Infrastructure Economics
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Module – 01
Lecture - 05
Infrastructure Finance-2

Module 5, I am going to discuss, what is basically International Finance?

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What is the need for international finance, different sources of international finance, investment in infrastructure and the challenges to get infrastructure finance.

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Let me begin with what is basically infrastructure finance. Given a back ground of finance in my previous lecture, where I have discussed that finance is a management of the monetary is a management of the money. Here we are linking that management of money with the infrastructure projects. Infrastructure finance is the study of managements of funds required to finance infrastructure projects through various types of investment.

Project finance, the principle vehicle for infrastructure investment is basically it involves the creation of a legally independent project company, finance with non-resource debt, and equity from one or more corporations, known as sponsoring firms. For the purpose of financing investment in a single purpose capital assets, usually with a limited life, so this is the explanation by Esty and Sesia in 2006.

That, what is basically infrastructure project finance involves, it involves the creation of legally independent project company, which is getting the finance with non-resources, non-resource debt and equity from one of the more corporations, one or more corporations known as sponsoring firms. The key point here is infrastructure project firms has to depend on many other partners, many other corporations, it may be some time, a mix of partners which takes the decisions.

So, the level of finance, because the level of finance is very wide and it is also for many years, so it includes a series of partners at local level and outside the country some time and also the partners from within the industry, outside the industry, from the international agencies, within that particular region. For example, in Asia, Asian Development Bank some time, beyond the international agency, beyond that region, maybe the World Bank and UNICEF and some other international agencies. So, we find here that it needs lots of coordination and adjustment.

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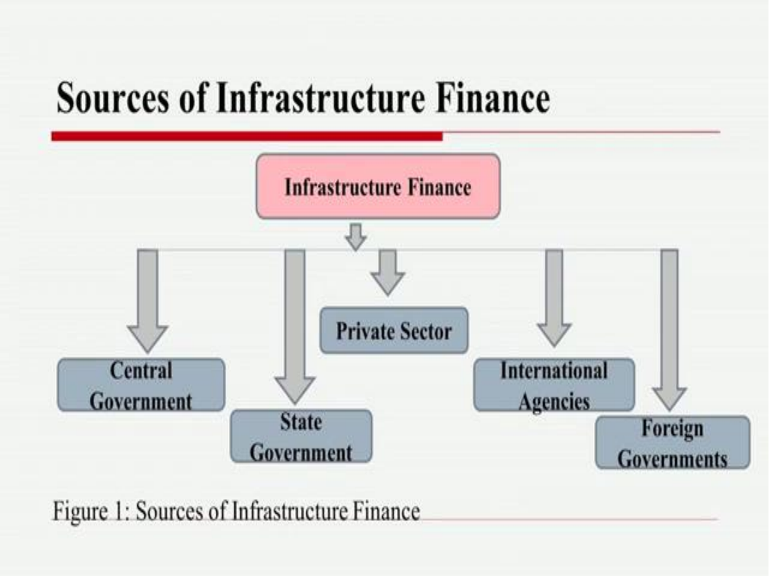

Let me also discuss this diagram, where we can find out what are basically the sources of infrastructure finance. The sources of infrastructure finance may be the central government, maybe the state government, may be the private sector, international agencies and international governments, foreign governments or the bilateral agencies. So, this diagram gives us a very brief idea that infrastructure finance is not fully dependent on one source.

But, international infrastructure finance has a wide range of sources within the country and outside the country. And when we say private sector, the private sector from the country, outside the country, when we say state government, we cannot really ignore the local bodies, also at this juncture, because there are certain local bodies, which is independently working without the interference from the state government and the central government. So, and they are also active in developing infrastructure at the local level.

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So, given this back ground of source of information, there are different strategies for infrastructure finance, which a country is adopting. As we have discussed today in my previous lecture that infrastructure finance or finance is not only the matter of the local economy, but it is basically, we live in a world of globally financed world where most of the decisions, most of the actions are not only dependent on the local bodies, not only dependent on the local economy, but dependent on various international factors, international agencies, international sources of lending. And in such a condition, we have to find out a country has to find out the strategies for infrastructure finance.

So, maybe the first strategy, which is a very traditional strategy for financing the infrastructure is public finance. So, when majority of the countries were adopted socialism or socialistic pattern of society at that time public finance or even in the mixed economic system, majority of countries were adopting the development of infrastructure fully dependent on the public finance.

Because, private sectors are not really willing to join infrastructure, because government were not allowing them to join. And lots of welfare promises were given to the public through development of infrastructure and there was a time, when Nehru in 1951 has said that the Public Enterprises are 'The Temples of Modern India' and at that time, it was only the public finance, it was only the public investment, which was the real key for the development.

One cannot ignore the fact that during the second five year plan, Nehru and Mahalanobis has decided that how India will have the big investment in industry, big industries and that includes various infrastructure projects also. So, like that many countries in the world which were adopted, which had this controlled economic system, they were also having a major dependency on the government funded, government fund for the infrastructure development.

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So, let me first discuss, what is basically infrastructure through public finance and then, we will discuss the other sources of finance and other strategies of finance. So, the budget of central government, state government and the local government to finance infrastructure projects are basically treated as the public finance. And through these local bodies, government state and central government, if the infrastructure projects are developed and that projects are basically treated as the project developed by the government or by the public finance. So, entire investment, construction, operation and maintenance is taken care by the government, if the infrastructure is fully developed by the public finance. So, raising and contributing funds from the public either through the taxes and tariff, public borrowing, such as bonds or maybe sometime both taxes as well as public borrowing both. So, this is the strategy, first strategy of getting the infrastructure projects done through the public finance.

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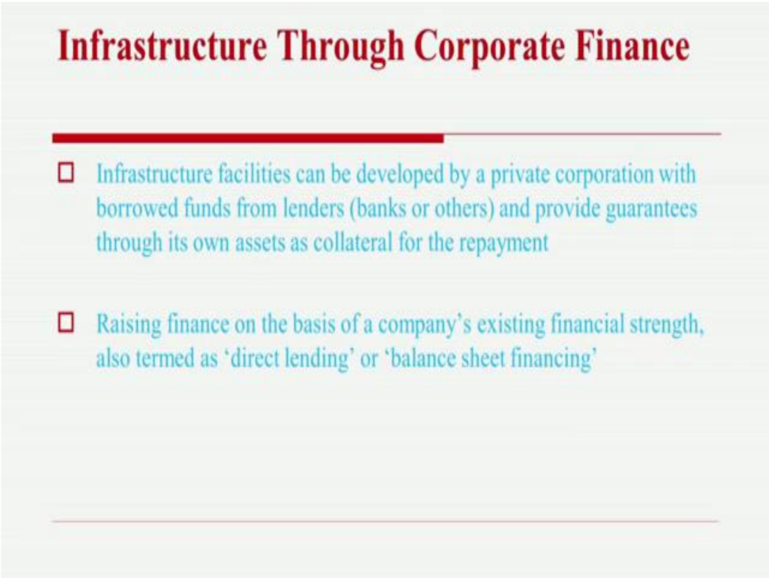

Let me also discuss here, what how basically the corporate world also finance the infrastructure projects? Infrastructure facilities can be developed by private corporations with borrowing funds from lenders, banks or others and it provides guarantee through its own assets and these activity corporate houses are raising the funds, raising finances on the basis of companies existing financial strength, also, termed as direct lending or balance sheet financing.

So, this is completely different from the public finance, because in public finance, the source of government revenue are the taxes source of government revenue are different tariff imposed on the public. At the same time, borrowings are by the borrowings are dependent on the public and ultimately government decides which projects has to go, government decides how it has to be completed and what will be the source of finance and what will be the source of revenue collection.

Compare to that, corporate finance is raising finance on the basis of company's existing strength and it provides guarantee through its own assets. So, one way, when we say public finance, public finance includes lots of political decisions, where the corporate finance is more independent in taking the decisions. Because, they basically try to have their benefit first and based on that, they decides what are basically risk involve, they calculate the returns on investment and based on that they basically go ahead with the financing infrastructure projects. Let me also discuss the third strategy, which is the strategy of the public private partnership infrastructure through public partner private partnership in investment.

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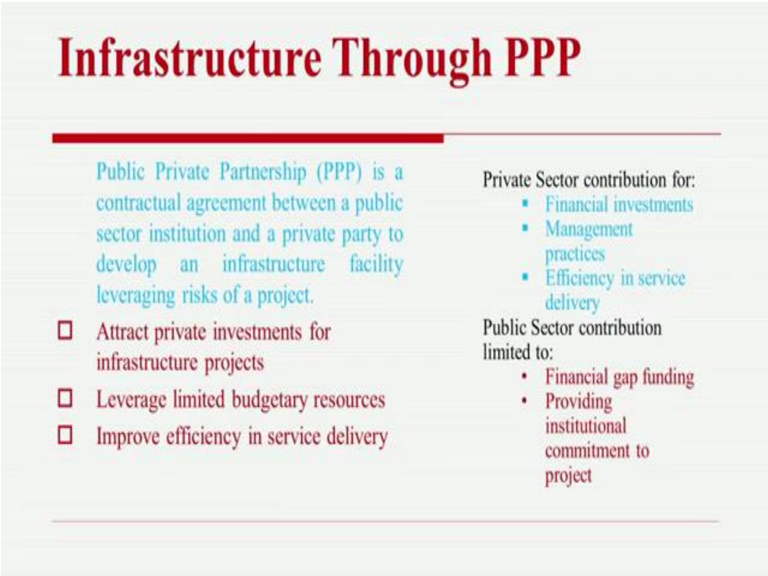

So, the public private partnership is a contractual agreement between public sector institution and a private party to develop an infrastructure facility risk of a project. Basically, this type of adjustment, this type of that agreement is very common in the world today, because by 1990 most of the country in the world has realize that, it is very difficult to manage the infrastructure projects only through the public expenditure.

Because, because of the fast growth of public expenditure, it was realized that, it is very difficult to finance those public expenditure, because ultimately public expenditure is dependent on the revenue comes from the public. So, very soon it was realized by different countries that it is high time because of the population pressure in many developing country.

And because of more dependency on the government, the size of the market, the expansion of the market has not happened as it was discussed in the Rosenstein-Rodan model and also Ragner Nurkse argued that it is the size of the market which matters for the economic growth and development. If there is not any expansion in the market, if the market is traditional in nature, it market is fully dependent on the agro based activities, you are having consumption in a very small network and the production in a very small network.

So, you do not have further challenge for faster growth, because you do not have inter linkage in the economy, and in such a situation, when you do not have inter linkage in the economy, the economy is in the standstill mode and they do not really work hard for breaking the deadlock in development. So, infrastructure play a very positive role in breaking that deadlock in the development.

Development is nothing except growth is nothing except breaking the deadlock and that deadlock is basically continuing if the infrastructure projects, if the investment is not really coming back to the economy. And it is very important that through this PPP, Public Private Partnership model, especially when world is looking for more assistance and more partnership from different part of the world. Even the developed countries are looking for the partnership with developing country today for many infrastructure projects.

And in such a situation, when world is becoming more interdependent, attracting private investment for infrastructure projects is only possible through more PPP strategy. Because, you have the agreement, you have a contractual paper, you have things very transparent that what type of partnership you want, what type of benefit your partner will get, what type of benefit you want and what model you are going to adopt, because these things are very transparent, when both parties are signing any agreement.

So, government as a facilitator at the same time government is the partner in the PPP strategy has to play a limited role not the complete role in terms of financing and investment. So, government has some pressure on the resource generation, budgetary resource generation.

But, it is not completely the public financing for the infrastructure, but the burden of the government is certainly coming down and this is one of the strategy where India, China, Brazil many other developing country are basically working on. Even in many country where there are very strict environment, where the government do take the final decisions, they do allow certain partners to join the hand and to allow other partners also to complete the projects.

So, through this activity, service delivery is much improved, efficiency of the infrastructure projects is much better. Because, private sector contribute for financial investments, management practices, efficiency in service delivery, while the public sector contributes in a very limited role in terms of financial gap funding. At the same time providing institutional commitment to the projects; that is very important to complete any infrastructure projects. So, there are certain facts, which one must understand today in a very brief presentation of certain statistics.

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Today 1.2 billion people live without electricity, 2.8 billion still cook their food without solid fuels, 1 billion people live more than 2 kilometers away from their house, almost 75 million people lack the drinking water facility and a country like India needs investment of US 1 trillion dollars in new infrastructure projects between 2012 to 17, that was the statistics of Department of Economic Affairs, Government of India in 2014.

Apart from India, if you can see the Africa, according to the Africa infrastructure country diagnostic, the infrastructure needs of Sub-Saharan Africa exceeds US 93 billion dollar annually over the next 10 years. And that shows that what type of challenges a country is having.

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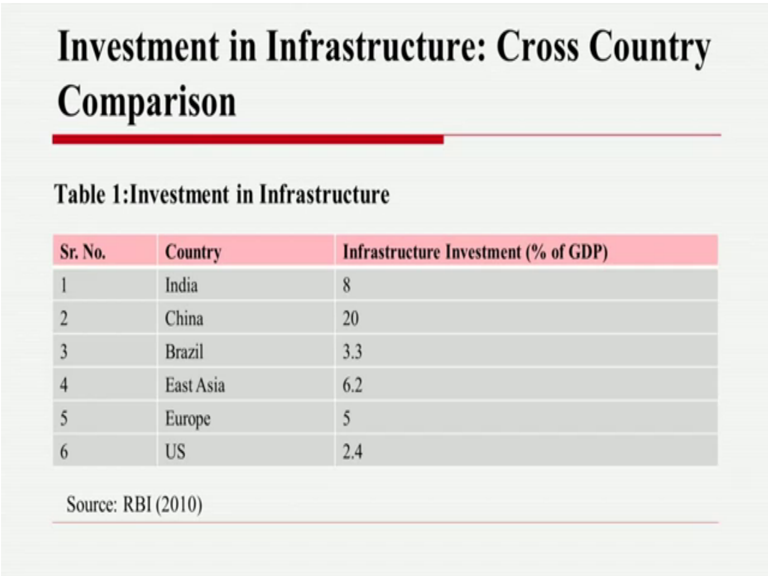

Investment in Infrastructure: Cross Country Comparison

Table 1:Investment in Infrastructure

Sr. No.	Country	Infrastructure Investment (% of GDP)
1	India	8
2	China	20
3	Brazil	3.3
4	East Asia	6.2
5	Europe	5
6	US	2.4

Source: RBI (2010)

If one can compare the investment in infrastructure at the cross country level, we can find out that as a percentage of GDP, infrastructure investment at the percentage of GDP, while, India is having 8 percent of investment, China is having 20 percent, Brazil 3.3, East Asia 6.2, Europe 5 percent and United States 2.4 percent. This is the RBI data in 2010.

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But, one can also see here the other data which comes from McKinsey Global Institution and the G 20 meeting in 2013 that the share of infrastructure financing as a percentage of GDP must be increased from present level 2, 5.6 percent in by 2020 worldwide. And developing country will need to invest an additional 1 trillion a year up to 2020 to keep pace with the demands of urbanization and better global integration and connectivity.

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So, with this statistics, I would like to briefly discuss the challenges to get infrastructure finance. Because, getting infrastructure finance is one of the challenging job for especially for developing and least developed country, because in first thing, which is very important to discuss here is the infrastructure projects are complex. Why? Because, infrastructure projects cannot be completed without land.

The first thing is the land acquisition. Second thing is infrastructure projects are complex, because it includes the local people, where the infrastructure will be developed. Some time local people feel that they are basically de-rooted from their past and what basically they will get from the development of infrastructure. Because, anybody who are really in a very poor condition, they want quick benefit from any growth process, any change in economical structure.

So, if infrastructure projects is coming up, they are looking at infrastructure projects are not going to give them any quick benefit, because infrastructure projects are a long projects, it has long gestation period is always required to completed the projects. So, in such a situation, when infrastructure projects are complex in nature; that is very difficult to get the finance for the infrastructure projects, because it is not so easy to convince the people that you are going to get certain benefits soon after the projects will be completed.

A highway which comes at a village on that area is first seeing the challenge that where they will be settled down and whether they will settled down properly or not. Because, it is all sentimental, when one go back to some other place, one has to basically rehabilitate to some other place, just for a development, which is not going to give any quick result.

So, in such a situation infrastructure projects are very challenging compared to establishing a small industry or compared to establishing a manufacturing unit. Because, it requires long time, it requires long huge investment, it requires support from the local public, it require support from the political party, it requires a proper support base from the technicians, from the local bodies.

And ultimately it is very difficult to continue with such infrastructure projects without getting the finance on time. So, the second challenge is no infrastructure projects in the world is labor intensive, it is always capital intensive and you need today modern technologies are required to build up those infrastructure. Because, that is more important, when you are having a very modern infrastructure growth going on, you cannot really rely on the old techniques to buildup such projects.

And whenever you are using the new techniques, you need more capital, more investment, because using the technology is not possible without having a much advanced level of investment. The third point which I have already discussed and which again I would like to discuss is the long period to complete infrastructure projects. And so when we say long period of time a long period to complete infrastructure projects, it is a demerit of such projects that requires long period of time.

So, infrastructure different agencies of infrastructure development today they also try to consider this fact that how quickly we can really complete this project. And for that, they need more planning them, they need more better investment, they need more better technology and at the same time, high risk are involved in infrastructure projects. So, risk are basically the political risk, social risk, there may be a social protest against a project which is being started.

There may be a risk in terms of not getting the raw material on time, there may be a risk in terms of not getting labor because of certain political connection, labor may not be comfortable to work on a site. So, in that case, infrastructure projects will not have a enough possibility to complete on time. So, there are varieties of risks not only the economic risk, but the political and social risk involve in the infrastructure projects and such risk which is basically non-economic.

One can divide- this risk as the economic risk and non-economic risk and we find out that in many country, many developing country, apart from economic risk, such as the raw material cost, the cost of loan, high cost of interest payment and other things. Apart from that risk, there are also certain risk like political protest, social protest and when you have such risk on the way to complete the infrastructure projects, it is really hard to say that when the project will be completed and how the project will be really finished.

So, apart from the physical infrastructure, when we see the social infrastructure, where the education, health and other things comes, we also find out a greater positive and negative externalities are being included. So, this is also one of the challenge, social returns can exceed private returns in terms of infrastructure projects, especially the social infrastructure projects.

It requires huge investment especially if you want to have the immunization program for the entire country or the education for the entire country, primary education for the entire country or proper health checkup or basic health facilities provided to all the children's of the country. So, in that case, you required more assistance in terms of investment but, at the same time, the private returns will not be as much as the social returns, because society as a whole will get the benefits.

But, as a investor, when the investor is looking for his or her own benefit, it may not be very feasible for them to get more benefit, more economic benefit in terms of they will always have more benefit in terms of social benefits.

So, in such a situation, private sector is reluctant in financing infrastructure projects and we find out that a majority of the projects which is related to education, health, sanitation, water distribution, safe drinking water and many other projects, which has more social returns, which provides more social returns are really having the problem. Today, in terms of finance because private investors are looking for their private returns and they are not really worried for what basically society is getting what return society is getting.

So, this is one of the challenges, one cannot say that, this is not a challenge. So, international agencies such as UNICEF and WHO, these agencies are really taking care of some of the major challenge, especially in the social sector in terms of health, education and sanitation and safe drinking water. So, with this discussion on the challenge to get infrastructure finance, I would like to basically conclude this discussion.

And in the next discussion, we are going to have a proper discussion on how international agencies are really helping and financing infrastructure projects in various countries including India.

Thank you.