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Analysis on Financing Status of Infrastructure in Agricultural High-tech Demonstration Zone of Yangling City and Application of PPP Mode

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Abstract Financing mode of municipal public utilities in agricultural High-tech Demonstration Zone of Yangling City was mainly divided into five kinds, including financial financing mode, debt financing mode, enterprise accumulation mode, business resources mode, foreign direct investment and private capital financing mode. Due to the single investment subject, narrow financing channel, monopoly management and ineffectiveness of capital utilization in infrastructure financing, PPP mode based on the co-operative financing of public sector and private enterprises was put forward. The financing applications of PPP mode in Yangling Demonstration Zone were discussed either. However, attentions should be paid to establish a benign partnership between government and private sector, and practice positively in the introduction of PPP. The operation mode of PPP mode as well as experience accumulated in bidding design and building construction could play a referential role in the infrastructure construction of Yangling Demonstration Zone and other regions.

Key words Infrastructure; PPP mode; Yangling Demonstration Zone; China

Agricultural High-tech Demonstration Zone of Yangling City (hereinafter referred to as the Yangling Demonstration Zone) is the unique national agricultural high-tech zone in China, which was approved by the State Council in 29th, July, 1997. Its total area amounts to 94 km² with a total population of 167 000 while planning zone of new district amounts to 221.12 km². Since the establishment, Yangling Demonstration Zone has achieved 3.05 billion yuan in fixed assets investment, in which, infrastructure investment is 1.76 billion yuan. With the sustained and rapid development of Demonstration Zone, the demand for infrastructure investment has increased constantly.

1 Analysis on financing status of infrastructure in Yangling Demonstration Zone

1.1 Single investment subject and narrow financing channel Financing mode of municipal public utilities in agricultural High-tech Demonstration Zone of Yangling City was mainly divided into five kinds at present, including financial financing mode, debt financing mode, enterprise accumulation mode, business resources mode, foreign direct investment and private capital financing mode.

1.1.1 Financial financing mode. Financial financing includes "two-term funds", central financial allocation and local financial allocation.

Urban maintenance and construction tax as well as public service surcharge is the special fund for urban maintenance and construction. Yangling Demonstration Zone only imposes urban

maintenance and construction tax. With the constant enlargement of urban scale, demand for construction funds is increasing. Urban maintenance and construction taxes amounts were 2.72 million, 3.38 million, 6.67 million and 6.85 million yuan respectively from 2005 to 2008, which accounted for 2.00%, 2.52%, 8.43% and 7.83% respectively of urban construction fund^[1-4]. In spite of the increasing taxes year by year, it accounts for a small percentage that could not meet the demand for usual maintenance expenditure of municipal facilities. According to the above data, the variation figure of urban maintenance and construction tax in Yangling Demonstration Zone from 2005 to 2008 is drawn (Fig. 1).

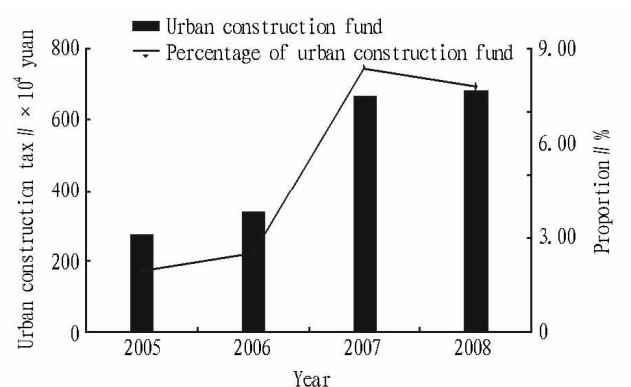


Fig. 1 Variation of urban maintenance and construction tax in Yangling Demonstration Zone from 2005 to 2008

The ratio of government financial investment to urban construction fund was decreasing. Total amounts of financial investment from central and local government were 26.78 million, 28.45 million, 9.36 million and 12.00 million yuan respectively

from 2005 to 2008, in which, there weren't central financial allocations in 2007 and 2008. Government financial investment in Yangling Demonstration Zone accounted for 19.27%、21.23%、11.83% and 13.71% respectively of urban construction fund^[1-4], which could not meet the demand for urban infrastructure investment. Variation of financial investment is shown in Fig.2.

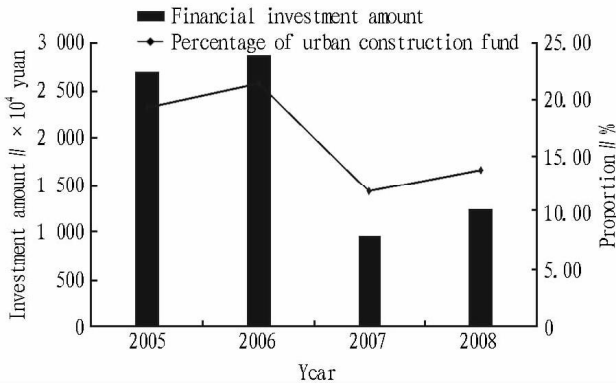


Fig.2 Variation of financial investment in Yangling Demonstration Zone from 2005 to 2008

1.1.2 Debt financing mode. Debt financing mode includes bank loan, utilization of national debt fund, utilization of foreign investment and corporate bond (stock).

Current urban construction fund in Yangling Demonstration Zone mainly depends on bank loan. Total amounts of loan were 56.83 million, 49.81 million, 32.06 million and 35.00 million yuan respectively from 2005 to 2008, which accounted for 41.00%, 37.00%, 40.50% and 39.95% of capital source respectively^[1-4]. The huge proportions lead to heavy debt burdens as they are shown in Fig.3.

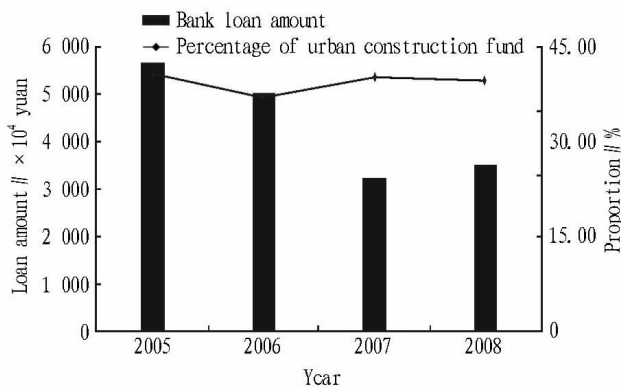


Fig.3 Variation of bank loan in Yangling Demonstration Zone from 2005 to 2008

Besides the financial allocation and loan, loan of local finance from national debt in Yangling Demonstration Zone also accounts for a certain percentage. Fig. 4 illustrates that there was no transferring loan in 2005 and the transferring loan amounts were 8 million, 8 million and 6 million yuan from 2006 to 2008 respectively, which accounted for 0, 5.97%, 10.12% and 6.86% of the income from 2005 to 2008 respectively^[1-4]. This is because positive fiscal policy was carried out by the Center during "the tenth five years", which led to the increasing input in urban infrastructure.

In spite of the small investing proportion, it reflects national

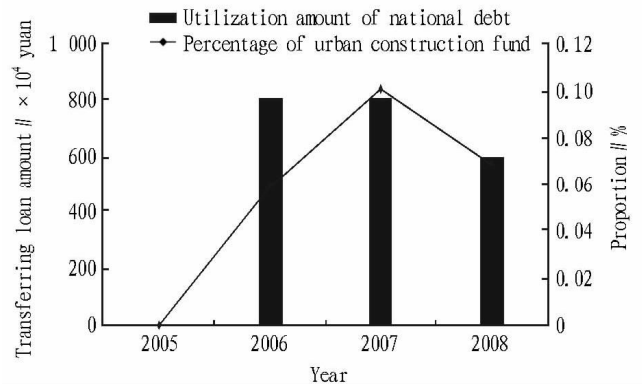


Fig.4 Variation of loan of local finance from national debt in Yangling Demonstration Zone from 2005 to 2008

transfer payment for Western China. In addition, direct financing accounts for a large percentage abroad, but hardly has any bond or stock fund been put into the urban construction in Yangling Demonstration Zone at present.

1.1.3 Enterprise accumulation mode. The status of enterprise accumulation mode is rising in urban construction investment. Fig.5 illustrates that self-financing amount of enterprises was 31 million yuan in 2005, accounting for 22.31% of urban construction fund. National and local financial amounts absorbed in 2006 were the maximum without self-financing of enterprises. self-financing amount was 70 million yuan in 2007, accounting for 8.90% of urban construction fund while it was 84 million yuan in 2008, accounting for 9.60%^[1-4].

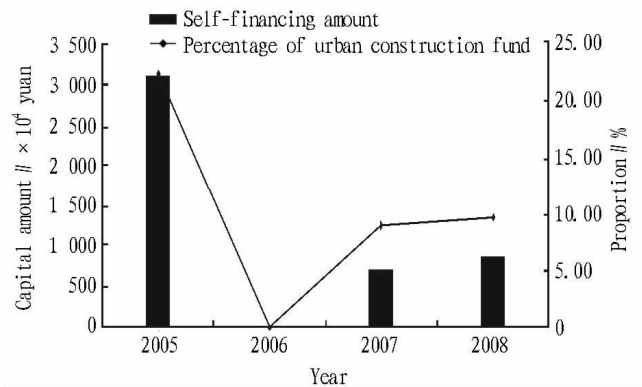


Fig.5 Variation of self-financing amount of enterprises in Yangling Demonstration Zone from 2005 to 2008

1.1.4 Business resources financing mode. Business resources financing mode, which is still at an initial stage in China, includes income of land transfers, operation income of intangible assets and transfer income of management right of stock assets. With the popularization and perfection of the system for the paid use of land, most cities have begun to utilize the land transfer income to make up for a deficiency of construction fund. Land transfer funds were 21.60 million, 52.35 million, 24.00 million and 25.26 million yuan from 2005 to 2008 respectively, accounting for 15.54%, 39.07%, 30.35% and 28.87% of urban construction fund respectively^[1-4] (Fig.6).

1.1.5 Foreign direct investment and private capital financing mode. With the transition of government's conceptions, reform and innovation of price and fee system, social funds have entered into urban construction field. Foreign direct investment

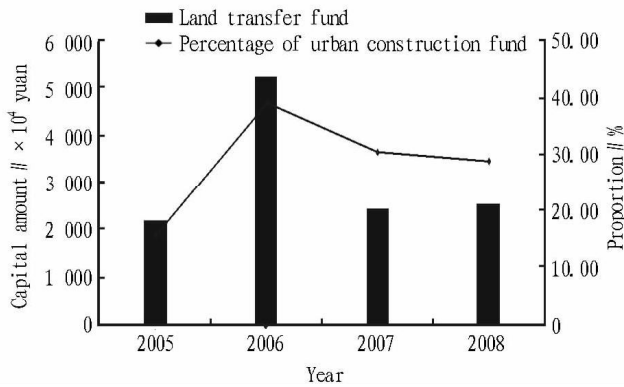


Fig.6 Variation of land transfer fund in Yangling Demonstration Zone from 2005 to 2008

and private capital financing will become the most potential financing channels of municipal public utilities. There is no foreign direct investment in Yangling Demonstration Zone at present. Typical modes of private financing include private-owned mode adopted by natural gas enterprises and BOT mode adopted by sewage treatment enterprises.

1.2 Monopoly management and ineffectiveness of capital utilization Due to the long-term monopoly management of urban public utilities, they lack the incentive mechanism of self-development. Moreover, some of them always have a deficit, which leads to a decreasing willingness of financial sectors to loan. The average price of urban water supply has increased from 1.5 yuan/m³ to 1.7 yuan/m³, but it is still lower than that in the surrounding counties (cities), which results in the serious waste of water. It can be seen that efficiency of capital utilization could be improved by reforming.

From this, it can be concluded that the realization of municipal public utilities in Yangling Demonstration Zone mainly depends on financial resources motivated by the government according to the demands of market. That is, construction fund of public utilities was acquired mainly by financial investment and bank loan. But the central and local financial funds are deficient, the proportion of bank loan is too large and the debt burden of infrastructure is too heavy. The proportions of loan of local finance from national debt and self-financing fund were within 10% except 2007. In spite of the management level, public infrastructures in Yangling Demonstration Zone now are mainly invested by government, which leads to serious non-separation of government and enterprises as well as monopoly management. When the government is pursuing infrastructure investment and private investment subjects are pursuing projects with reliable returns, the PPP mode emerges from the cooperative financing of public sectors and private enterprises.

2 PPP mode of infrastructure financing

2.1 Connotation of PPP mode Public private partnership (PPP) describes a mode which provides public goods or services by establishing a partnership between public and private sectors [5]. In general, PPP mode is a whole conception of project financing. Government won't transfer the whole responsibility of the project to the private enterprises when the part-

ners take part in a project. Instead, the purpose is realizing the benefits of the partners by supporting the project. Meanwhile, partners share the responsibilities and financing risks together [6]. Under the PPP mode, government and private enterprises could exert their own advantages, make the best of limited resources and achieve win-win progress by setting a long-term and mutually beneficial goal.

PPP mode was issued in the 1980s. Traffic volume of Britain at that time was sharply increasing, so traffic department began to provide services by establishing traffic operation enterprises in private sectors due to the constraint of financial budget. PPP financing mode became popular in western countries during the 1990s. The applications are extensive both in developed and developing countries, including the infrastructure projects such as highway, railway, port, electrical power and water supply [7].

2.2 Procedure of PPP mode Government sector signs franchise contracts with bid winners by government procurement, in which, bid winners always consist of construction companies, service operation companies, and banks or leasing companies that invest in the project. Bid winners will be in charge of financing, construction and operation. The essence of this financing is that government promotes the construction and effective operation of infrastructure by offering private company the long-term franchise right and earning right. The organization structure setting is shown in Fig. 7.

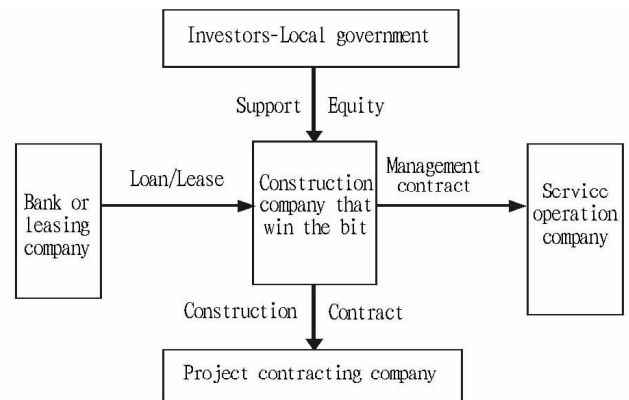


Fig.7 Organization structure of PPP mode

2.3 Effective application of PPP mode With the implementation of *Franchise Operation Measures of Urban Infrastructure in Beijing City* on 1st, Oct, 2006 and *Franchise Operation and Management Measures of Municipal Public Utilities* on 1st, May, 2007 by Ministry of Construction, PPP mode has been widely applied.

National stadium is a special and historic landmark of 2008 Olympic Games. PPP mode was adopted in construction financing of the venue. The funds were provided both by government and enterprises, in which, government investment accounted for 52% of the total investment, other investment and financing, construction, operation and management were in the charge of National Stadium Co. Ltd. The company has 30-year operation right of "bird nest" by law, it will pay taxes only after recouping investment and government won't share dividend during this 30 years. After the period, national stadium will be

transferred to Beijing Municipal Government and all equipments and facilities should be in good condition so that the national and large-scale races could be held there. National stadium is a project with low profit expectation, but government input could be effectively controlled by the effective try of PPP mode.

2.4 Risks of PPP mode The infrastructure projects closely relate to the benefits of public sectors and people. The financing process is very complicated, which involves various stakeholders, such as government, investors, bank consortium, consumers and the public. And it can be achieved only by long-run and effective cooperation of various units such as organizers, investors, builders, equipment suppliers, designers and project operators. Therefore, there are many uncertain factors and high risks.

3 Discussion on the introduction of PPP mode into the infrastructure financing of Yangling Demonstration Zone

3.1 Advantages of the PPP mode introduced into Yangling Demonstration Zone Infrastructure in Yangling Demonstration Zone is built on the basis of high starting-point and high standard construction. Aquatic sports centre, conference and exhibition centre, medical centre, thermal power plant and Yangling info port with high-speed broadband have been built in succession, hence, the urban framework has formed its embryonic pattern. But due to the large-scale investment, long construction cycle and low return of infrastructure as well as serious waste, low efficiency and high risk of government investment in infrastructure construction, infrastructure construction becomes the "bottleneck" in the development of Yangling Demonstration Zone.

Demonstration Zone enjoys various preferential policies of national high-tech industrial development zone and agricultural supportive policies. The demands of Yangling Demonstration Zone can be met by implementing PPP mode in infrastructure construction. ① Attracting private capital actively to construct infrastructure so as to effectively relieve the pressure of public expenditure; ② realizing the minimum construction cost of infrastructure so as to avoid the negative influence of high charge on the public caused by high cost; ③ raising funds for new projects by collecting advanced fees for infrastructure franchise from enterprises; ④ accelerating the escalation and updating of infrastructure so as to enable Yangling to become modern agricultural high-tech city, eco-city, industrial city and tourism city based on high-standard techniques and environmental protection. Private enterprises take part in public projects by the implementation of PPP mode, which not only brings about stable market share and higher return, but also gives full play to the positivity of private investors, and improves management level and service quality. Therefore, it helps the government from various aspects to meet the demand of the public for the infrastructure.

3.2 Attentions for the government in the introduction of PPP mode Operation basis of PPP mode is the benign partnership between government and private sectors. Basic condi-

tions of this relationship are avoiding the excessive dependence on the government resources, resources sharing, justice, openness, fairness, definite contract, simplification of administrative procedures, long-run investment, active sense of participation, effective communication and so on. In addition, formation of benign partnership depends on the clear goal of cooperators, effective communication, support of government leaders and so on^[8].

In order to apply PPP mode effectively, from the aspect of law, efforts should be devoted to speed up legislative process, or even carry out special legislation against a specific item according to foreign legislative mode; from the aspect of polity, the government should retain relative stability of regime and system, avoid impatience and drastic fluctuation of reform so as to ensure the project implementation; from the aspect of talent cultivation, on the one hand, professionals could be assigned to participate into practices and theoretical studies, which could utilize current experience of national stadium; on the other hand, domestic education and talent cultivation should be strengthened and discipline construction of project financing should be promoted^[9]. Generally speaking, the key lies in practicing actively, finding and solving problems in practice, expanding applicant scope and accelerating application.

4 Conclusion

Since the establishment of Yangling Demonstration Zone, infrastructure construction has developed rapidly with increasing scale. If the investment and financing mechanism, i. e. PPP mode, can be effectively explored, and inertial thought on government investment as well as financing of infrastructure can be changed, operation mode and experience accumulated in bidding design and building construction could play a referential role in the infrastructure construction of Yangling Demonstration Zone and other regions.

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政策性农业保险立法模式与立法框架研究

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摘要 研究了世界各国既有政策性农业保险立法模式,即政府主办下的国有化模式、政府扶持下的商业化模式、政府支持下的国有化-商业化混合模式、政府支持下的互助合作化模式,分析了各模式的特点。从法理上对中国政策性农业保险试点方案进行了归纳,主要有5种试点模式。①上海模式,属于政府扶持下的半商业化模式;②黑龙江垦区模式,属于政府扶持下的互助合作化模式;③北京模式,属于政府支持下的商业化模式;④浙江模式和江苏淮安模式,属于政府支持下的国有化-商业化混合模式;⑤商业保险公司代办模式,属于政府主办下的国有化模式。探讨了中国政策性农业保险立法模式的选择,模式应该体现政府的主导性特征。笔者认为,中国的政策性农业立法模式应兼采各模式之长,确立起综合型立法模式,理由有6点。①农业保险产品的准公共性决定了国家应该积极介入农险领域,发挥主导作用;②中国各区域自然条件、社会经济发展水平差异较大,不能均采用相同模式;③不同的立法模式有其特点,应最大限度地发展其优势;④国外的立法经验表明,立法模式不是固定不变的,而是在不断地进行创新和改进;⑤采行不同的制度模式,可以奠定中国政策性农业保险法律制度框架的基础;⑥符合保险经营的“大数法则”。介绍了中国政策性农业保险的主要框架,提出了财税支持政策性农业保险组织发展的措施。

关键词 政策性农业保险;立法模式;立法框架;国家支持

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杨凌农业高新产业示范区基础设施融资现状分析及应用 PPP 模式探讨

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摘要 首先对中国杨凌示范区基础设施融资现状进行了分析。目前杨凌示范区城市市政公用设施融资模式主要分为财政融资模式、负债融资模式、企业积累模式、经营资源模式、外商直接投资和民营资本融资模式5种,投资主体单一,融资渠道狭窄。另外,由于建设资金主要是通过财政投资和银行贷款方式取得,政企不分、垄断经营的现象仍然比较严重,资金使用效率低下,因此提出了以公共部门与私人企业合伙融资为基础的 PPP 模式,其中分别阐述了 PPP 模式的含义,模式的流程、实质,有效应用及所面临的风险。最后探讨了 PPP 模式在杨凌示范区的筹资应用。由于享受国家级高新技术产业开发区的各项优惠政策和国家对农业产业的倾斜扶持政策,不仅可以获得相对稳定的市场份额和较高的投资回报,而且可以充分发挥私人投资主体的积极性,提高项目的管理水平和服务质量,从各方面帮助政府满足社会公众对于基础设施的需求。但政府在引入 PPP 模式时也应注意到,应当建立良好的政府与私营部门的伙伴关系,积极进行实践,扩大应用范围,加快应用速度。另外,PPP 模式投融资的运营模式以及在招标设计和建筑施工全过程积累的经验,将对杨凌示范区及其他地区的基础设施建设起到极其重要的借鉴作用。

关键词 基础设施;PPP 模式;杨凌示范区