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International Experience and Pension Reform in China

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Background on Pension Reform in China

by Hang-Sheng Cheng
President, The 1990 Institute

The 1990 Institute recently completed research on pension reform in China, culminating in the accompanying policy paper: "International Experience and Pension Reform in China" by Michael Keran and Hang-Sheng Cheng. Since it is intended for policymakers and their advisors in China, the policy paper does not provide any background information on China's current pension situation, thus leaving a gap for readers of this Issue Paper. I would therefore like to take this opportunity to provide a brief backdrop to the topic.

Prior to 1979, the people in China enjoyed all-inclusive, cradle-to-grave social welfare. The benefits were provided by the employers, which were the communes for the peasants, the state enterprises or collectives for workers in the urban areas, and the government for civil-service workers. Since all means of production were state-owned, essentially everyone was "eating from the same pot." All were taken care of, but all were poor, desperately poor.

The economic reform of the past two decades has changed all that. It brought to China rapid growth and impressive improvement in the standard of living. At the same time, it has also resulted in erosion of the social support system. First, the communes collapsed; then the state-owned enterprises and collectives that were laden with large social support responsibilities found it increasingly difficult to meet competition and required heavy government subsidies and bank loans to keep them afloat. A thorough change in the social benefit system was, therefore, a necessary condition for successes in both enterprise and banking reforms. Nonetheless, a sweeping change of all aspects of social welfare was too daunting a task to undertake all at once.

In the late 1980s, the government began experimenting with pension reform in a number of provinces and municipalities. The idea was to move toward social pooling of pensions of urban enterprise workers, shifting the responsibility from the enterprises to the regional governments, with the latter collecting mandatory contributions from the enterprises and workers in payroll taxes and distributing the pensions to the retirees. In essence, the system is similar to those in the United States and other industrial countries—except for its regional administration feature, which significantly complicates pension administration in China.

The system is commonly described as a "pay-as-you-go" system, in that revenues are collected to pay the current

retirees. It is also called a "defined benefit" system, in that so long as a worker has met the minimal required number of quarters of contribution, he is entitled to receive the same amount of pension upon retirement, regardless of how much or how little he has contributed to the system. Obviously, it is a powerful tool for income redistribution, which guarantees a minimal level of retirement income to the elderly poor after having worked for a number of quarters.

The system, however, assumes that the current revenue will always be sufficient to pay for the current pensions. There is no problem when the population is young, for instance during the baby-boom years in the United States after the World War II, when the annual revenue exceeded annual disbursement year after year, leaving an accumulated surplus large enough to meet potential deficits for years to come. Typically, the surpluses are invested in government securities, that is, free for the government to draw upon for meeting current budget deficits or amortize the public debt. With an aging population, however, the situation is reversed, when the government must step in to pay for the annual pension deficits by direct subsidies from the treasury; it could become an increasingly heavy fiscal burden as times goes on.

By the mid-1990s, this was exactly the condition China was in. As a result of the success of its one-child policy the birth rate had sharply declined, and with improved health and standard of living people were living longer. As a result, China's population was rapidly aging. The ratio of retirees to current workers rose from 3 percent in 1978 to 18 percent in 1993 and 29 percent in 2001 and is expected to rise to 55 percent in 2030; that is to say, that the number of workers supporting each retiree fell from 30 in 1978 to 5.5 in 1993 and 3.5 in 2001, and is expected to fall to only 1.8 in 2030. Clearly, under these circumstances, a pay-as-you-go system could not be sustained in the long run.

In 1995, China started a new pension system for its urban enterprise workers. It was primarily a two-pillar system, consisting of a "social pooling" pillar and an "individual account" pillar. The former is a pay-as-you-go system, relying on a 20 percent payroll tax paid by the enterprises to pay for the current pensions, with the national treasury to serve as the guarantor of last resort. The latter is purported to be a fully funded "defined contribution" system, into which an 8 percent payroll tax paid by the workers is deposited and credited to the workers' individual accounts. (These rates are those being applied

on an experimental basis in several regions since mid-2001 and are expected to apply nationwide if the experiment works out as expected.) It is called defined-contribution, rather than defined-benefit, because the workers' rate of contribution is defined, but the amount of benefit will depend on how long the worker stays in the system and the rate of return the deposits will earn until his retirement. It is fully funded because the pillar should never require government subsidy, as the amount of pension a worker will receive should depend entirely on how much he puts in, plus the earnings from his deposit. This mixed, two-pillar system should at least lessen the stress on China's pension system in a rapidly aging society.

The system's viability depends on the workers' trust that the contribution they pay into their individual accounts will be there when they retire, and earn a rate of return sufficiently higher than the inflation rate in order to assure a decent retirement income in real terms. The former requires that the individual accounts be managed separately from the social pooling account, and the latter depends on the actual rate of return accrued to the deposits. In the current experimental system, the individual accounts are managed by banks, which are required to keep 20 percent of the amount in bank deposits and invest 80 percent in government bonds. The combined interests from these two sources determine the actual rate of return to the workers' individual accounts.

How actually the experiment is working out is too soon to tell. But, the two-pillar system has been in operation since 1995 and has not worked as intended. The main problem has been the de facto mixing of the funds from the two sources. Nominally, the workers' contributions are credited into their individual accounts; in fact, however, they are routinely diverted by the provincial authorities to pay for the current pension deficits and other types of expenditures. The so-called individual accounts are generally known to be nominal accounts, with perhaps little or no funds in them. They do not have much creditability in China.

This system is called a "notional defined contribution" system, in that it is defined-contribution in name only. In fact, it operates just like a pay-as-you-go system, with the government guaranteeing the pension payment on the basis of its current revenue from the payroll tax and other sources. Because of its apparent ease of operation, the system has been adopted by numerous countries in their pension reform, among which, however, the World Bank finds only the Swedish system to be sustainable in the long run.

The 1990 Institute's study of pension reform in China finds that a major factor in the sustainability of Sweden's notional defined-contribution system is its workers' traditional trust of the government and their willingness to put up with the

high payroll tax rate, 16 percent--compared to 8 percent in China--without incurring widespread tax avoidance. The system is also deemed sustainable because its pension payout depends on an actuarially-based life expectancy of workers upon retirement--compared to a rigid 120-month rule in China's system, whereby a worker's monthly pension will be equal to the total amount in his individual account upon retirement divided by 120, regardless of how long he might live after retirement. The study concludes that it would be difficult for China to fulfill all the essential requirements that have made possible the sustainability of Sweden's system. Rather than adopting a notional defined-contribution system like Sweden's, China would be better off to go directly to a fully-funded system.

This is especially so, since what motivated Sweden and other countries to adopt a notional, instead of a fully-funded, defined-contribution system is the high transition cost, which is considerably less in China. The transition cost is the cost of transition from a pay-as-you-go system to a fully-funded defined-contribution system, during which the workers or the nation as a whole would have to pay for the costs of both the old and the new systems. The double payment is required because under the new system the workers pay the payroll tax into their individual accounts, leaving no one to pay for the pensions of not only the current retirees but also those current workers who will retire before they have accumulated sufficient amount in their individual accounts for the payment of their pensions. In the case of Sweden and those of other countries, this transition cost was too large for either the workers or the nation to pay. Hence, they opted the comprise of a notional system, instead of a fully-funded system. That, however, is not the case in China, for which the transition cost should be much smaller relative to its national output. Having examined various approaches to funding the transition cost, the study regards the most feasible and desirable way for China is to issue government bonds.

Finally, the study also examines the potential ways of pension-fund management in China. It focuses on two issues: public vs. private management, and prudential vs. draconian regulation of fund management. On the former, international experience indicates universally poor result of public management. Of private management, international experience of sufficient duration is limited to only Chile, which has had private management of its pension funds since 1981. The experience indicates high costs of private management relative to those of efficient, publicly-managed systems, but not relative to the returns of the investment portfolios. Moreover, international experience also suggests numerous ways to reduce the cost of private management. On regulation of pension-fund management, "prudential regulation" is to insure avoidance of fraud, reduce risk-taking, lessen conflict of interest, and limit concen-

tration of market power, whereas "draconian regulation" stipulates in addition requirements on the structure, investment, and performance of the fund management.

International experience indicates that whereas prudential regulation is generally deemed necessary, draconian regulation is both unnecessary and harmful to the workers' interest. Since large-scale pension-fund management requires sophisticated skills, which presently China may lack, the study suggests opening to foreign participation, as China gradually comes under the rules of the World Trade Organization.

International Experience and Pension Reform in China

by Michael Keran
and
Hang-Sheng Cheng

Introduction

China is in the midst of a major transformation of the pension system driven by three factors:

- the rise in life expectancy which will raise pension cost,
- the fall in the birth rate which will eventually reduce payroll tax revenue,
- the move to a market based economy that necessitates reducing social burdens on state enterprises before they are privatized.

The World Bank estimates that under the current Pay As You Go (PAYGo) system, pension benefits will rise from 4% of GDP in 2000 to 14% in 2050 requiring a major rise in the already high payroll taxes. This potential funding crisis is not unique to China. Virtually every country faces similar problems driven by similar causes – a rise in life expectancy and a fall in the birth rate. In this paper we will consider how other countries have dealt with this crisis. We will focus on four major aspects of the problem.

1. The common sources of the problem that make current pension system unsustainable.
2. China along with several other countries has introduced a partial reform associated with a Notional Defined Contribution (NDC) system. Is this sustainable? or is a fully funded Defined Contribution system needed?

3. How to fund the transition from the current system to a fully funded system.
4. How to manage the pension reserves which are an essential part of a sustainable reformed system.

I. Why the Pension System is in Trouble

Government funded and managed pensions are found in virtually all countries. In high-income countries, like the OECD, all workers, in both the private and public sectors, are covered. The same is true in former centrally planned economies as a vestige of the "cradle to grave" welfare system. Even in poor countries of Africa and Latin America, there is pension coverage for at least some workers—for instance, government employees.

Almost all countries, including China, initially funded their pensions on a "pay-as-you-go" (PAYGo) basis. Payroll taxes on current workers financed pensions of current retirees. In virtually all countries, the size of the individual pension benefit is not closely linked to the amount of payroll taxes paid. This makes the worker think of these payments as taxes to be avoided, rather than as savings to be available in retirement. It is called a "defined benefit" system because one knows the amount of pension benefit before retirement.

The PAYGo system has proven to be badly flawed. In the early years, the number of workers greatly exceeded the number of retirees. This made it easy to establish generous pension bene-

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Note: Of this paper, Hang-Sheng Cheng wrote the section on fund management and Michael Keran wrote the rest. Although the paper was prepared under The 1990 Institute's auspices, the authors alone are responsible for its content.

fits financed with a low payroll tax rate. However, after a decade or two, the pension system matures and the number of retirees soars. At that point, the payroll tax rate must increase to fund the benefits, increasing the incentive to avoid paying the tax. In poor developing countries with weak and corrupt governments, tax avoidance takes the form of workers and companies moving into the informal and non-taxed sector of the economy. In rich developed countries it takes the form of enterprises restricting employment with a resulting rise in structural unemployment especially among the unskilled youth.

The pension system in most countries is at risk of failure. In many transition countries, the system is now insolvent. Even with a high payroll tax rate, revenues are not sufficient to pay pensions. In Eastern Europe, payroll taxes average 30% of wages. But, economic dislocation and a shift to the informal economy have reduced payroll tax revenue and led to unpaid or delayed pensions.

In the developed countries, the pension system is still solvent but there is a risk for the future. A low birthrate and increased life expectancy are forecast to reduce the number of workers per retiree from 4 in 2000 to 2 in 2030. As a general proposition with PAYGo funding, the payroll tax revenue will have to double, or the pension benefit reduced by one half, to keep it solvent. Within the developed countries, Western Europe has 2-3 times the unfunded pension liabilities as the U.S. And yet there is reluctance to take corrective action, because it is in conflict with their view of a good and equitable society.

It is inevitable that China's elderly population will rise – and with it the pension's share of GDP. And while its population now is relatively young, it is aging rapidly. It took Western European countries between 80 and 140 years to double the elderly portion of their population. The World Bank projects that it will take only 34 years for China to do the same. Because pension spending rises exponentially, the pension's share of GDP will more than double to about 8% in 2030 and to 14% by 2050. China needs a cost-effective pension system that is financially sustainable over the long run.

II. Sustainability: the Case of Sweden's Notional Defined-Benefit System

A pension scheme is sustainable if it avoids subsidies from the general revenue of the government. This means that in the long run revenues equal benefits payments.

One reform that has become popular in recent years is the "notional defined contribution" (NDC) system. In the system, workers' pension contributions are nominally deposited in their own individual accounts at a specified rate of return, with their pensions dependent on the account balance at the time of their

retirement—as in a "defined contribution" (DC) system. What makes the system "notional" is that in reality the workers' contributions are used to pay for the current retirees' pensions and other government expenditures—as in a PAYGo system. It is a system characterized as PAYGo in funding and DC in benefits.

Of the dozen or so countries, including China, that have moved toward a NDC system, the World Bank has identified only one country, Sweden, as a sustainable system. Of course, China is much different from Sweden, which is a rich country with well-developed financial markets and a government and people with a long tradition of respect for the rule of law. This would seem to make it an unlikely model for China. But if China is to have a sustainable NDC, it must match the characteristics of the Swedish system. Below we will consider what changes in the China's NDC system would be necessary to make it sustainable using Sweden as a comparison.

Sweden's NDC system is designed to accomplish two goals.

1. During the working years, use individual accounts to closely link payroll tax payments with future benefits in the hope of reducing tax avoidance. This requires public trust that the government will honor pension commitments even when there are little or no reserves available to fund them. Such public trust may be the most significant difference between Sweden and China.
2. During retirement years, use actuarially based life expectancy to determine the size of the monthly pension benefit. If done correctly it will keep individual benefits from exceeding notional account balances. Unlike Sweden, China uses a fixed 10-year, i.e. 120 months, life expectancy for all retirees as long as they have a minimum work history.

A. Individual Accounts. From the perspective of the individual worker, it appears that he has a DC pension. His payroll taxes are credited as contributions to his individual retirement account. In addition, he earns a "return" on his assets. These factors determine the amount of funds available at retirement. If a worker evades the payroll tax, his future pension benefit will be reduced proportionally; if he should quit early, the system costs are correspondingly reduced. This is a powerful inducement to stay in the system

From the perspective of the system administrator, it is PAYGo because the funds collected from individual workers are used to pay current retirees and perhaps for other purposes as well. The earnings on these accounts are strictly notional, because no funds have been invested. The decision on how much of a return to credit the accounts is arbitrary, because it is not tied to the earnings on any real or financial asset. Many countries, including China, use an artificially low interest rate on short-term government bonds. Italy uses the growth in nominal GDP. Sweden uses the growth in wages. This makes Sweden rela-

tively generous in calculating notional earning. But the logic behind this choice is consistent with system stability. Wages determine the revenue base of the pension system. If individual accounts grow only as fast as the wage base, then their aggregate value will not exceed the revenue base.

B. Life Expectancy. Sweden and most NDC countries deal with rising life expectancy by paying actuarially determined benefits. If a worker retires early, monthly benefits are automatically lower – if later, benefits are automatically higher, although there is a 35% implicit tax on late retirement. This insures that the present values of benefits are equal to the notional value of the pension, irrespective of when an individual worker retires. In the Swedish case, a retiree can return to work and have his benefits recalculated with second retirement. Using actuarially determined life expectancy automatically controls the growth in individual benefits and eliminates the incentive of workers to retire early, keeping valuable human capital in a productive role.

C. Post Retirement Earnings. Once a worker retires, the monthly pension benefit will depend upon three factors: the size of the individual account at retirement, the life expectancy of the worker, and the projected earnings of the account during retirement. The first two factors, as discussed above, are known at the time of retirement. The third factor, projected earnings, is the final element in making the NDC system sustainable. Now that the worker is retired, tax avoidance is no longer an issue. So, the key to setting post retirement earnings is to avoid having benefits exceed revenues.

In the case of Sweden, it consists of two elements: indexing for inflation and an adjustment for deviations of labor productivity growth from its historic average of 1.6% per year. If productivity growth is 1% below average, retirement earnings will grow 1% below inflation. If productivity growth is 1% above average, then earnings will grow 1% above inflation. This is a powerful stabilizing factor because the real value of pensions will rise only when productivity, and thus payroll tax revenue, growth is above average.

D. Dependency Ratio. Monthly benefits linked to life expectancy will keep each retiree account sustainable over his lifetime. However, to keep the NDC system sustainable over the long run requires that we deal with the fact that the number of retirees receiving benefits will rise relative to the number of workers making contributions. This is referred to as a rising dependency ratio. Sweden deals with this issue in two ways, one of which we have already mentioned, but deserve repeating.

1. Having a relatively high contribution rate at 16% of covered wages. This exceeds the revenue needed to pay bene-

fits to current retirees. So, a reserve fund is created, which will partially fund future pension benefits.

2. Having future benefits reduced if labor productivity and real wage growth fall below historic average. This insures that future benefit increases do not exceed the growth in future payroll tax revenue.

Sweden has a long tradition of accepting high taxes in exchange for abundant social services. This attitude is based on a high degree of confidence in government that is generally not shared by workers in other countries, especially poorer transition countries. For example, Poland and Latvia fund their NDC programs with lower tax rates between 9% and 10%. This is sufficient to pay current retiree benefits but not to build up a reserve fund. By not dealing with the future rises in the dependency ratio, these countries' NDC system is not sustainable.

What could these countries do to make their system sustainable besides raising the payroll tax rate? One way would be to follow Sweden in reducing post retirement earnings on individual notional accounts unless productivity growth exceeded the rise in the dependency rate. For example, if average productivity and the dependency rate were both rising at 1.6% per year, it would exactly offset each other and benefits would then be indexed for inflation but not for rising labor productivity. If productivity fell below average, benefits would rise less than inflation, i.e. a fall in the real value of benefits.

Many countries, including the U.S., take a version of this approach. While it does not guarantee long-term sustainability, it does postpone a financing crisis by some years. In the U.S., as in Sweden, the payroll tax revenue exceeds current benefits, which allows build-up of a reserve fund and extends for some years the time when benefits can be paid without raising payroll taxes. The U.S. does index pensions for inflation, but does not adjust down when productivity growth is below average.

Experience in the U.S. and other rich countries indicate that adjusting benefit payments only for inflation appears to be politically acceptable. However, an attempt to go further and to reduce the real value of pensions does create political discontent and is rarely done. Sweden's action to do this is too recent to judge whether it will be politically acceptable in that country. And yet having a method to reduce the real value of future benefits is critical to achieving financial sustainability with a NDC.

E. Evaluation. Why did Sweden choose the NDC system instead of moving directly to a fully funded DC? The World Bank estimated that the present cost of the transition from PAYGo was 350% of GDP. That was viewed as too great a fiscal burden to deal with explicitly. NDC allowed Sweden to

fund current and future retirees in the short run, while indirectly reducing benefits over the long run.

China's situation is different. The present value of pension liability is much lower: between 50% and 75% of GDP, making the transition cost of a funded DC system much lower and more feasible. (More on transition funding in the next section.) But, if China wants a sustainable NDC system, it must make major changes to bring it in line with the Swedish system. This includes:

1. Over-funding, or surpluses, in current pension funding should go into a reserve to pay for future pensions and not to finance other government programs.
2. Notional earnings on individual accounts before retirement should be competitive with earnings available to private investors. While this will raise long-run benefit costs, it will help prevent evasion of payroll taxes and keep revenue growing at the target rate.
3. Notional earnings after retirement should be equal to the inflation rate or less. How much less depends on the difference between growth in productivity and the rise in the dependency rate.
4. Use an actuarially based life expectancy to calculate monthly pension benefit rather than the present 120-month formula. This will insure that the present value of pension will be equal to the individual notional account, even with early retirement.

The political, financial and economic risks associated with implementing a sustainable NDC as enumerated above are substantial. It is our view that it would be easier for China to convert to a fully funded DC system. The transition funding would be much less than Sweden's and about equal to that of Chile's 21 years ago, when it successfully funded its transition to a full DC system.

F. Fully Funded Defined Contributions. This system is almost by definition sustainable. Payroll tax revenue flows directly into management funds and is invested in a diversified set of assets. These assets grow in value from worker contributions and investment returns until withdrawn to pay benefits. There are, of course, many questions to be answered if this DC system is to be honest, efficient, and provides a stable benefit.

1. Should the funds be managed by the government or private institutions?
2. How to keep administrative fees from eating up the interest and even principal of the fund?
3. Should there be restrictions on the type of assets the fund invests in?

These and other questions are answered later in the section on reserve management.

III. Funding the Transition

Moving from a PAYGo Defined Benefit system to a mostly funded Defined Contribution pension system creates a major transition problem. How to pay for the transition cost?

There are two possible ways to fund this transition.

1. Increased payroll taxes on current workers.
2. Government funding through general tax revenue, issuance of new government bonds or sale of government assets.

A. Increased Payroll Taxes. The advantage of the first approach is its apparent administrative simplicity, using the same payroll tax revenue that funded the old system to fund the transition. The problem is that this approach would result in double taxation of current workers. This is not only unfair but would encourage tax avoidance and thus is self-defeating.

Some have argued that China's existing payroll taxes are almost sufficient to fund the transition. A relatively small subsidy from the government budget over the next 5 years would fill the gap. International experience suggests this is not realistic because it ignores tax evasion. Current payroll taxes just for pensions are already high at 20% for enterprises and 8% for workers. So the incentive for tax avoidance is also high. With weak tax administration by the central government, there are many ways for an enterprise to underreport wages, especially with the cooperation of local government. In the case of workers, tax avoidance would consist of moving to the underground economy. That would happen if they realized that their individual accounts are only notional accounts, the value of which is subject to government manipulation. So computer forecasts of future payroll tax revenue, which assume no further tax avoidance, may be too high and estimates of the government subsidy too low.

High payroll taxes will also interfere with another reform program: privatization of large state enterprises. These taxes represent high fixed costs that make state enterprises less competitive relative to private enterprise without these costs. It will make it more difficult to find a suitable buyer, lower the value of the enterprise, and thus reduce the potential revenue the government would receive from privatization.

We believe that government funding of the transition is essential if pension reform is to succeed. There are just too many ways for individuals, enterprises, and local government to avoid these taxes. International experience shows that the governments of emerging economies do not have the information to detect or the skills to eliminate payroll tax evasion. As a result in those countries, such as Chile, that have switched from PAYGo to mostly funded systems, the transition cost has

generally been financed without primary reliance on raising payroll tax rates. Instead, they have imposed some largely hidden cost on current workers, such as raising the retirement age or not fully indexing for inflation. The important point is that if these cuts are actuarially sound, i.e. only eliminating subsidies, they create minimal incentives for tax avoidance.

We conclude that the only long-term viable alternative is for the government to fund the transition. We will consider several aspects of this funding problem.

1. We show that the least cost method of funding is to issue government debt.
2. We present the interest rate and budget consequences of this added debt.
3. We consider how the debt should be managed.

B. Government Funding

The government has three ways of raising funds:

- Increasing taxes on income, profits or value-added.
- Sale of government assets, e.g. by privatization of state-owned enterprises.
- Increasing government debt.

1. Taxes. A broad-based tax on the whole economy would create less evasion and avoidance than a tax on wages only. Two economists at the Beijing University estimated that the transition costs could be funded by a 1.4% VAT versus a 5.6% payroll tax on covered workers. Not only is the VAT harder to avoid, but given its relatively low rate there is also less incentive for tax avoidance. However, such a tax would be bad social policy, because in China the average pensioner has a higher lifetime income than the average consumer who pays the VAT. This is because low paid agricultural workers are not covered by government pensions.

2. Selling Assets. Financing the transition with the sale of government assets, i.e. privatization of state enterprises, is a popular idea. Older workers helped create those assets, and it seems appropriate to fund their pensions with the proceeds of the sale of those assets. However, the experience of other countries is that hasty mass privatization of state-owned enterprises has been a failure. An article in the June 2001 issue of the *Journal of Economic Literature* surveys all of the recent empirical studies on privatization. The conclusions are unambiguous. Mass privatization has been a failure and single enterprise privatization a success, in both raising revenue for the government and improving productivity for the economy. In the latter case, even employment loss has been insignificant because of increased sales. But single enterprise privatization is a slow

process. So, in the short run it would be hard to match privatization revenue with pension payments, although in the long run it could be a viable avenue.

3. Debt Financing. This has been the most successful method of financing in countries that have moved from a PAYGo to a mostly funded pension system. It has been done in a two-step way, pioneered by Chile in 1981 and closely matched by Hong Kong in their 1997 plan. First, existing retirees are separated from future retirees who are currently working. Current retirees continue to be paid their pensions as in the past. (We will discuss their funding source below.) Future retirees will have a claim in the old pension system as well as building assets in the new system. The present value of each worker's claim on the old system is calculated and a "recognition bond" issued. These bonds are notional, because no cash changes hands at this point.

The second step occurs when the worker retires and a private financial institution, such as an insurance company, converts the recognition bond into a fixed life or variable annuity. At this point, the government sells bonds in the private capital market to fund the annuity. We would anticipate that in general the interest on these bonds would be paid out of the general tax revenue, and the principal would be retired from privatization proceeds. Since this second step would arise only gradually after the first step, it would give the government time to sell its asset holdings singly, rather than in mass, and accumulate the proceeds for debt retirement.

Government debt issue can also finance payments to old retirees, although that is not common in other countries. However, in China where the long-run potential for privatization revenue is larger than in other countries it is a more attractive alternative. As cited, the Beijing University economists estimated that the privatization revenue, after paying bank loans, will exceed the total transition costs by more than 2 times. Finally, transition funding with debt has the added advantage of spreading interest costs over future generations and thereby reducing the burden on the current generation.

a. Interest Rate and Budget Consequences of Capitalizing Pension Debt

There are two forms of government borrowing, and they have very different effects on interest rates:

- Borrowing to finance budget deficit. This will raise interest rates.
- Borrowing to capitalize an existing government obligation, such as new ways of paying future pensions. This will not raise interest rates.

It is important to understand the reason behind these different

effects. A budget deficit means that the government is spending more on goods and services than it is taking in tax revenue. Some mechanism is required to transfer these goods and services out of private sector control to the government. In a market economy, this transfer is done via the price mechanism that, in this case, is the interest rate. It must rise sufficiently to induce investors to purchase the new debt, thereby purchasing less private securities or goods. The government's interest cost will rise for two reasons: the larger size of the outstanding debt and the higher interest rate that will eventually be paid on all debts. When the average maturity is short, e.g. two years, the higher interest rate will quickly result in higher interest payments on the total debt.

Alternatively, if the government debt is used to fund the transition cost of pension reform, it will not raise interest rates. This debt only makes explicit the government's obligation to pay pensions that was implicit in the past. The pension obligation was always there in the form of a claim on the state-owned enterprises. Transferring that claim to the central government does not increase the demand for goods and services. Therefore, no relative price signal is needed to shift resources. Interest rates will be unaffected.

This discussion is more than theoretical. It matches real world experience. Some 20 years ago, the government of Chile funded a similar transition by issuing bonds. There was no effect on the level of interest rates. Some 12 years ago, the U.S. issued some \$150 billion in bonds to pay off depositors of failed savings banks. There was also no effect on the level of interest rates. In both cases, an implicit debt was made explicit, and there was no change in interest rates.

Unlike the U.S. and Chile, China does not currently have a market-determined interest rate on government bonds. However, the experience of these two countries still has relevance because of China's large market-based sector. If China continues to control interest rates, it will know that debt financing will not further distort the market sector. And if China frees interest rates to be set in the market place, debt financing of the transition cost will not, by itself, cause interest rates to rise. While interest cost will rise because of more government securities outstanding, it will not be reinforced by a rise in interest rates. Given the short average maturity of China's debt, a rise in interest rates would have quickly compounded the interest costs of funding the transition. Fortunately, this should not happen.

If the fear of the interest cost of funding the transition causes the Chinese government to delay pension reform, it could face in 20-30 years the type of financial problems now facing Japan. Japan instituted a generous PAYGo pension system in the 1960s that was easy to fund when the population was

young and the GDP and wage growth rates were high. However, in the 1990s GDP and wage growths have been low, while the population has aged dramatically. This has contributed to budget deficits of 10% of GDP. Its Debt/GDP ratio of over 100% is higher than any other industrial nation's, almost double that of the U.S. at its peak in the early 1990s.

China is now in a rapid growth phase with a relatively young population. But in 20 or 30 years China will be where Japan is now, but with a lower per person GDP. That means China will have more problems than Japan if it does not address pension reform now

b. Debt Management

China currently has a rather modest national debt, held largely by government banks and paying an artificially low interest rate. If the central government is to fund the transition with debt issue, a number of changes must be made to encourage non-bank financial institutions, such as pension funds, to purchase government debt.

1. The interest rate should be made competitive by allowing it to be set by the market. Without this, only government-controlled banks would purchase the transition debt. This would compound the banks' problems by adding asset/liability mismatch to their bad loans. The transition debt should be purchased by financial institutions, such as insurance companies and pension funds, which have long-maturity liabilities. Banks that generally have short-maturity liabilities, as demand deposits should not purchase it.
2. The risk of purchasing government debt should be reduced, e.g.
 - Eliminate credit risk by making explicit the sovereign guarantee against default.
 - Minimize inflation risk by issuing both inflation-adjusted and regular bonds. With the current low inflation rate, there may not be much difference in the two interest rates. However, eliminating this long-term risk will make it easier to sell long maturity debt.

More than fifty years ago, the U.S. government held interest rates artificially low to more easily finance its World War II debt. This policy was abandoned in March 1951. That freed markets to innovate and started a process, which eventually led to the financial markets the U.S. has today. China would also benefit from the financial innovation that would follow freeing interest rates.

IV. Capital Market and Reserve Management

A sustainable pension system will, most likely, require the

build-up of a massive amount of reserves. An honest and efficient management of these reserves will be necessary to make the system work. In addition, China faces a dilemma. As a critical part of the socialist market economy, the new pension program must have a market orientation, which would both contribute to its success and insure its compatibility with the rest of the economy. Yet, China's capital market is not sufficiently developed to provide safe and competitive returns for its pension investment. As a result, the present program limits pension investment to bank deposits and government bonds, the only available instruments in the market.

Both the dilemma and the investment limitation are based on a myopic view of the two-way dynamic relationship between pension reform and capital market development. Unless constrained by regulation and public management, the demands of pension fund management would call forth the development of market instruments and institutions, ranging from bank deposits and commercial bills at the short end to government and corporate bonds and corporate stocks at the long end, as well as security dealers, investment advisory services, security rating companies, accounting and law firms, and institutional investors.

All this, of course, would not happen overnight, nor occur automatically without active public policy measures to insure macroeconomic stability, impartial law enforcement, financial regulation and supervision. Pension reform alone would not do the job, but it would contribute to capital market development, which in turn would induce better enterprise governance, and the national economy to higher growth through improved efficiency of capital allocation.

Although this dynamic process has been widely recognized, international experience has been limited, only since Chile's pension reform in 1981. In the following, two broad areas will be surveyed in order to identify issues on which international consensus has been reached and those that remain controversial. The two areas are (1) public vs. private management, and (2) draconian vs. prudential regulation.

A. Public vs. Private Management

Evidence from international experience on this issue has been indisputable: the performance of public management has been dismal, especially in countries where the rule of law is weak or absent, and the public service is inefficient or corrupt. Even in countries where both the law and the public service are proficient, public management invariably yields risk-adjusted returns that are considerably below market returns. In a World Bank study of 22 countries, including both developed and developing countries, which had public management of pension funds, almost one-half (10 countries) had negative real

returns, and the rest had positive but low returns. Only two, Korea and Malaysia, had a Sharpe ratio--i.e. average annual return divided by the standard deviation--greater than one.

However, high returns may be due to high economic growth, and low returns to sluggish growth. To adjust for this factor, the difference between the publicly managed pension-funds returns and the economy's growth rate has been calculated. Of the 22 countries, only three showed higher returns than income growth rates: the Philippines (by 1.0 percent), Morocco (0.6 percent), and the United States (0.2 percent); the differences for the rest were all negative. The low returns could not be accounted for by poor government management, since in countries that have a good reputation of efficient government service--such as Canada, Japan, Singapore, and Sweden--the returns were all below their respective economic growth rates, although significantly better than countries of poor government service.

Why have the publicly managed pension funds performed so poorly? The explanations are twofold: asymmetrical incentives, and government interference in investment management. Since the managers are government employees, they are invariably not rewarded for good performances, but are punished if things turn out badly. The only rational behavior in such a system is to opt for safe returns, and there are no safer returns than those of the government bonds and deposits in government banks. In addition, government directives either wholly or largely dictate the investment policy. In the United States, for instance, all the social security funds must be invested in non-marketable government bonds. In Japan and Korea, most of the pension fund surpluses are turned over to the Ministry of Finance, which in turn uses the funds to build hospitals, housing, dams, roads, harbors, and welfare facilities. Jordan explicitly stipulates that its public pension funds must be invested in projects that have a "development dimension."

Private management, however, provides no panacea, either. There are at least two problems: cost and regulation. The former will be considered in the rest of this section, and the latter in the next.

International experience suggests that private management of pension funds tends to incur higher cost than public management in countries with honest and efficient government services. The advocates of private management argue that it is net return that matters, and that high return justifies high cost. A 1999 World Bank study examines Chile's experience--it being the only developing country that has accumulated sufficiently long experience for study--and finds that over the 15 years from 1982 to 1997, the average gross real return of the pension funds was an impressive 10.2 percent per year, significantly higher than the average 5.5 percent cost per year for manage-

ment fees and commissions. Nonetheless, the cost was still a large 54 percent out of the gross returns to the investment of workers' contributions. Granted that it may be unlikely for public management to match the 10.2 percent return, still it would be more reassuring if the cost could be substantially curtailed.

A 2001 World Bank study breaks down the cost of private management into four components: start-up cost, investment cost, record-keeping and communications cost, and marketing cost. In all these areas, it finds that the cost can be reduced. Chile and most of the other Latin American countries charged a high start-up fee, which could be amortized into annual fees on the assets, as with the no-load mutual funds in the developed countries. By far the largest, about one-half, of the total cost has been due to marketing, in order to attract individual workers through advertising and direct sales. This cost could be substantially mitigated if contracts were signed with large groups or institutions, rather than with individual workers--as with the U.S. Thrift Saving Plan for civil service workers and the thrift plans for workers of most large U.S. corporations. Switching from active investment, i.e. picking individual stocks and fixed-income assets, to passive investment by using indexed funds could also reduce investment cost. Finally, having the contracting institutions, rather than the pension managers, responsible for record keeping and communication with the workers and retirees could also reduce the recording and communication cost.

In short, to continue to cite Chile's experience of high costs of private pension management in the early years of its reform is to overlook the vast international experience of fund management in the last twenty years for reducing costs. Even in Chile's case, the fee per unit of assets declined sharply from 9.4 percent in 1982 to a mere 1.4 percent in 1998, much like that of the U.S. mutual fund industry today.

Private pension management requires supervision and expertise. Supervision must be developed domestically in order to insure national control. Expertise, however, could be tapped from the vast international pool. In this regard, Bolivia's experience might be helpful. Lacking both a developed capital market and asset-management expertise, Bolivia in 1997 opened a widely publicized international auction of the rights to manage its new pension funds. It specified not only the qualification of the bidders, but also a uniform per account net-contribution fee, while inviting bids on the additional per asset fee. In the end, two international companies were accepted, with contracts renewable at the end of five years. As a result, Bolivia's pension-fund administrative fee ranked among the lowest in nine Latin American countries in 1998: 3.0 percent of assets, compared to 9.2 percent for Mexico and 7.7 percent for Argentina. Only Chile's 1.4 percent was lower.

B. Draconian vs. Prudential Regulation

There are two kinds of regulations: (1) prudential standards and rules to avoid fraud, reduce risks, lessen conflict of interest, and limit concentration of market power; and (2) draconian regulations on the structure, investment, and performance of the pension funds, in addition to the prudential regulations. Typical draconian regulations are limits on the allowable investment instruments and performance requirements on the profitability of fund management.

While there is general agreement over the need for prudential regulation, increasing concern has been expressed on the cost of draconian regulation. Requiring the profitability of pension funds to stay within a band of the industry average, for instance, reduces competition and incentives to risk-taking. Investment rules are found to be especially onerous. Restricting investment to government securities, for instance, not only guarantees low return, but also deprives the nation a major impetus for capital market development. Studies have shown that returns to Chile's pension funds improved substantially after investment restrictions were liberalized in the late 1980s. By the mid-1990s, when the restrictions were no longer binding, pension funds performed even better than a risk-adjusted market index. For the OECD countries, the average pension-fund return of the prudential-regulation countries was found to be significantly higher than that of the investment-restriction countries.

C. Applicability to China

China's pension reform is still at an early stage of development. Some basic issues in pension fund management remain unsettled. Foremost among these is public versus private management of pension funds. The present program of government collection of mandated pension contributions from enterprises and workers does not necessarily require public management of pension funds. As stated, international experience demonstrates clearly that the performance of public management has been dismal, even in countries with high standards of public administration. Poor performance of publicly managed funds would inevitably lead to increasing budgetary subsidies, thus in essence reverting back to the old PAYGo system, which has meant increasing government budgetary burden and has proven to be unsustainable. China's present fragmentation of pension administration into 31 provinces, autonomous regions, and special municipalities has made the case against public administration even the more compelling.

The high cost of private management is a legitimate concern. Yet, there now exists a vast international pool of fund managers who are experienced in the various ways of cost controls that have been accumulated over the last twenty years.

Although China does have several domestic asset-management companies, their expertise in managing large assets may not be up to international standards. China's recent WTO entry reflects its readiness to open its domestic market and tap world resources to help promote its economic development. In this regard, Bolivia's recent experience, cited above, might be worthy of China's consideration.

International experience also indicates that the temptation to impose draconian regulations must be resisted. For the protection of pension-fund safety, vigorous enforcement of prudential relation should suffice. Additional limitations on asset choice and management profitability are unnecessary and may be counterproductive. Under the present conditions, private managers may have no choice but to limit investment to bank deposits and government bonds. But, the choice should be the market's, not the regulators'. Limiting portfolio choice would deprive China of a powerful stimulus for capital market development.

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