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The Logic and Path of Infrastructure Investment and Financing in the New Situation

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Abstract: This paper conducts a systematic study on the logic and path of infrastructure investment and financing in the new situation. It deeply analyzes the characteristics of infrastructure projects, such as large capital demand, long construction period, dispersed risks but stable returns. It reveals the limitations of bank credit in financing, mainly reflected in risk aversion, maturity mismatch, and lack of income compensation mechanism. This study further explores the optimization effect of intensive and large - scale operation on the investment and financing logic under the promotion of policies, and emphasizes the activation of social capital vitality through innovative financing tools, policy - based financial support, and fiscal incentive measures. It proposes to effectively solve the financing problems by constructing a diversified financing system, promoting infrastructure REITs, introducing long - term capital, and improving the risk - sharing mechanism. In view of the systematic defects existing in the current investment and financing mechanism, this paper puts forward the paths of deepening reform. These include the coordination of fiscal and financial policies, the construction of a multi-level capital market, and the improvement of legal guarantee. The aim is to achieve the efficient and sustainable development of infrastructure investment and financing, providing theoretical support and practical reference for promoting high-quality economic growth and industrial structure optimization.

1. Introduction

Infrastructure investment can not only promote effective investment and drive economic growth in the short term, but also form medium - and long - term supply capacity, creating conditions for high - quality economic development and the improvement of people's living standards [1]. The process involves huge investment, a long construction period, and slow capital recovery, making the investment and financing models increasingly complex and diversified. The traditional financing model relying on government - led and bank credit faces structural problems such as insufficient capital supply, an imperfect risk - sharing mechanism, and a mismatch between income expectations and investment risks, resulting in low willingness of social capital to participate and low financing efficiency. As the policy orientation gradually shifts to the application of market - based, diversified, and innovative financing tools, there is an urgent need to systematically reconstruct the logic of infrastructure investment and financing, and build an integrated, multi - level, and full - cycle - covering investment and financing framework to achieve efficient capital

allocation and sustainable project operation.

2. Analysis of the Characteristics of Infrastructure Investment and Financing

2.1 Large project scale and high capital demand

Infrastructure projects cover core fields such as transportation, energy, and communication. The investment of a single project often reaches billions or even tens of billions of yuan, involving costs in multiple links such as land acquisition, project construction, equipment procurement, and operation and maintenance. The huge capital demand places extremely high requirements on financing channels and capital use efficiency. A single source of funds is difficult to cover the capital demand throughout the cycle, resulting in major challenges in capital raising, cash - flow management, and risk - sharing for projects. Relying solely on government financial investment or bank loans is difficult to meet the huge capital demand for infrastructure construction [2].

2.2 Long construction period and slow capital recovery

Infrastructure projects usually take several years or even more than a decade from feasibility study, scheme design, capital raising to construction and operation management, and the revenue growth is slow in the initial stage of operation, with a long payback period. The long - term large - scale occupation of funds reduces the return on investment of investors, limits capital liquidity, and raises financing costs. New business models for infrastructure need to focus on improving resource allocation efficiency and capital - recovery ability on the basis of overall balance of operating funds [3].

2.3 Dispersed risks and stable returns

Infrastructure projects face high - risk factors such as policy adjustments, cost increases, and construction delays during the construction stage. After entering the operation stage, these risks are significantly reduced, and the income source tends to be stable, mainly relying on continuous cash flow generated by government payments or concession rights. Although the risks are prominent in the early stage of the project, the project shows strong resistance to economic fluctuations after completion, which has strong attraction for investors who prefer long - term stable returns. However, its public welfare nature leads to relatively limited income levels, making it difficult to achieve high returns.

3. The Credit Logic and Limitations of Infrastructure

3.1 The basic characteristics of the credit logic

Bank credit mainly provides support for capital demand through loans, project financing, etc. However, affected by risk management and capital constraints, credit funds tend to flow to low - risk projects that have entered the operation stage or are about to generate stable cash flow, ignoring the early - stage high - risk projects with more urgent capital needs, resulting in a serious mismatch between capital supply and actual project needs. Bank credit generally relies on collateral and guarantees to control risks, but this risk management model cannot effectively adapt to infrastructure projects with poor asset liquidity and long - term income cycles, lacking targeted risk assessment and dynamic management mechanisms.

3.2 Analysis of the limitations of the credit logic

3.2.1 Insufficient capital supply due to risk aversion

Banks are restricted by capital adequacy ratio regulations and risk preferences, and tend to support projects with stable cash flow and mortgaged assets, avoiding early - stage high - risk and uncertain infrastructure projects. This preference leads to a serious shortage of initial financing, a single financing structure, and the failure of the market-based investment and financing mechanism to effectively guide social capital into the early stage of infrastructure, resulting in a mismatch between capital supply and project risk characteristics.

3.2.2 Maturity mismatch problem

Banks mainly raise funds through short - term deposits and medium - term liabilities, resulting in an obvious mismatch between the maturity of funds and the long - term construction period of infrastructure projects. The credit cycle is difficult to cover the capital demand throughout the project's life cycle, weakening the bank's enthusiasm for long - term capital allocation. The lack of flexibility and sustainability in fund arrangement limits the bank's stable capital support for long - term infrastructure projects.

3.2.3 Lack of income compensation mechanism

Infrastructure projects have low income returns due to their public welfare and long - term nature, which are difficult to meet the income requirements of banks for risk compensation. The lack of an effective risk - sharing and income compensation mechanism leads to the lack of sufficient return expectations for banks when assuming potential credit risks, further weakening the financing willingness for public welfare and basic infrastructure projects and restricting the long - term investment of bank funds in the infrastructure field.

4. The Optimization of the Infrastructure Investment and Financing Logic by Policy Encouragement

4.1 Policy - driven intensive and large - scale operation

In order to promote intensive and large - scale operation in the infrastructure field, the leading and construction roles of the market should be clarified, the government's guiding function should be strengthened, the investment and financing system should be further improved, the investment vitality of various market players should be stimulated, business model innovation should be encouraged, and application scenarios should be cultivated [4]. The government has issued a series of industrial guidance policies and fiscal incentive measures, including the establishment of industrial investment funds, the issuance of special bonds, the promotion of infrastructure public REITs, and the optimization of the PPP model. These measures have formed a financing pattern led by the government, dominated by the market, and participated by multiple parties, effectively alleviating the capital bottleneck in infrastructure investment and financing.

4.2 Improving the financing path and stimulating the vitality of social capital

4.2.1 Innovative financing tools

The government actively promotes the wide application of new financing tools such as infrastructure asset - backed securitization (ABS) and infrastructure public REITs, improving the

liquidity of infrastructure assets and realizing the division of income rights, attracting long - term funds and social capital into the infrastructure field. By optimizing the capital structure and enhancing the capital turnover efficiency, a virtuous cycle of financing and operation is formed, effectively alleviating the constraints of traditional financing channels on project progress.

4.2.2 Support from policy - based financial institutions

Policy - based banks, relying on the advantages of national credit, provide long - term low - interest loans to infrastructure projects. It is necessary to promote the reform of the fiscal, tax, financial, and investment and financing systems as a whole to solve the problem of poor capital circulation in major infrastructure projects, municipal projects, and the real industry [5]. This effectively makes up for the shortcomings of commercial banks in financing high - risk infrastructure projects and promotes the smooth implementation of public service and public welfare infrastructure projects.

4.2.3 Fiscal incentives and tax preferences

The government reduces the financing costs of enterprises and improves investment return expectations through targeted financial subsidies and tax reduction policies, and implements differential incentives for key areas such as green energy and smart cities to accelerate the investment of social capital. Through measures such as preferential land use and tax reduction and exemption, the infrastructure investment and financing environment is further optimized, alleviating the high - cost and high - risk problems faced by social capital in the project start - up stage.

5. Path Selection for Solving the Infrastructure Financing Bottleneck

5.1 Construction of a diversified financing system

5.1.1 Giving play to the guiding role of the government

The government effectively reduces the early - stage financing risks of infrastructure projects by setting up special funds and implementing a risk compensation mechanism, stimulating the vitality of social capital participation. For example, in the key infrastructure construction projects promoted by the National Development and Reform Commission, fiscal funds leverage social capital through capital injection, constructing a diversified investment and financing mechanism led by the government and dominated by the market, effectively alleviating the financing problems of high - risk and high - cost projects and promoting the efficient cooperation between government funds and social capital.

5.1.2 Promoting the development of industrial funds

The state and local governments can set up special industrial investment funds, optimizing the financing structure in the infrastructure field through parallel equity investment and debt financing. For example, the Guangdong Provincial Government has set up an infrastructure industrial investment fund with a scale of hundreds of billions of yuan, focusing on supporting rail transit, smart cities and other fields. Combining direct equity investment and debt financing effectively reduces project financing costs, accelerates the implementation of infrastructure projects, and achieves sustainable development.

5.1.3 Deepening the PPP model

We need to promote the Deepening of the PPP Model: Optimize the legal and policy framework of the PPP model, improve the contract management, risk - sharing, and income distribution mechanisms, facilitate the whole - life - cycle management of projects, and enhance the transparency and compliance of project operation. Taking the infrastructure construction in Xiong'an New Area as an example, through the PPP model, central enterprises and local state - owned enterprises are attracted to participate. The government provides policy support and risk guarantees, and enterprises are responsible for project design, construction, and operation, constructing an interest - linking mechanism of risk - sharing and benefit - sharing, effectively enhancing the confidence of private capital in infrastructure investment.

5.2 Innovation of financial tools and construction of risk - sharing mechanism

5.2.1 Promoting infrastructure REITs

By transforming the equity of infrastructure assets into tradable securities, infrastructure public REITs realize asset securitization, break through the traditional financing model, release the value of existing assets, and broaden the sources of funds. Taking the first batch of infrastructure public REITs projects in China in 2021 as an example, the Beijing - Shanghai Expressway REITs was successfully issued, raising more than 10 billion yuan, effectively revitalizing the expressway operation assets, providing reinvestment funds for new infrastructure projects, realizing a virtuous cycle of asset revitalization and project reinvestment, reducing financing costs, and optimizing the capital structure.

5.2.2 Introducing insurance funds and pension investment

Insurance funds and pension funds are highly compatible with the characteristics of high - capital - demand and long - cycle - return of infrastructure projects due to their long - term, stable, and safety - preference nature. The government encourages insurance funds and pension funds to invest in infrastructure construction through policy guidance and investment incentive measures. Ping An Insurance Company of China invests in the transportation infrastructure projects of the Beijing - Tianjin - Hebei integration. Relying on its long - term capital advantages, it participates in the construction of high - speed railways and rail transit, providing low - cost and long - term stable capital support for the projects, effectively reducing financing risks and enhancing the enthusiasm of social capital participation.

5.2.3 Establishing a risk compensation and guarantee mechanism

The government provides guarantees for high - risk and long - cycle infrastructure projects by setting up special risk compensation funds and policy - based guarantee mechanisms, effectively sharing the investment risks of social capital. Taking the policy - based guarantee fund established by the China Development Bank as an example, the fund provides loan guarantees and risk compensation for large - scale projects in key fields such as energy and transportation, reducing financing risks, enhancing the confidence of market players, and promoting private capital and financial institutions to actively participate in high - risk infrastructure projects, alleviating the investment bottleneck.

6. Fundamental Problems of the Infrastructure Investment and Financing Mechanism and the Direction of Deepening Reform

6.1 Mechanistic defects

The current infrastructure investment and financing mechanism has not formed a systematic and sustainable support system. The disconnection between policy orientation and market - based investment and financing needs leads to low capital allocation efficiency, an imperfect risk - sharing mechanism, and investors facing high risks of capital recovery and income uncertainty during the project construction and operation process. The imperfect exit mechanism leads to the lack of flexible exit channels for social capital in the whole life cycle of the project, further weakening the investment willingness. Taking the PPP model as an example, some projects have problems such as unclear government performance commitments and opaque income distribution mechanisms, suppressing the active participation of private capital, resulting in an imbalance in the investment and financing structure and blocked capital flow, and hindering the smooth progress of infrastructure projects.

6.2 Paths of deepening reform

6.2.1 Optimizing the coordination of fiscal and financial policies

The lack of linkage between fiscal and financial policies leads to a single financing structure and unstable capital supply for infrastructure projects. It is necessary to organically combine direct fiscal investment, tax preferences, interest - subsidy loans, and credit support from financial institutions to form a strong policy synergy. The government can learn from the capital allocation method of national key science and technology projects, providing both fiscal and financial support for new infrastructure construction, enhancing the flexibility of capital supply, improving capital operation efficiency, alleviating financing pressure, improving the investment and financing environment, and further stimulating the vitality of social capital.

6.2.2 Constructing a multi - level capital market

In the infrastructure sector, the current situation of relying on a single financing channel leads to insufficient capital supply. To solve this problem, it is essential to construct a multi-level capital market system. It is necessary to vigorously promote the coordinated development of multiple financing tools such as equity financing, bond financing, and asset securitization to diversify financing channels.

6.2.3 Strengthening legal guarantee and policy transparency

The lack of policy transparency and legal guarantee in infrastructure investment and financing restricts the effective participation of private capital. It is necessary to improve the legal and regulatory system, refine the rules for PPP contract management, risk - sharing, and income distribution, and build a clear, stable, and predictable policy environment. We need to strengthen the supervision of contract performance, standardize project operations, reduce investment risks caused by policy fluctuations, boost the confidence of market entities, and attract continuous injection of long-term capital into the infrastructure sector.

7. Conclusion

In the new situation, infrastructure investment and financing face multiple challenges such as capital scale expansion, risk prevention and control, and income balance. The traditional financing model is difficult to meet the capital needs of high - intensity, long - cycle, and diversified projects. It is necessary to rely on the coordination of fiscal and financial policies, innovative financial tools, and risk - sharing mechanisms to reconstruct an efficient and sustainable investment and financing system. By promoting financial instruments, revitalizing existing assets, and guiding long-term capital inflows into the infrastructure sector, a virtuous cycle of capital recovery and project reinvestment can be realized. The legal system should be perfected and policy transparency should be enhanced to strengthen the standardized management of the PPP model, reduce policy uncertainties, and stimulate the enthusiasm of social capital participation. A diversified financing system guided by the government, dominated by the market, with extensive participation of social capital, and controllable risks should be established, so as to promote the efficient, stable, and sustainable development of infrastructure investment and financing mechanisms, providing strong support for high-quality economic growth and industrial structure optimization.

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