

PENSION FUNDS AS AN INFRASTRUCTURE FINANCING AVENUE: AN EXPLORATORY STUDY

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Abstract

Development of infrastructure is a sine qua non of economic development. Development of agriculture depends, to a considerable extent, on the adequate expansion and development of irrigation facilities. Industrial progress depends on the development of power and electricity generation, transport, and communication facilities. Of course, if proper attention is not paid to the development of infrastructure, it is likely to act as a severe constraint on the economic development process of the country. As evidenced, India has re-emerged as one of the fastest growing economies of the world. India could unleash its full potential, provided it improves its infrastructural facilities, which are at present not sufficient to meet the growing demand of the economy. A major concern in perpetual infrastructure development is funding. Taking into consideration the current recessionary trends in world economy, slow industrialization and volatile FDI scenario, financing infrastructure development seem to be a major obstacle. Innovation in finance in the recent past has provided large number of avenues such as BOT, BOLT etc. To extend this innovation further, this paper aims to explore the use of pension funds as an option to finance infrastructure projects. The paper shall discuss the Cost-Benefit Analysis of use of Pension Funds in infrastructure financing with specific reference to India. The paper also aims to discuss the learning from similar experiments carried out in other parts of the world.

INTRODUCTION

The Indian economy shows evidence of improving financial conditions, providing it a good standing with which to face this century. This position could be enhanced, however, if the enormous infrastructure deficits are dealt with. Different studies have concluded that there exists a very strong relationship between growth and the need to enlarge infrastructure. As such, failure to recognize the importance of the role that this factor plays in India's development could tremendously limit its long term growth. The role of infrastructure should not only be seen from the cold perspective that macroeconomic indicators sometimes give. There are several positive relationships with improved infrastructure from a social standpoint as well, particularly on the reduction of inequality and poverty. Thus, a major pool of

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infrastructure can generate greater quality of life to even the poorest sectors, as improved transportation channels improves the connection of rural communities to markets; moreover, it fosters school attendance while simultaneously elevating the level of human capital, increasing income and job expectations. Likewise, better infrastructure allows populations to achieve more dignified standards of living by offering greater access to basic services like electricity, potable water and sewer systems. In order for governments to achieve greater investments in this category, a series of market conditions that reflect current and potential supply and demand needs are needed. If these exist, it remains to be seen if the circumstances will be in place to channel the interests that they may raise in any interested parties in its execution both in public and private sectors. In general, this is part of the institutional and financial framework.

Infrastructure investment has been an important element in the economic stimulus packages introduced to try and deal with the effects of the recession. It is reinforced by the need to develop sustainable energy sources, and by the development needs of countries in the south. Public sector finance – tax revenues and bonds – remain the main way of financing such investment. The economic crisis has required governments to deliberately increase their budget deficits – contrary to the official wisdom of the last 30 years – in order to increase demand and so maintain the level of economic activity higher than before. At the end of 2009, governments continue to plan for continued economic stimulus, despite increasing rhetoric about the need to plan ‘exit routes’ by cutting public spending. In France, there are plans to issue a special ‘national bond’ to finance €35 billion of investment in infrastructure and research and development¹. In Germany, Chancellor Merkel has decided to provide a continued stimulus in the form of higher budget deficit, but through tax cuts of €24 billion rather than infrastructure spending².

CHARACTERISTICS OF INFRASTRUCTURE FINANCE

All investment projects involve some risk, but infrastructure projects in developing countries are perceived as unusually vulnerable to risks, which constrains financing. Risks are perceived as high partly because projects are typically undertaken not by established utility companies with strong balance sheets but by special purpose companies executing individual projects on a build-operate-transfer or build-own-operate basis. Project financing is on a nonrecourse basis (that is, lenders do not have recourse to the sponsor company but look solely to the revenue stream of the project available to meet debt service obligations). The risks associated with the revenue stream are therefore scrutinized. Equity investors may be willing to

¹ *NY Times* 19 November 2009 *French Weigh \$52 Billion Bond Issue*
<http://www.nytimes.com/2009/11/20/business/global/20loan.html>

² *FT* November 29 2009 *Swabian housekeeping forced to adapt*
http://www.ft.com/cms/s/0/0d06de40-db67-11de-9023-00144feabdc0.html?nclink_check=1

accept higher levels of risk in return for higher expected returns on their equity, but lenders typically have a lower tolerance for risk and a greater need for risk mitigation mechanisms. Although governments conduct project negotiations with the sponsors, it is the lenders behind the scenes who set risk mitigation standards and determine whether projects are financeable. Infrastructure financing, typically, can be characterized as:

1. *Longer Maturity*: Infrastructure finance tends to have maturities between 5 years to 40 years. This reflects both the length of the construction period and the life of the underlying asset that is created. A hydro-electric power project for example may take as long as 5 years to construct but once constructed could have a life of as long as 100 years, or longer.
2. *Larger Amounts*: While there could be several exceptions to this rule, a meaningful sized infrastructure project could cost a great deal of money. For example a kilometer of road or a mega-watt of power could cost as much as US\$ 1.0 mn and consequently amounts of US\$ 200.0 to US\$ 250.0 mn (Rs.9.00 bn to Rs.12.00 bn) could be required per project.
3. *Higher Risk*: Since large amounts are typically invested for long periods of time it is not surprising that the underlying risks are also quite high. The risks arise from a variety of factors including demand uncertainty, environmental surprises, technological obsolescence (in some industries such as telecommunications) and very importantly, political and policy related uncertainties.
4. *Fixed and Low (but positive) Real Returns*: Given the importance of these investments and the cascading effect higher pricing here could have on the rest of the economy, annual returns here are often near zero in real terms. However, once again as in the case of demand, while real returns could be near zero they are unlikely to be negative for extended periods of time (which need not be the case for manufactured goods. Returns here need to be measured in real terms because often the revenue streams of the project are a function of the underlying rate of inflation.

PRESENT SCENARIO OF INFRASTRUCTURE FINANCING IN INDIA

There is a growing realization in many developing countries of the limitation of governments in managing economic activities. Provision of infrastructure facilities, traditionally in the government domain, is now being offered for private sector investment and management. This trend has been reinforced by the resource crunch faced by many governments.

It was not so long ago that infrastructure investment in India was financed almost entirely by the public sector – from government budgetary allocations and

internal resources of public sector infrastructure companies. In the span of 10 years, and particularly in the past five years, the private sector has emerged as a significant player in bringing in investment and building and operating infrastructure assets from roads to ports and airports and to network industries such as telecom and power. Private investment constitutes almost 20 per cent of infrastructure investment. Yet, total infrastructure investment remains low, at around 5 per cent of GDP. The Government of India aims to raise infrastructure investment to over 9 per cent of GDP by the end of the 11th Five-Year Plan (2007-12), or an average of 7.4 per cent of GDP a year during the plan, and projects a rise in the share of the private sector to 30 per cent³.

Building infrastructure is a capital-intensive process, with large initial costs and low operating costs. It requires long-term finance as the gestation period for such projects is often much longer in nature. Infrastructure projects are characterized by non-recourse or limited recourse financing, that is, lenders can only be repaid from the revenues generated by the project. Thus, the market and commercial risks, including uncertainty of demand forecasts, assume greater significance for lenders. As a result, complex risk mitigation and allocation arrangements are embedded in the financial and contractual agreements amongst multiple parties – project sponsors, commercial banks, domestic and international financial institutions, and government agencies. And infrastructure projects have significant externalities – where the social returns exceed the private returns – which call for some form of subsidization, such as government guarantees or viability gap funding to make them attractive for private sector involvement.

Infrastructure projects are generally executed through individual project companies called Special Purpose Vehicles (SPV). The main reason for this is to better protect the parent company from possible adverse impact in the concession business. Thus, infrastructure financing presents a number of challenges. The scale of investment is large and investors have to be prepared for a long horizon for debt repayment and return on equity. Many financial institutions are limited in their ability to invest in very long-term illiquid assets.

PENSION FUNDS IN INDIA

India has never had a pension system for the population across the country, as has been in existence in other parts of the world, even though we have had some schemes mainly directed at government employees. In other parts of the world pension reforms have led to funding, not of the defined benefit (DB) kind but the defined contribution (DC) kind. All over the world there has been a tendency to switch over from DB to DC and this is not because DB is bad. The forces of globalization have caused a high flux of employees from one organization to another, from one country to another, making it almost impossible to run a DB system. Other

³Rajiv B Lall & Ritu Anand, *Financing Infrastructure, IDFC Occasional Paper Series (No.3 January 2009)*

reasons include the weakening of trade unions across the globe and the decreasing rate of interest which led to employers finding it increasingly difficult to sustain the funding required for building the benefits on the DB system. However, this has also become the exit route for some employers to get out the liability of pensions. Some of these factors are playing their role in India too. Under the DB system the pension was defined and arrangements were made to make sure assets were available, whether the pension was funded or not. The DC system defines the contribution but one still needs to ensure that the accumulated contribution will meet the desired amount of pension one will get. That's where the role of actuaries comes in. India does not have the required regulatory regime, particularly one that applies across the field. We still require a holistic approach to regulating pension providers.

The details of regulations and supervision vary by the type of pension, i.e. whether defined benefit or defined contribution, but the basic aim is to protect the interests of the members/ subscribers and to ensure that they receive a fair deal.

Following is the regulatory arrangement for the various pension segments.

- The means tested and tax financed assistance being provided by the government to the destitute aged 65 and above (DB), does not require any supervision by a regulatory authority.
- The complementary pension in the form of the proposed defined contribution fully funded individual account pension would require a regulatory framework for supervision.
- Public Provident Fund (PPF) (DC) is managed by the government with 75% of the net accretions being given as loans to the states and the balance credited to public account of the Government of India and as such does not require supervision by a regulatory authority. Further, this fund is most likely to be closed once the proposed individual account pension system is introduced.
- Employee Provident Fund (EPF) (DC) is both administered and regulated/supervised by the Employee Provident Fund Organization (EPFO). This is not a very satisfactory arrangement as the body that administers it also regulates and supervises it. Sooner than later, for the benefit of the system, this arrangement will have to be changed with the supervisory function being given to the pension regulator.
- Employee Pension Scheme (EPS) 95 (hybrid, but essentially DB) is again administered and regulated/ supervised by the EPFO. This would also benefit from being rolled into the supervisory control of the pension regulator.
- Government employees' pension for existing employees (DB) is not funded and is paid on Pay As You Go (PAYG) basis out of the current revenue. It is managed by the government and as such is not supervised by any regulatory authority.

- Occupational pensions (DC and DB) set up through approvals from the Commissioners of Income Tax (CIT) are envisaged to be supervised by the relevant CITs but this supervision remains confined only to adhering to the prescribed investment pattern. The other aspects are left to self regulation through auditors and actuaries. In India there are no minimum funding requirements.
- Personal pensions and group pension products (essentially DC) offered by the life insurers are regulated and supervised by the IRDA and those offered by the MFs are regulated and supervised by the SEBI;
- Gratuity funds set up through approvals from the CITs are envisaged to be supervised by the relevant CITs but this supervision also remains confined only adhering to the prescribed investment pattern. This being a defined benefit scheme, other aspects are left to self regulation again through auditors and actuaries.

NATIONAL PENSION SCHEME (NPS)

Pension Fund Regulatory and Development Authority (PFRDA) have been established by the Government of India, Ministry of Finance in 2003 to promote old age income security. The Government authorized PFRDA to extend NPS on a voluntary basis to all citizens of India including workers of the unorganized sector. NPS is now available to all citizens of India with effect from May 1, 2009, other than Government employees already covered under NPS. Any Indian citizen, Resident or Non-Resident Indian between age of 18-60 years can join this scheme provided complying with KYC norms. A member can invest in this scheme any amount during the year subject to minimum of Rs.6000 per year. The Pension Fund Managers (as selected by the member) shall invest this fund in market on prudent basis to yield maximum return on behalf of the member. On attaining the normal retirement age of 60 years, a member has to annualize a minimum 40% of the total accumulated wealth and remaining can be withdrawn by him in lump sum or in a phased manner.

The Pension Fund Regulatory and Development Authority has initially appointed following Pension Fund Managers. In addition to this, a few Points of Presence (POPs) have also been made available to extend the outreach of the scheme:

- ICICI Prudential Pension Funds Management Company Limited
- IDFC Pension Fund Management Company Limited
- Kotak Mahindra Pension Fund Limited
- Reliance Capital Pension Fund Limited
- SBI Pension Funds Private Limited
- UTI Retirement Solutions Limited

INVESTMENT GUIDELINES ACCORDING TO THE NEW PENSION SYSTEM

- Non-Government provident funds are allowed to invest 5% of assets in blue-chip shares and 10% in corporate debt and equity-oriented mutual funds.
- Relaxation of norms for superannuation and gratuity funds to invest in the Gilt fund. Provident funds can have a maximum exposure of 5% in gilt funds at any point in time.
- Provident Funds can invest in bonds of financial institutions and companies having investment grade8 from at least 2 credit rating agencies.
- There would be multiple pension fund managers licensed by Pension Fund Regulatory and Development Authority (PFRDA) and the choice would be with the individual employees to decide which fund manager they would like to go with.
- Under the NPS, it is proposed that there would be four broad categories of pension scheme (scheme A, B, C and D). While in scheme A, investments will be made in Government securities only, scheme D would have relatively higher weighing for equity while retaining the dominance of fixed income instruments. Schemes B & C will provide a balanced investment option with equity and fixed income instruments.
- On the issue of guarantees on principals and/or returns, market based guarantees are proposed under the NPS scheme. This means that the subscriber has to bear the cost of the guarantee. However, the scheme with 100% Government Securities would be totally risk free in terms of capital protection and assured returns if the securities are held to maturity.

PENSION FUNDS – INFRASTRUCTURE INVESTMENT OPTION

As the need for investment in infrastructure continues to grow, private sector financing for infrastructure projects has developed around the world. Given the long-term growth and (potentially) low correlation aspects of infrastructure investments, pension funds have also shown interest in increasing their exposure to this area, along with their move into alternative assets. Such investments cover a wide spectrum of projects – from economic infrastructure such as transport, to social projects such as hospitals – and involve different forms of financing (primary vs. secondary, debt vs. equity, private vs. listed, direct vs. indirect). Data explaining the size, risk, return and correlations of this diverse asset class is therefore limited, which may be making pension fund investors cautious. Given investing in such assets also involves new types of investment vehicles and risk for pension funds to manage – such as exposure to leverage, legal and ownership issues, environmental risks as well as regulatory and political challenges – such caution may well be justified. However, if governments wish to help infrastructure developers tap into potentially important sources of

financing such as pension funds, certain steps can be taken⁴.

Investing in infrastructure has become a new topic for pension funds in recent years. Institutional investors are trying to spread their investments across a much wider spectrum of investments than in the past. They are looking for new sources of return and better diversification of investment risk. In this process, they are searching beyond the traditional asset classes of equities, bonds, cash and real estate. The idea of investing in infrastructure seems to strike a chord with many pension plan directors and members. Infrastructure feels more “tangible” and “real” than a lot of other complex products and derivative strategies presented to pension funds these days, where they find it difficult to detect the underlying value. In addition, infrastructure is made for the long term, and there seems to be a natural fit with the long-term liabilities of many pension plans. For some people there is also a connotation to sustainable or socially responsible investing, which is an increasingly popular route chosen in particular by public and industry-wide pension plans.

LESSONS FROM LATIN AMERICA

In the nineties, two major reforms were undertaken with intensity by Latin American countries; namely, private participation in pension fund management and in infrastructure investment. Many countries in other parts of the world have undertaken one or another of these reforms, but not both at the same time (with the exception of the United Kingdom, which closely resembles the case of many countries in Latin America and pioneered private participation in infrastructure). These dual reforms have created a sizable, mostly domestic source of long-term funds, while at the same creating a sizable need for domestic investment funds. Nevertheless, in spite of the potential benefits of a happy marriage, a relationship has not yet been developed. The liberalization of many emerging market economies and the attendant realization of the many benefits of private participation in infrastructure, have resulted in a considerable need for private capital. This liberalization, occurring in the context of relatively underdeveloped financial markets, has meant reliance on foreign capital to finance growing needs, with the concomitant risk for the economies of unexpected devaluations and/or sudden reversals of those flows. Even though foreign capital flows into infrastructure projects are more resilient than portfolio investment, recent crises have reduced the willingness of investors to provide capital for emerging markets. As a result, projects have been subjected to severe foreign exchange risks.

Since the pioneering effort of Chile, which took place in 1981, many Latin American countries have undertaken pension fund reform, including the introduction of private management of mandatory pension savings along with or as a replacement for the public pension system. These pension funds have accumulated a significant amount of resources. It is evident from earlier studies that Chile has the

⁴Inderst, G. (2009), "Pension Fund Investment in Infrastructure", *OECD Working Papers on Insurance and Private Pensions*, No. 32, OECD publishing, © OECD. doi:10.1787/227416754242

largest pension funds relative to the size of its economy. At the end of 1998, accumulated assets exceeded US\$31 billion, representing 40% of GDP. Other regulated systems (mandatory and voluntary) are relatively recent, and more are added every year (the most recent one being that of El Salvador, which was established in 1998; a private pension fund system is slated to start in Venezuela in late 1999). While most systems are relatively incipient, they are growing rapidly, both as a result of the profitability of investments and the number of new entrants. Chile's private pension fund system has been in operation for almost 20 years, and in that period resources have grown at an annualized rate of 29.4% (in local currency). Most recent systems have posted very high growth rates. For example, in Argentina, pensions increased at a rate of 29% a year over three years; in Colombia the rate of increase was 39% over two and a half years; in Mexico it reached 168% over two years; and in Peru, 22% over three years. Nevertheless, they are still small when compared with their potential and relative to the size of the respective economies. If the countries that have started private pension funds were to reach the levels attained in Chile, Latin America would have over US\$560 billion. This is a significant amount that the underdeveloped and thin capital markets would not be able to absorb; forcing investments in government paper or bank instruments. There is a need to develop those markets and to introduce new instruments, which the pension funds are in a position to support.⁵

If regulations of private pension funds were to be relaxed to allow investments in private infrastructure projects and, in turn, these projects adapted their financial instruments to the needs of those pension funds, both parties would be able to reap significant tangible and intangible benefits. Private pension funds benefit from the opportunity to enhance the risk-return combination offered to the affiliates, hopefully enhancing the value of their savings and pensions. Private investments in infrastructure benefit from the possibility of tapping long-term resources in local currency and reducing financing costs. In the process, there is the opportunity to promote the development of the country in areas that can have a multiplier effect in terms of competitiveness and quality of living. To achieve this relationship, pension fund regulations must be restructured so that the goal of safeguarding the value of pensions does not hinder investments in viable and profitable infrastructure projects. On the other hand, infrastructure needs to tailor the instruments to satisfy the needs of pension funds.

PENSION FUND AND INFRASTRUCTURE INVESTMENT - REWARDS / BENEFITS

Among the reasons offered for why a pension fund might want to invest in infrastructure are: (1) the long duration of such investments; (2) protection against volatility; (3) protection against inflation; and (4) diversification.⁶

⁵Antonio Vives (May 2000), "Pension Funds in Infrastructure Project Finance", *Inter-American Development Bank, Washington D.C.*

Long duration of investments: It is frequently suggested that infrastructure assets can yield long-term and predictable revenue streams that might match the long-term liabilities of a pension fund. Arguably, the stream is long-term because of the assumed extended life of the facility and the long-term nature of the concession rights acquired by virtue of the investment, which in some cases can be as long as 99 years.

Protection against Volatility: The volatility of any revenue stream will depend on factors such as how heavily regulated the facility is, the extent to which it has a monopoly on the service provided, and the inelasticity of the demand for the service. Examples include water supply systems and, perhaps to a lesser degree, roads that are the only transportation link in a geographic area.

Protection against inflation: Infrastructure investment cash flows are often inflation linked, or may at least face a relatively inelastic demand. The former may be achieved by linking user fees to a consumer price index or to a country's Gross Domestic Product (GDP), or by taking account of inflation through a rate-setting process where the infrastructure is heavily regulated, such as utilities. But even here, there are no guarantees as to total revenue (and net profits).

Diversification: A range of experts asserts that infrastructure investments diversify large investment portfolios. For example, it is often suggested that they have a moderate to low correlation with traditional asset classes, such as stocks and bonds. However, as the different and complex definitions of infrastructure might suggest, infrastructure is at best a heterogeneous class, if, indeed it can be considered a class at all. As a result, claims about diversification require careful scrutiny, particularly in light of the wide array of investment vehicles available and the extensive regulatory and political differences across regions and countries.

PENSION FUND AND INFRASTRUCTURE INVESTMENT – COSTS

Political/regulatory/contract risk: It is a concerned fear that political opposition may derail agreements, that the government may exercise regulatory power in a way that adversely affects the concession or that it may not honor the agreements, which usually are central to infrastructure investments. (Similarly, tax risk relates to policy changes of that sort which governments might make.) Political issues may arise from the possibility that union jobs may be lost or the perception that the deal is a bad one for taxpayers, or because of fee increases or environmental issues. In the case of non-domestic investment, resistance to foreign ownership can be a factor as well. The risk may differ depending on the revenue source for the asset or service involved. Contract risk likely cannot be entirely avoided, even with agreements written to minimize such concerns.

Leverage Risk: There also exist leverage risks, due to infrastructure projects typically involving a substantial amount of debt financing. Associated interest-rate risk can be hedged by use of swaps and other financial derivatives. However, the

⁹Larry W. Beeferman, (December 2008) "Pension Fund Investment in Infrastructure: A Resource Paper"

persistence of high inflation-adjusted rates over long periods of time can adversely affect investment returns. The problem can be most acute in the case of assets not traditionally considered as infrastructure, such as car parks and service stations, which may be less, suited to supporting high debt multiples.

Liquidity Risk: It arises from infrastructure investments usually entailing long-term commitments, so there may be no ready market for selling them in the interim. Investors therefore need to examine a manager's proposed exit strategy, particularly since lease and concession agreements can be as long as 50 to 99 years. However, the increased interest in infrastructure investment and the proliferation of vehicles by which to make investments may afford opportunities for greater liquidity. Potential purchasers include strategic acquirers, other large, sophisticated investors looking to gain long term positions through direct investment or co-investment.

Event Risk: It refers to the devaluation or even destruction of infrastructure assets by terrorist attacks and natural disasters. If portfolios contain a small number of relative large holdings, as is often the case, a significant loss for one may have a large impact on the whole portfolio. Such adverse consequences can be mitigated by insurance policies, assuming they are available, although they may not always cover all possible losses. A related risk – improbable but still possible – concerns the possible obsolescence of the asset (consider, for example, the unexpected fate of city pay phones in the cell phone era). While it may be hard to imagine such a dramatic drop in demand occurring with highways, airports, electricity grids, etc, the significant run-up in gasoline prices that occurred in the middle of 2008, if sustained, might have a significant impact on highway usage for example.

Business Operational Risk: It may result from demographic change, shortfalls in forecasted revenue, changes in economic conditions and in consumers' disposable income, poor asset management and the emergence of new competing infrastructure. Related concerns are construction risk (in the sense of delays and cost overruns) and liability and litigation risk. In addition, because the field is relatively new, there is a limited pool of professionals with lengthy experience in sourcing, structuring, and transacting complex infrastructure deals. This, in turn, demands that they first have the ability to accurately assess the operational complexities of projects they are bidding on and bid accordingly and second, that they have the knowledge and expertise to effectively manage that complexity if they win the bid.⁷

Investment Ratings: Pension funds, by their very purpose of establishment, are risk averse and this moves them away from corporate bonds. However, in reality many of the AAA/AA+ corporate bonds have close to 0 default rates and offer a substantially higher spread over gilts thereby increasing the return profile of the portfolio without adding to its risk structure.

⁷Larry W. Beeferman, (December 2008) "Pension Fund Investment in Infrastructure: A Resource Paper"

CONCLUSION

Pension fund money is increasingly being attracted into public infrastructure through private infrastructure funds and direct investments by public pension funds. Two key characteristics of pension funds could have an influence on the broader project finance market. Public pension funds are not only mindful about rates of return, but they are also extremely sensitive to constituents' interests as many have publicly elected boards. Some funds also have so-called permissible countries or permissible investment lists that take environmental, social and human rights issues into account when considering investments. One implication of this sensitivity to shareholder approval is that there could be a growing interest within the pension fund community in projects that are built on principles of sustainability such as the Equator Principles. Another characteristic of public pension funds is that they are quick to step forward and make their views known if they perceive misguided corporate management. As pension funds get more involved in infrastructure financing, this kind of shareholder expression may become more common and may result in more consistency and transparency in reporting.

There is indeed, an urgent need that the pension fund regulations must be restructured so that the basic purpose of protecting the primary goal of value maximization of pension funds is served. At the same time, infrastructure needs to tailor special instruments to satisfy the needs of pension funds.

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