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Overview of Contractual Savings Institutions

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Contractual savings institutions, because of their stable cash flows and long-term liabilities, could be ideal sources of term finance for both the public and private sectors. Unlike developed countries, most developing countries have insignificant contractual savings industries — but many are beginning to make reform in this industry a high priority.

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This paper — a product of the Financial Policy and Systems Division, Country Economics Department — is part of a larger effort in PRE to study the financial and economic impact of contractual savings institutions and assess their prospects in developing countries. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Wilai Pitayatorakarn, room N9-003, extension 37666 (59 pages with tables).

Contractual savings institutions include national provident funds, life insurance companies, private pension funds, and funded social pension insurance systems. They have long-term liabilities and stable cash flows and are therefore ideal providers of term finance, not only to government and industry but also to municipal authorities and the housing sector.

Except for Singapore, Malaysia, and a few other countries, most developing countries have small and insignificant contractual savings industries that have been undermined by high inflation and inhibited by oppressive regulations and pay-as-you-go social pension insurance systems.

Contractual savings institutions play a much bigger role in the financial systems of developed countries. In some countries, such as Switzerland, the Netherlands, and the United Kingdom, the resources mobilized by life insurance companies and pension funds correspond to well over 100 percent of annual GDP.

Vittas and Skully provide an overview of the structure and the state of development of contractual savings institutions in both high- and low-income countries. They also identify a number of operating characteristics that define the social, economic, financial, and regulatory implications of different types of contractual savings institutions.

Reforming their contractual savings and pension systems is becoming a high priority in many countries. Vittas and Skully emphasize that the fundamental objectives of reform should include:

- *Providing adequate but affordable and therefore sustainable benefits* (this might involve some intentional redistribution for social equity).

- *Creating a strong link between contributions and benefits*, which would minimize any incentive distortions on labor markets and avoid capricious redistributive effects caused by volatile inflation and inconsistent service requirements.

- *Generating long-term savings* that would help stimulate the development of capital markets.

On the basis of their analytical evaluation of different types of institutions and in line with practice in high income countries, the authors advocate a multi-pillar approach to contractual savings and pensions. For developing countries this could include:

- *A first pillar*, in the form of a *social pension insurance system*, that would provide a basic pension to old people, would aim for widespread coverage, and would be funded either from general tax revenue or from a combination of employee, employer, and government contributions.

- *A second pillar*, based on a *compulsory system of personal pension plans* offering contribution-based benefits but with strong safeguards regarding inflation protection and solvency (this pillar could comprise both a state-run national provident fund and personal pension plans offered by private-sector insurance companies and commercial banks).

- *A third pillar*, consisting of optional funded *occupational pension schemes* that might be offered by multinational corporations as well as large local conglomerates.

- *A fourth pillar*, consisting of *voluntary personal savings* such as bank deposits, life insurance policies and annuities, marketable securities, and houses.

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I. INTRODUCTION

Despite the establishment of a large and growing number of nonbank financial intermediaries, such as finance and leasing companies, and the recent emergence of active securities markets, the financial systems of most developing countries continue to be dominated by large commercial banks. The main reason for this is a widespread failure to promote contractual savings institutions, such as national provident funds, funded social pension insurance systems, life insurance companies and private pension funds.

The 1989 World Development Report (WDR) estimated that, for a sample of 13 developing countries with relatively more advanced financial systems, deposit banks controlled in 1985 nearly half of total financial assets, while contractual savings institutions accounted for only 5% (World Bank, 1989a). In fact, very few developing countries have well established contractual savings industries. Singapore and Malaysia have long operated large national provident funds. In 1987, their accumulated reserves represented respectively 72% and 41% of national income. Adding the reserves of life insurance companies raises the total level of contractual savings in these two countries to 78% and 48% of GDP (Table 1). Korea, which has a well developed life insurance industry, and Chile, which has promoted a system of personal pension plans since the early 1980s, have contractual savings sectors that have mobilized resources equal to about 20% of GDP. A few Asian, African and Caribbean countries, such as India, Zimbabwe and Barbados, also have relatively important contractual savings industries, comprising both life insurance companies and pension or provident funds. But the vast majority of developing countries have small and insignificant contractual savings industries that have been undermined by high inflation and inhibited by oppressive regulations and pay-as-you-go social pension insurance systems.

Contractual savings institutions play a much bigger role in the financial systems of developed countries. For a sample of 8 countries, the 1989 WDR estimated that contractual savings institutions represented 16% of total financial assets in 1985. This ranged from less than 10% in the case of Germany, France and Japan to over 25% in the case of Canada and the United Kingdom. But because the financial systems of developed countries are generally much deeper than those of most developing countries (Singapore and Malaysia are clear exceptions to this broad generalization), the resources mobilized by life insurance companies and pension funds in advanced countries tend to correspond to a much higher proportion of GDP, ranging from 133% in Switzerland to 117% in the Netherlands, 105% in the United Kingdom and 72% in the United States (Table 1).

Table 1

ASSET OF LIFE INSURANCE COMPANIES AND PENSION FUNDS, 1987

	% GDP
Switzerland	133
Netherlands	117
United Kingdom	105
Singapore	78
United States	72
Sweden	63
Malaysia	48
Denmark	47
Canada	43
Japan	32
Germany	29
Chile (1988)	22
France	19
Korea (1988)	18
Belgium	16

Source: Financial Times, 12 July 1990 and national central banks

Contractual Savings and Term Finance

Because commercial banks specialize in collecting short-term deposits and extending short-term credits, developing countries have suffered from a lack of formal term finance. Attempts to induce commercial banks to extend long-term loans have not been very successful since commercial banks are not ideal vehicles for term lending. In contrast, contractual savings institutions with their stable cash flows and long-term liabilities would be ideal providers of term funds, not only to government and industry but also to municipal authorities and the housing sector.

But despite their potential importance as sources of long-term financial savings and despite the complaints of many developing countries that they suffer from a shortage of long-term finance, there has so far been relatively little systematic effort to promote contractual savings institutions in developing countries. In attempting to increase financial savings and stimulate the development of their financial systems, most developing countries have concentrated their efforts on resource mobilization through the banking sector with a heavy emphasis on greater branch representation, savings education, and improving the returns offered on bank deposits. However, as savers accumulate more financial assets and become financially more sophisticated, they are likely to seek longer term investments with potentially higher returns than those offered by banking institutions. The establishment of contractual savings institutions offers an alternative to bank savings products and should assist developing countries in diversifying

national savings into longer term forms and in promoting capital market development.

Policy Issues

The visible financial and economic success of such countries as Singapore, Malaysia, Korea and Chile, in combination with the growing financial pressures confronting most social pension insurance systems, have induced policymakers in many countries to examine the case for reforming their contractual savings industries and to pay a closer look at their potential contribution to economic development. But policymakers interested in promoting contractual savings institutions in their countries are faced with a number of important questions: What is the primary role of contractual savings institutions? What is their potential impact on the rate of national saving and the mobilization of long-term financial resources? What implications do they have for the development and functioning of capital markets? What are their effects on economic efficiency and social equity? What is the appropriate role of government in promoting contractual savings? What is the case for granting preferential fiscal treatment on contractual savings compared to other types of savings? To what extent should contractual savings schemes rely on forced savings and compulsory participation? What are the regulatory preconditions for well run and stable contractual savings institutions? Given that there are several different types of contractual savings institutions, with distinct advantages and disadvantages, which ones should policymakers favor?

This is clearly a long list of questions that cannot all be addressed in one paper. They underscore, however, the complexity of the issues raised by most contractual savings institutions. This paper focusses on the operating characteristics of different types of contractual savings institutions and provides a brief survey of their structure and state of development in both high and low income countries¹. The economic and regulatory issues are addressed in a separate paper (Vittas, 1990).

Relatively little work has been done on the state of the contractual savings industry in developing countries and on the policies that are required to assist its development. For understandable reasons, given the pervasiveness of financial repression and the precarious position of banking systems in many countries, the World Bank, in line with other multilateral lenders, has focused its financial sector work on macropolicy reforms and banking restructurings. Some work has been carried out on social pension insurance systems², while IFC produced an unpublished paper on the promotion of contractual savings (Tata, 1984). Other international bodies have published various studies on particular sectors of the contractual savings

¹ The paper is based on an earlier background paper for the 1989 World Development Report (Skully, 1988).

² Wallich (1983), Puffert (1988), Puffert and Jimenez (1989), Mesa-Lago (1989) and World Bank (1989b).

industry, such as social security systems and life insurance companies³. The recently completed report on the contractual savings industry in Mexico represents one of the first comprehensive studies of the industry in a developing country (World Bank, 1990).

The present paper makes an attempt to offer a comprehensive survey of contractual savings institutions in different countries, though this is handicapped by the limited availability of up-to-date statistics on a consistent basis. Use has been made of data published by various international bodies and in some cases by national authorities, but because of delays in publication, some of the data used is several years old. The structure of the paper is as follows: The remainder of this introduction is devoted to a review of contractual savings institutions and a summary discussion of their main operating characteristics. The latter provides an analytical framework for discussing the merits and demerits of different types of institutions. The rest of the paper is then divided into six sections. The next section looks at national provident funds. It is followed by sections on social pension insurance systems, life insurance companies, occupational pension schemes and personal pension plans. The paper concludes with a brief discussion of the case for promoting an integrated contractual savings industry in developing countries.

Types of Contractual Savings Institutions

There are four types of contractual savings institutions: national provident funds, social pension insurance systems (if they operate on a funded basis), life insurance companies and occupational pension funds. In addition, personal pension plans, which can be managed by different types of institutions (life insurance companies, commercial and savings banks or pension fund administrators), represent an alternative and growing form of long-term contractual savings.

The common features of contractual savings institutions are that they cater to the long-term needs of savers and involve long-term contractual arrangements that represent the principal, if not the only, part of their business. Other institutions may also operate contractual savings schemes, such as save-as-you-earn deposit facilities, housing finance savings schemes and plans to invest in mutual funds and unit trusts. But these are established for shorter terms and usually represent a small part of their total business.

Contractual savings institutions also provide services for collective investment on behalf of individual savers, with the attendant benefits of economies of scale, risk diversification and professional management. They share this function with collective investment institutions, such as mutual funds, unit trusts and investment trusts. There is considerable overlap

³ Mackenzie, IMF (1988), Meghir, OECD (1989), International Labor Organization (1983, 1984 and 1988), International Social Security Association (1986) and UNCTAD (1984, 1985 and 1987).

between contractual savings and collective investment institutions and this is underscored by the use of unit-linked insurance policies and pension plans, i.e. policies where accumulated reserves are invested in unit trusts. Nevertheless, there is a fundamental difference between the two types of institutions: contractual savings institutions as defined above are essentially long-term institutions, whereas collective investment institutions focus on short-term savings.

Irrespective of their organizational form, contractual savings institutions can be classified into two basic types: those that operate as defined contribution (DC) plans; and those that are based on defined benefit (DB) plans. In DC plans, regular contributions are made by or on behalf of participants and final benefits depend on the total contributions made and the accumulated investment earnings. National provident funds, personal pension plans, most policies of life insurance companies and many occupational pension schemes, especially multi-employer schemes and those sponsored by smaller firms, are based on DC plans. In contrast, in DB plans, participants are promised a certain level of benefits and contributions are adjusted as necessary in the light of investment performance and other factors. Social pension insurance systems and company-based pension schemes, especially those sponsored by large employers, are often operated as DB plans.

Operating Characteristics

The various types of contractual savings institutions have different social, economic, financial and regulatory implications depending on a number of key operating characteristics. Some of these characteristics are inter-related and are common in some types of institutions, while others cut across different institutions. The various characteristics reflect differences in objectives and organizational form and define in many respects the advantages and disadvantages of different types of institutions.

The first operating characteristic regards the extent to which there is a direct link between contributions and benefits. Schemes with a strong direct link do not have redistributive effects and are generally perceived as forced or voluntary savings, as the case may be. They are not normally seen as a tax on labor or as a disincentive on labor mobility and have, therefore, limited effects on labor market efficiency.

The second characteristic, which is related to the above, is the extent to which they involve intentional redistribution. Schemes with redistributive objectives have a weak link between contributions and benefits. If the link is very weak, they tend to be seen as taxes on labor (rather than as forced savings) with adverse implications on the functioning of the labor market. Intentional redistribution may reflect social equity objectives, such as transfers from high to low income workers or from small to large families, but it may also be based on labor market incentives, such as transfers from mid-career leavers to long stayers, and from slow plodders to high fliers, in company-based schemes.

The third operating characteristic is the occurrence of unintentional redistribution. Unintentional redistribution may result from the effects of

inflation on the distribution of benefits within and across generations, but it may also be caused by changes over time in the provisions or performance of different schemes.

The fourth characteristic refers to the compulsory or voluntary nature of participation in contractual savings schemes. Voluntary participation suffers from the problem of adverse selection. This occurs because people with higher risks are more likely to seek to obtain life insurance cover and less likely to buy annuity policies than people with low risks. Compulsory participation avoids the problem of adverse selection, but is exposed to the problem of moral hazard as people try to manipulate or evade the system. The problem of moral hazard is more acute in cases where benefits bear little or no relation to contributions.

The fifth characteristic relates to the centralized or decentralized management of contractual savings institutions. The main advantage of centralized administration is lower operating and marketing costs, but the disadvantage is greater exposure to political pressures and the risk of manipulation that may lower returns and cause capricious changes in benefits. Another potential problem is the prevalence of bureaucratic procedures and low efficiency at the operational level. Decentralized management can avoid these problems, though it may involve much higher marketing costs, due to the competitive provision of services, and possibly also higher operating costs, that may result from the reduced scale of operations of individual institutions.

Decentralized management will also involve higher regulatory costs and will require the creation of guarantee funds with risk sharing facilities to protect the pension balances or pension rights of individual workers. On the other hand, decentralized management can make a major contribution both to the development of capital markets and to the promotion of innovation, both with regard to financial instruments and with regard to pension products, whereas centralized management may encourage the direction of investment funds by government edict and, thus, hinder the development of capital markets.

The sixth characteristic may be described as informational efficiency. Schemes that are simple to operate are also more transparent and easier to explain than complex systems, which tend to lack transparency and are, sometimes, difficult to comprehend, even by professionals. Informational efficiency is important for compulsory schemes since informationally efficient systems are more likely to be perceived as deferred compensation and forced savings rather than a tax on labor.

The seventh, and last, operating characteristic relates to the allocation of risks. Following Bodie⁴, it is useful to distinguish three risks of contractual savings plans: replacement risk, investment risk and inflation risk. But in addition to those risks, another and most important consideration is the solvency and integrity risk of plan providers. Replacement risk is the risk that benefits may be low in relation to

⁴ See the approach developed in Bodie (1990).

retirement needs, investment risk reflects variations in investment performance and inflation risk refers to the risk that benefits may not be protected against inflation. These three risks are clearly inter-related, but their allocation between different participants in contractual savings schemes varies widely by type of scheme. Solvency and integrity risk covers the risk that providers of benefits will fail to deliver the promised level of benefits, either because of financial insolvency or because of lack of integrity.

II. NATIONAL PROVIDENT FUNDS

Operating Characteristics

National provident funds typically operate as defined contribution schemes⁵. They pay out benefits that depend on the contributions made and the earnings accumulated over the life of the fund. Contribution rates are fixed by the authorities and are normally payable by both employers and employees. Provident funds disburse lump sum payments on retirement although some plans allow for conversion into annuities, i.e. into regular pension payments.

In a defined contribution, fully funded scheme, there is neither a redistribution of income within the generation concerned nor any redistribution between that generation and others. In addition, because contributions and benefits are not linked to working for particular employers, national provident funds have no distributional effects between early leavers and workers that stay on with the same employer. They do not, therefore, have restrictive effects on labor mobility.

Provident funds may, however, cause unintentional redistribution across generations if the rate of return on invested balances fluctuates considerably over time. Moreover, if contribution rates are perceived to be too high and to imply a very high level of forced savings, national provident funds may have adverse effects on employment creation in the formal sector. In addition, labor compensation may take the form of fringe benefits or wages may be understated in order to evade the high contribution rates.

National provident funds are usually justified as being simpler to introduce and operate than social pension insurance systems or occupational pension schemes. Some governments also find them attractive because they are less likely to be subject to political pressures to force unbudgeted changes in benefits.

National provident funds are often established as paternalistic institutions and may be subject to considerable political interference. They have the potential to accumulate substantial reserves, which can then be used to fund the government debt, to support "high priority" sectors or activities, or to acquire stakes in private industry. But if the reserves are not invested wisely, or if contributions are low, the final benefits may be inadequate to meet the retirement needs of members. In national provident funds, the replacement, investment and inflation risks are borne by employees. The solvency and integrity of the funds depends on their real rate of return and their administrative efficiency.

⁵ In the approach used in this paper, national provident funds based on defined benefit plans would be classified as social pension insurance systems.

National Provident Funds in Developed Countries

Because most developed countries have long established social pension insurance systems with extensive, if not universal, coverage, no national provident funds are found in OECD countries.

National Provident Funds in Developing Countries

National provident funds are perhaps the only contractual savings institutions that have made a significant impact on the economies and financial systems of some developing countries. They are mostly found in Asian countries, although they are also present in some African countries. Table 2 provides some data on provident funds in a few, mostly Asian, developing countries.

Table 2

SELECTED NATIONAL PROVIDENT FUNDS, 1983

Country	Institution	Assets %GDP
Singapore	Central Provident Fund	53.8
Malaysia	Employees Provident Fund	24.4
Solomon Is	National Provident Fund	15.4
Sri Lanka	Employees Provident Fund	8.1
Swaziland	National Provident Fund	6.0
Nepal	Employees Provident Fund	3.8
India	Employees Provident Fund	1.9
India	Assam Tea Plant. Prov/Pension	0.1
Indonesia	Social Security System ASTEK	0.2

Source: International Social Security Association (1986)

Table 3 shows the contribution rates for national provident funds in several African and Asian countries. With the exception of Singapore, Malaysia, Nepal and Sri Lanka, the countries listed in the table have total contribution rates well below the 20% level. This suggests that national provident funds in these countries are less able to accumulate large reserves.

Worth noting are the low contribution rates in Indonesia and the absence of national provident funds in Korea, Taiwan and Thailand. Taiwan has opted for a social pension insurance system, while Thailand recently announced the creation of a central provident fund. In Korea, the establishment of a social pension insurance system has been legislated since the early 1970s, but it was only implemented in 1988.

Table 3

NATIONAL PROVIDENT FUNDS
CONTRIBUTION RATES

	Percent of Salary Contributed by		
	Employee	Employer	Total
<u>Africa</u>			
Ghana	5.0	11.5	16.5
Gambia	5.0	10.0	15.0
Nigeria	6.0	6.0	12.0
Kenya	5.0	5.0	10.0
Swaziland	5.0	5.0	10.0
Tanzania	5.0	5.0	10.0
Uganda	5.0	5.0	10.0
Zambia	5.0	5.0	10.0
<u>Asia</u>			
Singapore	25.0	10.0	35.0
Malaysia	9.0	11.0	20.0
Nepal	10.0	10.0	20.0
Sri Lanka	8.0	12.0	20.0
Papua New Guinea	5.0 - 10.0	7.0	12.0 - 17.0
India	6.25 - 8.0	6.25 - 8.0	13.0 - 16.0
Fiji	7.0	7.0	14.0
Solomon Islands	5.0	7.5	12.5
Kiribati	5.0	5.0	10.0
Western Samoa	5.0	5.0	10.0
Indonesia	1.0	1.5	2.5

Source: Social Security Administration (1986).

National Provident Funds in Singapore and Malaysia

The ability of national provident funds to accumulate large reserves depends on several factors, the most important of which are the age of the fund, its coverage and demographic structure, and the level of contributions. Other important factors are the level of investment income and the level of benefits, especially the retirement age in relation to the working life of members. National provident funds register their highest rates of growth when their coverage and/or their contribution rates increase.

The most important national provident fund is the Central Provident Fund of Singapore that was established in 1955. The Employees Provident Fund of Malaysia, set up in 1951, is also very large. Their experience is very interesting and suggestive of the strong link between contribution rates and the level of reserves.

The CPF started with total contribution rates of 10 per cent, divided equally between employers and employees. Contribution rates were raised for the first time in 1968 to 13%. There followed further increases, ranging from 1 to 4 per cent, on over a dozen different occasions. These brought total contribution rates to 16 per cent in 1970, 20 per cent in 1971, 30% in 1974 and 50% in 1984. However, because of their adverse impact on employment creation, contribution rates were reduced in 1986 to 35% (by lowering employer rates to 10%). In 1988 and 1989 contribution rates were changed again: employer contributions were raised first to 12% and then to 15%, while those of employees were lowered first to 24% and then to 23%, giving increased total rates of 36% and 38%, for 1988 and 1989 respectively. The aim of the authorities is to bring total rates to 40% in 1990, equally divided between employers and employees.

Table 4

NATIONAL PROVIDENT FUNDS IN SINGAPORE AND MALAYSIA

Central Provident Fund, Singapore

	Reserves LCU bn	% of GDP
1976	4.1	27.9
1981	12.1	41.3
1983	19.5	53.1
1985	26.8	68.9
1986	28.3	73.1
1987	30.6	71.8
1988	32.5	65.8
1989	36.1	65.3

Employees Provident Fund, Malaysia

1980	9.5	17.8
1985	24.7	31.9
1987	32.3	40.5

Source: Central Provident Fund & Bank Negara Malaysia

Accumulated reserves of the CPF rose from 4.1 billion Singaporean dollars in 1976 to 36.1 billion in 1989. In relation to GDP, they rose from 28% in 1976 to 65% in 1989, though they reached a peak of 73% in 1986 (Table 4). Apart from the changes in contribution rates and the expansion of membership, two other factors have affected the growth of reserves: the rate of interest credited to member balances and the introduction of housing and approved investments schemes permitting the withdrawal of funds by members.

The rate of interest credited to members was initially set at 2.5% when the CPF was established. This was raised to 5% in 1963 and gradually to 6.5% by 1974, but since 1987 the rate of interest has been linked to the average of rates on savings deposits and 12-month fixed time deposits. In general, the rate of interest has been slightly positive in real terms, although given the long-term nature of CPF funds, a higher rate of return than that available on short deposit rates would have been more appropriate. The scheme permitting members to withdraw accumulated balances to invest in public housing units was introduced in 1968 and was later extended in 1981 to also allow investments in private residential units. Since its introduction, over 15 billion Singaporean dollars have been released under the housing scheme.

Over 95% of CPF reserves are invested in government securities bearing a constant and relatively low rate of interest of 6.5%. The government has not invested all the funds in local development projects but has instead accumulated a substantial pool of foreign exchange reserves (Lim Chong Yah, 1986 and Schulze, 1990). In 1989, foreign exchange reserves amounted to nearly 40 billion Singaporean dollars, exceeding the total balances of the CPF.

The experience of the Malaysian EPF is similar to that of the CPF, although by design it is generally a smaller institution and of lesser significance for the domestic economy than the CPF. This is mainly because contribution rates are much lower than in Singapore. Contribution rates for the Malaysian EPF were raised on two occasions: from a total of 10% (equally divided between employers and employees) to 13% (7% from employers and 6% from employees) in 1975 and to 20% (11% from employers and 9% from employees) in 1980. Coupled with a substantial expansion of coverage and the growth in incomes, EPF reserves increased from 9.5 billion ringgit in 1980 to 32.3 billion in 1987. These corresponded to 18% of GDP in 1980 and 41% in 1987.

The annual rate of dividend paid on member balances was raised periodically from 2.5% in the 1950s to between 4% and 6% in the 1960s, over 7% in the 1970s and 8.5% since 1983. The EPF invests between 85% and 90% of its resources in government securities. As in Singapore, the EPF allows withdrawal of balances for housing purposes (Bank Negara Malaysia, 1989).

III. SOCIAL PENSION INSURANCE SYSTEMS

Types and Operating Characteristics

There are three types of social security systems offering old age pensions: universal benefit schemes, which provide pension coverage for all residents over a specified age without regard to income, assets or employment status; universal social assistance schemes, which limit pension coverage to poor residents meeting certain asset and income limitations; and social pension insurance schemes, which offer pension benefits to participants after a certain age and subject to certain past employment and contribution requirements.

The first two types are welfare plans and are largely funded from general revenue. The third type are mostly funded by contributions from employers and employees, although governments often make a contribution from general revenue. This may give the impression that social pension insurance schemes are user pay systems but in practice there is rarely a direct relationship between contributions and benefits. As contributions are seldom adjusted for risk, the pooled nature of social pension insurance means cross subsidization from the young to the old and from the healthy to the ill.

Social pension insurance systems, being national or at most regional institutions, have centralized management, though their operations are often decentralized. Their operating costs may be lower than in the case of privatized and, therefore, completely decentralized systems but, by their nature, social pension insurance systems are susceptible to political influence, both with regard to the payment of benefits and with regard to the investment of their reserves. In many countries, social pension insurance institutions lack autonomy from central government and they also suffer from administrative weaknesses that affect their ability to keep records and to enforce compliance with the rules of the schemes, especially the prompt payment of contributions.

In addition to old age and invalidity pensions, social security systems also administer a wide range of social programs, including unemployment benefits, family allowances, and health benefits. An indication of the importance of social security programs is shown in Table 5. Over 140 developed and developing countries offer some form of state social welfare program and 132 provide some form of old age pension. While there may be economies of scale in covering a number of risks through one program, the disadvantage is that there may be substantial cross subsidization. In some cases the cross financing happens directly with pension fund money being used to cover short-term benefit payments, while in other cases this is accomplished through borrowings.

Table 5

NUMBER OF COUNTRIES WITH SOCIAL SECURITY PROGRAMS

	1949	1967	1981	1985
Any type	58	120	139	142
Old age/invalidity	44	92	127	132
Sickness/maternity	36	65	79	83
Workers' compensation	57	117	136	136
Unemployment	22	34	37	40
Family allowance	27	62	67	64

Source: Social Security Administration (1986)

Financing Social Pension Insurance Systems

A basic difference between social pension insurance institutions and national provident funds is that the former are defined benefit schemes, while the latter typically operate as defined contribution plans. In social pension insurance systems, pensions are usually fixed in relation to average wages or as a proportion of a participant's pensionable salary, whereas in national provident funds, benefits depend on the contributions made and the investment income accumulated over the life of the fund. As regards funding, national provident funds are always funded schemes, but social pension insurance institutions may be operated on a fully funded, partially funded or totally unfunded, pay-as-you-go basis. Social pension insurance systems assume, in principle, the replacement, investment and inflation risks (if benefit formulas and pension payments are fully indexed) but workers and pensioners assume the solvency and integrity risks. In practice, real benefits may be curtailed if financial pressures intensify and contributions cannot be raised.

Unfunded schemes operating on a pay-as-you-go basis may also accumulate reserves for liquidity purposes, but such reserves normally cover payments over a few months only and tend to be invested in relatively liquid form. For their part, funded social pension insurance systems may or may not involve the accumulation of large reserves, depending on the level of benefits and contributions. If benefits are limited to the provision of a safety net to alleviate poverty and hardship among old people, the required resources may not be very large. But if benefits are more generous, and especially if they are related to the earnings of beneficiaries during a few years prior to their retirement, then funded social pension insurance systems may lead to a significant accumulation of funds in the hands of public institutions. The investment of these funds may give rise to several concerns. On the one hand, they may be used to finance large public sector deficits. On the other, if they are used to invest in the corporate sector, they may expose social pension insurance systems to excessive risk, while they may also confer undue influence over corporate affairs to the managers of these funds.

Scale premium systems, which combine certain aspects of the fully funded and pay-as-you-go plans, represent a hybrid between funded and unfunded schemes. In scale premium systems, the initial contribution rate is

determined in such a way that the probable inflows into the scheme (including both current contributions and investment income) during a given period (called a period of equilibrium) are equal to the probable outflows in the same period (including current benefits and the accumulation of a reserve fund). The period chosen is sufficiently long to guarantee a certain degree of premium stability. Only the investment income of the reserve fund is used to cover current benefits. The principal of the reserve fund is left intact. When current receipts plus investment income are no longer adequate to cover current benefits, the contribution rate is raised to the level corresponding to another period of equilibrium.

Scale premium systems may be particularly suited for newly created funds as they allow an initially low contribution rate and some accumulation of reserves, while at the same time avoiding the frequent contribution rate changes required of a system operating on a pay-as-you-go basis. These rates, though, would still be subject to review at least every three years, and even more frequently with high inflation.

Financial Pressures

Unfunded social pension insurance systems, which use current contributions from active workers to pay pensions to retired people, involve large transfers between different generations of workers, especially during the initial phases of creation and expansion of the system. Each generation effectively pays for the benefits of those that preceded it with no direct relationship between what beneficiaries of the system initially contribute and their end benefits. But social pension insurance systems also often involve transfers between members of the same generation through progressive elements in the determination of benefits and contributions. For instance, the targeted replacement rate may be higher for low income workers⁶.

Unfunded systems face major financial strains when the number of beneficiaries increases in relation to the number of contributors. Maintenance of benefits may then require substantial increases in the level of contributions. Alternatively benefits may be curtailed. In either case, forced changes in the functioning of unfunded social pension insurance systems may give rise to further intergenerational transfers. A fundamental weakness of social pension insurance systems, even if they are initially fully funded, is that they are subject to considerable political and social pressure to expand benefits without a commensurate increase in contributions.

Inflation has a double-edged impact on the finances of social pension insurance systems. On the one hand, it may erode the real value of financial assets, especially government bonds and other debt instruments that are not indexed. But, on the other hand, depending on how benefits are determined,

⁶ The progressivity of social pension insurance systems may be limited by setting ceilings on contributions. Such ceilings tend to be unfair on middle income workers and are usually raised when social pension insurance systems face financial strains. In a few cases, contribution ceilings have been completely eliminated.

inflation may also erode the real value of pensions. The net impact is unclear. In many countries with persistently high inflation, there is strong pressure to use indexed financial instruments for the investment of reserves and also to index benefit formulas and pensions. The transition from low to high inflation, or from high to low inflation, or from unindexed to indexed operations, may have a large impact on the finances of both funded and unfunded social pension insurance systems.

Inflation may also cause capricious redistributive effects, depending on whether benefit formulas are indexed or not. Further capricious effects may result from the use of benefit formulas that require limited years of service for full pension and provide substantial survivorship benefits to dependents. Workers with long service and few dependents will then subsidize those with short service and many dependents.

Social Pension Insurance Systems in Developed Countries

All developed countries have social pension insurance systems. These are often combined with universal benefit or universal social assistance systems. Historically, Germany, the early leader in this area, first introduced comprehensive state health insurance in 1883, then industrial injury or workers compensation insurance in 1885 and, finally, an old age & invalidity pension in 1889. The three schemes were combined into one fund in 1911.

Most developed countries operate unfunded or partially funded social pension insurance systems. These accumulate small amounts of reserves to cover liquidity needs. For instance, the German social security funds have reserves amounting to 5.5% of GDP, while the social security institutions of France, which also include the occupational pension schemes that are based on the distribution system, have reserves of only 3.5% of national income. Canada, another country with partially funded public pension schemes, has social security reserves equal to 8% of GDP.

The Japanese Employees Pension Insurance (EPI) and the Swedish National Pension Insurance Fund (NPIF), both of which provide earnings-related benefits, have accumulated much larger resources, amounting to 16% of GDP in the case of Japan and to 30% in the case of Sweden. In Sweden, this has been a result of deliberate policy as contribution rates were initially set at high levels to assure a rapid buildup of reserves. Following the financial reform of social security in the United States in 1983, it is estimated that the social security trust fund will reach 12.8 trillion dollars by the year 2030 - equivalent to 2 trillion dollars in 1988 prices or over 25% of projected GDP (Aaron et al, 1989).

In countries with funded social pension insurance systems, the accumulation of large reserves has raised concerns about the implications for the functioning of financial markets and the allocation of resources. In the United States, it is argued that the reserves of the social security trust fund are used to finance an unduly high public sector deficit. In Sweden, because of concern about its potential domination of the capital market, the NPIF has been required to invest its resources through other financial

institutions and especially to channel funds to the housing sector through the mortgage credit institutions, although these restrictions have been relaxed in recent years. In Japan, most of the balances of EPI are, also, invested in the housing sector.

The social pension insurance systems of developed countries face a number of common problems, such as aging populations resulting from low birth and mortality rates, high levels of unemployment and a tendency towards early retirement especially among elder long-term unemployed workers⁷. These trends caused a substantial increase in the ratio of benefits to contributions and growing pressures on the financial situation of many national systems. In response to these pressures, many countries increased contributions (by raising contribution rates or by increasing or eliminating the income ceilings on contributions) or decreased benefits (by raising the normal retirement age or increasing the required covered service)⁸.

Social Pension Insurance Systems in Developing Countries

Several developing countries, particularly in Latin America, have social pension insurance systems that are based on modifications of the initial German system. Most of these systems were initially set up as funded schemes. But rapid population growth coupled with relatively young populations, industrialization and economic growth, as well as expanded coverage, have allowed many countries to increase their overall benefits without a commensurate increase in contribution rates. As a result, most systems are now operating on an unfunded, pay-as-you go basis. But despite expanded membership, most social pension insurance systems in developing countries cover only a relatively small fraction of the population. In most countries the large rural populations engaged in subsistence farming and the informal sector in urban centers are excluded from coverage.

In countries with high inflation and unindexed benefit formulas or pension payments, the real value of benefits has been eroded by inflation. This has caused a capricious redistribution of benefits from workers with long service and high incomes to those with short service and low incomes. In Mexico, high inflation in the mid-1980s has resulted in almost all pensioners receiving the minimum pension, irrespective of their years of service and contributions to the social pension insurance system and irrespective of the level of their salaries at retirement⁹. These developments have further loosened the weak link between contributions and benefits, causing the system to be more widely perceived as a tax on labor rather than a forced savings scheme for retirement income.

⁷ The vast rise in medical costs, caused by increases in the relative price of medical services and greater demand due to increased life expectancy, has imposed financial strains on other social security programs.

⁸ see Haanes-Olsen (1989).

⁹ See World Bank, 1990.

Some developing countries operate funded social pension insurance systems. One such country is Jordan, which introduced a social pension insurance system in 1980. This has been able to build up adequate reserves corresponding to about 15% of GDP. It is expected that, even without taking account of its investment income, it will be in strong financial position for the next 20 years. Allowing for the accumulation of investment income and on conservative actuarial projections of pension benefits, the period of financial equilibrium, during which no increase in contribution rates will be necessary, is extended to over 60 years.

Table 6 shows the reserves of social pension insurance systems in relation to GDP in some Latin American and Caribbean countries. Despite the vagaries of inflation and expanded coverage, some of these systems are still of considerable importance (at least in terms of asset holdings) within their respective financial sectors.

The impact of inflation on the value of reserves can be avoided if reserves are invested in real assets. The Mexican IMSS has predominantly invested in real assets such as hospitals and other buildings. Based on the assessed value of its fixed assets, the reserves of IMSS amount to nearly 6 trillion pesos, which is nearly 10 times the reported book value. The experience of IMSS is therefore much superior to that of social security systems in other Latin American countries that have mostly invested in unindexed financial assets. However, like most other social security systems, IMSS consists of several programs providing, in addition to pension insurance, medical care, worker compensation and miscellaneous social services. Surpluses of the pension insurance program have been treated as transfers to the other programs rather than as reserves invested in the real assets of the medical sector.

Table 6

SELECTED SOCIAL PENSION INSURANCE SYSTEMS
IN LATIN AMERICA AND THE CARIBBEAN REGION

Country	Year	Institution	Assets %GDP
Barbados	1986	National Insurance Office	14.6
Bahamas	1985	National Insurance Board	11.7
Ecuador	1986	Inst. Ecuatoriano de S.S.	6.6
Jamaica	1987	National Insurance Scheme	5.8
Costa Rica	1986	Caja Costarricense de S.S.	5.7
Venezuela	1981	Inst. Venezolano de los S.S.	3.7
Colombia	1982	Instituto de Seguros Sociales	2.9
Peru	1987	Instituto Peruano de S.S.	0.7
Mexico	1987	Inst. Mexicano del S.S.	0.2

Source: Brenes (1983) and Mesa-Lago (1989)

Table 7

SOCIAL PENSION INSURANCE SYSTEMS
CONTRIBUTION RATES

	Employee	Employer	Percent of Salary Contributed by Total
<u>AFRICA</u>			
Seychelles	5.0	10.0	15.0
Sudan	5.0	9.0	14.0
Benin	3.6	5.4	9.0
Burkina Faso	4.5	4.5	9.0
Senegal	3.2	4.8	8.0
Cameroon	2.8	4.2	7.0
Cape Verde	4.0	3.0	7.0
Gabon	2.0	5.0	7.0
Burundi	3.0	3.5	6.5
Zaire	3.0	3.5	6.5
Chad	2.0	4.0	6.0
Congo	2.6	3.4	6.0
Liberia	3.0	3.0	6.0
Rwanda	3.0	3.0	6.0
Togo	2.4	3.6	6.0
Central Afr. Rep.	2.0	3.0	5.0
Madagascar	1.0	3.5	4.5
Mali	1.6	2.4	4.0
Mauritania	1.0	3.0	4.0
Niger	1.6	2.4	4.0
Guinea	1.6	1.6	3.2
Ivory Coast	1.2	1.8	3.0
 <u>ASIA</u>			
Philippines	1.6 - 8.0	5.1 - 6.8	6.7 - 14.8
Taiwan	1.4	5.6	7.0
 <u>EMENA</u>			
Iran	7.0	20.0 (3.0)	30.0
Egypt	10.0	15.0 (1.0)	26.0
Kuwait	5.0	10.0 (10.0)	25.0
Syria	7.0	14.0	21.0
Turkey	9.0	11.0	20.0
Bahrain	7.0	11.0	18.0
Cyprus	6.0	6.0 (3.5)	15.5
Jordan	5.0	8.0	13.0
Algeria	3.5	3.5	7.0
Morocco	1.7	3.4	5.1
Pakistan	-	5.0	5.0
Tunisia	1.25	2.5	3.75

Table 7 (contd)

	Percent of Salary Contributed by		
	Employee	Employer	Total
<u>LAC</u>			
Uruguay	3.0 - 16.0	10.0 - 14.0	13.0 - 30.0
Paraguay	9.5	16.5 (1.5)	27.5
Brazil	8.5 - 10.0	10.0	18.5 - 20.0
Chile (old system)	18.9 - 19.9	-	18.9 - 19.9
Argentina	11.0	7.5	18.5
Bahamas	1.7 - 8.8	5.4 - 7.1	7.1 - 15.9
Guyana	4.9	7.4	12.3
Dominican Republic	2.5	7.0 (2.5)	12.0
St Lucia	5.0	5.0	10.0
Panama	6.25	2.75	9.0
Peru	3.0	6.0	9.0
Trinidad and Tobago	2.8	5.6	8.4
Dominica	3.0	5.0	8.0
Grenada	4.0	4.0	8.0
Costa Rica	2.5	4.75	7.25
Venezuela	2.0	2.75 (1.5)	6.25
Barbados	3.0	3.0	6.0
Nicaragua	1.75	3.5 (0.25)	5.5
Mexico	1.5	3.75	5.25
Bolivia	1.5	1.5 (1.5)	4.5
Colombia	1.5	3.0	4.5
Honduras	1.0	2.0 (1.0)	4.0
Suriname	2.0	-	2.0

Numbers in brackets show government's contribution

Source: Social Security Administration (1986)

Social pension insurance systems are financed with contributions from employers and employees, with transfers from government, and with investment income on their accumulated reserves. Table 7 shows contribution rates in a number of countries that operate social pension insurance systems rather than national provident funds. The preponderance of Latin American and Frenchspeaking African countries is brought out in the table. Most African countries have low contribution rates in contrast to EMENA countries that tend to have high rates. Latin American countries show no universal pattern. Some have high contribution rates but others, especially in the Caribbean region, have low rates.

It should be stressed, though, that setting contribution rates and receiving the contributions, are quite different matters. Substantial policing may be required to ensure compliance among private employers. Similarly, even where there is compliance, the payments may not be received on time, and government and state enterprises in many developing countries are often substantially behind in their payments. This can become a particularly acute problem during periods of high interest rates and/or high inflation as there are substantial incentives to postpone payments for as long as possible. In many cases, the plan administrators may be unable or unwilling to act against late payers so there are substantial delays in final collection. Worse still, no penalties may be assessed, or even when included, the penalty rate may be so low that guilty parties can pay the penalty and still profit from the delay.

Another problem is created by the moral hazard inherent in all compulsory systems. Employers and employees may collude in understating covered wages by using an excessive amount of fringe benefits as part of their compensation packages or by making underhand payments in cash. In either case assessed contributions will be lower. Such practices are more prevalent when there is a weak link between contributions and benefits.

IV. LIFE INSURANCE COMPANIES

Types of Companies and Products

Life insurance is offered by three major types of companies: stock companies, owned by their shareholders; mutual companies, owned by the firm's policyholders; and state-owned companies. Internationally there are typically many more stock companies than mutual or state-owned companies, but individual mutual companies are often more significant within their respective markets than their stock counterparts. This is certainly true in many developed countries (such as the United States, the United Kingdom and Australia) where most of the largest companies are mutual firms. Usually mutual companies and most stock companies offer life insurance and life related policies on an exclusive basis but so-called composite companies, which are almost always stock companies, combine the offer of life and non-life business.

The types of companies and their significance in a particular country depend on many factors but probably the most important are the economy's size and development. The smaller the economy, the more likely it will be served by only one insurer, typically state-owned, which will hold a legal or de facto monopoly on all local insurance. Alternatively, the country may be served only by agents of foreign insurers. Locally incorporated private insurance companies or formal branches of foreign insurers are unlikely until a much larger market size is reached. A compromise position also may exist as when a local insurance company is jointly owned by the government and a foreign insurer. Even where such ventures are established, they usually specialize first in non-life business and only later expand into life insurance. Typically composite insurers are more commonly found in Latin American and African than in other developing countries.

Life insurance companies cover two types of personal risks: the risk of premature death and the risk of excessive longevity. The former is covered by various types of life policies, such as whole life and term insurance, while the latter is covered by annuity policies. Life insurance companies also provide policies that cover both kinds of risks. These include various types of endowment policies that combine life protection with a strong savings element. Life insurance was historically motivated by the need to provide financial protection to the dependents of the insured. But in modern times, the savings component has been stimulated by fiscal incentives and the high returns obtainable on longer-term assets and has become the predominant element of most life policies.

Life insurance companies are also involved in managing and insuring occupational pension schemes that combine the accumulation of reserves during a person's working life with the payment of regular pensions during their retirement. Pension programs, which represent a combination of endowment policies with deferred annuities, are often associated with the offer of group life insurance.

Insurance policies range from traditional contracts with a fixed nominal value and fixed premiums to more modern varieties such as unit-linked, participating and indexed policies that involve variable premiums and variable

insured values or the so-called universal life policies that offer greater flexibility in the payment of premiums and the buildup of savings. Annuity contracts involve a lump sum upfront payment in return for regular payments, that may be fixed or variable, over a specified period of time.

Both life policies and annuities may range from one year to the whole life of the insured. Premiums are smallest for pure life term policies where no payment is due if the insured is still alive at the expiration of the policy and highest for participating endowment policies where a capital sum depending on the profit performance of the company is payable at the maturity of the policy. Similarly, the price of annuities is lower for contracts that pay regular sums only as long the annuitant is alive and higher for those annuity contracts that refund some of the capital to the dependents of annuitants.

Although some policies, such as single premium one-year policies or pure life policies with variable premiums, do not generate any long-term savings, most types of insurance policies contribute significantly to the accumulation of technical reserves and other long-term funds. Their investable funds, arising both from the creation of technical reserves and the reinvestment of profits to the benefit of policyholders, can be several times their annual premiums. Annuity contracts also generate investable funds since premiums are paid upfront.

In discussing the role of life insurance companies as contractual savings institutions, a basic distinction should be drawn between individual and group policies. For reasons that are discussed further below, individual policies incur high operating and marketing costs and suffer from extensive information problems. Group business benefits, on the other hand, from low operating and marketing costs and, as it is often negotiated by employers on behalf of their employees, it is subject to fewer information problems. In particular, group business, which is often associated with insured occupational pension schemes, avoids the inefficiencies caused by the problem of adverse selection.

Most life and annuity policies operate as defined contribution plans where policyholders assume the replacement, investment and inflation risks. However, in some traditional policies, the investment risk is assumed by insurance companies, while use of indexed instruments (both policies and investment assets) may mitigate the inflation risk. Insurance policies involve a direct link between contributions (premiums) and benefits with no intentional redistribution; however, unintentional redistribution, over time or across policyholders, may result from wide variations in investment returns. Policyholders assume the solvency and integrity risks, although use of compensation and guarantee funds may provide effective risk-sharing facilities.

Factors Affecting the Development of Life Insurance

The development of the life insurance industry depends on a number of factors, such as the level and distribution of income and wealth of a country, its social culture and family structure, the efficiency, solvency and public

image of insurance companies, the tax treatment of insurance premiums and benefits, the availability of social security benefits, the degree of macroeconomic and political stability, and the regulatory framework.

Apart from income and wealth, which are clearly major determinants of the demand for life insurance, the fiscal treatment of premiums and benefits and the regulatory framework have a large impact on the development and structure of life insurance in different countries. Life insurance premiums are in many countries deductible for income tax purposes. Although deductibility is subject to limits, it lowers by a significant amount the effective cost of life policies in countries with high marginal tax rates. In addition, the maturity proceeds of life policies are often exempt from both income and estate taxes and this may explain the popularity of endowment policies, where the savings component predominates over the protection element. But in the United States, where endowment policies are treated as cash investments and are taxed accordingly, in contrast to the proceeds of whole life policies which are tax exempt, endowment insurance policies account for a very small proportion of the total business of life companies (Black and Skipper, 1987).

Extensive regulation of the insurance industry is premised on the need to protect the interests of consumers by standardizing contracts (to reduce information costs) and by preventing insolvencies. Insurance operations are handicapped by high information costs that may give rise to deceptive practices by both insurers and their customers. Of particular importance are the problems of moral hazard and adverse selection, which arise because of the asymmetry of information between insurers and the insured.

Moral hazard occurs when the very act of obtaining insurance cover increases the risk of loss by affecting the behavior of the insured. Moral hazard is a major issue in general insurance lines, but it may also be present in life insurance since the existence of a life policy may cause changes in behavior: for instance, drivers with life cover may take less care in driving.

Adverse selection occurs because people with higher risks (e.g. people with poor health or in hazardous occupations) are more likely to seek insurance cover than people with lower risks. Adverse selection operates in the opposite direction in the case of annuity contracts where people with short life expectancy are less likely to buy annuities than people with long life expectancy.

To reduce the incidence of moral hazard and adverse selection, insurance companies design differentiated policies based on elaborate risk classification systems and include special provisions for exceptions and co-insurance. But these measures increase the complexity of contracts and heighten the need for consumer protection against abuse of exclusion clauses by insurance companies. Again these concerns are more prevalent in general than life insurance. In the latter, the main information problems arise from the complexity and long-term nature of contracts and the uncertainty regarding future returns.

Endowment insurance policies, especially participating and unit-linked policies, are in many respects informationally inefficient financial instruments. The performance of different policies is affected by the investment performance of the underlying funds, the marketing expenses incurred in promoting new business (especially the payment of hefty commissions to insurance salesmen) and the penalties imposed for early surrenders. In the case of participating policies, effective returns depend on the declaration of bonuses. Insurance companies tend to allocate a major part of returns in the form of final bonuses that penalize policyholders who do not hold their policies until maturity.

To protect consumers from deceptive packages and unfair practices, an effective system of regulation and supervision is required to set acceptable standards on marketing expenses and information disclosure. Regulation is also required to ensure that insurance companies maintain adequate reserves to meet future claims and to prevent them from investing their reserves in speculative assets.

Life Insurance in Developed Countries

Unlike funded occupational pension schemes which, with few exceptions, are mainly found in Anglo-American countries, life insurance business is also well developed in several continental European countries and Japan. There are several indicators of the development and efficiency of the life insurance industry. Some provide a measure of the flow of saving through insurance policies, others an indication of the size of the industry and its role in the process of financial intermediation and still others a measure of its efficiency. International comparisons are complicated by differences in practice and data coverage.

A frequently used indicator is the level of annual premiums in relation to national income. This measures the flow of saving through insurance policies. In general, the higher the percentage of premiums, the higher the development of the local insurance industry. But differences in operating costs and investment efficiency between countries may distort the comparability of these ratios. For instance, countries with high operating costs and low investment returns will require a higher level of premiums for the same total insurance coverage.

The premium to income ratio will also be affected by the business mix of life insurance companies. A greater reliance on short-term business will tend to increase annual premiums without a corresponding increase in reserves. This is especially the case with short-term annuities that are effectively used as deposit-like instruments that are often motivated by the imposition of interest rate ceilings on bank deposits.

Table 8 summarizes data on life insurance premiums in developed countries. The Japanese life insurance industry has the highest ratio of premiums to GDP (7.4%), followed by Ireland (5.8%), the UK and Switzerland (each with 4.9%). In Japan and Ireland, the high level of life premiums is partly explained by the preponderance of single premium short-term policies. In Japan, single premium business is partly motivated by the low interest rate

ceilings on retail deposits¹⁰, while in Ireland an important factor is considered to be the high marginal rates of income tax in conjunction with the preferential treatment of life insurance policies by comparison to other types of financial assets. Single premium business has also been very important in Spain, a country with a low level of premiums but very fast growth in recent years.

Table 8

LIFE INSURANCE PREMIUMS IN DEVELOPED COUNTRIES

	1986	1987 % GDP	1988
Japan	5.75	6.43	7.35
Ireland	4.99	7.60	5.80
UK	4.95	5.25	4.89
Switzerland	4.05	4.45	4.85
USA	3.57	3.69	3.65
Finland	3.16	3.33	3.55
Australia	1.65	1.79	3.49
Netherlands	2.67	2.92	3.23
Germany*	2.53	2.86	3.08
Sweden	2.73	2.50	2.89
France	1.83	2.15	2.73
New Zealand	1.66	3.30	2.56
Canada	2.44	2.62	2.54
Norway	2.62	2.03	2.06
Spain	0.45	1.27	2.05

* includes insured pension and burial funds

Source: Sigma, Swiss Reinsurance Company (various issues)

A second indicator is the level of premiums in US dollars on a per capita basis. In addition to the distortions caused by differences in business mix, operating costs and investment efficiency, a comparison of per capita premiums is affected by the vast fluctuations in exchange rates and the considerable divergence between nominal exchange rates and purchasing power parities. Table 9 shows the per capita premiums in different countries as reported in Sigma, the publication of the Swiss Reinsurance Company, which is the main source of international data on life insurance. These are based on

¹⁰ Single premium policies may offer a guaranteed return that exceeds the interest rate ceiling on retail deposits. In Japan, even general insurance companies offer policies with deposit-like features. These charge high premiums with a guaranteed refund that incorporates a rate of return exceeding available interest rates on bank deposits.

year-end exchange rates that increase further the distortions caused by exchange rate fluctuations.

A third indicator is the value of insured amounts in relation to national income. In 1987, this ratio amounted to 339% in Japan, 165% in the United States, 128% in Korea, 102% in the United Kingdom, 70% in Malaysia and 65% in Singapore. This indicator is higher, the higher the proportion of whole life business and term insurance and the lower the proportion of endowment policies. But the indicator is less useful in the case of participating "with-profits" and unit-linked policies, which have a variable insured amount that depends on the investment performance of the underlying reserves.

Table 9

PER CAPITA PREMIUMS IN LIFE INSURANCE

	1986	1987	1988
	in US dollars		
Japan	981	1461	1746
Switzerland	938	1357	1331
Finland	480	674	757
USA	621	679	718
UK	479	706	716
Sweden	447	513	610
Germany*	415	595	598
Australia	173	220	569
Ireland	362	711	527
Netherlands	360	483	494
Canada	348	432	492
France	256	382	457
Norway	437	432	444
New Zealand	141	397	306
Spain	28	108	183

* includes insured pension and burial funds

Source: Sigma, Swiss Reinsurance Company (various issues)

A fourth indicator is the level of life funds (i.e. the reserves and other liabilities to policyholders) in relation to national income. This is probably the least distorted of the three measures and in some respects the most relevant since it provides an indication of the importance of the life insurance industry in the domestic financial market. But this ratio may also be affected by differences in business mix and in investment and accounting practice. For instance, reserves may be undervalued if they are invested in real estate and are reported on the basis of cost rather than market value, while a greater reliance on endowment and long-term annuity business is likely to raise the level of reserves.

Data on life insurance funds are not as readily available as those on premiums. Table 10 indicates the level of life funds in relation to GDP for a small number of countries. These range from 17% in Germany to 32% in Switzerland. It can be seen that life funds represent a substantial pool of resources in the countries listed and that they are growing at a very fast pace in Japan.

Another two indicators that measure the relative role of the insurance industry in intermediating financial services are the value added of the industry as a percentage of national income and the level of employment in the industry as a percentage either of total employment in the country or of total employment in the financial sector. Comprehensive data covering both the insurance companies and the distribution networks are not, however, readily available.

Table 10

LIFE INSURANCE FUNDS IN DEVELOPED COUNTRIES

	1986	1987 % GDP	1988
Switzerland	28.0	29.8	31.6
United Kingdom	30.8	30.9	31.1
Japan	22.4	25.7	29.0
Germany*	18.9	19.6	20.3
Netherlands	17.2	18.3	20.2
United States	17.3	18.4	19.2

* includes insured pension and burial funds

Source: national central banks

An indicator, which is not often reported and is more an indicator of efficiency rather than development, is the ratio of life funds to gross premiums. This takes account of differences in operating and investment efficiency, but provides no indication of the overall size and development of the industry. Moreover, this indicator can still be distorted by differences either in business mix or in reserve policies.

As regards differences in business mix, countries where insurance companies have a large proportion of single premium life policies will report a low ratio of reserves to premiums, while companies with a large volume of long-term annuities where premiums are paid upfront will tend to show a high ratio. The ratio of reserves to premiums will also be lower in countries that experience a high growth of life insurance since reserves are built up over a number of years. As regards reserve policies, countries using conservative mortality tables and discount rates will report higher levels of technical

reserves and therefore a higher ratio of life funds to premiums than countries with less conservative reserve policies.

Table 11 shows the ratio of life funds to premiums for a small number of developed countries (the data for 1977 are based on total assets rather than just the life funds of life insurance companies). Japan and, to a lesser extent, the United States report relatively low ratios at 4 and 5.3 respectively. These reflect high operating costs and low investment returns as well as a business mix that requires a lower volume of reserves. Among European countries with ratios around 6.5, the high ratio in Germany and Switzerland is probably due to rather conservative reserve policies, that for Netherlands to low operating and, especially, low marketing costs, while in the case of UK companies, it most likely reflects high investment returns.

Table 11

RATIO OF LIFE INSURANCE FUNDS TO ANNUAL PREMIUMS

	1977	1986	1987	1988
Germany*	5.2	7.47	6.85	6.59
Switzerland	8.1	6.91	6.70	6.52
United Kingdom	7.8	6.22	5.88	6.35
Netherlands	n.a	6.46	6.27	6.24
United States	4.9	4.86	4.97	5.25
Japan	3.1	3.90	3.99	3.95

* includes insured pension and burial funds

Source: Tables 7 and 9, and Hill (1986).

A better indication of efficiency is given by the rate of return on investment assets of life insurance companies. A comparison of rates of return should, of course, take account of differences in nominal rates of interest that reflect differences in inflation and exchange rate expectations and in real rates of interest. A correct measure of efficiency should focus on the spread between investment returns on life insurance policies and the nominal rate of interest on long government bonds, with an allowance for a risk premium associated with high and volatile inflation.

Unfortunately, comprehensive and comparable data on rates of return on life insurance policies are not available. As regards UK and German insurers, it is reported that UK insurers achieve average rates of return in the region of 15% to 20% against 7% to 8% for their German counterparts (Rabe, 1990). Even after allowing for differences in inflation rates between the two countries, UK companies appear to be more efficient than German companies. A main reason for this difference in investment performance is the greater freedom enjoyed by UK companies to invest in domestic and foreign equities, but another contributory factor may be the more conservative reserve policies

of German insurers. The higher investment returns achieved in the United Kingdom result in lower premiums for the same amount of insured values, though German insurers also argue that the lower UK premiums may also reflect lower mortality risks in the United Kingdom (Finsinger, 1990).

A Price Waterhouse report compared insurance returns across EEC countries in the context of the so-called "Cost of Non-Europe" project, but the data used in the report and its conceptual approach suffer from several deficiencies and its data should be used with great caution (Price Waterhouse, 1988). The report found that the cost of term insurance was much lower in the United Kingdom and the Netherlands than in Germany. The report stressed that German companies must use standardized insurance contracts as well as conservative mortality and discount rates, which increase the cost of insurance. But it also noted that German insurance companies are also mandated to rebate to policyholders 90% of any surplus. It is not clear to what extent these rebates have been taken into account in calculating the cost of term insurance.

Life Insurance in Developing Countries

With few exceptions, the life insurance business is not well established in developing countries. This can be attributed to both demand and supply factors, such as the low level of income and wealth of developing countries, the lack of financial sophistication among savers, and the imposition of an inhibiting regulatory framework. Failure to promote group-based business, which has played a significant part in the growth of life insurance and pension business in developed countries, has been another crucial factor.

Income and wealth are clearly important, not only because poorer people may be unable to afford the required insurance premiums, but also because they have little real and financial wealth and are thus exposed to little risk of financial loss. In many developing countries, the demand for life insurance may be mitigated by the traditional reliance on informal insurance arrangements (e.g. through extended family and community support) for coping with major misfortunes, such as disability or death of family members.

The distribution of income and wealth is also likely to affect the demand for life insurance. In a country with high income inequality, wealthier members of society may be able to take advantage of more efficient insurance policies in foreign markets, whereas the poorer segments will have little effective demand for life insurance. Wealthier people may benefit from lower premiums available in foreign markets that reflect both their lower mortality risks and the higher efficiency of foreign markets. This may create an adverse selection problem for local insurance operators, who may be left covering the higher mortality risks of lower income people and may, thus, be forced to raise their premiums, reducing further the level of effective demand for the domestic industry. The demand for life insurance will be further dampened by the existence of social security institutions offering financial protection through social welfare programs.

Macroeconomic and political instability, manifested in high and volatile inflation and political uncertainty, will affect adversely the development of

Table 12

LIFE INSURANCE IN DEVELOPING COUNTRIES, 1983

	Premiums/ GDP %	Premiums Per Capita US\$***	Life Funds/ GDP %	Life Funds/ Premiums
<u>AFRICA</u>				
Botswana	0.26	2.56	0.42	1.6
Burkina Faso	0.04	0.53	0.06	1.5
Cameroon	0.08	0.57	0.08	1.0
Congo	0.01	0.13	-	-
Ethiopia	0.04	0.06	0.33	8.3
Gabon*	0.04	1.20	-	-
Gambia	0.03	0.13	0.07	2.3
Ghana*	0.01	0.08	-	-
Lesotho**	0.02	0.02	-	-
Malawi	0.69	1.22	-	-
Mozambique	0.03	0.13	0.25	8.3
Nigeria*	0.25	1.75	1.04	4.2
Seychelles	0.04	0.08	-	-
Sudan*	0.01	0.04	0.03	3.0
Zambia*	0.90	3.70	-	-
Zimbabwe	3.11	23.79	16.85	5.4
 <u>ASIA</u>				
Bangladesh	0.09	0.11	0.30	3.3
Bhutan*	0.08	0.09	0.29	3.6
India	0.69	1.82	5.06	7.3
Indonesia*	0.17	0.85	0.50	2.9
Korea*	4.59	93.07	7.83	1.7
Malaysia*	0.99	21.35	3.95	4.0
Philippines*	0.40	2.55	1.06	2.7
Singapore*	0.86	61.85	3.57	4.2
Sri Lanka*	0.14	0.54	0.96	6.9
Thailand*	0.57	4.77	-	-

Table 12 (contd)

LIFE INSURANCE IN DEVELOPING COUNTRIES, 1983

	Premiums/ GDP %	Premiums Per Capita US\$***	Life Funds/ GDP %	Life Funds/ Premiums
EMENA				
Cyprus	0.77	24.72	2.35	3.1
Egypt	0.17	1.45	0.53	3.1
Kuwait	0.15	20.16	0.46	3.1
Malta	0.51	14.25	2.63	5.2
Morocco	0.32	1.93	1.30	4.1
Oman*	0.08	5.79	0.12	1.5
Syria	0.02	0.44	0.03	1.5
Tunisia	0.37	4.42	0.18	0.5
Yugoslavia	0.08	2.02	0.28	3.5
 LAG				
Argentina	0.12	1.97	0.02	0.2
Barbados	1.79	72.94	7.76	4.3
Bolivia	0.09	0.17	0.08	0.9
Brazil	0.14	2.22	0.09	0.6
Chile	0.92	15.53	1.52	1.7
Colombia	0.36	5.10	0.61	1.7
Costa Rica	0.19	2.46	0.76	4.0
Ecuador*	0.05	0.69	0.07	1.4
El Salvador*	0.64	5.39	1.40	2.2
Guatemala*	0.29	3.55	-	-
Guyana	3.01	15.90	11.43	3.8
Jamaica	2.59	44.39	6.23	2.4
Mexico	0.21	4.04	-	-
Nicaragua	0.31	3.76	0.36	1.2
Panama*	1.78	37.91	6.61	3.7
Peru*	0.14	1.25	0.04	0.3
St. Lucia*	1.47	16.77	4.40	3.0
Trinidad & Tobago	1.44	121.73	4.79	3.3
Uruguay	0.09	1.68	0.26	2.9
Venezuela*	0.67	19.60	0.83	1.2

* Data for 1984

** Data for 1985

Source: UNCTAD Secretariat (1987)

the life insurance industry. High inflation will lead to poor investment returns on insurance reserves and reduce the real value of insurance contracts unless indexed policies and investments are used, while the credibility of insurance contracts, which are essentially long-term instruments, will be undermined by persistent political uncertainty.

On the supply side, the regulatory framework may inhibit competition, innovation and efficiency if it is based on oppressive product and premium controls and uses insurance reserves as captive sources for financing budget deficits and funding low-yield government securities. While a regulatory framework based on solvency and consumer protection considerations is deemed essential for the creation of a stable, efficient and fair insurance industry, in many developing countries insurance regulation has resulted in high concentration, inefficient operations and limited product development.

Data on the development of life insurance in developing countries are not available on a comprehensive and regular basis. UNCTAD undertook a major survey of insurance business in developing countries in November 1985 and published the results of its survey in 1987. Table 12 summarizes the life insurance data for the developing countries covered in the UNCTAD survey. The data mostly relate to 1983 and 1984 and are therefore somewhat dated by now.

The UNCTAD survey shows that, among developing countries, 8 countries had premium-to-GDP ratios in 1983/4 of more than 1 per cent. These included Korea (4.5), Zimbabwe (3.1), Guyana (3.0), Jamaica (2.6), Barbados (1.8), Panama (1.8), St Lucia (1.5), and Trinidad and Tobago (1.4). Trinidad had the highest level of per capita premiums of 122 U.S. dollars, compared to 94 for Korea, 73 for Barbados, 62 for Singapore and 44 for Jamaica.

As regards the accumulation of life funds, Zimbabwe had the highest ratio of life funds to GDP at 17 per cent, followed by Guyana with 11 per cent. Other high ranking countries included Korea and Barbados, each with 8%, Panama with 7%, Jamaica with 6% and Trinidad with 5%. The UNCTAD survey also showed that the ratio of life funds to gross premiums was quite high in some Asian and African countries, such as India, Sri Lanka and Zimbabwe. Korea and the Philippines and most Latin American countries had low ratios, while Malaysia and Singapore reported ratios in the middle range.

Interestingly, with the exception of Korea, which has a fairly high level of economic development, and Panama, which has actively encouraged the growth of an offshore financial center, the other developing countries that have relatively more advanced life insurance sectors are all former British colonies. In these countries the local banking system was developed by British bankers and assumed their traditional concentration on short-term, generally trade related, business rather than term finance. In response to this fairly narrow scope of operations, other British firms established subsidiaries in British colonies to fill market gaps. The colonial civil service may also have created a pension fund to cover local employees as well as expatriates, and British companies there may have similarly provided some limited form of pension or provident funds. Thus on independence, the countries listed within these high insurance development indicators had the basis of a fairly diversified, though highly foreign controlled, financial sector.

Table 13

LIFE INSURANCE PREMIUMS
IN SELECTED DEVELOPING COUNTRIES, 1986-88

	1986	1987 % GDP	1988
<u>AFRICA</u>			
Zimbabwe	..	3.04	2.85
Kenya	0.53	0.50	0.49
Cameroon	..	0.13	0.19
Nigeria	..	0.18	0.16
Cote d'Ivoire	..	0.14	0.16
<u>ASIA</u>			
Korea	6.42	7.31	7.48
Taiwan	..	2.34	2.68
Singapore	1.13	1.29	1.45
Malaysia	1.41	1.49	1.23
Philippines	0.80	1.06	1.11
India	0.76	0.81	0.88
Thailand	0.66	0.73	0.77
Indonesia	0.19	0.21	0.21
China	0.13	0.14	0.16
<u>EMENA</u>			
Portugal	..	0.35	0.54
Pakistan	0.40	0.18	0.46
Hungary	0.57	0.52	0.45
Morocco	0.33	0.36	0.36
Poland	..	0.27	0.20
Egypt	0.16	0.19	0.19
Kuwait	0.18	0.15	0.14
Tunisia	0.10	0.10	0.12
Turkey	0.03	0.04	0.05
Yugoslavia	0.06	0.05	0.04
<u>LAC</u>			
Panama	1.99	1.75	2.04
Chile	0.99	1.13	1.11
Mexico	..	0.33	0.42
Uruguay	..	0.34	0.35
Colombia	0.29	0.28	0.27
Argentina	0.21	0.14	0.21
Venezuela	0.40	0.22	0.20
Brazil	0.14	0.13	0.11

Source: Sigma, Swiss Reinsurance Company (various issues)

Cultural factors are also important in these rankings. In those countries where the extended family still plays a very important role in the local culture (such as the Pacific island countries), this inter-personal support network serves as an effective competitor for the insurance industry. Potential customers in these cultures know that if a family's chief bread winner dies, then the rest of the extended family will ensure that his dependents have a place to live and food to eat. As long as this informal insurance exists, it is difficult to convince the individual that he must provide through the formal market, particularly as he will still be paying "premiums" to the informal market even if he purchases insurance. While the extended family continues to exist to some degree in most countries, its importance tends to decline as the population moves from mainly rural villages to large urban areas. Thus, the degree of insurance development may well be closely correlated to the degree of a country's urbanization, once a basic "take-off" level of income is reached.

The data of the 1987 UNCTAD survey are not only dated but they cover the position of the life insurance industry at a particular point in time. Data from Sigma, summarized in Table 13, show the evolution of life insurance premiums for a smaller number of developing countries. Excluded from this list are the small Caribbean countries. Out of 32 countries, only 8 countries had annual life premiums in excess of 1 per cent of GDP - five of these were in Asia (Korea, Taiwan, Singapore, Malaysia and the Philippines), two in Latin America (Panama and Chile) and one in Africa (Zimbabwe).

Life Insurance in Korea, Malaysia and Chile

Like funded pension schemes, the life insurance industry can accumulate very large resources once the foundations for growth and efficiency are put in place. In this respect, the experience of three developing countries with relatively strong contractual savings industries is worth a closer look.

Korea has a highly developed life insurance sector judged by the level of premiums in relation to national income. Indeed, Korea has a higher ratio than any of the developed countries listed in Table 7. As shown in Table 14, the ratio of premiums to GDP rose from 1.6% in 1980 to 7.3% in 1987. In nominal terms, annual premiums rose more than eleven-fold between 1980 and 1987.

The growth of the Korean life insurance industry is explained by four main reasons. First, the country has experienced a very high rate of economic growth. Second, Korean households have a high propensity to save. Third, until recently, there was no national security and welfare system in place. And, fourth, life insurance companies have used aggressive selling techniques.

The growth of the life insurance industry is also reflected in the rise in the proportion of life funds in relation to GDP. From a level of 2.5% of GDP in 1980 they reached nearly 14% by 1987. However, the life insurance industry has been criticized for its cartelized structure, its uncompetitive practices and its low efficiency. This is brought out in the table by the low level of the ratio of life funds over annual premiums. Although this has been

improving gradually, at 1.9 in 1987 it was still extremely low by international standards.

Table 14

LIFE INSURANCE IN KOREA

	PREMIUMS/GDP %	RESERVES/GDP %	RESERVES/PREMIUMS
1980	1.59	2.42	1.52
1981	1.96	2.83	1.44
1982	3.18	4.47	1.40
1983	3.80	5.76	1.51
1984	4.48	7.35	1.64
1985	5.28	8.73	1.65
1986	6.42	11.54	1.80
1987	7.31	13.53	1.85

Source: Life Insurance Business in Korea, 1986, the Life Insurance Association of Korea and Sigma, Swiss Reinsurance Company (various issues).

A number of reasons may explain the relative performance of the Korean life insurance industry. On the one hand, the very high growth of life insurance premiums may have exerted a downward pressure on the ratio of reserves to annual premiums (since reserves are built up over a number of years), while accounting practices, such as the valuation at cost of real estate assets, may have unduly depressed the value of reserves. Neither of these reasons suggests relative inefficiency in terms of high costs or low returns. But, on the other hand, the reliance on aggressive, labor-intensive selling techniques may have inflated operating costs, while the accumulation of reserves may have suffered from compulsory investments in low-yielding instruments and from the preponderance of shorter term policies.

The position of the life insurance industry is substantially different in Malaysia (Table 15). The establishment of the Employees Provident Fund has reduced the need to save with life insurance companies and as a result the level of premiums to GDP is slightly over 1%. But because financial institutions have greater freedom to invest their funds in assets with market-related yields, the performance of the industry has been much better than in Korea. Accumulated assets of life insurers correspond to 6% of GDP. Although this makes a small addition to the long-term contractual savings mobilized by the Employees Provident Fund, it shows a much better investment efficiency than the Korean life insurance sector. In fact, if the Korean companies had the ratio of reserves to premiums of their Malaysian counterparts, their reserves would correspond to over 35% of GDP.

Table 15

LIFE INSURANCE IN MALAYSIA

	PREMIUMS/GDP %	RESERVES/GDP %	RESERVES/PREMIUMS
1980	0.61	3.13	5.17
1981	0.65	3.37	5.18
1982	0.71	3.82	5.40
1983	0.78	3.98	5.07
1984	0.86	4.20	4.90
1985	1.01	4.98	4.92
1986	1.26	6.02	4.76
1987	1.20	6.09	5.06
1988	1.19	5.91	4.95

Source: 27th Annual Report of the Director General of Insurance, 1989,
Ministry of Finance, Malaysia

As already noted, the relative underdevelopment of life insurance in most developing countries is partly explained by the multitude of restrictions that are imposed on the sector and inhibit its growth. A good example of the impact of such restrictions, and of the potential for growth and expansion once they are removed, is provided by the reform of life (and general) insurance in Chile. Prior to 1980 insurance business in Chile was subject to a wide range of controls and restrictions that aimed to discourage competition in order to preserve the solvency of insurance companies. The main premise was that competition would be self-destructive and cause bankruptcies that would hurt consumers. The market was reserved for local companies, both prices and products had to be approved by the authorities, and little regard was paid to providing an efficient and inexpensive service. Not surprising the insurance business was languishing even though over 100 companies were in operation.

In 1981 a major reform of the insurance sector was undertaken. This included opening the market to foreign competition and removing price and product controls. At the same time, greater emphasis was placed on prudential regulations with appropriate solvency margins and investment criteria. The industry was also encouraged to consolidate into a smaller number of entities. By 1989, the number of insurers operating in Chile dropped to 36 but those operating now included local subsidiaries of some major international companies, such as Aetna and Allianz. Both general and life business grew at a fast rate in the 1980s stimulated by lower prices, product innovation and greater competition. Between 1980 and 1988 life premiums rose in real terms by a factor of 7.5 and they nearly doubled between 1984 and 1988. However, in relation to GDP, the growth of premiums was more modest from 0.94% in 1984 to 1.11% in 1988 (Table 16), although they were as low as 0.19% in 1980. The reserves of life insurance companies rose at the same time from 2% to 3.7% of GDP and, reflecting their lower operating costs and higher investment returns, the efficiency index went up from 2.1 to 3.3.

Table 16

LIFE INSURANCE IN CHILE

	PREMIUMS/GDP	RESERVES/GDP	RESERVES/PREMIUMS
	%	%	
1984	0.94	1.98	2.11
1985	1.03	2.46	2.38
1986	1.00	2.90	2.91
1987	1.13	3.30	2.92
1988	1.11	3.69	3.31

Source: Anuario Seguros 1988, Superintendencia de Valores y Seguros, Chile

V. OCCUPATIONAL PENSION SCHEMES

Types and Operating Characteristics of Pension Plans

Occupational pension schemes involve two main types of pension plans: defined benefit (DB) and defined contribution (DC) plans. These have different operating characteristics and different advantages and disadvantages.

DB plans are based on pre-determined levels of pensions, either as a percentage of pensionable salary or in fixed amounts. Employee contributions (if plans are contributory) are a fraction of salary that is either constant or varies with age and length of service. Employer contributions depend on the performance of the fund since employers provide an undertaking to make up any difference between the defined pension level and the value of accumulated contributions and investment income.

In DB plans, the investment risk of accumulated reserves is assumed by the sponsoring companies, which may thus provide some kind of retirement income insurance to their members (Bodie, 1990). But with few exceptions, mainly for civil servants and other public sector employees, this insurance is usually limited to the nominal value of pensions at the time of retirement and rarely covers the real value of pensions after retirement, although sponsoring companies often adjust pensions on an ad hoc basis to take account of inflation. The inflation risk is thus largely assumed by employees.

There is no explicit fee for the provision of replacement risk insurance, but restrictive conditions on pension plans imply a cost to employees. Employee costs include qualifying limits on the vesting of benefits and limitations on the portability of vested benefits. DB plans also lack transparency, while the value of the retirement income insurance depends on the solvency and integrity of the sponsoring employer.

A major shortcoming of DB plans is that, like participating insurance policies, they are based on poorly defined financial contracts. Employers usually retain the right to terminate plans and convert accrued benefits to a DC plan. Plan termination may take place when firms face insolvency and are unable to meet their pension obligations, when firms are taken over or merged with other companies, or when the plans are overfunded. In all cases, the behavior of employers may be determined by opportunistic considerations that breach their long-term undertakings towards their staff. Another weakness of DB plans is that employees stand to lose considerably if they are dismissed just before they acquire vesting rights for their accrued benefits.

DC plans involve regular contributions by employers and/or employees that are fixed in relation to salary, while pensions depend on the total value of accumulated contributions and investment income. DC plans do not carry an implicit insurance that retirement income will be a certain percentage of pensionable salary. Their members are exposed to the investment risk of fund assets and especially the impact of unexpected inflation, unless indexed instruments are used. However, members of DC plans are free from the restrictive conditions on vesting and portability that affect members of DB plans.

Vesting refers to the acquisition of pension (and other benefit) rights by employees. The main distinction is between immediate vesting, when pension rights vest on joining a pension scheme, and deferred vesting, when accrued pension rights vest after a stipulated minimum service and age requirements. There is also a distinction between full vesting, when accrued pension rights vest in their entirety, and graded vesting, when accrued pension rights vest on a sliding scale as more vesting requirements are met. Deferred full vesting may give rise to cliff vesting, whereby completion of a stipulated period of service confers substantial pension rights. Portability refers to the ability to transfer vested pension rights to other pension schemes (McGill, 1984).

In most DB plans, benefits are vested after a qualifying period of service, which may range from 3 to up to 10 years, and in some cases even longer. Employees may lose all pension benefits if they leave before completing the minimum period for vesting. If they leave after vesting, their pension benefits may be frozen until they reach retirement age. In some countries, leaving employees may be entitled to transfer their pension rights to the plan of their new employer, but even then employees changing jobs in mid-career would normally lose out. This is because actuaries tend to use different assumptions, especially about the growth rate of the wages of individual members and perhaps also about the real rate of return of the capital fund, for people who stay with a firm than for those who leave or those who join late. The potentially large losses incurred by early leavers are likely to discourage labor mobility.

The intentional redistribution from mid-career leavers to long stayers is reinforced by another type of intentional redistribution from slow plodders to high fliers - i.e. from workers who make little progress in their career development to those who achieve rapid promotion. This redistribution takes place because companies make contributions on behalf of groups rather than individual employees. Under a DC plan, high fliers would have to increase substantially their contribution rates in later years in order to attain the same replacement rate as under most DB plans. Differences in total lifetime compensation between slow plodders and high fliers reflect to a substantial extent differences in productivity and performance but they also involve a substantial element of intentional redistribution.

DC plans are simpler to operate than DB ones. They usually confer immediate vesting and are not subject to portability restrictions, although if a plan is solely based on employer contributions, vesting may be deferred. In general, DC plans do not involve any intentional redistribution between different groups of workers and are, therefore, less likely to restrict labor mobility. They are also not affected by the solvency and integrity of the sponsoring employer. But DC plans depend on the solvency and integrity of the financial institutions managing the funds while the investment risk is borne by participating employees. They may involve unintentional redistribution both within and across generations. A sound regulatory framework is necessary to safeguard the interests of savers and stimulate competition and efficiency. In addition, in countries with high and volatile inflation, DC plans must have access to indexed instruments to increase their ability to hedge against the inflation risk.

DC plans are by definition fully funded, but DB plans may operate either on a funded or unfunded basis. Unfunded schemes, operating on a pay-as-you-go basis, cover in most countries civil servants and military personnel, and also members of industry-wide schemes in several European countries, such as France, Italy and Greece. Funded schemes may be self-administered as independent trusts or they may be insured and administered by life insurance companies.

Funded schemes are not always fully funded. Historically, most schemes were underfunded, although in recent years, many schemes in Anglo-American countries became overfunded as a result of the valuation gains obtained on their holdings of equities and other assets. Overfunding has given rise to some serious problems, such as the ownership of surplus funds, the right of sponsoring employers to terminate overfunded plans and the tax treatment of contribution holidays and refunds.

In some countries, pension schemes may be funded by the creation of book reserves, which are then available for self-financing by the sponsoring company. To increase the security of benefits, such schemes may be reinsured. In Germany, companies operating book reserve schemes are required to contribute towards the national pension guarantee fund, a pay-as-you-go central fund that assumes the pension liabilities of insolvent firms and assesses contributions on solvent firms as necessary to cover losses.

Fiscal Treatment

Establishing a funded pension scheme can be divided into two separate decisions: creating a pension scheme and setting up a fund to cover its future liabilities. Both decisions are heavily influenced by tax considerations, although other motives may also be important. For instance, pension schemes may be created for paternalistic reasons, to reward loyalty and long tenure, and to encourage job-specific training. But the most important consideration is often the tax treatment of pensions and pension contributions.

If pensions are tax exempt, or are treated more favorably than severance and seniority pay provided under labor legislation, as is the case in some developing countries, then the fiscal benefits of pensions are obvious. But even if pensions are subject to income tax, the deductibility of contributions confers a tax deferral, the fiscal benefits of which depend on the degree of progressivity of the system of income tax. The higher the marginal rates of income tax, the greater the benefits of tax deferral.

The decision to set up a fund to cover the future liabilities of pension schemes is also influenced by tax considerations. If the investment income and capital gains of pension fund assets are tax exempt but those of bank deposits, mutual fund shares and direct holdings of securities are subject to tax, perhaps at high marginal rates, the comparative tax advantage of saving through pension funds can be very significant. But in countries where interest income on bank deposits and government bonds as well as capital gains on securities are free from tax, the incentive to set up a pension fund, as distinct from creating a pension scheme, is much weaker.

Sponsoring companies may decide to fund their pension liabilities for other reasons, even in the absence of tax advantages. For instance, local subsidiaries of multinational corporations may set up a pension fund in order to comply with accounting regulations of their home country, even though local regulations may allow them to operate on a pay-as-you-go basis or with book reserves.

The tax treatment of pension plans represents a move towards a consumption tax base, which avoids the taxation of saving. But their preferential tax treatment affects the composition of financial assets in favor of long-term savings held with institutional investors. Pension funds, like life insurance companies, have long-term liabilities and their reserves are ideally suited for investment in long-term assets. Because their liabilities are often open ended in real terms, pension fund managers have a strong preference for investing in real assets such as corporate equities and real estate or in indexed bonds.

In developing countries that suffer from a shortage of formal term finance, the promotion of contractual savings through a preferential tax treatment of pension funds (and other forms of contractual savings) would be a desirable objective of financial policy. But in developed countries, the continuing provision of tax incentives to contractual savings could result in excessive concentration of financial savings in the hands of institutional investors with potentially undesirable implications for the functioning of capital markets and for the market for corporate control. These may include overprovision of equity finance, inadequate monitoring of large corporations and undue emphasis on short-term results (Jensen, 1989), although existing evidence on the occurrence of these practices is inconclusive. Thus, in the longer run, it would be advisable, and more equitable, to remove the preferential tax treatment of contractual savings by extending the principle of tax deferral to all types of savings. This would amount to a generalization of a consumption tax system, which could only be undertaken in the context of a major fiscal reform. A less drastic alternative approach, which is already adopted in some countries, would be to lower the limits on the amounts of contractual savings that benefit from tax deferral.

Pension Funds in Developed Countries

Occupational pension schemes exist in many developed countries either as an alternative to the social pension insurance system or as a source of supplementary benefits. In most countries, the first occupational pension schemes were set up to cover civil servants and military personnel but the concept was later extended to the private sector, especially among the larger corporations.

Occupational pension schemes may be organized on an industry-wide or on a company basis. Industry-wide schemes covering employees in banking, insurance and other sectors are in widespread use in several continental European countries. In contrast, company-based schemes are predominant in Anglo-American countries, such as the United States, the United Kingdom, Canada and Australia. But multi-employer schemes covering workers in

industries with relatively high labor mobility, such as mining and construction, are also found in Anglo-American countries.

Company pension funds have grown at very high rates in some developed countries over the past forty years or so. Several explanations have been put forward to account for this growth. Historically, pension plans represented a formalization of paternalistic discretionary payments made by employers to retiring employees in recognition of their long and faithful service. They were primarily seen as a means for ensuring a satisfactory level of income for retired employees and they were generally limited to senior staff. Over time, company pensions came to be seen as deferred compensation that, in addition to ensuring adequate retirement income, provided incentives for greater loyalty and increased productivity. Pension benefits that are subject to vesting and portability restrictions reward long tenure and are often perceived as an effective mechanism for encouraging the undertaking of job-specific training by both employers and employees.

The growth of company pension funds has also been stimulated by two other factors. First, during times of restrictive policies on wage and salary increases, improved pension benefits were an effective means for raising total labor compensation. In the 1950s, the offer of improved pension benefits in lieu of salary and wage increases provided a major boost to occupational pension plans in both the United States and the United Kingdom. Second, the more favorable fiscal treatment of saving through pension plans provided a strong and persistent incentive to save through qualified pension schemes.

The growth of company pension funds has also been related to the imperfections of private annuity markets. Historically, savers have been reluctant to buy annuities and this has been attributed to two reasons. First, it is argued that because of the problem of adverse selection, whereby people with short life expectancy are less likely to buy annuities than people with long life expectancy, insurance companies are forced to base their annuity prices on the mortality risks of people buying annuities and this results in higher annuity costs than if prices are based on the mortality tables of the whole population. These prices are considered to be "actuarially unfair"¹¹, although it can be argued that the higher costs reflect a necessary segmentation of the market. In life insurance, market segmentation by risk characteristic is, in principle, accepted as rational and desirable behavior on the part of insurers; it is difficult to see why in annuities the same approach should be seen as involving "actuarially unfair" prices.

Second, a more important reason for the underdevelopment of the private annuity market may be that, unlike life insurance which can be bought by small regular outlays, the purchase of annuities involves large sums of money. People are generally reluctant to part with a substantial sum of money and run the risk of not leaving this money to their heirs if they should die shortly

¹¹ For a discussion of these points, see Friedman and Warshawsky, 1988 and 1990.

after setting up an annuity contract. The bequest motive is generally considered to be an important determinant of household saving. Historically, insurance companies offered simple annuity contracts that exposed contract holders to substantial financial loss in case of early death, but over time they developed more sophisticated contracts that refund a substantial part of the capital in case of early death. Economists have tended to treat annuities as assets that leave no bequeathable wealth¹², but this is not in conformity with prevailing business practice.

Another, and historically more relevant, reason for the underdevelopment of private annuity markets may be the very growth of social security and company pension funds, which may have deprived the annuity markets from a substantial segment of potential customers. A basic feature of both social security and company pension schemes is that they are mandatory programs that save on marketing and other production costs (such as medical screening) and overcome the problems caused by adverse selection. Moreover, both types of programs provide for survivorship benefits and thus avoid the potential financial losses from early death. They may therefore represent more efficient means of providing for retirement income and insuring against excessive longevity than individual annuities. But this is no different from arguing that mandatory group life insurance is a more economical and efficient means of providing against the risk of premature death than individual life policies.

Table 17

PENSION RESERVES* IN DEVELOPED COUNTRIES

	1986	1987 % GDP	1988
Netherlands	70.9	72.9	77.8
United Kingdom	51.2	48.2	47.1
United States	37.6	38.0	40.4
Canada	25.5	26.4	26.0
Germany (book reserves)	7.8	7.8	8.0

* excludes the reserves of insured pension schemes

Source: national central banks

Data on the accumulated reserves of pension funds are shown in Table 17 for a small number of countries. It can be seen that pension reserves range from 26% of GDP in Canada to 78% in the Netherlands. In Germany, book reserves for pension liabilities represent 8% of GDP. As noted in the table, these data exclude the reserves of insured pension funds which are included in

¹² See the editors' introduction in Bodie, Shoven and Wise, 1988.

the reserves of life insurance companies (Table 10). They also exclude the pension reserves of social pension insurance systems (in the case of the Swedish National Pension Insurance Fund, these amount to 30% of GDP).

Pension Funds in Developing Countries

Little information on the existence of occupational pension funds in developing countries is readily available. As in earlier periods in developed countries, those that exist mostly cover civil servants, military personnel and privileged employees of large public sector corporations and financial institutions. Company-based schemes are more likely to be found in countries such as India, Zimbabwe, Botswana and other former British colonies. They are also more developed in countries that lack national provident funds and have weak social pension insurance systems but where multinational corporations have a relatively strong presence, such as Brazil, Mexico and Indonesia.

In countries with well developed national provident funds, company-based schemes are unlikely to be large. In Malaysia where the Employees Provident Fund has a wide coverage, company-based schemes represented in 1987 less than 1 billion ringgit in assets, corresponding to slightly over 1% of GDP or a tiny fraction of the resources accumulated by the EPF. In Singapore, employers were allowed in the 1980s to opt out of the Central Provident Fund for a part of their contributions, which they had to invest through a scheme known as COWEC (Company Welfarism through Employers' Contributions). COWEC funds were required to guarantee a rate of return that was no lower than the CPF rate. Several COWEC funds were established, but their prospects were substantially reduced when CPF implemented new schemes that allowed employees to withdraw part of their balances for investments in gold, approved shares and non-residential property.

Occupational pension schemes are probably more developed in several developing countries than the paucity of data may suggest. In many countries, company-based schemes covering the employees of the local subsidiaries of large multinational corporations are known to exist, although relatively little information is available on their size and operations. It is also likely that most of the schemes operate on a partially funded basis as tax benefits for funding may not be very large whereas tax incentives for setting up pension schemes may be quite strong.

In Mexico, for instance, information from market sources suggests that there are over 2,000 private pension plans covering up to 4 million people. The majority of these plans offer benefits that cover the seniority and severance obligations imposed on employers by labor legislation. But in many cases, especially those of the local subsidiaries of multinational corporations and those of large local conglomerates, pension benefits are considerably more generous and go well beyond the legally imposed obligations.

The sophistication of the local pension funding industry may also be quite advanced, especially in some of the larger Latin American countries, such as Mexico and Brazil. Thus, companies may offer pension benefits that are linked to some price index to maintain the real value of pensions, while reserving the right to reduce or suspend such price adjustment if they are

unable to withstand its financial impact. Many plans assign the management of pension reserves to different management groups in order to stimulate competition among the suppliers of fund management services, such as trust departments of banks, insurance companies and brokerage houses.

In many developing countries, the only regulation affecting pension funds is a requirement to register with the tax authorities in order to ensure the deductibility of contributions and the exemption from income tax of the fund's investment income. In some cases, registration entails some prudential regulations on the investment activities of the fund, such as a requirement to hold a certain portion of assets in government securities or to invest only in approved securities. In general, however, little effective regulation and supervision is undertaken and this may also explain the paucity of statistical information on the operations of occupational pension funds.

VI. PERSONAL PENSION PLANS

Operating Characteristics

Personal pension plans are a growing form of contractual savings offered and managed by various types of institutions, such as commercial banks, insurance companies, brokerage houses and specialized administrators. They share some features in common with individual insurance policies, although they have one important advantage over them: personal pension plans normally benefit from substantial fiscal advantages in the form of tax deferral. Even in countries where life insurance premiums are tax deductible, personal pension plans benefit from preferential treatment because they are subject to more generous limits.

Like other pension schemes, they represent a combination of endowment insurance policies with deferred annuities. Their endowment insurance part may operate on a participating or unit-linked basis. Compared to individual insurance policies, personal pension plans are less complex and, as a result, more transparent. They are often combined with term life policies that offer pure life protection without a savings component.

Personal pension plans are defined contribution plans and as such do not suffer from the vesting and portability problems of DB occupational pension schemes. However, like other DC plans, their ability to meet the retirement needs of savers depends on the solvency and investment performance of the institutions with which they are entrusted.

Personal pension plans provide greater freedom of choice to individual workers than occupational pension schemes. Workers can choose the institution with which they want to place their funds and they also often have the right to transfer their pension plans to other institutions if they are dissatisfied with the performance of plan managers. On the other hand, however, the existence of this choice may lead to much higher operating and marketing expenses, especially if no restrictions are placed on the ability of individual members to transfer their pension accounts.

Personal Pension Plans in Developed Countries

Few countries have established regulations for personal pension plans that benefit from tax advantages on the same footing as company pension schemes. In some countries, such as the United States and the United Kingdom, personal pension plans have long been made available to self-employed people that wanted to supplement their social security benefits. Employees covered by occupational schemes have also been allowed to make additional voluntary contributions in relation to their occupational pension schemes to the extent to which their projected benefits were below the specified ceilings.

In the United States and Canada, additional savings, through so-called individual retirement accounts (IRAs) in the United States and the registered retirement savings plans (RRSPs) in Canada, have been permitted. In France, the plans d'épargne en vue de la retraite (PER) have been replaced with the plans d'épargne populaire (PEP), which provide tax incentives to promote long-

term savings, but are no longer linked to a person's retirement. These plans are generally subject to relatively low annual limits to prevent their abuse by wealthy savers or by people engaging in tax arbitrage, the opportunities for which exist in countries where interest payments on personal or housing loans are tax deductible.

The two countries that stand out in the promotion and use of personal pension plans are the United Kingdom and Chile. In the United Kingdom personal pension plans have grown at a fast rate since the pension reform of 1987 when employees were given the right to opt out of both the state earnings-related pension scheme and company-based occupational pension schemes. To encourage employees to take up the option of personal pension plans, the authorities have offered generous rebates of past contributions to the state scheme and an explicit earnings-related subsidy as well as the option to revert to the state scheme. As the subsidy has not been graded by age, many younger employees have opted out but there is concern about the fiscal costs involved and the risk of massive re-entry at a later stage.

Personal pension plans can be established with insurance companies, commercial banks, and building societies and can be invested in bank and building society deposits as well as in marketable securities, including bonds, equity and unit trusts. Since their effective introduction in 1988, more than 4 million personal pension contracts have been created, mostly with leading life insurance companies.

Personal Pension Plans in Developing Countries

Personal pension plans exist in Chile since the early 1980s. Following the Chilean lead, other developing countries, especially in Latin America, have also considered the introduction of such plans and have enacted measures to promote their use alongside existing social security and company-based schemes. But no country appears to have made much progress in this regard, although a few countries, e.g Mexico, are considering an extensive overhaul of their contractual savings industry that would assign a central role to the creation of compulsory personal pension plans¹³.

In Chile, the system of compulsory personal pension plans was introduced after the reform of the social security system in 1981. Management of the funds is entrusted with a number of approved pension companies (Administradoras de Fondos de Pensiones - AFPs). Employees make mandatory contributions equal to 10% of earnings (up to a specified inflation-indexed ceiling), though they are allowed to make additional voluntary contributions up to a total of 20%. Employees are also required to buy both term life and medical insurance, which are provided on a group basis. On retirement, employees can either buy an annuity from a life insurance company or come to similar arrangements with their AFP.

¹³ See the report on contractual savings institutions in Mexico, World Bank (1990).

The Chilean system is a government-mandated, but privately managed, pension system. The ability of contributors to change AFPs encourages competition among pension managers in terms of cost efficiency and investment performance. To ensure the solvency of the pension companies the authorities have imposed an elaborate system of prudential regulations. In addition, because of the high and volatile level of inflation, both life insurance policies and pension plans must be offered on a indexed basis. To enable life insurance companies and administrators of pension plans to offer indexed policies and plans to their members, all debt instruments must be issued as indexed instruments.

The compulsory nature of the system and the achievement of very high real rates of return (an average of over 10% per year over the 1980s) have led to the accumulation of large amounts of long-term resources. The fact that workers of over 40 years were allowed to stay with the old social security system and thus outpayments were kept down to very low levels has also contributed to the accumulation of resources, although at the national savings level this has been offset by the resultant large deficit of the old social security system. Total membership of the system of personal pensions increased from 1.4 million people in 1981 to 3 million in 1988, representing two-thirds of all employed people. Total reserves amounted to 18% of GDP in 1988.

One problem facing the Chilean system is the concentration of large pension funds in the hands of 13 companies. This is further accentuated by the fact that the largest three AFPs account for over 65% of the total assets of the system. Strict and complex regulations imposed on the investments of pension funds have limited their ability to contribute to the provision of equity and bond corporate finance, although in recent years the authorities have tried to bypass this problem by authorizing investments in mutual funds that hold corporate securities.

VII. AN INTEGRATED APPROACH TO CONTRACTUAL SAVINGS

Analytical Evaluation

The analytical framework set out in the introduction of this paper identified seven operating features that characterize the functioning of different types of contractual savings institutions. These include: the existence of a link between contributions and benefits, the extent of intentional redistribution, the extent of unintentional redistribution, the compulsory or voluntary nature of participation, the centralized or decentralized management of institutions, the informational efficiency of different institutions and the allocation of risks. The social, economic and financial implications of different types of contractual savings institutions depend on how they combine these characteristics.

Thus, national provident funds have a direct link between contributions and benefits. They involve no intentional redistribution, although they may cause some unintentional redistribution if their investment performance is not protected against inflation. They are based on compulsory participation and are centralized institutions, able to function with low marketing and operating costs but exposed to political influence as regards their investment policies. National provident funds raise relatively few and simple regulatory issues and can be operated as simple and transparent institutions. In terms of the allocation of risks, employees assume all relevant risks, with benefits being highly dependent on the pursuit of sound macroeconomic and financial policies by public authorities.

In contrast to national provident funds, social pension insurance systems have a weak link between contributions and benefits. This is weaker, the greater the amount of intentional and unintentional redistribution. The latter can come about as a result of the combined effect of defective benefit formulas and volatile inflation. Social pension insurance systems also suffer from a high degree of complexity and lack of transparency. Thus, although they are centralized national institutions, they raise regulatory problems, such as the need to limit abuse of the system by benefit administrators or for political purposes. Their compulsory nature avoids the marketing and other costs of voluntary schemes, but social pension insurance systems are faced with the problem of moral hazard as employers and employees try to evade the payment of contributions while obtaining the benefits of the system. In terms of the allocation of risks, social pension insurance systems assume in principle the replacement, investment and inflation risks, but in practice these risks are borne by workers because, when financial pressures intensify and contributions cannot be increased, real benefits are curtailed.

In discussing the role of life insurance companies as contractual savings institutions, a clear distinction needs to be drawn between individual and group business. Both types have a direct link between contributions and benefits and do not involve intentional redistribution, although unintentional redistribution may occur in countries with high and volatile inflation and no indexing of policies. But even under reasonable price stability, unintentional redistribution may result from large variations in real rates of return across different companies.

Individual business is based on voluntary participation and is bedeviled by the problem of adverse selection and other information costs. Because life insurance and annuity policies are offered by a multitude of companies, they incur high operating and marketing costs and require a robust regulatory system to discourage the offer of deceptive packages, the use of aggressive selling techniques and the incurrence of unduly large expenditures, such as the payment of high commissions to insurance salesmen.

In traditional policies with fixed premiums and insured values, insurance companies assume the investment risk, but policyholders bear the inflation risk. In more modern policies, such as participating and unit-linked policies, the investment and inflation risks are assumed by policyholders, though the latter may be mitigated by the use of indexed instruments¹⁴. Participating policies suffer from the discretion that insurance companies have in setting the annual and final bonuses. Unit-linked policies are free from this problem, but policyholders are exposed to the sharp fluctuations in securities prices. One of the most important disadvantages of individual policies is their informational inefficiency. They require the imposition of strict information disclosure requirements, which are difficult to define and may inhibit competition.

Group business is free from many of these shortcomings. It incurs much smaller marketing and operating costs and largely avoids the problem of adverse selection, even though participation need not be compulsory. Although the allocation of risks is not different from that prevailing in individual policies, group business is less complex and is faced with simpler information disclosure requirements. This is because group life policies usually involve term insurance only with a pure life protection element. The savings element is linked with the offer of insured occupational pension schemes.

The operating characteristics of occupational pension schemes depend on whether they are based on defined contribution or on defined benefit schemes. Defined contribution plans are similar in many respects to national provident funds: they have a direct link between contributions and benefits, are simple and transparent, and involve no intentional redistribution, although they may cause unintentional redistribution if inflation and rates of return on assets are volatile.

Defined contribution pension plans differ from national provident funds in their participation rules and management structure. Like all pension funds, they often involve mandatory participation, although employers offer pension schemes on a voluntary basis. Switzerland is the only country that requires all employers irrespective of size to establish pension funds for their employees. As regards management, occupational pension funds are organized on a decentralized basis, although the effective management of investment funds is often concentrated in a relatively small number of investment managers that include in most countries large investment and commercial banks as well as large insurance companies. Because participation

¹⁴ Inflation risk is not completely eliminated because there is no perfect indexation system.

in pension funds is employment-related, occupational pension funds do not incur large operating and marketing costs.

Defined benefit pension plans have a weak link between contributions and benefits that gives rise to both intentional and unintentional redistribution. They affect labor mobility through their vesting and portability restrictions. Defined benefit plans are also informationally inefficient as they lack simplicity and transparency. In fact, one of the greatest shortcomings of defined benefit plans is that very few participants seem to understand the implications of the multitude of provisions that characterize most such plans. Defined benefit plans require extensive regulations to ensure adequate information disclosure to fund members and to protect the interests of workers from opportunistic employers.

The allocation of risks differs considerably between defined contribution and defined benefit plans. In the former, all the risks - replacement, investment, inflation and solvency - are assumed by employees. In the latter, employers bear the replacement and investment risks, but employees assume the inflation and integrity risks.

Generalized personal pension plans have many advantages over other forms of contractual savings. They confer individual choice to employees, are based on decentralized management and have a direct link between contributions and benefits. Compared to other defined contribution schemes, they suffer less from the problem of adverse selection, because they are based on compulsory participation, and they involve lower operating and marketing costs than individual insurance policies. They are also simpler and more transparent than insurance policies.

Their advantages over defined benefit plans lie in the absence of intentional redistribution and in their greater simplicity and transparency. They are also free from the risk of opportunistic behavior on the part of sponsoring employers, who may opt to terminate their plans under certain circumstances and renege on their pension promises. But the allocation of risks in personal pension plans is heavily tilted towards employees, who assume all the risks (replacement, investment, inflation and solvency) identified above, though use of indexed instruments may mitigate the inflation risk and introduction of guarantee funds may reduce or eliminate the solvency risk.

Because of their compulsory nature, personal pension plans imply heavy responsibilities for governments and regulatory authorities. Governments must maintain macroeconomic and price stability over long periods to protect the real value of accumulated reserves. Alternatively, they must develop and make available fully indexed instruments to the managers of these funds. Regulatory authorities must also establish effective systems of regulation and supervision that minimize the risk of insolvency of plan managers, while retaining adequate incentives for competition and efficiency, both in the offer of pension plans and in the investment of pension assets.

Reforming Contractual Savings in Developing Countries

Many developing countries around the world have social pension insurance systems that are faced with considerable financial pressures. In many countries, real benefits have been eroded by inflation and replacement rates for workers with above minimum earnings have fallen to very low levels. At the same time, the development of the life insurance industry has been inhibited by oppressive regulations that stifle competition and impede innovation, while occupational pension schemes, if they exist, cover a small fraction of privileged workers.

Reforming their contractual savings and pension systems is becoming a high priority in a large number of countries. The fundamental objectives of reform should include:

- the provision of adequate but affordable and therefore sustainable benefits;

- the creation of a strong link between contributions and benefits, which would minimize any incentive distortions on labor markets and avoid capricious redistributive effects caused by volatile inflation and inconsistent service requirements; and

- the generation of long-term savings that would help stimulate the development of capital markets.

Moderate social equity objectives involving the achievement of widespread coverage and some intentional redistribution from high to low income workers may also be included among the basic objectives of a reformed pension system, although it is generally preferable to pursue social policy objectives through general tax revenue rather than through payroll taxes. Finally, a reformed pension system should aim to be simple and transparent.

The preceding analysis has shown that the various types of contractual savings institutions have different advantages and disadvantages and different social, economic and financial implications. In developed countries, this has lent support to the traditional view among social security experts in favor of an integrated approach to contractual savings that includes the so-called three pillars of social security:

- a first pillar, in the form of a social pension insurance system, that provides a basic pension to old age people, aims for universal coverage, and is funded either from general tax revenue or by a combination of employee, employer and government contributions;

- a second pillar, based on occupational pension schemes that may be operated as defined contribution or defined benefit plans; and

- a third pillar, consisting of private savings that may include elements of contractual savings, such as life insurance policies and personal pension plans.

The Swiss system provides a good example of the three pillar approach. The social security system, the first pillar, was created in 1947. Occupational pension funds, the second pillar, were offered on a voluntary basis by employers but, following a referendum passed as long ago as 1972, they became mandatory for all employers in 1985. Personal savings constitute the third pillar, although no special incentives for personal pension plans appear to exist. In 1988, there were 105 first pillar and over 18,000 second pillar institutions. Operating costs are contained by the use of joint administration for all institutions through the Central Equalization Office, which keeps all individual records and also administers an equalization fund (OECD, 1988).

Because of the problems of occupational pension schemes that have received considerable attention in many countries, there is a growing trend towards accepting a somewhat different structure that would be based on a four-pillar approach, comprising:

as a first pillar, a social pension insurance system offering modest benefits;

as a second pillar, a compulsory system of personal pension plans offering contribution-based benefits but with strong safeguards regarding inflation protection and solvency (this could also include a national provident fund operating in parallel with private pension plans);

as a third pillar, optional but funded occupational pension schemes offering supplementary benefits; and

as a fourth pillar, voluntary personal savings.

An integrated, multiple pillar approach would also seem appropriate for developing countries, although developing countries have opted in the past for one or other type of contractual savings institution. Most countries have social pension insurance systems that operate either on a pay-as-you-go basis or with very limited funding, although some countries have funded systems. In contrast, Malaysia and Singapore (and a few other countries) have relied almost exclusively on national provident funds, while Chile has opted for a compulsory system of personal pension plans. Very few countries have occupational pension schemes and life insurance companies that play a significant part in their contractual savings industries.

For developing countries that lack an effective regulatory infrastructure and have limited social equity objectives, a combination of a moderate social pension insurance system with a national provident fund would offer many advantages: both would be centralized, compulsory schemes that would avoid the problems of adverse selection and would benefit from lower operating and marketing costs. Such centralized institutions may suffer from lack of autonomy and administrative inefficiencies, but in countries with weak regulatory frameworks, a decentralized system of private providers of contractual savings facilities would probably suffer from greater weaknesses, such as the potential opportunistic behavior of private suppliers.

The social pension insurance system could provide a minimum pension to all covered workers. By using properly indexed benefit formulas and pensions and by maintaining some link between contributions and benefits, such a system could avoid many of the pitfalls of existing social security systems in developing countries.

The national provident fund would aim to provide contribution-based benefits and would involve no intentional redistribution. But provident funds would, perforce, accumulate large balances and their success would depend on their investment policies. Properly structured and prudently managed, national provident funds can make a significant contribution to the development of the contractual savings industry and can meet adequately the two fundamental objectives of contractual savings institutions, viz., the provision of economic security and the promotion of long-term financial savings. However, their centralized nature may also be their greatest weakness. In countries suffering from macroeconomic instability, there would be a great risk of profligate governments using the resources of provident funds as captive sources of finance.

Social security experts discourage the use of a high degree of funding because of the difficulty of maintaining the real value of accumulated resources in countries with high and volatile inflation and excessive government intervention in the allocation of financial resources. Concern is also expressed at the political implications of large funds since the body that controls such funds will be able to wield considerable financial and political power.

Because of the risk of political exploitation of the resources of centralized institutions, social security officials have traditionally favored the co-existence of a centralized social pension insurance system, offering minimum pensions but involving low contributions and accumulating modest balances, with decentralized occupational pension schemes and personal savings. To avoid the problem of adverse selection and overcome the difficulties created by the vesting and portability restrictions of occupational pension schemes, there is increasing support for a compulsory system of personal pension plans, which could also be combined with the provision of survivorship benefits and group term life insurance.

A system based on personal pension plans could achieve many of the objectives of a well-functioning contractual savings scheme. It would generate long-term financial savings, maintain a strong link between benefits and contributions, avoid labor market distortions, and attain simplicity and transparency. However, to make a significant contribution to the development of capital markets and, above all, to achieve a satisfactory level of benefits, a decentralized system of personal pension plans would require robust and effective regulation and supervision to control the opportunistic behavior of pension plan managers. Its successful operation would depend on a number of preconditions that parallel those for a sound and efficient banking system. These would include adequate and effective systems of prudential regulation and investor protection, an absence of investment controls that use contractual savings as captive resources to fund priority sectors and the

elimination of controls that stifle competition and inhibit operating efficiency.

For many developing countries that are still struggling with inefficiently managed and badly regulated banking sectors, this would represent a big challenge. Yet the development of an efficient and sound contractual savings sector crucially depends on the development of stable and effective government structures.

In some countries, a compromise solution could be the creation of a national provident fund as a second pillar but with an option given to covered employees to transfer their balances to personal pension plans run by properly authorized and regulated private pension funds. The rate of return offered by the national provident fund could then effectively represent a floor rate that private pension funds would have to earn to remain in business.

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