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Pension reform in China

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Chapter 1: Preface

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When we grow old, we work, produce, and earn less, thus we need support from a family and a government. Today, the world's population ages, informal family-based supports are getting difficult and at the same time, formal programs are also facing difficulties due to the increasing costs. All these situations cause old age security systems are in trouble worldwide. Unavoidably, pension has become the main topic in the social security system in many countries. Every country is looking for a suitable way to develop and reform its own pension system. Since the early 1990s China examined the policies of other countries and conducted many discussions, in order to choose a model for reforming its social security system. My aim in this paper is to find a suitable policy for reforming pension system in China.

In Chapter 2, the existing pension systems in the world will be examined. It will focus on the some models of pension systems according to the following categories: risk bearing, managerial arrangements and financing sources. I'd like to give a brief introduction of pension systems in this chapter.

In Chapter 3, it will be considered more on the pension system in China. Here I will examine the history of the system up to now: its establishment, the 1st reform (1997), and the current system. This current one that has been operated in China is unique and adapts to China's peculiar situation, i.e. the combination of social pooling funds and individual accounts.

In Chapter 4, I will firstly analyze some relevant factors for pension system in China and show the reasons why they are important and should be considered for the improvement of the pension system in China. Then, four options are suggested in this paper: 'Shift to pure Pay-as-you-go scheme', 'Transfer to Fully-funded scheme', 'Implement Notional Defined Contribution system' and 'Design an improved version of the current system'. I will analyze each one's advantages and disadvantages. I also refer to solutions to overcome some of the disadvantages.

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Chapter 2: Introduction to Pension arrangements

2.1 The development of formal pension systems

The global-aging problem becomes more and more serious now. As a result, old age social security systems cannot only rely on the informal arrangements and so formal programs have to be developed in order to meet the needs.

The informal pension system is an unwritten ethical-based mores between the parents and their children. In some societies children are bound to look after their aging family members. This kind of custom still exists in Africa and parts of Asia. Elders in a family quite often live with their children. Although those elders still could contribute to their family by taking care of the grandchildren or giving advices from their experience, their productive capabilities decline. So they get some supports back from the children. This say it works as if it is a social security or mutual aid system. But this sort of informal program does not always work very well, as in the case of people with no children, or those whose children do not earn enough to support them. Also, as a society develops, an agricultural character is replaced by an industrial one, which leads to a big shift of labor forces from rural areas to industrial cities. Once the traditional family-based arrangements of production and subsistence break down, formal market-based arrangements often replace them. In countries where aging is a serious problem, the governments' involvement is required urgently. The establishment of a formal system, i.e. by the government, has to be done properly, that is, without speeding the breakup of existing informal systems, nor shifting too much responsibility to the government.

It is estimated that 40% of the world labor force participates in the formal system of pension support; most of them are publicly mandated and publicly managed. From the end of 1980s to the middle of 1990s, most countries with formal pension system chose and designed a suitable pension model for themselves by learning from the experiences of other countries.

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2.2 *The global practice of pension system*

2.2.1 Risk bearing

Defined contribution and Defined benefit are two models in the field of pension distribution. According to risk bearing, we choose one of them. At the beginning, these two models were used by the American Insurance Company for distributing enterprise annuity. Now they are used widely in the social security system. Defined benefits are mostly used in publicly managed pension plans together with the pay-as-you-go system. Defined contributions are widely used in the private pension plans together with funded plans.

2.2.1.1 Defined benefit plans

In defined benefit plans, the pension formula is defined in advance. The benefits depend on the length of employment and salary over some periods. One of the big advantages of defined benefit plans is that it secures the pension for elder people while the rest of the society bears the risk of economic fluctuations.

2.2.1.2 Defined contribution plans

Defined contribution means that the annual contribution is defined in advance but benefit is not. When people save in their personal saving plans for their own old age, contributions are specific and ultimately define what will be the benefits of the people when they will receive their pension. As we said benefit is not defined, which depends on how well the investments are managed and how long workers contribute and collect. Under this model, workers bear considerable risk on investments, disability, and longevity. Because of the uncertainty of future rates of return, duration of working and retirement periods, there is no guarantee for the future annual benefits.

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2.2.2 M*anagerial arrangements*

2.2.2.1 Public pension plans

Public pension plans have the following features: 1) they are publicly mandated and managed 2) most of them are pay-as-you-go and 3) they belong to the model of defined benefit plans. The main financial source of this plan is taxation.

Defined benefit formulae take different forms in different counties: means-tested, earnings-related benefits and universal flat pensions. Means-tested pensions pay higher benefits for those with lower income or smaller assets. Earnings-related pensions pay higher benefit for those with higher contribution or earnings. Universal flat pensions pay the same benefits to everyone above a certain age, regardless of income or work history. In practice, some countries such as Canada, Denmark, Norway and Sweden take the form of the combination of all formulas; some countries such as Germany, the US and France take one of these forms.

By 1995, there were 165 countries that had at least one kind of social security system, and 158 of them had pension plans. Few of these countries (less than 30) adopted private funded pension plan; most of them enforced public pension plans. In OECD countries, public pension plans are widely introduced and it has been one of the biggest budget expenditure of governments, exceeding 20 percent of the total (Table 2-1 will illustrate this to you).

Public pension plans are popular in OECD countries. Why it is so? Several reasons can be given: 1) Public pension plans use a defined benefit formula that promises a specified pension to retirees. That is to say, it will be easier for a government to meet the target of provide income security for retirees. 2) Public managed schemes are mandatory and have a unique capability of income redistribution, giving by this way the capability of reducing poverty and reaching equity. 3) Under government management, it's easier to protect the pensioners

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against inflation and to make the pension funds more secure (Huaizhong Mu, 2002).

Table 2-1 Global Public Pension Spending and Coverage

(National averages by income group)

Income level	*Spending as Percentage of GDP*	*Pension as percentage of government expenditures*	*Pension spending Coverage of public pension scheme*
Low	0.7 (32)	3.9 (18)	10.2(19)
Lower-middle	2.9(29)	10.1(16)	27.9(16)
Upper-middle	6.7(20)	23.8(13)	50.7(7)
High	8.2(23)	23.1(20)	95.8(12)

Note: Number in parentheses indicates number of countries for which data are available.

Source: World Bank (1994)

However, these kinds of pension plans are also facing a lot of challenges as following: 1) Public pension plans are publicly managed, and largely pay-as-you-go. And pay-as-you-go is under increasing financial pressure. 2) Many public pension plans face the problems of high administrative costs, the bureaucracy of public management sector and low efficiency. 3) It may lead individuals to rely on the public arrangements and to ignore individual's responsibility, that is to say the role of personal savings. 4) It will also have some negative effects to the labor market. Firstly, it may increase unemployment. With the increase of labor cost, the employer will reduce the demand for labor, thus, increases unemployment. Secondly, this kind of pension plans may encourage the early retirement. In these sorts of pension plans, the pension annuity is not closely linked with the contribution. In this way, some people get pensions more than their contribution, while others do not collect enough benefits. This can lead to a vicious cycle of the labor market and pension fund management (Huaizhong Mu, 2002).

2.2.2.2 Occupational pension plans

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Unlike public pension plans or personal saving plans, private employers established occupational schemes. Its main features are: 1) it is set up by employers under the supervision of a government and is supported by taxation. It has small involvement of government and relatively low administrative cost. 2) Occupational pension plans are sponsored by employers; there may be mandatory, voluntary or a result of collective bargaining. 3) There can be managed under some companies, organizations or professional pension funding management institutions (non-profitable or private institution). 4) Defined benefit or defined contribution. The ways of paying pensions are variable: they can be monthly-pay pension, once payment and purchase insurance annuity.

Because of the long history of occupational pension scheme, there are many forms for collecting, managing and delivering pensions. So there can be many models:

Bodies for establishing the pension plans can be company-based or industry-wide scheme. Company-based schemes are supplemented by multiemployer plans in sectors with high labor mobility. Industry-wide schemes facilitate transferability of benefits (World Bank 1994).

Financing sources can be individual contributed annuity or individual non-contributed annuity (enterprises have to pay in either case). Individual contributed annuity means that workers are required to contribute a percentage of their salaries to the pension plan, while the employer is making up the difference. Obviously, individual non-contributed annuity means that workers have no obligations to contribute to the pension plan. Most countries adopt individual contributed annuity system; in this sense, employers and employees share the risk (Huaizhong Mu, 2002).

Occupational pension plans may ease a financial burden of public pension plans.

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Many industrial countries encourage the growth of occupational schemes, by making them mandatory or quasi-mandatory through collective bargaining, or by permitting employers to opt out of the public plan if they provide an equivalent private plan. France, Switzerland, Denmark, Netherlands and Australia had adopted the quasi-mandatory scheme through collective bargaining. Sweden had adopted the worker-employee bargain enterprise pension system. Japan and United Kingdom permit employers to opt out of the public plan if they provide an equivalent private plan (World Bank).

Usually, occupational schemes are run on one of the bases: pay-as-you-go or fully funded. In a competitive economic environment, firms have serious problems covering unfunded pension obligations. Most industrial countries such as Canada, the Netherlands, the United Kingdom and the United States operate occupational scheme on a funded basis. France is an exception, where they adopted a mandatory, national wide operated pay-as-you-go pension plans.

Occupational pension plans can be defined benefit or defined contribution. The annuity provided by defined benefit occupational plans depends on the number of years of service and on the worker's salary over the last few years of employment. As in other forms of pension plans, defined benefit plans also can be operated either on the basis of funded or pay-as-you-go. Most funded defined benefit plans can be found in the private sectors, while pay-as-you-go plans usually cover civil servants and military personnel. In defined contribution plans, the annuity is based on the contributions plus the investment income. Hence, defined contribution occupational plans are fully funded. Life insurance companies or other financial organizations usually administer these funds. In practice, all the forms above can be found in combination. For example, in the pension plans named '401k plans' adopted in the United States, which is a voluntary plan based on the defined contribution scheme (both contribute) where the way of pension paying could be chosen freely.

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Nowadays, 1/4 of the old aged people and 1/3 of the labor force from OECD countries join the occupational pension system. The capital necessary for the occupational pension system increases rapidly. The advantages of this scheme are as follows: 1) it is a good supplement to the state public insurance. To some extend, it diverts the risk of the income of elder people, and further it guarantees their lives. In OECD countries, the replacement rate of occupational pension plans is 20%-30%. Thus, together with the public insurance, the total replacement rate may reach 60%-70%. 2) It may improve labor productivity in this way. Occupational plans, especially defined benefit plans that limit vesting and portability and encourage retirement at an early age, have potentially important effects on labor force participation, training and mobility- and therefore on the efficiency of labor market (World Bank 1994). 3) Funded occupational pension plans will be good for the development of capital market, through which it may have an increase on the capital accumulation. Hence, it seems to be beneficial to world economy.

Unfortunately, the requirements for the occupational pension plan become more and more demanding. During the last few years, government started to pay more attention to it. The ratio of occupational replacement rate becomes higher in the total replacement rate. In some countries, it is considered to operate the mandatory or quasi-mandatory occupational pension system. More and more the defined benefits system comes to be adopted instead of the defined contribution system.

2.2.2.3 Personal saving pension plans

There are two forms for the personal saving pension system. The first one is the mandatory pension system. In this system, employee and employer have to deposit some percentage of their income into the personal saving account of the employee according to the regulation of government. The pension account has to be managed and operated by some financial institutions. When the employee

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reaches the age of retiring, all the money in his personal account, including the pension he deposited, interest and other income from this capital, has to be given to him in the form of pension. This kind of scheme is very widely used in Asia and Latin American countries, such as Singapore (Central Provident Fund, created in 1955) and Chile (Mandatory saving program privately managed). The second form of the personal saving pension system is the personal saving account, which is created as a voluntary decision of an individual operated by the individual or his family. Such an example is the case when people purchase life insurance or try to accumulate certain amount of savings.

In the countries where already exist the public pension plan, both of the mandatory and voluntary personal saving system both can be operated together with the occupational pension system, while in the countries without public pension system, mandatory personal saving account will be the main form of old age pension system. In China, the mandatory personal saving is required, however nowadays they are trying to set up system that will separate social security pooling (enterprises have to deposit a portion of their total wage incomes into a pension fund, which is managed by a local old age insurance bureau) from personal accounts.

Public pension scheme, occupational pension plans and personal saving plans are three arrangements of managing and financing the pension system. These three ways clearly define the obligation for the public, the enterprises and the individuals. What I have mentioned up to now is on a theory basis. In practice, countries may choose to organize their pension systems either by operating a single pillar scheme, or combining two out of the three, or putting the three pillars together. Empirical evidences of the last choice are found in Chile, the Netherlands and some OECD countries.

2.2.3 Financing way

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2.2.3.1 Pay-as-you-go

Pay-as-you-go is a plan to cover its pension obligations by using current revenues. Collected contributions should be balanced with the yearly expected pension payment. It has the following features: Generally speaking, high benefits or low contributions are permitted if there is a low dependency ratio (ratio of retirees to workers), a high rate of productivity and real wages. Actually, it is a transfer across generations, where workers of today pay pensions for today's retiree and having the expectation that future workers will do the same. However, because there is no stock of savings to pay future pensions, loss of capital caused by economy fluctuation, inflation and any nature disasters can be avoided. Pay-as-you-go is relatively easy to be operated and it is widely used in the system of public pension systems. After the World War II, pay-as-you-go became the main model used in industrial countries. Fifty percent of the middle-income countries and 10%-20% of the low-income countries (Soviet Russia, east European countries and China) adopted this system. In 1970s, most of the developed countries were experiencing difficult time. This coincided with a period of high rate of retirement. Governments faced big financial burden. In 1970, the social security expenses of England accounted 16.3% of GDP, and it rose to 20.9% in 1975. The social security expenses of Sweden rated 23% of GDP in 1978. Western Europe was facing the 'Social Security Crisis' as well. Japan claimed that 'the pension system will collapse'. Even the United States who are always cautious about the pension system, experienced this period of 'social security difficulty' (Huaizhong Mu, 2002).

The global aging problem brought huge financial pressure on the countries with pay-as-you-go pension system. The demographic problem is actually caused by the low rate of birth in contrast to the increase in life expectancy. In the mid of 1960s, every woman used to give birth to 2 children in Germany, however now, the average number of children per woman fell to 1.4. On the other hand, the percentage of people over 60 in Germany was 20% while in France was 19%.

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The demographic transition had big effect on the pension system, especially the dependency rate increased greatly. (Table 2-2)

Table 2-2 The Dependency Rate in main European Countries (%)

Year	France	Italy	UK
1950	26.4	21.2	24.2
1960	28.4	23.9	21.1
1970	31.3	28.1	29.0
1985	27.7	33.2	31.5
1990	28.7	35.5	32.1
2000	32.0	40.8	31.3
2010	32.4	45.0	31.9
2020	41.3	50.2	37.4
2025	45.4	53.8	40.4

Sources: From ILO

2.2.3.2 Fully Funded Pension plans

In fully funded pension plans, collected contribution should balance the long-term expected expenditure. Having in mind future expectation of the expenditures, it can define a relatively stable contribution rate (that may be a little bit higher than the rate of the pay-as-you-go plan) that will enable us to accumulate the capital needed to pay future obligations.

Its main features are the need of private saving account for the future pension and no transferability across generations. The current generation of workers supports itself through wages and saves after retirement. In this way, it can face, to some extent, the aging problem. Another characteristic is that it has defined contribution. A low dependency ratio and a high rate of interest enable high benefits or low contributions. The contribution rate relates to the income. Therefore, it can stimulate people to contribute and reduce the administrative cost. In addition, fully funded pension plans will encourage people to extend the working period and reduce the tendency of early retirement.

There are two arrangements for funded pension system: fully funded and fully

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funded as a supplement to public managed pay-as-you-go plan. 1) Fully funded. By the end of the 20-century, almost 19 countries have chosen the funded pension system. Singapore established the public funded pension plan while Chile quit the publicly managed pension system (pay-as-you-go) and adopted the mandatory private funded pension system. 2) Fully funded plan as a supplement to public managed pay-as-you-go, it may help to reduce the public managed pension replacement rate. There are some supplemented pension programs in European countries, such as enterprise annuity and occupational annuity. Some developing countries (such as China and Turkey) are considering improving the function of public pension system and meanwhile to develop fully funded pension plans as a supplement to the public one.

Funded pension plans may work together with defined contribution, in which workers contribute according to their incomes and they take rights for their personal saving account (saving and interests). Funded model can also combine with defined benefits. However, with this combination, there are some uncertainties, such as return rate, employee's life expectancy, work period etc. If the replacement rate is lower than what they expected, but the life expectancy is longer than expected or they retired earlier, the benefit cannot be reachable under the funded model.

The flaws of the funded model are as follows: 1) the high amount of accumulated capital may be affected by the fluctuation of the economy very easily, such as the inflation and the deflation. If a country chooses funded pension plan, the country has to be ready for all the challenges when its pension fund enters capital market. 2) The formula of calculating contribution becomes more complicated, additional factors have to be added, such as wage, wage growth rate, interest rate etc.

2.2.3.3 Partially Funded

There are two types of partially funded system: scaled premium and general

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average premium. Both types provide support for the current retirement generation; meanwhile accumulate some reserves for the future pension obligation. In this sense, the income may cover the need for some years of period (usually 5 to 10 years) and also accumulate some reserves for the future. Partial funded is different from the pay-as-you-go, because it has some reserve for the future; however it is also different from the fully funded which has a bigger fund for a longer period. The reserve of partial funded is smaller than the funded but bigger than the pay-as-you-go. It has the characteristics of both of them, and tries to find equilibrium that will balance horizontally (working generations and retiring generations) as well as vertically (an individual grows up from young to old period). At the same time, the accumulated funds will be helpful since it is easing the burden caused by the aging problem of the elders. Meanwhile, we confront lower inflation risk because the funded amount is smaller than the funded pension plan.

Table 2-3 gives us a summary of the above different types of contribution methods, where you can find major characteristics for these methods.

2.2.3.4 Notional Defined Contribution

Notional Defined Contribution scheme is a quite new one in the international pension system, and was first adopted by Sweden in the beginning of the 90's. Now some countries such as Italy, Latvia, Poland, and Mongolia also follow this scheme in a different formula, however the most sustainable system is the Swedish one. Here we would like to give a brief introduction of the Swedish pension reform in order to learn better about the Notional Defined Contribution pension plan.

Sweden adopted a rational pension reform due to the augmentation of the demographic challenges that all OECD countries faced. Five parties and some 85% of members of Parliament supported this reform. The new system started to

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operate in 2003.

Table 2-3 Types of contribution

Financing method/ Contribution types	*Characteristics of the contribution rate*	*Funding level*
Pay-as-you-go	Contributions collected year by year should exactly balance the expected expenditure for the year	Does not lead to the accumulation of funds except for a modest contingency reserve maintained to avoid liquidity problems
Partial funding (I) (Scaled premium)	The contribution rate is fixed over a defined period (called 'equilibrium period') so that income and expenditure should be in actuarial balance over this period, taking into account the funding objective at the end of the equilibrium period	The size of the reserve normally goes along with the length of the equilibrium period, and a funding objective at the end of the equilibrium period is fixed, either to avoid liquidity problems or to pre-fund part of the liabilities
Partial funding (II) (General average premium)	Premium balances the present value of total expected future benefits minus initial reserves and contribution income, stays constant in theory ad infinitum	Accumulates similar level of reserves to full funding but higher during initial phases of a scheme and lower towards the final years (if calculated over a defined period)
Full funding (I) (mandatory savings)	Earnings-related constant rate throughout Earnings-related constant rate throughout the life cycle of the scheme, scheme is in automatic equilibrium	Terminal funding level of reserve automatic
Full funding (II) (terminal funding)	Contributions collected over a defined period should be equal to the discounted value of the benefits accrued during this period, subject to adjustments for accumulated surpluses or past unfunded liabilities	A reserve equal to the value of all accrued benefit entitlements is accumulated. The value of accrued benefit entitlements includes the value of benefit entitlements earning to date by active and inactive members
Full funding (III) (constituent capitals)	Contribution rate calculated so as to cover each year the total present value of all newly awarded pensions during that year; generally only applied to disability benefits under employment injury insurance schemes	Terminal level of funding, but, owing to absence of acquired rights of contributors, lower level than under (I), (II)

Source: International Labor Office 2000

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Actually, Sweden moved from a traditional income related defined-benefit system, to a defined-contribution system. The old system was financed more or less on a pay-as-you-go basis. In NDC system, the contribution rate (18.5%) remains the same as in the old system. What changed in the new system was that 16% of the contribution would be used for the current pay-as-you-go pension expenditure, while 2.5% of the contribution would go into individual financial accounts under the defined-contribution system. Individuals have the administrative rights for their account but they cannot withdraw what they deposit. Financial accounts are managed by a variety of private funds chosen by the individuals.

The Swedish social security department calculates the individual's financial accounts yearly. The 2.5% of contribution is supposed to be credited every year to the individual notional account under the Notional Defined Contribution System. The corresponding amount is transferred by monthly installments to the system's buffer fund, which finances pension payments. The 16% of contribution, which is used for the pay-as-you-go system, is calculated at the time of retirement by dividing the notional account balance by the life expectancy at the retirement. Those individuals with insufficient contributions throughout their careers will be entitled to a minimum guaranteed pension, paid for by general taxes. As in the old system, the guaranteed-pension is indexed by the change in the Consumers Price Index. Besides that, in the new system, the guaranteed-pension has to link with the economic growth rate (Bingwen Zheng, 2003).

The new system has mainly two notable features: 1) Partial privatization. The 2.5 percent of contribution will goes to the individual accounts. Workers have the right to determine how to invest this fund according to different investment preferences. 2) The pensioners cannot know the pension amount before them retiree because many factors such as price index, economic growth rate and life expectancy effect the future pension. 3) There is no requirement for retirement age. Pension credits will always be earned and added to the notional (as well as financial) accounts as long as the individual has pensionable income, and

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regardless of age. However, in the new system, workers are encouraged to prolong the employment years: workers may retire after 61 years old with the pension of 60% replacement rate; they will receive the pension of 80% replacement when they retire after 66 years old (Estelle James, 2003).

2.3 Conclusion

The above is a brief introduction to different types of pension system. As the emerging the old aging problem, pension is becoming not only a personal problem but also a big social concern. General speaking, expenses on the pension program increased very fast. For example, 1979-1983, in some countries, such as US, Germany, Australian, Soviet Russia and Brazil the pension spending accounted for 50% to its total social security expenditure. While in some European countries, such as the UK, France and Italy it reached 40%. The situation is the same in China. In 2000, all the expenses for the retired people, such as pension, and health expenses for them etc., almost accounted for about 70% of the total social security expenditures. In order to see how to reform the pension system in China, I shall introduce the pension system in China next.

ΒΙΒΛΙΟΘΗΚΗ

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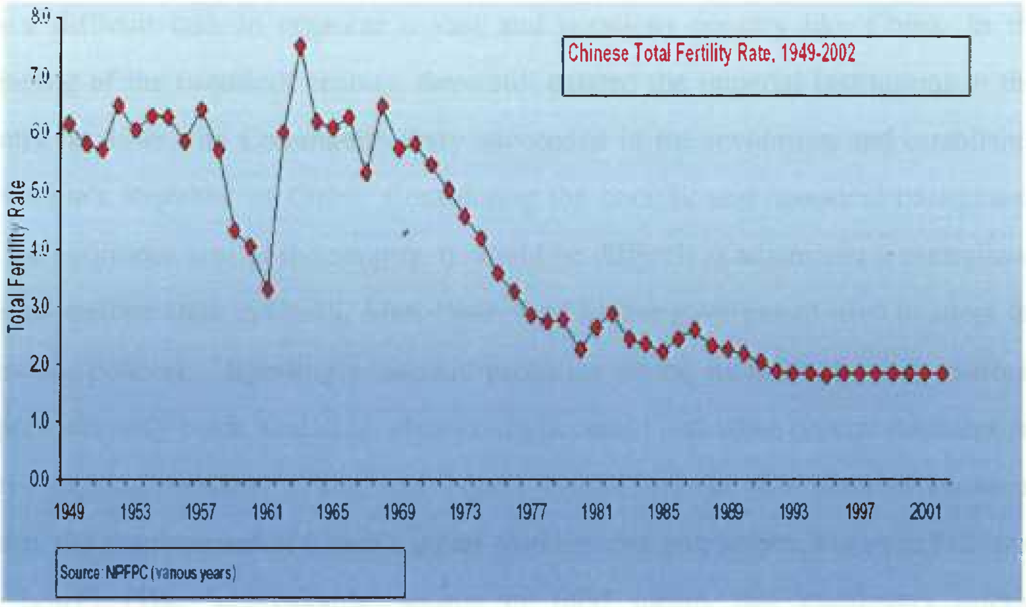
Chapter 3: the development of pensions in China

China is the most populous country in the world, with 1.3 billion inhabitants by January 6 of 2005(CPIRC, 2005). The natural growth rate of the population was 12.86‰. China is still a young nation with the fast developing of its economic and gradually increasing of its living standard. However, over the next few years, China will age dramatically. There are two main forces that lead the aging of China. One is the decreasing of fertility rate due to the effects of the family-plan policy in 1970s. The fertility rate has fallen from 5.8 to 1.8. In Beijing and Shanghai, the fertility rate has fallen all the way to 1.0. The other force is the rising of the life expectancy over the past 50 years. Now, the demographic aging problem has become a big economic and political issue in China. Figure 3-1 and Figure 3-2 will illustrate the situation to you. China is attempting to reshape its public pension system. For our better understanding on the pension reform in China, we shall see the development of the Chinese pension system first.

Figure 3-1: Behind China's age wave: A dramatic decline in fertility rates



Source: Richard Jackson & Neil Howe (2004)

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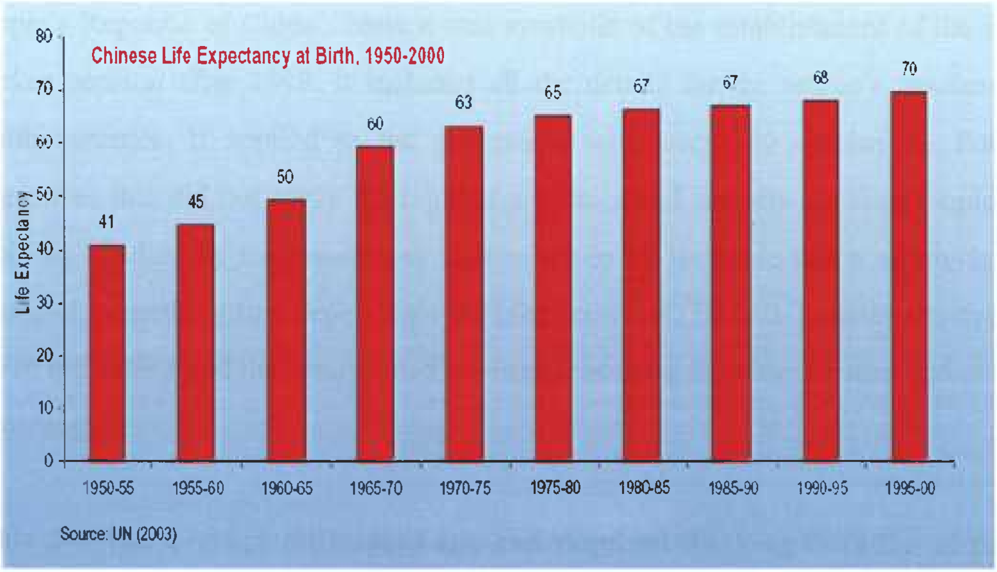
Figure 3-2: Behind China's age wave: An equally dramatic rise in life expectancy



Source: Richard Jackson & Neil Howe (2004)

3.1 The establishment and development of the traditional Pension System in China

3.1.1 The traditional pension system in China

It is a difficult task to organize a vast and populous country like China. In the beginning of the twentieth century, there still existed the imperial institutions in this country. In 1949, the Communist Party succeeded in the revolution and established the People's Republic of China. Considering the complicated historical background and the enormous size of the country, it would be difficult to administer a centralized, national welfare state in China. After 1949, the Chinese government tried to adopt the following policies: 'digesting economic problems at the local level', and 'national support was only made available when crises occurred and when natural disasters cut across regional borders' (Fung and Ngan, 1996:45-6). In this planned economy system, the employment of China's urban workers was guaranteed, the so called 'iron rice bowl'. (The 'unbreakable' source of food means that employers offered permanent jobs and full welfare protection to all employees).

The first Chinese public (urban) pension system in China was established in 1951 when the State Council published the first 'Regulations of Labor Security for the People's Republic of China'. Now it was symbolic of the establishment of the urban worker pension after 1949. It included all the details for the retiree's pension and health schemes. It applied to the enterprises with over 100 employees. For the enterprises that did not apply the regulations, the social security for their employees could be handled by the enterprises themselves or by the trade union to which they belonged, something that depends on the labor contract. Table 3-1 shows the average age of retirement and the conditioned minimum working duration for men and women accordingly.

Table 3-3 The average retirement age and required working duration of urban workers in the traditional pension system (1951-1978)

	Average retirement age	*Required working duration (years)*	*Replacement rate*
Men (managerial & non-managerial positions)	60	25	70%-90%
Women in managerial positions	55	20	70%-90%
Women in non-managerial positions	50	20	70%-90%

There were some Party-led movements that had big effects on the Chinese economy, such as the Anti-Rightist Campaign of 1957 and the Cultural Revolution (1966-1976). During these periods, the Chinese Federation of Trade Unions was abolished and the supervisory responsibility for labor insurance was then transferred to the local labor bureaus. At the same time, the task of distributing benefits was passed on to the SOEs (Stated owned enterprises). As a consequence of these movements, especially after the Cultural Revolution, the state institutions were rebuilt in the 1970s; however, the public authority remained extremely fragmentary. As a result, this limited administrative capacity prevented the Chinese state from managing a coherent and centrally regulated public pension system. In 1969, the Chinese Ministry of Finance issued a document titled 'Financial Reforms of the SOEs', which stated that some expenditure, such as the retirees' pension, salary for the long-term sick personnel and other social security expenditures would be listed beyond the item of operating costs.

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That means, after 1966, China's social security system (including the pension schemes) was designed to deliver social services and benefits to employees and their families through the SOEs. It can be regarded as a big shift in the China's social pension system. This pay-as-you-go system offered defined benefits pensions, which were financed by the employers. In this system, enterprises had to pay all the pensions for retirees out of their income. There is no funding for future pension liabilities. Both male and female employees of the SOEs were entitled to pension benefits. Due to the fact that the pension would be covered for the employees until they die, the retirement age was early and the replacement rate was high. In addition to the above, together with the fact that employees did not contribute to the pension plans of the SOEs, these were better considered as enterprise insurance schemes rather than social insurance ones. Each enterprise took responsibility for its own employees, including for pension and health care. In this enterprise-based social security system, the retirees of each enterprise still regarded as the employees of the enterprise, and all pensioners received pensions directly from their previous employers. Due to the fact that employees did contribute to the pension plans, the SOEs had big financial burden on it. This system lasted until about 1978 (Daniel Beland and Ka Man Yu, 2004).

3.1.2 Main characteristics of traditional pension system in China

3.1.2.1 The principle of the traditional pension system –fairness

The socialist system was established in China in 1949. In 1954, the right of social security was written into the constitution of China, which stipulated that all the citizens have the rights to receive material assistances from the government and the society; especially when they are old, sick or disable. The basic principle for the traditional pension system is fairness. Series of regulations have been issued since then, such as 'Regulations of Labor Security for the People's Republic of China', 'Regulations of retirement arrangements for the retiree' (1951). In 1978, the State Council published two regulations on old-age social security arrangements. All these showed that the Chinese government was trying to improve the social security for the

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elder.

3.1.2.2 Life guarantee for the retirees

The main objective of the traditional pension system is to provide the life guarantee for the retirees. Although China experienced several Party-led movements, the basic life of the elder was guaranteed except for the period of the Cultural Revolution (1967-1977). Hence, the traditional pension system had the ability to guarantee the old-age security of urban workers at that time.

3.1.2.3 Non-sustainable due to the limitations of the tradition pension system

There are many limitations of the traditional pension system. Some of them are:

a) The traditional social security system was not stable. This is due to the fact that the traditional pension system was under the government administration, and was affected by the governmental structure changes, personnel replacements in relevant departments and political movements. It had many fluctuations of social policies. As a result, the property of social security had been changed. So it was not a national-wide social system but an enterprise-based security.

b) Traditional pension plan of China was not socialized; it was an enterprise-based social security system in which all pensioners received pensions directly from previous employers. In the planned economy, enterprises were under the protection of the government, while at the same time enterprises guaranteed the job security for their employees. So, the mobility of employees was very poor. This inevitable brought two results: firstly, the longer history the enterprise had, the more serious the aging problem of the enterprise would be. Secondly, if an enterprise wanted to solve the aging problem, it definitely needed to recruit more young people. If they keep carrying this out, employees would be too many for the enterprise, and then low efficiency and a huge financial burden would arise. Thus enterprises were facing a

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dilemma.

c) The replacement rate was at a very high level in the traditional pension system. According to the pension regulation in 1950, the replacement rate could not be higher than 70%. At that time, the salary was very low and it was impossible for retirees to have big amount saving. The only income for the retiree was the pension. And 70% of their salary as a pension was not enough for their livings. Therefore the replacement increased for many times. By the end of the 1978, the replacement rate almost reached 90%.

In addition to the above, the SOEs were responsible for the pension. The financial burden of the SOEs was so high that some enterprises finally could not carry it and collapsed. For example, Liaoning Province Dalian Weaving Plant, which was established in 1951, and was a famous enterprise in the northeast of China. After 1986, it started to face difficulties and the first serious corporate deficit appeared in 1987. Since 1990 until the bankrupt, it has operated in the red continuously. The main reason was the financial burden from the pension expenditure. Before the plant bankrupted, it had 1258 employees and 1503 retirees. The cost for the retirees was higher than the one for the current employees. It was impossible for the plant to develop. There were many such enterprises in China (Gongcheng Zheng 2002).

Through the above case, we can see that it was inevitable to reform the traditional pension system even though it was fairer for the members of the society. In 1978, there was a great economic reform in China and it became more urgent to change the old pension system and to adapt to the economic reform.

3.2 The reform of the traditional pension plan in China

3.2 .1 Backgrounds of the pension reform in China

In the first section of this chapter, we briefly discussed the impact of institutional structures and policy legacies on social policy development in post-revolutionary China. The recent pension reform was mainly due to two factors: demographic aging problem in China and the financial difficulties faced by the SOEs.

There are more concerns with the population-aging problem and the pension reform in China with the increase of the life expectancy and the family planning policy. In 2002, people over 65 years old make up 7.3% of the national population (China Statistic Bureau). Since 1970s, China had implemented a policy of family planning to control population growth and thus the birth rate began to decrease. By 2002, the annual rate of population growth had dropped to 12.86‰. All these mean that fewer workers will be entering the labor market in the following decades. In other words, the dependency ratio will be bigger. The current working generation has to support more retirees. So, the pension expenditure will grow rapidly in the future.

In general, there are several reasons for the pension reform. Firstly, the economic reforms have placed numerous SOEs in a difficult financial situation that calls into question their ability to guarantee the old-age security of urban workers. In 1978, the Chinese state launched several waves of institutional and economic reforms related to what Deng Xiaoping (the then President) called 'Socialism with Chinese characteristics'. Since then, China's economy has been shifted from the planning economy to the market one. Thus, the economy has to face the international competition. For example, in 1986, on the 18th Plenary Session of National People's Congress, the regulation on enterprise's bankruptcy was issued and started to effect on November 1st 1988. With the establishment of this regulation, all the SOEs had to face international competition. Also with the demographic aging, their ability to provide social security benefits to their employees has become a real concern since the 1980s. For instance, the proportion of industrial SOEs that were running deficits increased from 19.2% to 38.2% between 1980 and 1997. The traditional pension system is not adaptable under the current market economy.

Secondly, the traditional pension system itself has many problems and difficulties as I

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have referred above to the increase of the retirees, the big financial burden that enterprises had to solve. This fact hints at two possibilities: 1) in order to help these enterprises with big financial problem, the government has to spend a lot of money on it. However, it is obvious that this kind of transfer or subsidy does not obey the principle of market economy. 2) Due to the big financial problem, these enterprises may try to evade paying the pensions for the retirees and as a result, the basic life of retirees cannot be guaranteed. This would bring instability in the society.

Thirdly, with the openness of China, more experiences from western countries will help China to find the way to set up a better social arrangement system.

Finally, after the family planning policy, the traditional broad family has been changed; instead, more and more nuclear families appear. A formal, well-organized social security system is now required very much.

3.2.2 Reform of pension system in China

The major objective of pension reform is to extend coverage while spreading the financial burdens caused by pension expenditures across older and newer enterprises through social pooling.

In 1984, the state carried out the first modern reform, which has promoted experiments on Social Pooling program of pension in some provinces in China, like Guangdong, Jiangsu and Liaoning. The participants SOEs in pooling programs put a portion of their total wages into a pension fund managed by a local old-age insurance bureau. Individual workers could voluntarily use their savings to supplement the pension fund (Song and Chu, 1997). However, at that time, pension reform was still at its experimental stage, and methods of Social Pooling varied from place to place.

The 1986 pension reforms also introduced the idea of employee contributions. In this year, the 4th Conference of Sixth National Congress passed the 'Economic and Social

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Development 7th Five Year Plan of People's Republic of China'. It is stated clearly that the social security system has to be established step by step in order to meet the needs of the new situation. Then, on July 12, the State Council published the 'Regulations on Implementation of Contract Labor in SOEs', which stimulates that the new recruited employees should be hired on a contract basis, while the current employees will keep their permanent status. Government organized the pension for retirees socially; the pension resources are from the enterprise and the contractual worker (Daniel Beland and Ka Man Yu, 2004). The government has to subsidies the pension fund when it has difficulties, also state clearly about the contribution and benefits. It was a big reform of pension in the history of China because it indicated the transition from traditional pension to a social insurance.

On June 26 of 1991, China State Council issued the 'Decision on the Reform of Enterprise Employees' Pension System'. In this document, it clarified the responsibilities of some ministries. For example, the Ministry of Labor was in charge of the pension insurance of urban workers, the pension of public sector was under the administration of the Ministry of Personnel, while for the rural pensions, the Ministry of Civil Administration had to do all relevant managerial work. Besides that, the State Council proposed a three-tier retirement insurance system for employees in urban enterprises. The system had three parts: 1) a basic retirement program managed by the state 2) supplementary retirement programs funded by the enterprises and 3) individual savings retirement accounts chosen by each employee. We can see that the pension system was mainly in the form of pay-as-you-go scheme. The enterprises, the employees, and the government financed it through a combination of pooled funds and individual accounts. This decision reflects that China's pension system was moving to the social insurance.

When China tried to explore the further pension reform, in other countries, the pay-as-you-go system also experienced some problems and the funded pension was put into practice. Thus, China was thinking of learning some valuable experiences from other countries for its pension reform.

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On March 1 1995, State Council issued a document named 'the Memorandum on the Enterprise Worker's Pension Reform' in which clarified the new pension model in China, the combination of pooling and individual funded accounts. Together with this document, it also published two regulations concerning the issues how to combine the pooling and individual funded accounts. Plan I focused on individual accounts while plan II emphasized pooling and economic solidarity. According to this document, all the SOE employers have to contribute to a mandatory-pooled fund and both employers and employees should contribute to mandatory individual accounts. We can see that what implemented in China is not partial funded, but the combination of pay-as-you-go pillar and fully funded. Based on the above information, we could summarize the pension system in China in the Table 3-2 (Gongcheng Zheng, 2002):

Table 3-4 the Pension Model of Pooled Fund and Individual Accounts in China

	Pooled Fund	Individual Accounts
Financing method	Partial Pay-as-you-go	Partial fully funded
Benefit arrangement	Flat benefit for all the pensioners	Differentiated benefit between individuals
Management	Public fund	Private fund

This document failed to promote the formation of a coherent pension system in China. Giving local governments the power to select their preferred reform model actually increased fragmentation by creating incentives for these governments to differentiate their schemes in order to maintain their control over pension funds. Every regional and local official wanted to maximize its own welfare funds in order to increase employment and create profitable investments. Thus, local officials were choosing the pension system that is more appropriate for their region. This made the China's pension system more decentralized. We are not sure that if this system is successful or not, however, it is the unique pension formula and provided a new concept of the pension reform in the world.

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Facing the decentralized situation of pension system, the State Council required that all localities should have a uniform standard for the contribution rate by the end of 1997. In practice, very few localities adopted this standard due to the fact that different localities have the discrepant economic growth. As a result, the differences had led to the creation of hundreds of schemes all over the country, seriously handicapping labor mobility from the SOEs to private enterprises.

On July 16 of 1997, State Council issued the 'Decision on Establishing a Unified Basic Pension System for Enterprise Workers' and requested all the localities had to implement the standard contribution rate. More specifically that enterprises could not contribute more than 20% of the total wage of social pension plan, and individual workers had to pay about 8% of their wages into their personal accounts. The enterprises' contribution to the pension plan is divided into two parts: one goes to the pooling fund and the other part goes to the individual accounts. Meanwhile, individuals' contribution goes to their own accounts. In this sense, the state further recognized the essential role of private savings accounts in the pension system. However, this 'Decision' didn't stimulate the penalties for the case of contribution evasion. In 2000, the State Council issued a modified Plan for social pension system; Liaoning province is an experimental site. It was stipulated that what the enterprise contributed went only to the pooling fund and not to the individual personal accounts and what the individual contributed still went totally to the personal accounts. The pensions that those employees received were including the part from the social pooling and the total accumulation from their own personal accounts.

In 1998, the Ministry of Labor and Social Security (MOLSS) was established. The establishment of this Ministry illustrated that the central government would like to develop a more comprehensive social security system in China. On January 22 of 1999, the State Council issued the 'Regulation on collecting the social insurance fund'. Some actions were taken in order to cope with accumulated deficits in established pension pools, such as: an increase in the proportion of social security expenditures in central and local authorities' budgets, issuing long-term government bonds for

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designated uses, selling state-owned assets to obtain cash, and raising money through lotteries.

On December 25 of 2000, the State Council issued the 'Notice on improving the urban social security system'. This document stipulated how to manage the social pension fund properly. For example it says about how to separate the pooling and personal saving accounts and how to manage them in different ways. It also proposed to try to push the pension fund to the capital market. All these regulations reflect the decision of the government to proceed to the reform of pensions in China.

3.3 Some factors that affect the pension reform in China

Actually, a pension reform can be affected by many factors, such as history, economic development, social risks etc. We will discuss these factors separately.

3.3.1 Historical background

Although the history of traditional pension system is not so long in China (about 30 years), which effect to the current pension reforms. Generally, there are three main effects. Firstly, a lot of people are used to the traditional system after so many years, it is hard for them to accept the new one. Secondly, the urban workers, who benefit from the traditional pension, create difficulties to the reform in China due to the fact that they will lose the high replacement pension and will have the obligation to contribute after the reform. There is a transition period between old and new systems. Thirdly, the traditional pension system is under the pillar of pay-as-you-go, however, the new pension system is the combination of social pooling and fully funded. During this transition period, the current generation not only has to support the retiring generation but also has to accumulate the fund for their future pension obligation. In this sense, a big debt has arisen, including the pension payment for the current retirees, the compensation pension payment of the contributions for many middle-aged employees (these people have worked for many years without any pension contribution but they

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will benefit from the social pension system when they retire). Roughly speaking, the amount is 2.875,3 billion RMB (about 351 billion dollar) estimated by Ministry of Labor and Social Security in 1995. The State Council calculated that the amount is about 6.714,5 billion RMB (about 819 billion dollar) in 2000. How to solve the problem of such huge debt is a big concern in China now.

3.3.2 Economic situation

Economic reform and development is another important factor that affects the Chinese pension system reform. As we saw in the beginning of this chapter the economic system in China was experiencing the transition from the planning economy to the market economy. Obviously, this big change cannot be done promptly but step by step. Neither the pension reform can be done at once, not only because of the lack of financial capital but also due to the fact that it may damage the development of the economy if the pension reform develops too fast.

3.3.3 Social risk

Since China adopted the market economy, some SOEs became bankrupt and as a result many retirees of these enterprises could not receive their pensions on their time or even not the full amount of pension. This is a big social problem of urban workers. Hence, pensions are related to the social risk directly. Besides this problem, the old age security in rural area is even a more serious one. Before, in China, especially in rural areas, the old age security was heavily depending on the informal family-based arrangement. However, the decrease of the size of the family was accompanied by the decrease in the demographic problem, and unfortunately, no possibility to secure the people from the rural areas. Based on the above facts, we need a good and stable pension reform program in order to find a solution to all the possible dangers.

3.3 Achievements and problems of pension reform in China

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3.4.1 Achievements

The pension reform achieved a lot over the last ten years; we will see these achievements in detail.

3.4.1.1 From enterprise pensions to social security

As we saw in the previous section, the basic defects of the traditional pension were caused by the enterprise-based system. As a consequence, it led to a big financial burden on the enterprise, and the social resources could not be distributed in a proper way.

After the 10-year reform with the new system, we achieved important changes:

Firstly, the current pension system is on the socialized principle. The social pooling and personal saving accounts are under the administration of Social Insurance Institution, and both of them are independent from the enterprises or organizations; The whole procedures of contribution, management and delivering the pension are under the supervision of the governmental department of administration.

Secondly, the task of delivering pensions had been shifted from the enterprise to some public services, such as the Post Office and some commercial banks. At the end of 2001, 98% of pensions were distributed through public services instead of enterprises. i.e., enterprises had less administration works.

3.4.1.2 Enterprise and individual workers share responsibilities together

I already clarified that in 1997, State Council issued 'Decision on Establishing a Unified Basic Pension System for Enterprise Workers' and stipulated that the contribution rate of enterprise would be 20% and of individuals 8%. In this sense, under the current scheme, the pension is contributed not only by the enterprises but

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also the employees.

There are two means to support pensions: one is the government who has to provide subsidy or transfer when there is deficit in the pension fund. In fact, during 1998 to 2001, the total governmental expenditure on pensions was 86.1 billion RMB (about 10.5 billion dollar). The other support is the capital market, through which the pension fund will increase or keep its value.

Although the pension reform is still in an experimental stage and individuals' responsibilities are not still clarified, the structure has been formulated – the enterprise, individuals and the government are the three main components of the current system, which is totally different from the traditional one.

3.4.1.3 From single pillar to multi- pillar security

The traditional pension is a single pillar system where the only income for retirees is their pension. So it is characterized by the high responsibility of the enterprises to contribute and high risks of retirees. After 1997 reform, the new pension system became to follow the three-pillar idea of the World Bank.

According to the idea, the first pillar is a PAYGO pension financed by pooling funds citywide. The second pillar is a system of individual savings accounts funded by both employees and employers. The third pillar is a supplementary pension funded by employers (David D. Li and Ling Li, 2003). The first pillar would be funded by enterprises that would guarantee a replacement rate of 20 percent to the wages at the retirement age with a minimum of 15 years of contribution. Both employees and individual workers would fund the second pillar. At the retirement (55 years old on average, taking into account early retirement) the worker would receive a monthly pension equaling to the balanced account the retirement divided by 120. This calculation assumes a life expectancy of 70 years and equal growth in the wage and discount rates. On these assumptions, these two pillars are expected to provide

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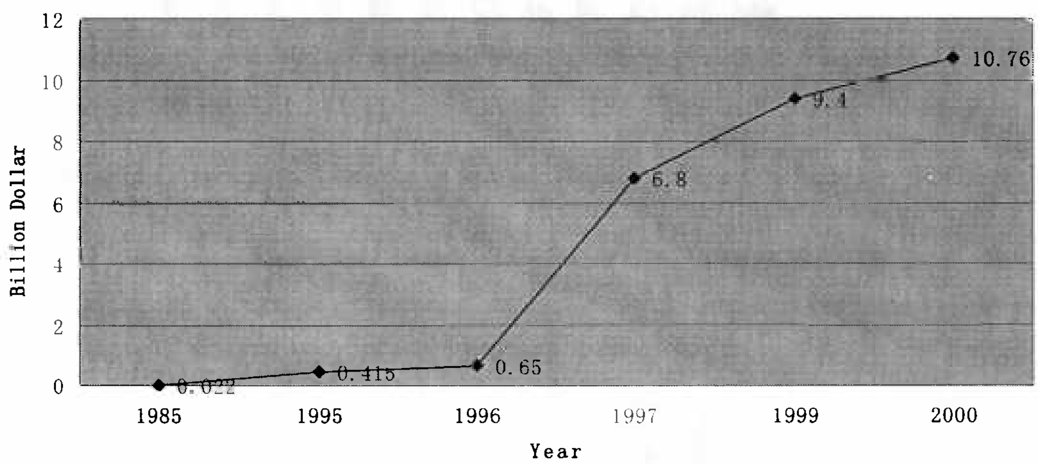
together a replacement rate of 58.5 percent (Yaohui Zhao and Jianguo Xu, 2002).

By the end of 2000, there were 104.48 million employees and 31.7 million retirees covered by the social pension insurance. Another fact is that more and more people were getting involved in the commercial insurance, but it is hard to calculate the exact figure. However, the total income of life insurance companies during 1985-2000 (Figure 3-5) illustrates the great increase.

Figure 3-5 Total income of Life Insurance Companies during 1985-2000

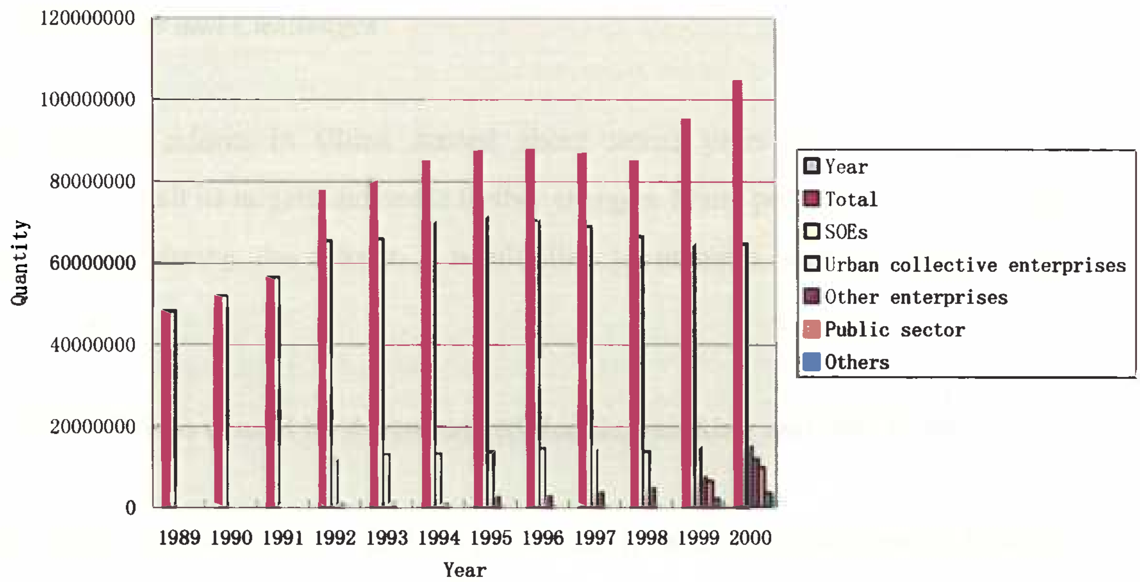


Source: State Statistic Bureau of China

3.4.1.4 Increasing of the coverage of the new system

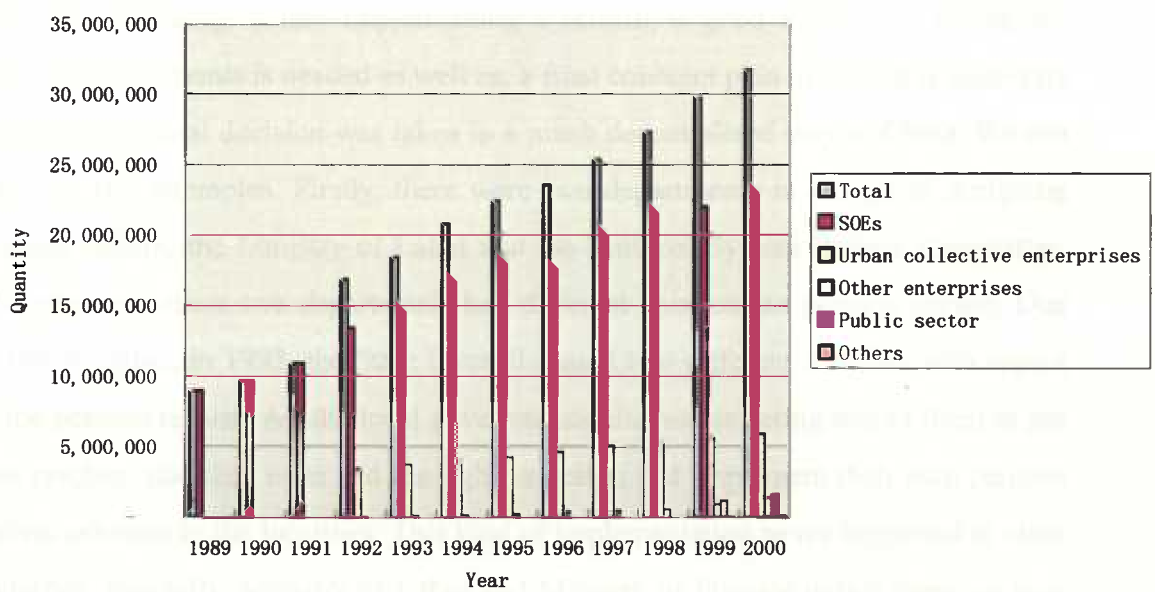
To see if a pension system is effective or not, we can see it from its coverage. The state tries to extend its coverage into non-state enterprises. In January 1999, the State Council issued 'Tentative Rules on the Payment of Social Security Dues', designing to speed up the inclusion of non-state enterprises and migrant workers into the pension pools (State Council 1999). There are some data (Figure 3-6 and Figure 3-7) that may prove the increase of the coverage (Yaohui Zhao and Jianguo Xu, 2002).

Figure 3-6: Coverage of Social Pension Insurance 1989-2000
(Current employees)



Source: Liu Yongfu 2001.

Figure 3-7 Coverage of Social Pension Insurance 1989-2000
(Retirees)



Source: Liu Yongfu 2001.

The information from Figure 3-6 and Figure 3-7 indicates that the coverage of the social pension insurance increased dramatically from 1989 to 2000. Also the social

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pension is not only for the employees of the SOEs but for of all kinds of enterprises.

3.4.2 Problems and Challenges

The pension reform in China started about seven years ago, and hasn't yet accomplished all its targets and needs further changes. Many problems and flaws have been caused during the reform. I would like to mention some of them to the following:

3.4.2.1 Problems caused by decentralized decision-making and management

The pension reform could be difficult to proceed if there is no cooperation between different governmental departments. It will be even more problematic if there is no centralized decision-making, centralized management body or centralized governmental administration system.

Generally speaking, before implementing a reform, a good discussion among the different departments is needed as well as, a final coherent plan of reform is necessary. However, the final decision was taken in a much decentralized way in China. We can see it in two examples. Firstly, there were two departments in charge of designing pension reform, the Ministry of Labor and the National System Reform Committee. Unfortunately, these two departments had different opinions on pension reform. Due to this situation, in 1995, the State Council issued two different schemes with regard to the pension reform. All the local governments allowed selecting one of them to put into practice, and they even had the right to design and implement their own pension reform schemes in the localities. This kind of implementation never happened in other countries. Secondly, Ministry of Labor and Ministry of Finance didn't agree on how to collect social pension insurance contributions. In the end, all the provincial governments could determine channels through which the contribution should be collected and administrated, either the Social Insurance Institution or the Taxation Institution. The existence of two bodies that collect and administrate the pension

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system is something that never happened before in the world. The direct result from the above two examples was that the current reform plan was not standardized and unified, and by consequence will create serious problems in the future.

Besides the decentralized decision-making, the administration system was also not standardized until 1998. Before then, the pensions of SOEs, public sectors and rural areas were under the administration of the Ministry of Labor, the Ministry of Personnel and the Ministry of Civil Administration respectively. Meanwhile, Ministry of Communication, Ministry of Railway, Ministry of Electronic Power, Ministry of Post, Ministry of Water Resources and Ministry of Coal were authorized by the State Council to manage the social pension for the employees under each one's jurisdiction. Apart from them, the China People's Insurance Company also got involved in the management of social pension insurance. All those created a big problem of decentralization and delayed the development of pension reform. Although, the Ministry of Labor and Social Insurance was established in 1998 with the purpose of standardizing the pension reform, the negative effects caused by the decentralization could not be eliminated at once (Gongcheng Zheng, 2002).

3.4.2.2 China's pension crisis

Over the next 35 years, the proportion of the population over 60 years old in China will jump from 9 percent to 22 percent. As a result, the dependency ratio of pension system is calculated to become 35 percent in 2005, 53 percent in 2030 and 69 percent by 2050. Table 3-8 illustrates it for us and Figure 3-9 shows us the trend.

Facing this challenge, it is still hard to say that the combination of pooled fund and individual saving is an effective pension system that can not only meet the needs of the retirees but also save for the current working generation. This is because during the 10-year reform the goal has not been achieved: the individual saving accounts are operated emptily (there are actually notional accounts with no real reserves), due to the fact that the funds that are accumulated from the personal saving accounts have

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been used to fill the gap of the social pension fund. Also, in most areas, the contribution rate is already high enough and has no room to increase. In order to solve the problem of lacking fund, the central government decided to support the pension expenditure through government subsidy or transfer. According to Mr. Zheng Huaicheng, the Minister of Finance, the expenditure for the pension increased by 42% during the first quarter of 2002 compared with the last year. Although the central government tries to provide the financial support, still there was no big change. The Implicit Pension Debt (IPD) in China accounts for 63% of GDP (World Bank). The negative cash flow of pension system will continue to increase in the next decades. Figure 3-10 will show us the trend. In 2005 the deficit is expected to be nearly 50 billion RMB or nearly $6 billion ($1=RMB8.28). By 2030 the deficit will reach RMB 630 billion ($76 billion), and by 2050 nearly RMB 1.5 trillion ($181 billion) (James A. Dorn 2004). Even though, some economists still believe that, if the national economic growth rate remains at the level of 7%, such debt will not lead to the bankrupt of Chinese economy and the government will be able to solve the deficit.

Until 2001, funds could only be invested in bank, government bonds, and a limited level of stock fund. But these pension funds need more efficient capital markets to invest, and China's banking system and the stock and bond markets are not matured enough to offer an efficient capital market for operating a fully funded pension system. As an economist said, the pension reform in China is not only urgent but also very complicated. The social pension reform is connected with the development of capital market.

3.4.2.3 Past debt

The retirees and middle age employees have no contribution records in their funds, now that the pension system has shifted from the traditional pay-as-you-go to the current partial funded (partial pay-as-you-go and partial fully funded). As a result, the historical debt hidden behind the generations' transition period show-up and a proper solution is needed. However, up to now, the solution of this big debt was in an

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academic level.

There is also contribution imbalance between localities due to the different history of burdens. For example, in an old industrial city - Wuhan, which has more retirees than a new industrial city Shenzhen, the contribution rate reached to 24%, while in Shenzhen is only 6%. This imbalance will be worsening for the city that has a higher contribution rate. At the same time, there is no way for the old industrial cities to take on all the burdens left from before. The only solution will be to increase the contribution rate abnormally. But still the needs of retirees cannot be fulfilled. That's why many personal accounts are operated emptily. Hence, the pension reform cannot be accomplished after all.

3.4.2.4 The responsibilities between government, enterprise and individual are not clarified

As said before, in the new pension system, government, enterprises and individuals share the responsibility of pension; but each one's responsibility is not clear.

As to the government, its financial burden is increasing rapidly. However, there is no specific percentage or standard by which government should be involved in. Also, at a central and local government level, there is no regulation to allocate obligations to them. Between 1998 and 2001, of the total subsidy to the pension insurance 90% comes from the central government and only 10% from the local government.

As to the enterprises and individuals, localities have their own contribution rates, which hinder the competition principle of market economy --- that is fairness. All these differences are a disincentive to local authorities and market.

3.5 Conclusion

Pension reform in China is a tough task; it needs not only to reform the pension

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system, but also to develop the capital market. In order to succeed in the reform, the government has to learn from the experiences of other democratic countries, considering the facts in China. The topic for the next chapter will be **International Pension Reform: Lessons for China.**

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Table 3-8 China's Pension Crisis

Year	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
Dependency Ratios (%)											
Old-age dependency ratio (65+/15-64)	10.6	11.4	12.4	14.5	18.2	21.0	25.3	31.5	36.6	38.1	39.2
System dependency ratio	35.4	35.1	36.2	38.6	43.0	48.7	53.0	56.0	59.9	65.1	69.2
Financial Conditio[illegible]RMB 10 billion, in 2000 Yuan)											
Revenue	17.2	25.8	36.3	43.5	50.3	56.9	63.9	71.3	78.5	84.3	90.1
Expenditure	21.2	30.6	42.0	58.7	78.3	102.5	126.9	149.4	174.0	203.1	235.3
Annual balance	-4.0	-4.8	-6.6	-15.1	-28.0	-45.6	-63.0	-78.1	-95.5	-118.8	-145.2
Accumulated res.	9.7	-12.3	-45.9	-111.7	-245.9	-484.2	-860.1	-1384.0	-2070.2	-2966.1	-4126.3
Bal. Contrib. Rate (%)	28.0	27.0	27.0	30.7	35.5	41.1	45.3	47.8	50.5	54.9	59.5

Note: RMB 8.28=$1. Source: Wang et al. (2004: Table 5).

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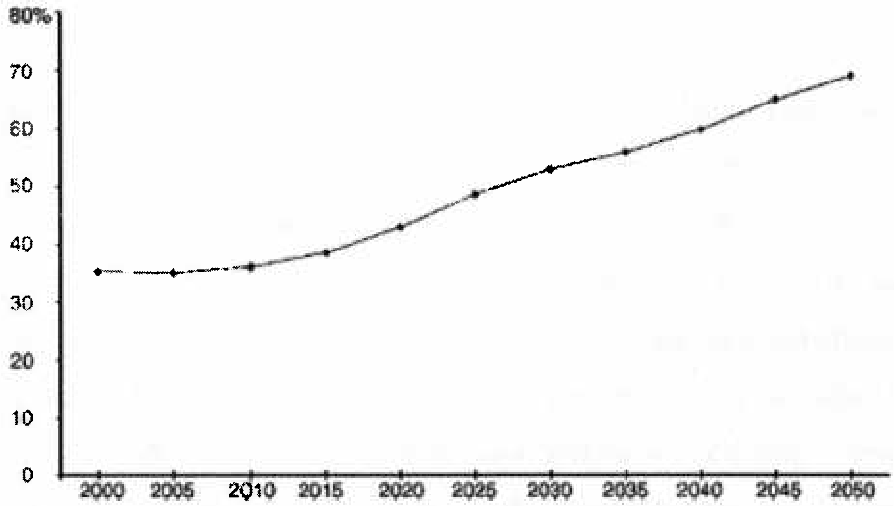
FIGURE 3-9 A RISING DEPENDENCY RATIO IN CHINA'S PENSION SYSTEM (RETIREES PER WORKER, %)



SOURCE: Wang et al. (2004: Table 5).

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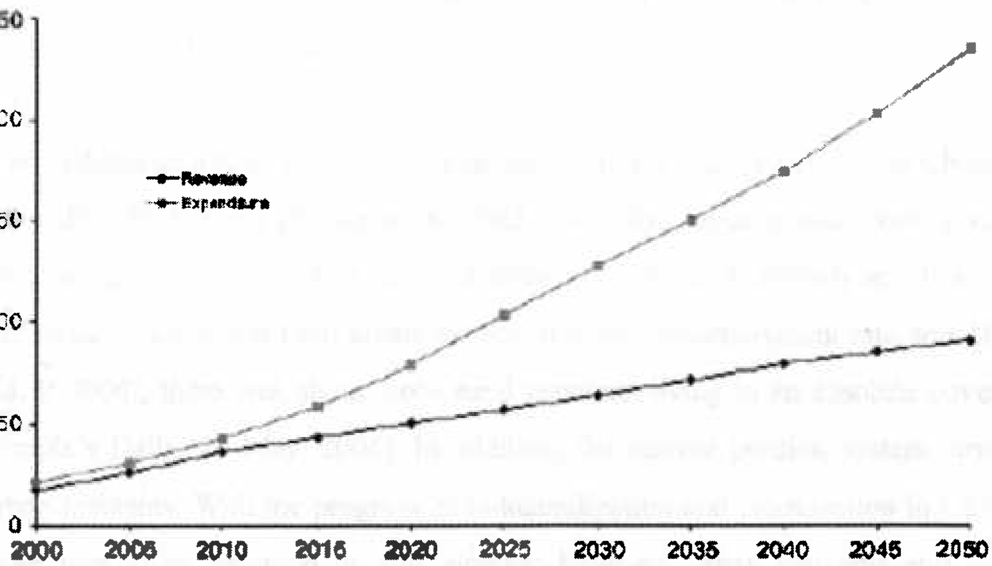
FIGURE 3-10
PROJECTED DEFICITS IN CHINA'S PENSION SYSTEM
(RMB 10 BILLION, IN 2000 YUAN)



SOURCE: Wang et al. (2004: Table 5).

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Chapter 4: International Pension Reform: Lessons for China

Due to the problems existing in the current pension system (the system that combines both a defined benefit PAYG plan and a defined contribution plan with fully funded individual accounts, what we called 'social pooling with the individual accounts') in China, it is necessary to do further reforms. The questions are: what kind of pension system fits into China's specific national situation and how to set up this system? What kind of pension system can we afford? These questions have been debated for some years. Before we selecting a new target pension model, it'd better firstly to analyze the factors that one should take under consideration.

4.1 Relevant factors

The pension system is a fundamental part of the social security system, which is related with economic growth and social stability. We have to be cautious enough in order to select a suitable target pension model. Especially in China, there are too many special situations and factors we need to consider.

The updated data from Chinese government about the total population of China is 1.3 billion by the end of January 6, 2005. Virtually, the economic development (per capita) in this country is still at a relatively low level. Poverty and inequity still exist in urban and rural areas: the actual urban unemployment rate was 10% (Li. P 2004), there was about 3.6% rural residents living in an absolute poverty (People's Daily, 27 May, 2004). In addition, the current pension system targets urban residents. With the progress of industrialization and urbanization in China, more new cities emerged or will emerge; however, urban residents still only account the 36% of the total population (2001). Therefore, a pension scheme should extend its coverage to secure a great majority of people's pension needs. This is the objective of social stability and development (Bingqin Li, David

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Piachaud, 2004).

In such a populous and developing country, promoting economic growth and raising economic efficiency are the core tasks facing China. Hence, a new pension system should be not only a social stabilizer, but also a stimulus to economic growth. A well-designed pension system is the one that gives incentives to work, so that enterprises and the national economy are benefited by.

As a result of the family-planning policy, which was imposed in 1970s, the birth rate was controlled strictly. China is expecting a more serious aging problem than other countries between 2020 and 2030. A stable and sustainable pension scheme should be designed. This scheme must be ready in order to ease the aging problem.

When the policy maker is going to choose pension system, all the above factors should be taken into consideration.

4.2 Available choices

There are many pension models in the world and almost all pension schemes are undergoing reform. China may learn from the international experiences and their lessons when selecting a new pension system. The problem is that due to differences in historical background, culture and economic development stages, there is no available model for China to pick up. More comparisons and considerations are needed. In fact, there are four options suggested in the paper.

4.2.1 Option one: shift to pure PAYGo scheme

Government funded and managed pensions can be found in many countries. In high-income countries, like the OECD, all workers, in both private and public sectors, are covered. This is also the fact in the former centrally planned

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economies; usually we call this system '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' basis. Current workers have to contribute in order to support current retirees. Nowadays, the pension system in China is a system that combines both a defined benefit PAYG plans and a defined contribution plan with fully funded individual accounts. Unfortunately, the fact in China is that the individual accounts set up were not funded and the funds in the individual accounts were used to pay for the benefits of the current retirees. They are notional individual accounts. Furthermore, these empty accounts with uncertain interest rate lead individuals and enterprises to lack of incentives so as to participate in it. Hence, many people believe in a return to the pure PAYG system.

As we know there are many advantages of PAYG system, such as: universal coverage (for the group considered), poverty relief, redistribution, and avoidance of capital market volatility and low administrative costs. Still, we cannot simply say that PAYG is sustainable in China. As we already saw from the current pension system in China, there are many problems existing: more serious financial pressure caused by an adverse demographic structure; the crowding-out effect on savings, and hence the reduction in capital accumulation and the slowing down of economic growth (Feldstein, 1974, 1995; Kotlikoff, 1979); Distortions to the labor supply and the form of compensation because of the low return implied by PAYG (Feldstein, 1996; Kotlikoff, 1996); the lack of incentive in PAYG..

A common question addressed to a PAYG system is how it handles the redistribution function under conditions of an adverse change of demographic structure, which increases the dependency ratio. With the decline of the fertility in China since the 1970s, the growth rate of the young population dropped down sharply, about 17 percent while the old population (older than 65) rose 2.5 percent.

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Therefore, the system dependency ratio will increase from 35 percent in 2005 to 53 percent in 2030 and 69 percent by 2050. In other words, less than 3 workers will be supporting each retiree in 2005, less than 2 by 2030, and less than 1.5 by mid-century (James Dorn, 2004).

Usually, the standard contribution rate is calculated according to the formula of *Contribution rate=Dependency ratio ×Replacement rate (C=BD).* Dependency ratio is mainly affected by the old-age dependency ratio, but not only by it. The pension coverage, and labor participation rate and unemployment rates will also determine the dependency ratio. Let's assume that other variables remain the same, with the increase of demographic dependency ratio, the pension system's dependency ratio rises as well. Keeping in mind the dependency ratio increases, in order to maintain the financial balance of PAYG, we have to discuss the replacement rate. The average replacement rate in China is 70 percent, which is higher than the average of the international level. Since the 1950s, replacement rate was high in China because at that time, wages were low and pension was the main source of income for the retirees. With the economic development in China in the last 20 years, the wages increased sharply. However, the replacement rate didn't decline to match with the increases of wages. With the increase of the dependency ratio, in order for PAYG to handle the redistribution function and to play a mean of poverty relief, a reduction in the replacement rate might be the appropriate solution.

With the industrialization in China, more and more ongoing migrations from rural areas move to the urban ones. However, the urbanization speed is much behind the industrialization and also behind the level of other developing countries (Li. P 2004). Hence, there is going to be a process of urbanization in the near future. It is possible that the urbanization rate will be 70 percent after 30-40 years, that is, the annual increase of urbanization rate will be 1.0-1.2 percentage point, which is approximately twice than that in 1978-1998 (Yuan Zhigang, Feng Jin, 2004). Usually, the migrations from rural areas to the urban ones are young people, who

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have the higher ability to take risks. This has important implication to the social pension system. On one hand, it will increase financial burden for the system, but on the other hand, with the influx of young workers will help the PAYG system to maintain the financial balance.

We already discussed that dependency ratio will be affected by many factors. Virtually, dependency ratio is a function of retirement ages, life expectancy and mortality rate. Life expectancy and mortality are variables that cannot be controlled. Retirement age is a variable that can be adjusted according to the change of life expectancy. Actually, if the retirement age IS adjusted in a proper way, it will be helpful for easing the pension crisis with the increasing of aging pressures. Unfortunately, the retirement age hasn't been adjusted since 1951, while the life expectancy has greatly increased. Table 4-1 will illustrate these changes.

Table 4-1 Life expectancy and Statutory Retirement age (1951, 1990 and 2000)

Year	Life expectancy (years)		Statutory Retirement age (years)		
	Male	Female	Male	Female officials	Female workers
1951	40	40	60	55	50
1990	66.84	70.47	60	55	50
2000	69.63	73.33	60	55	50

Data source from (Yuan Zhigang, Feng Jin, 2004).

We can see from the above table that the situation in China is earlier retirement and longer life expectancy. Usually, this requires increase in the contributions or more workers to support the retirees. One solution is to increase the retirement age. But things are not so easy in China. With the increase of retirement age, unemployment probably will increase as well. The fact is that the unemployment rate in China is already high - the actual urban unemployment rate was 10% (Li. P 2004). Facing this situation, increase in the retirement age may not feasible in China for the time being.

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A mandatory PAYG system would target in poverty relief and income redistribution. However, it will create the lack of incentives for enterprises and individuals to participate in the system. As a consequence, noncompliance and evasion will appear. In short, under the PAYG system, the aim of poverty relief and income redistribution may be achieved, however, incentives for both enterprises and workers to contribute to the pension system will be low because the required payroll tax is high and the system is redistributive.

Based on the above discussion, a mandatory PAYG system in some sense would benefit the urban population in China. However, it may also create new problems. In addition, financing the pension with the increasing of aging problem, sufficient output must be ensured.

4.2.2 Option two: transfer to Fully Funded scheme

Nowadays, there is another academic perspective: establishing a fully funded pension system in China giving to the workers private property rights to their pension funds would increase economic freedom and prosperity (just as it did in Chile) (Piñera 1998). We admitted there are some advantages of fully funded scheme, such as: it can avoid the financial burden caused by the population aging; it is a mode of self protection, which can lead to a high incentive for contribution and less payment evasion; the reserve accumulated is better for the future pension payment. This scheme has been successfully implemented in Chile and Singapore. However, it is still hard for us to say that fully funded system is an ideal system. First, regarding to the argument that fully funded will increase the incentive for contribution and less payment evasion, Nicholas Barr considers that 'badly designed pensions-whether public or private-can affect labor supply adversely' and 'labor supply should be seen in the broader context of welfare maximization'. Second, Barr thinks a move towards private pension is not the only way to go, even if pre-funding is thought desirable. Cutting future spending, setting aside resources to meet future increase in demand also can achieve the goal. In order for us to know if fully funded system is viable or

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not in China, we have to analyze the specific situation in China.

There are many problems in implementing fully funded system in China. The root problem is the lack of a well-designed transition plan between these two systems. In the practice of China, the transition cost consists of two parts: one is the future benefits promised to current retirees (those retired before 1997); the other one is the future benefits promised to the work force that have paid into the system. According to the Wang et al. (2004), assuming *the current pension system is immediately terminated* (World Bank 1997:33), the China's implicit pension debt (IPD) is about RMB 4.4 trillion or 48 percent of GDP. Such a big debt, is it possible to be paid off under fully funded system? According to James (2004), it is possible, which has been proved by Zhao and Xu (2002). They calculated that the annual cost of paying off the IPD over a 50-year period would be 1 percent of GDP or 5.6 percent of payroll, assuming that the economy grows by 4 percent per year. Furthermore, if one assumes that (1) the real rate of return on investment under the fully funded system is 6 percent (a reasonable assumption given the high rates of growth in the nonstate sector), (2) wages grow by 4 percent per year, and (3) workers contribute to their individual accounts for 40 years, to be retired at the age of 60, and living till the age of 75, then they could receive their pension with 60 percent replacement rate, while the annual contribution they did should equal to 10.2 percent of payroll. While in the current system, the contribution rate is 24 percent. In this case, China could therefore pay off its pension debt and fund a private system with a total contribution rate of only 15.8 percent of payroll (Zhao and Xu 2002: 406-12).

However, under the current system, the funds in the individual account were used to pay the benefits of the current retirees. The individual accounts actually are a notional one. This deficit of the individual accounts is ultimately a liability of the state budget, which should not be overlooked. Furthermore, the investment return of the social security fund should not be simply assumed as 6 percent even with the involvement of nonstate sector. Usually, this investment return is measured by the return on government bonds, which was greatly below the growth of money wages (it will be difficult to accumulate financial assets). Another important issue is the pressure on

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keeping and increasing the real value of the fund, which may strongly rely on the capital market. The current capital market in China is underdeveloped. It is also tough to take advantage of international capital markets. If the obligation of remaining and increasing the real value of pension fund relies heavily on the capital market, the government faces high economic and political risk.

Another attractive solution for financing the transition cost is through privatization of China's large state assets. According to the World Bank, 'the state-owned enterprises had productive assets of more than 2 trillion RMB and unproductive assets (e.g. land and buildings) of 5 trillion RMB while the explicit debt of SOEs to banks was less than 2 trillion RMB'. Also some economists from Beijing University estimated that the privatization revenue, after paying bank loans, will exceed the total transition costs by more than 2 times. So there was room to sell part of these assets to finance the transition. In September 2000, the National Social Security Fund (NSSF) was established. The financing source for this fund is through government revenue, SOE sales and other sources. 'In June 2001, the State Council decided to execute the plan for 'Selling state-owned shares to raise funds for the social security system'. From July to the end of September 2001, 15 enterprises raised money from IPO's. These included selling 10 percent of the state-owned shares of the proceeds of the total share sale. The stock market responded to the plan with a sharp fall and the stock market index declined by 30% within four months. In June 2002, the State Council stopped the plan, which had proved a failure in the market' (Yuan Zhigang, Feng Jin, 2004).

Economists for transition from a PAYGO pension system to a fully funded pension system provide more options. (1) Option one is to tax the current generation (TCG) to pay the full transition cost. The government may directly tax the current workers or, equivalently, tax their employers, and use the revenue to finance the pension of the current retirees. Although the government funding is a way for solving the transition financial problem, there are too many ways for individuals, enterprises, and local government to avoid these taxes. For the time being, no country has found a useful way to solve the problem of contribution evasion. For the countries that shifted form

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PAYG to fully funded systems successfully, like Chile, they had to find new ways to solve the financial problem during the transition period. What Chile did is to impose some largely hidden cost on current workers, such as rising the retirement age. But these methods may not be feasible in China (we already discussed it in the previous section). (2) Option two is to tax the future generation (TFG) to pay for the transition cost of supporting today's retirees. The simplest way to do this is by issuing public debt and using the funds to pay the pensions of current retirees (David D. Li and Ling Li). It is possible for China to follow what the Latin American did by issuing the bonds to take over all the liabilities caused by transition and exchange this new explicit debt for the old implicit debt. However, we cannot say it will reduce the pressure on the public budget. Because the bonds have to be collected through taxation and future generation has to pay higher taxation. It is only a change in the form of taxation, from the social security tax to other kinds of taxes. If we use other tax to finance the transition this will conflict us with the purpose of pension reform, which is to alleviate the burden on future generation. Hence, the pension reform from PAYG to fully funded is a Pareto-efficiency improvement due to the fact that it eliminates the pure-tax component of PAYG contribution. Also it is a Pareto-efficiency reduction because there must be an increase in taxation, which will be used to finance the transition cost and to help the government cover its debt. Hence the net effect of pension reform on Pareto-efficiency is ambiguous (Yuan Zhigang, Feng Jin, 2004).

Even if China successfully solved the transition problem and implemented the fully funded system, creating this pension system need further liberalization of the economic system, including the privatizing state-owned enterprises and banks. In particular, China needs to: 'remove restrictions on private ownership and protect property rights; establish a fully funded pension system that empowers workers; liberalize the financial sector and privatize the SOEs and state banks; allow full convertibility of the renminbi' (James 2004). But this is a very difficult task for China. Under the leader Deng Xiaoping, economic reforms had been implemented since 1978, especially after entering WTO, further reforms has been done. Deng Xiaoping

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pointed out that 'the reform of the political structure and the reform of the economic structure are interdependent and should be coordinated' (Deng 1987:147-48). That is why China has been experiencing economic liberalization and experimenting with different ownership forms. However, it doesn't mean that China will privatize the economic ownership totally. China is a socialist country, which means that the economic reform should not go too far away from the social regime.

4.2.3 Option three: implement Notional Defined Contribution system

Many countries with large public pillars and implicit pension debts have found it exceedingly difficult to make the transition to a partially funded system with a mandatory private pillar--in part because of the financing problem but also because of the political interests associated with existing institutions. This explains the third group of reforming countries--those that feature notional defined contribution (NDC) plans. I will pay considerable attention to this type of plan because de facto, it is being used in parts of China (Estelle James, 2003). This system was first adopted by Sweden. In 1994, the Swedish parliament reached an agreement to reform the system and approved implementing legislation in 1998. After that time, more countries started to experience this new system, such as, Italy, Latvia, Poland, Mongolia and Kirghizia.

Swedish pension reform brought great changes, which are noteworthy and beneficial. The NDC approach has many advantages. (1) Tying benefits to contributions. In NDC, what the workers receive for benefits depend on how much they contributed. As David Lindeman from the World Bank said that, 'the chances for short-term stability are enhanced by giving current workers an incentive to assure that employers pay contributions timely and at the right level' (David Lindeman, World Bank 2003). (2) More adapt to the external economic situation changes, especially to the wage changes. To the fluctuation of the labor size also has good adaptability. The NDC in Latvia and Poland define the contribution rate will be adjusted according to the size of future contributors (Zheng Bingwen, 2003). (3) Labor market disincentives are

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minimized: there is no penalizes nor rewards for early retirement in the NDC system. 'Workers can retire as early as age 61 or stay in the workforce as long as they choose. Early retirement no longer burdens taxpayers since workers who choose to retire early do so in exchange for a smaller pension' (G. Normann and D. Mitchell, 2000). 'An NDC plan automatically adjusts the retirement age upward (or annual benefits downward) for increased longevity; avoiding the difficult political decision to raise the retirement age that is periodically necessary in DB plans' (Estelle James, 2003). (4) With the increase of fiscal benefit, taxes and government spending can be reduced. The NDC system will yield large fiscal benefits over time. The Swedish government calculated that the payroll tax rate necessary would have reached 36 percent by 2025 if still under the old system. 'Even the 16 percent tax in the new system is too high, though the creation of notional accounts minimizes the adverse impact on labor supply' (G. Normann and D. Mitchell, 2000). (5) It is very suitable for the countries that have no mature capital market. For developing countries that haven't established a mature capital market, introducing NDC would be a good solution. That is to say, NDC can be operated before the capital market and financial institution is to be mature and at the same time, it may encourage the development of capital market (John B. Williamson, 2002). (6) Fairness. The new system closely links pension benefits with lifetime earnings. This safety net program will ensure that all retirees have adequate income.

Despite these advantages, there are still some limitations of this system. (1) NDC is not redistributive, and as a result it cannot accomplish the first pillar task of protection low earners. For this purpose, another plan for 'minimum pension' as a supplement has to be established to avoid unfairness during the transition from PAYG to NDC system. Empirical evidences from six countries (that already implemented NDC) proved, because of this limitation, NDC would lead to a result that the richer workers more welcome this system than the poorer ones. If there is no plan for 'minimum pension', some workers situation will be very bad. To them, PAYG will be better. For the workers who had continuous 40 years working experience, NDC will provide a better replacement rate, like 50 percent, while for the women, the workers who

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worked for non-state sectors, the replacement rate they will receive may be will less than 40 percent. But, if this redistributive component is large it may override the linkage between contributions and benefits that is responsible for these labor market improvements. In Sweden, given the high level of the minimum pension and its gradual phase-out relative to the average wage, the NDC component will be irrelevant for the majority of workers. In Latvia, the minimum pension for women who retire early partially offsets the incentives to postpone retirement (Estelle James, 2003).

(2) Political risks are unavoidable. To be sure, the accumulation of real assets by the Swedish fund makes it easier for the government to finance promised benefits to older workers and current retirees. In the future, instead of collecting more taxes from workers to make up any difference between payroll tax revenues and old-age benefit payments, the government will be able, at least in part, to sell its stocks and private-sector bonds. Although the real assets in the Swedish trust fund are a benefit, these real assets are accompanied by risks. Politicians control how the money in the trust fund is invested. Countries that have government-controlled investment almost always succumb to the temptation to invest money for political purposes (G. Normann and D. Mitchell, 2000).

(3) Absence of funding and financial market effects. 'A big failing is that the NDC does not capture the benefits of funding, since there are no funds' (Estelle James, 2003). Empirical evidences from Sweden illustrated to us that the NDC structure has adverse effects to saving rates. It has no incentive for financial market to develop under NDC.

(4) Under certain condition, it may also create evasion. As the dependency rate increases, the contribution rate would have to increase for newer cohorts, to keep the system solvent in the absence of pre-funding--just as is the case in traditional PAYG DB systems. These younger cohorts may have to notionally "save" for their old age a much larger amount than is optimal for them, in order to cover the benefits that have been promised to older cohorts. In that case, the incentives for evasion and escape to

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the informal sector would be strong, because their subjective rate of time preference would far exceed the notional as well as the market interest rates (Estelle James, 2003).

Is NDC system feasible in China? In fact, many economists believe that NDC is partly used in China. The current pension system in China is the combination of social pooling and individual accounts. Unfortunately, due to the fact that funds in the individual accounts have been used to pay the current retirees, these accounts remain largely notional. The questions are if NDC pension system can solve the current pension crisis in China. First, regarding to the augmentation of aging problem, what the Chinese government planning to do is to follow the Swedish method - build a 'buffer fund' to reduce the need for large tax increases. This fund certainly will be a public managed one since the individual accounts are notional. As a consequence, it will create political risks. Hence, such a buffer fund will not help China to develop its capital market. Second, introducing NDC in China will solve the current Implicit Pension Debt problem. The biggest concern in China now is about the pension deficit. This deficit mainly refers to the notional individual accounts. If China implemented this NDC, it will no need to make the individual accounts funded. In this sense, the transition cost will be solved gradually. Thirdly, NDC is a suitable system for the financial market in China. The financial market in China only has 20 years history. It has no ability to face all the challenges from international financial market. NDC has no such requirement for its financial market, which is a solution for China. Forth, NDC is a system that may reduce replacement rate without creating too many social risks. Empirical evidences from other six countries illustrate that under NDC system, the replacement rate usually is not high. With the decrease of replacement rate, the third pillar may have space to develop. Fifth, in order for China to adopt NDC, some necessary changes have to be done. One of the features of NDC is that it is flexible. China may make some necessary changes in order to adapt to the situation in China. For example, NDC has the advantage to postpone the retirement age, which will benefit the country from the lack of labor force. However, the situation in China is less job opportunities and surplus of labor forces. A regulation for re-employment

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after retirement may be needed: for the people who are already retired, if they would like to continue another job, the government may require that their contribution rate should be an index bigger than one (Such as 1.5). For the women who have to take care of children and to leave the labor market, they may have the right to purchase the contribution records (this is different from other European countries, in those countries, women can have the rights for a certain period, let's say six years for free) for a certain period. Of course, more changes have to be made in order to adapt the situation in China. Here, we only give two suggestions (Bingwen Zheng, 2003).

Although there are many shortcomings in NDC system, still is attractive to countries that have very large implicit pension debts, like China. We cannot say NDC is a system that feasible for China for very long period. What we suggest is to implement NDC system as a second pillar of pension system. Together with the first pillar-PAYG would help China to overcome the transition period. As Estelle James says, 'NDC may lay the groundwork for savings that eventually enable the growth of a funded second pillar; but until that happens it should be recognized as a very partial reform'. Sixth, due to the fact that there is an absence of funding in NDC, that means there is no investment rewards from the individual accounts. We cannot sure if it will create more evasion and other disincentives for the current workers. Furthermore, with no savings in the individual accounts, it is not helpful for developing the capital market in China. However, development of the financial markets is a crucial task to China.

4.2.4 Option four: design an improved version of the current system

Current pension system in China is a combination of defined benefit PAYG social pooling plan and a defined contribution plan with fully funded individual accounts. There are advantages of this system. This mode has the advantages from PAYG and fully funded. The funded individual accounts can serve as an incentive for individual saving, and provide long-term savings for financial market, which will finally benefit the economic growth. Also, fully funded individual accounts is only one side of the

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system, it has lower risks than a totally fully funded system. In addition, this dual module system with separate administration can have higher capacity than the one based on a single financing model.

On the other hand, there are also some facts that we cannot overlook. The challenge of old aging is very serious now in China. The pension reform in1997 (so called '1997 reform') didn't achieve its goal instead, many flaws appeared. The contribution rate has reached at a very high level, however the coverage is still low, 3/4 labor forces in China have no insurances at all. In addition, the individual accounts still remain empty. All these make the current system unsustainable.

China, a country with a high economic growth rate, a country still very poor, how can we design a pension system for China? This system should take good care of our future old retirees and at same time not to create too much burdens for the young generation.

4.2.4.1 Suggested steps to further reform:

(1) Reduce the contribution rate. A sustainable pension system should have a reasonable contribution rate. The lesson we learned from the failure of '1997 reform' is that the current generation contributed at a high level, but, there is nothing accumulated in their individual accounts, thus create evasion of contributions. In order to encourage the contribution, reduce the contribution rate is a necessary method.

(2) Fund the Implicit Pension Debt (IPD) through a socialized way. IPD can be funded through many ways. We may conclude three ways: a). Finance the IPD through the government revenue, through privatization of China's large state assets. In September 2000, the National Social Security Fund (NSSF) was established. The financing sources for this fund are through government revenue, SOE sales and other sources. Many economists have proved that there was room

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to sell part of assets of SOEs to finance the transition. Unfortunately, some plans of selling state owned shares failed. (b) Finance the IPD through taxation. The government may directly tax the current workers or, equivalently, tax their employers, and use the revenue to finance the pension of the current retirees. Of course, it will increase the burden for the current workers. But by tax a wider group people, the burden can be spread lower for each one. In addition, with the development of national economy, the burden will eventually become less and less. (c) Issue the government bonds. China may follow what Chile did. In 1981, Chilean government issued 'recognition bond', which means the current workers had the claim rights to the old pension system. These bonds were notional because there was no actual cash involved. When the employee retired, the government would sell the 'recognition bonds' to private institutions (such as insurance company) and pay the pension for the retiree. We can see that the interest of the bond was from the tax revenue, and the annuity was from the private sector. This new mode was very successful, before the reform, the contribution rate in Chile had reached to 76% of the wage and still cannot cover the expenses, in 1980's the contribution rate fall to 33.25% and the investment return rate as high as 13%, which was higher than European countries. But, for the time being, the most important thing for China is to clarify the amount of IPD. There are many calculations from different organizations. According to World Bank, IPD is about 67 percent of GDP in China.

(3) Set up a funded system of individual accounts under an independent management system. There are many advantages to make the individual accounts funded. The most obvious one is can increase the incentive for contribution. Besides that, we also have to make sure that these accounts be managed independently. The failure of '1997 reform' let us know that it is very necessary and important to give worers the property rights to their individual pension accounts. With this property right, workers may determine the investment of their accounts. It will be another incentive force for contribution. With the increase of contribution, more funds will accumulate in the social pooling and it will be easier for China to face the aging

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challenge.

(4) Remove all the administrative barriers. Another important lesson we learned from '1997 reform' is that the employees had no property rights to their individual accounts. These accounts were under the governmental administration. It make government has the advantage to use the fund in these accounts. In fact, employees must have property rights for their accounts. The management of these accounts has to be transferred to an independent financial institution. We don't support for privatizing the pension system in China. These individual accounts still are part of social insurance, and under the supervision of the government. An independent fund management institution has to be established at all the localities. The contributions from the enterprises and employees have to be managed by this institution. A centralized supervision institution also should be established and it will in charge of the management and supervision job to all the local institutions. In addition, this central organization has the obligation to help these local ones to keep and increase the value of pension funds, by providing investment guide and designing pension withdraw system. In order to make the individual accounts transparent and safe, a strict accounting and auditing system have to be set up at the same time (Richard Jackson & Neil Howe, 2004).

4.2.4.2 Challenges overcome

Some factors blocked the reform of pension system, such as the immature of capital market, the absence of guarantee that personal accounts will be genuinely funded and individually owned. We need to overcome these challenges in order to further reform the pension system.

First challenge is to develop the capital market. There are many improvements in the Chinese capital markets. But these markets are still at the very developing stage. The size of stock market is still very small with bad financial liquidity. In America, the ratio of total value of stock market and bank saving is 1.5: 1, while in China, this ratio is 14:1. That means the bank saving in China is 14 times bigger than the stock market value. The situation of bond market is even worse. The flexibility of central

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government bonds at second market is very weak. The local governments have no right to issue bonds for financing their investments. That is the reason they used the funds in individual accounts to finance the current pension payment. In order to issue the company bonds, enterprises have to follow many procedures to get the approval from the central government. In fact, the central government determines the rate of bonds. The financial services in China are also immature. The central government manage the social pension system, as a consequence, there is no Chinese companies have experiences on managing pension funds. Furthermore, it is not permitted those local social security authorities to entrust the pension funds to an independent capital management company. International experiences told us that a mature capital market would help the pension system to develop. With China's entering WTO, more and more competitions from foreign capital markets will come. In 2007, China has to open all the financial markets to foreign banks, insurance companies and other financial institutions. In this case, it is very urgent to develop its capital market. China should broaden and deepen its capital markets. China has billions families, usually, they spend their money on houses or save them in the banks. Even though, banks have no ability to provide big-sized loans since too many bad debts cannot be solved. But we know, economic development needs an efficient capital market. In addition, the capital markets in China are still not free enough. Most of capitals allocations are arranged by government through state owned banks. We must further free the capital markets, and let them compete under the market principle. Also, China needs to speed up the integration into the global economy. Chinese investors should learn how to compete with foreign competitors, Chinese companies should learn how to analyze the global market, search for new clients and export diversity products.

Second challenge is to fund the individual accounts. If the individual pension accounts can be funded, it must bring many benefits to Chinese economy. The reform should be implemented gradually. Initially, a small part of contribution from individual accounts can be entrusted to an independent fund manager. And the investment should be restricted at some financial markets with low risk, such as government bonds. When the markets become more mature and the fund managers

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have more experiences, the restriction can be loosed. At that time, the contribution to the individual accounts also can increase and the fund in these accounts can be invested in bonds and stock markets, and finally can be invested in the international stock markets. During this period, government can control the speed and try to avoid the fluctuation of financial markets.

4.3 Conclusion

In this study, I gave four options for a prospective pension reform in China, in the light of experiences from other countries. Whichever decision policy makers would make, the reform will need a long time to prove whether it achieves its goals of securing adequate retirement incomes for China's elderly population, and of helping China having a prosperous developed economy.

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