



# 基础设施投资论

杨 军 著

On the  
Investment  
of Infrastructure



中国经济出版社  
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**图书在版编目(CIP)数据**

基础设施投资论/杨军著. —北京:中国经济出版社, 2003. 8

ISBN 7-5017-5996-0

I. 基… II. 杨… III. 基础设施-投资-研究-中国 IV. F299.24

中国版本图书馆 CIP 数据核字(2003)第 072508 号

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出版发行: 中国经济出版社(100037·北京市西城区百万庄北街 3 号)

网 址: [www.economyph.com](http://www.economyph.com)

责任编辑: 叶亲忠 (电话: 88380089)

责任印制: 石星岳

封面设计: 白长江

经 销: 各地新华书店

承 印: 三河市欣欣印刷有限公司

开 本: A5

印 张: 9.5

字 数: 250 千字

版 次: 2003 年 9 月第 1 版

印 次: 2003 年 9 月第 1 次印刷

书 号: ISBN 7-5017-5996-0/F·4845

定 价: 25.00 元

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# Abstract

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Infrastructure is a matter of overall importance involving social welfare, quality of resident's life, and production and development. It's status and functions in the economic development are taken great seriously by nearly all governments and economists.

People are just intensely concerned about that infrastructure is very important to industrialization and production rate for a longtime. But it was not enough for people to realize the problem on infrastructure investment, and the relationship between infrastructure and economic development. So this caused the faults of the development policies on infrastructure. Infrastructure became an independent economic category till the end of 1940's. From then on, the development economists begin to study the important function that the supply of infrastructure makes to the economic growth in the developing countries. However, a comparatively complete and authoritative system of scientific theories about the research has not founded till now. So the essay analyzes detailed the realities of the infrastructure investment in our country by comparison and summing up the experiences and lessons of some developed countries and developing countries. And it tries to deeply study the significant problems about the infrastructure investment in our country. So some advices in policy can be provided for the infrastructure investment in our country.

China is a big developing country, and has the specialty and the complex nature of the infrastructure investment. For about ten years, the infrastructure investment in our country has made great progress.

And the investment efficiency has also been enhanced. The service of infrastructure is not able to satisfy the demand of the economic growth. So Chinese government has to correctly formulate the policies about the infrastructure investment. Choosing the topic of the essay lies in the consideration.

There are eight chapters in the book, including the introduction, scale, structure, regional progress, investment, management and strategy about infrastructure.

In the production, firstly, infrastructure is defined to the public affairs and construction supplying the service for many investors. And the writer gradually brings forward the problem about the essay from the realities of our country. Secondly, the writer summarizes the internal and external theory about infrastructure, and expounds the ideas, the points of view and progress of research about infrastructure that the early economics, the development economists, the experts of World Bank and the domestic scholars have got for many years. At last, the writer explained the thread of thought and the main content of the essay in detail.

The second part of the book is the research of scale of infrastructure investment. The scale of infrastructure investment has an effect on social development and economic growth by two ways. One is to increase the supply capacity for infrastructure. The other is to uphold the quality of service and to enhance the level of service about infrastructure. The writer analyzes and points out: (1) Infrastructure investment stimulates aggregate output and production rate of aggregation essential factor to be raised. And there is an obvious relationship of elasticity between the two sides. (2) The course of the infrastructure investment makes the conditions for industrialization. (3) The infrastructure investment influences the industrial development by two

ways. (4) The excellent infrastructure invested to construct is the foundation for enlarging the scale of trade and enhancing the capability of trade competition. (5) Infrastructure investment accelerates the flowing of production factors and selling products, and promotes the development of civilization. At the same time, the civilization stimulates the demand for infrastructure in itself.

When we clearly know about the fluency that infrastructure makes on the economic development and the effect that it has on the economic growth, on the basis of this, and the writer analyzes the present situation about the infrastructure investment in our country, and forecasts the demand that realizing the goal of the economic growth has for the infrastructure investment. As the prediction is concerned, we still have to consider the laws of the changes about the structure, the layout and the technical progress of infrastructure. So this brings forth the following three chapters.

The third part of the book is the research of the structure of the infrastructure investment. The nature of the structure of the infrastructure investment is that all kinds of the economic resources are disposed among each department of infrastructure. The writer thinks that the change of the structure of the infrastructure investment is a historical course. The investment structures for each period before form the current structure of the infrastructure. And the current investment structure molds the future structure of infrastructure. Sometimes it is unreasonable for the structure of infrastructure in a country or a region. The important cause of this lies in the unreasonable investment structure. So the essay goes a step further to analyze the factors that determine the structure of the infrastructure investment. The factors includes: (1) The demand structure is the essentially variable that determines the investment structure. (2) The current structure of in-

infrastructure is the base that determines the investment structure. And the basic function shows in two sides. (3) The technical progress is the fundamental motive force that promotes the changes in the structure of infrastructure investment. (4) The interregional trade and the Tran regional investment accelerate the changes in the investment structure. (5) The factors of organization influence the investment structure. In all, these factors that depend on each other and condition each other together consist of a whole that determines the changes in the structure of the infrastructure investment.

Then the essay begins to analyze that the changes of the structure of the infrastructure investment act on the economic growth. The writer bases the research on the comparison about the changes of the investment structure during the courses of the growth of economy in England, the United States, France and German. Thus, the writer sums up the common trend and the track of the changes in the structure of infrastructure investment in these countries. Infrastructure not only serves for the industrial structure and the economic growth, but also is the standard about the level of the social welfare. The changes in the structure of infrastructure are bound up with the raising on the level of people's income. On the basis of the theoretical research, the essay analyzes the structure of the infrastructure investment in our country, taking advantage of the detailed data. In face of the realities, the writer brings forward the thread of thought and the concrete countermeasure that can make the structure of the infrastructure investment excellent.

The infrastructure investment relies on the geographic space and the spatiality of the ground. Whenever the construction and the power for production and life are fixed in one area, they will make long-term function there. So the fourth chapter in this book is the research

in regional disposition of the infrastructure investment. The main content of this chapter is the internal laws manners and paths of the regional disposition. The unite thinks that the effects that the regional disposition of the infrastructure investments has on the improvement of regional economy embody at five aspects: the regional disposition of the investment at the infrastructure improves the increase of the commerce from three sides: the first is to accelerate the flow of person, material and information, to decrease the cost of transport, to raise the efficiency of the commerce; the second is to expand the scale of the commerce by consummating the system of the infrastructure and improving the capacity of senile; the third is to raise the efficiency of the resource allocation and to promote the interregional production special by optimizing the disposition of the elements of production.

The manners and the paths that the regional disposition of the infrastructure don't change according to man's will but have their internal laws. By comparing the regional dispositions among the United states, Japan and the soviet Union, the unite thinks that the regional disposition of the infrastructure investment have their characteristics, but there are still some common features, They express in four sides: (1) The regional dispositions of the investment on the infrastructure start where there are good conditions to have infrastructure construction, and centralize where there are plentiful resources and high economic level. (2) The enlargement in the space of the infrastructure investment is related to social division of lab our, industrial evolution, commercial exchange and market capacity. (3) The productive disposition is superior to the living one. (4) The space disposition involves efficiency and fair. After comparing and analyzing the regional disposition of the infrastructure in the United States, Japan and the Soviet Union wholly, the writer divides the ways of the disposition into three



kinds. The first is that the government or the common facilities departments dispose the infrastructure investment by the mandatory plans. The secondly is the way that the market is considered to be main and the government is used to adjust, The third is the way that the regional disposition of the infrastructure investment based on the market disposition and guided by the government that invests on the infrastructure.

The fifth part of this article is the research of the technical progress. The effects of the technical progress express in raising the productive efficiency, accelerating the permutation of the infrastructure investment structure, promoting the effects of scale economy, perfecting the space planning of the infrastructure investment and raising the service efficiency of the infrastructure by improving the policies, plans, management and organization etc.

The writer thinks that the effects that the technical progress has on the infrastructure investment change according to the quantity of the technical progress. Generally speaking, non – continuous technical progress enlarges the investment scale in labour – intense infrastructure investment. The effects that the technical progress have on the investment scale are influenced seriously, They embody mainly in two sides: the one is that the birth and the development of the departments are the direct great achievements of the technical progress: the other is that the technical progress change greatly the traditional departments of the infrastructure investment in quality and quantity. The technical progress affects the projects arrangement, the order and the cost of the investment, the scope and the feasibility and ways of improving the technologies. The first, we should use the new technologies and try our best to increase the technical level; the second, we can use the advanced technologies directly to construct or improve our infrastructure

so that we can raise the infrastructure level to a new one; the third, the new technologies developing give us the chance to improve them; the fourth, the administrative skills of the infrastructure make improve the technologies to be possible.

The sixth part of this book is the investment research of the infrastructure. Few people focus their attentions on the Question whether the private capitals can be invested in the infrastructure field. The investment system guided by the governmental capitals has obvious limits that embody in these sides: the single main body of the investment, the low investment efficiently, the bad management etc , so how to reform the investment system , to raise enough capping our government . The writer considers that the pattern should be changed from being guided by the governmental investment to by the market one according to the infrastructure investment circumstances in our country above all . The first is to construct and perfect the base of the market financing – capital market and project one. The capital market is the main body of the resource allocation . The project one is the condition of the infrastructure financing . The second is to cultivate the neutral organizations . The third is to construct the main body of the investment and financing under the condition of the modern market economy . The next is to renew and standard the governmental functions . The investment system and raising efficiency in the market financing . The last, we should renew the ways of financing continuously in order to raise enough funds and to accelerate the infrastructure investment and construction.

The western area is the district that needs the most infrastructure investment funds in our country . The infrastructure financing of the western development should start from leading the western private capitals into constructing the infrastructure. The writer expounds the sys-

tem that leading in the private capitals in the western development from two aspects . The first is to analyze the supply of the private capitals system, to consider that the Quantity and the overall arrangement of the resources decide the supply capacity of the system; the second is to analyze the nudes of leading in renting the system is to construct investment encouragement. To improve the private capitals system needs to reform a sort of the systems or institutions.

The seventh part of this book is the management research on infrastructure in vestment. The good management increases the guaranteeing of investment efficiency of infrastructure. The real reason on lowly efficiency of the investment manages in our country is that the system is not sound and scientific. Increase the efficiency of infrastructure investment manages, we want to separate enterprise from the government. We should abandon the government to control the resources, high degree concentrate plan, exclusive investment management system; the investment process of infrastructure should promote to put into formula the operation, pass to operate the accomplishment the agreement, manage the contract, list price method; the investment and maintenance of the infrastructure links usage and carry out the business management: Who we, who hand over the fee, and who invest and maintenance, who we the fee. Increasing efficiency infrastructure investment manage can still pass the business decomposition. Generally, resolve the business have two kinds of method. To develop infrastructure, we will promote the consumer into investment decision. The decision process must availably consider the plan, control, environmental and protecting poor people.

Studying the strategy of infrastructure investments is finally part of this book. The establishment invest strategy is to obtain the whole benefit, farsighted performance. The author creatively brings up three

greatest investments strategy. Three strategy are mutually coupling, mutually add, cross usage, and together constitute our country future invest strategy system on infrastructure.

# 内容提要

基础设施是涉及社会福利、居民生活质量、生产与发展的全局性问题，其在经济发展中的地位和作用越来越受到各国政府和经济学家的重视。

长期以来，人们只是关注到基础设施对工业化与生产效率的重要性，而对基础设施及基础设施与经济发展关系的理论化认识程度不高，并由此导致基础设施发展政策的失当。直到 20 世纪 40 年代末，基础设施才作为一个独立的经济范畴而存在；此后，发展经济学家开始研究基础设施供给对于发展中国家经济增长的重要作用。70 年代以后，各国政府逐渐意识到一国基础设施恰当与否，决定其在从事多样化生产、进行国际经济竞争、解决人口增长问题、减少贫困以及保护环境方面的成败，并把发展基础设施摆在首要位置，纷纷对基础设施领域实行改革。与此同时，许多经济学家及世界银行专家对基础设施与社会发展和经济增长的关系进行了细致研究。然而，这些对基础设施的研究作为理论经济学的一个分支，至今没有建立比较统一、比较完整的权威性科学理论体系；人们对基础设施的认识比较肤浅，对基础设施投资问题进行专门研究的资料和文献更为少见。本文运用历史和逻辑相统一、理论与实际相结合的研究方法，通过比较、总结部分发达国家和发展中国家以往基础设施投资的经验教训，详细剖析我国基础设施投资的实际，力图深入探讨我国基础设施投资的重大问题，为我国基础设施投资提供政策建议。

中国是一个发展中的大国，具有基础设施投资的特殊性和复杂性。建国初实行的计划经济体制和经济落后的现实所决定的经济发展战略，对基础设施投资严重不足、“欠账”太多。随着改革开放

的深入和市场经济发展,物质供给日益丰富,产品供求发生逆转,而作为经济增长和社会发展条件的基础设施依然供给小于需求,“瓶颈”制约日益严重。近十多年来,我国基础设施投资取得了长足的进步,投资效率大有提高;然而,基础设施服务还不能完全满足经济增长的需求。面对国情现实、快速提升国力需求及21世纪中叶建成中等发达国家的目标,面对中国基础领域与发达国家相比在规模、结构、区域配置、技术进步、资金筹措等方面的劣势局面,我国基础设施投资与建设还有很长一段路要走,为此,中国政府必须正确地建立基础设施投资和发展政策。在这种背景下,研究基础设施理论以及经济发展中基础设施的投资问题有助于我们加深对基础设施及其与经济发展关系的认识,有助于我们科学地制定基础设施的投资政策。论文的选题正是基于如上考虑。

本书内容共有八章,除第一章外分别研究基础设施投资规模、结构、区域配置、技术进步、投融资、投资管理和投资战略等七大问题。在每一问题的研究中采用先理论、后实际,摆问题、提对策的逻辑谋篇布局,力求得出实用的分析结论。具体内容如下:

本书开篇是导论部分。首先,将基础设施定义成为多个使用者提供服务的公共事业及公共工程;指出完备的基础设施决定一国或一个地区的经济增长速度、贸易多样化程度、减轻贫困的难度和环境的可持续性,基础设施足够快的发展速度,促进提高生产效率并降低生产成本,改善经济增长质量。据此,笔者认为我国经济发展长期存在基础设施供给不足的“瓶颈”,直接导致低效率的资源配置和经济波动;表现在:对基础设施投资不足、数量短缺、结构扭曲、区域配置不合理、技术水平低等方面,及其对经济持续增长和宏观经济稳定运行的制约。改革开放后,基础设施总量水平虽上了一个台阶,但这一改善具有明显的弥补欠账的性质,不可能满足经济增长对基础设施供给规模、供给结构、区域配置、技术进步和资金投入的需求;面对基础设施领域日益激烈的竞争和我国基础设施的落后局面,我们必须探索基础设施投资规律,研究基础设施领域

投资中的一系列问题,至此,提出本书研究的问题。其次,笔者综述了国内国外研究基础设施的理论成果,详细阐述了早期经济学家、发展经济学家以及世界银行专家和国内学者关于基础设施的思想、理论观点和研究进展。在此基础上,笔者运用投资学的基本理论从成本、效率、福利、投资进入、经济增长、劳动就业、政府作用等方面对上述理论进行了评述,以期深化人们对基础设施投资及其相关问题的认识,进而为研究基础设施投资问题和制定我国基础设施投资政策找到理论依据。在本章的最后,笔者详细地说明了本书的研究思路及主要内容。

基础设施投资规模研究是本书的第二部分。基础设施投资规模以增加基础设施的供给能力和维护基础设施的服务质量、提高服务水平两种方式作用于社会发展和经济增长。基础设施投资作为一种有别于生产、流通、分配、消费等经济行为的特殊活动,一方面在基础设施投资过程中创造需求,另一方面投资完成后增强产品和服务的供给能力。笔者分析认为,(1)基础设施投资刺激总产出、综合要素生产率的提高,二者具有明显的弹性关系。德国铁路建设、美国 1950—1985 年的发展两个时期基础设施的投资对于总产出和要素生产率的作用是最好的例证。(2)基础设施投资过程为工业化创造条件,各国的工业化都是伴随着基础设施投资的增加而发展,几乎所有工业化国家和新兴工业化国家的发展历史都是如此。(3)基础设施投资通过两条途径影响产业发展,一是基础设施投资形成对供给产品的需求,拉动相关产业发展;二是基础设施建成扩大了商品市场的范围,商品需求量增加,推动产业的发展。基础设施投资规模大,建设周期长,常常吸收大量的就业人员,稳定宏观经济的运行。(4)投资建成良好的基础设施是扩大贸易规模,提高贸易竞争能力的基础。完善的基础设施减少贸易中的交通成本,促进生产专业化;同时,提高贸易速度,扩大贸易范围,增加贸易需求。(5)基础设施投资加快了生产要素、产品销售流通和人口流动,促进了城市化的发展;而城市化本身刺激了对基础设施需求,推动了

经济发展中对基础设施投资。基础设施一旦建成将在相当长的时期内发挥作用，为了保障服务的持续和有效性，还必须在基础设施发挥作用的过程中不断地对管理、维修与保养等方面进行追加投资。基础设施的重置投资对于避免基础设施存量浪费、保障其服务效率，提高对基础设施存量的利用水平具有重要的意义。一是足够的重置投资减少产出在利用基础设施进行传输过程中的损耗，提高投入产出比；二是重置投资提高基础设施服务能力；避免因配置失当造成基础设施的重复投资；三是保障基础设施服务的优质、足量及其可靠性，有利于降低用户成本，满足用户的多样性需求。基础设施重置投资不足等价于基础设施的负投资，严重地影响经济的可持续增长。

当我们清楚了解基础设施投资对经济发展的影响和对经济增长的作用后，笔者以此为据分析了我国基础设施投资现状并预测出实现经济增长目标对基础设施投资的需求。分析认为，80年代以来，我国实施以改革投资环境、促进经济增长、拉动社会需求为中心的基础设施投资政策，基础设施出现快速发展的局面，表现在投资幅度上升、投资规模扩大、技术等级提高、保障经济增长能力显著增强；然而，基础设施投资增长的速度远远不及经济增长速度。笔者以近几年投资多、发展较快的交通、通讯基础设施为例，经过数据分析比较发现基础设施投资并不能很好满足经济增长的需求。我国基础设施处于超负荷的状态，“瓶颈”制约缓解了，并不表明我国基础设施实现了真正意义上的供需平衡，相反，我国基础设施整体规模滞后、投资不足，某些基础设施的短缺日益严重。为了改变现状，加快工业化速度，实现“十五”计划和2010年的发展目标，还必须加大投入。经作者对不同的经济增长方案下基础设施投资需求的预测，未来十年部分基础设施的投资需求额将达到6万亿人民币。如果考虑到结构调整、区域配置调整、技术进步等需要，投资数额会更大，因此，我们必须研究基础设施结构、布局、技术进步的变动规律及其与经济增长的联系。这也分别构成著作的三、四、



## 五章。

本书的第三部分是基础设施投资结构研究。基础设施投资结构的实质是各种经济资源在基础设施各部门之间的配置。由于基础设施投资的不可逆性,基础设施投资结构决定基础设施构成及其对经济增长的保障效率,决定对需求多样性和个性化的满足程度。笔者认为,基础设施投资结构变动是一个历史的过程,现有的基础设施结构是以前各时期投资结构形成的,当前的投资结构塑造着未来的基础设施结构;一国或一个地区基础设施结构不合理,其重要原因在于投资结构的不合理。文章进一步分析了基础设施投资结构决定的因素。这些因素包括:(1)需求结构是决定投资结构的重要变量。经济增长对基础设施投资结构的需求具有一系列的特征,表现在:需求范围广、需求程度与基础设施职能密切相关;需求对基础设施专用性要求高;需求的强度具有均衡属性;同时经济增长对基础设施需求具有多重性、多样性和个性化的特点。经济增长的需求结构对基础设施投资结构决定主要是通过中间需求的作用而实现的;贸易发展引致经济增长对基础设施需求结构的变动进而影响基础设施投资结构变动。(2)现存基础设施结构是决定投资结构的基础。这种基础性决定作用表现在两个方面:一方面是不同的基础设施的物质基础存量不同,投资结构不一样;另一方面,现在的基础设施结构会影响和决定社会对基础设施投资的需求程度与结构。在社会需求总量结构一定的情况下,社会对基础设施投资结构的需求取决于现有基础设施构成的满足程度。(3)技术进步是推动基础设施投资结构变化的基本动力。从需求方面看,技术进步不断地改变着人们的消费观念、消费对象和消费方式,从而不断创造出新的消费需求来决定投资结构;从供给方面看,技术进步直接推动着基础设施投资对象、方式和方法的创新,提高基础设施水平,促使劳动生产率提高和生产成本下降。(4)区域间贸易和跨区域投资加速投资结构变化。贸易促进市场一体化不能离开基础设施的一体化和通讯联络的紧密化,贸易物质差别改变对基础设施服务需求的