Olga Bednyakova
Uniwersytet Wrocławski

Urszula Kalina-Prasznic
Opiekun naukowy — Scientific Tutor

Public-private partnership in the transport infrastructure of developing countries

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Słowa kluczowe: partnerstwo publiczno-prywatne, kraje rozwijające się, inwestycje transportowe, publiczne i prywatne inwestycje

Keywords: public-private partnership, developing countries, transport infrastructure investments, public and private investments

Abstract: The development of transport infrastructure requires great sources of financing, both public and private. In the article the role of PPP in transport in developing countries is considered. Recently there has been an increase in PPP in transport in developing countries, but the financial needs of transport infrastructure development are still huge. In the article the features of PPP in transport are also considered.

Partnerstwo publiczno-prywatne w infrastrukturze transportowej krajów rozwijających się

Abstrakt: Rozwój infrastruktury transportowej wymaga ogromnych źródeł finansowych zarówno publicznych, jak i prywatnych. W artykule rozpatrzona jest rola PPP w infrastrukturze transportowej w krajach rozwijających się. Ostatnio w tych krajach zwiększyła się liczba projektów PPP w transporcie, ale potrzeby finansowe na rozwój infrastruktury transportowej są nadal ogromne. W artykule zostały również rozpatrzone specyficzne cechy PPP w transporcie.

Introduction

Infrastructure investments are considered an essential tool to create conditions conducive to economic development, especially given the overcapacity in the

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manufacturing industry. Investment in infrastructure is a perfect way to redistribute resources and labor from stagnating economic sectors in the industry, ensuring long-term economic growth. Historically low levels of investment have led to the deterioration of roads, airports, and other vital resources. Increased infrastructure spending would be a good economic policy, both short- and long-term. Public investment in infrastructure stimulates private investment: every dollar spent on infrastructure projects leads to the multiplier effect of about 1.59 US dollars. Moreover, business benefits from cost reduction in the spheres of transport, communication, power and water supply[1].

Inadequate infrastructure hinders the process of intensification of international division of labor and the economic development in the global economic space. For instance, the world trade and the international flow of capital both have high dependence on the existing transport and communication infrastructure. The poor quality of transport infrastructure limits the country's sustained economic development as well as its competitiveness on international markets[2]. The infrastructure provides a process of industrial agglomeration, where new industries are concentrated around the already existing industrial clusters. For a long time the infrastructure expenditure has been considered consumption expenditure of the private or public sector and only recently has it moved to the category of capital investments[3].

However, despite the fact that the public sector is financing a significant part of infrastructure services, investment demand is still unsatisfied, and governments are looking for methods to improve the efficiency of transport infrastructure. Public-private partnership (PPP) is one of the tools of the government, by means of which it is expected to increase investment in infrastructure and its efficiency.

The problem of transport infrastructure investment is more essential for developing countries. First of all, their existing infrastructure is quite far from the level of the well-developed countries infrastructure. There is a lack of public funds and necessary investments expenditure for the development of transport infrastructure. The quality of existing infrastructure deteriorates as a result of its aging and insufficient maintenance. The main reason for the implementation of PPP projects in the transport infrastructure development is that there is a great need for infrastructure financing in developing countries that cannot be fulfilled by limited public funds.

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[1] M. Zandi, *Doing Infrastructure the Right Way: Increased Investment in Public Assets Offers Both Short- and Long-Term Economic Benefits*, https://www.economy.com/dismal/analysis/free/226001 (date of access: 26 May 2015).

[2] World Bank, *Infrastructure at the Crossroads: Lessons Learned from 20 years of World Bank Experience*, 2006; World Bank, *Infrastructure and the World Bank: A Progress Report*, 2005.

[3] E. Gramlich, "Infrastructure Investment: A Review Essay", *J. of Economic Literature*, XXXII, Sept. 2009, pp. 1176–1196.

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Features of PPP in transport infrastructure

Transport projects, including building airports, roads, railways, rail, buses, tunnels and bridges are traditionally developed through a combination of private and public funding. States are turning increasingly to the private sector for investment into the development of new and existing transport infrastructure. The transport sector is facing two major challenges: demand forecast and land designation policy. A demand for the transport infrastructure is influenced by competing types of transport, demographic changes, economic conditions, and facilities costs for beneficiaries, usability, individual preferences and a number of other, often interrelated factors which make it difficult to accurately forecast demand. The need for access to a parcel of land for the construction of transport facilities makes them expensive, long-term and politically sensitive projects. The public reaction to new transport facilities could be ambiguous. No one wants a new railway or road near their house. For many projects, particularly rail, the high cost of land and construction could not be compensated by permissible and politically acceptable tariffs. Many transport projects require specific and substantial government support.

PPP projects in transport have the following specific features:

1. Acquisition of land. The government participates in the confiscation and aquisition of land or transfers it to the project company. The time required for the registration of the acquisition of necessary land will largely depend on the local legislative system.

2. Traffic risk. The beneficiary of the future transport services is the population as a whole. Therefore, PPP projects in transport are difficult to quantify and more difficult to allocate among the project participants.

3. Capital subsidies. Transportation projects require significant capital expenditure that may exceed capabilities of the private financial markets or the revenue potential of the project. At the same time, tariffs should remain at an affordable level, so government support could be crucial to the financial stability of the project.

4. Risk concerning legal regulations. Any construction or reconstruction must meet the established regulations and may require permission of the authority. These regulatory issues will affect the project's schedule, and should be resolved at the beginning of the process.

The governments are turning increasingly to the private sector with proposals to participate in the construction of transport networks. It is a growing trend, mainly because of the fact that the public sector has huge transport expenditure, as well as because of the insufficient number of activities financed by the government. The need to increase the volume of transport services leads to higher expenditure of the government. Developing countries have a particular need to expand their capacity in the provision of transport services, but its cost is unacceptably high[4].

[4] L.C. Gilroy, R.W. Jr. Poole, P. Samuel, G. Segal, "Building New Roads Through Public-Private Partnership: Frequently Asked Questions", *Reason Foundation*, 58, March 2007, p. 14.

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The rise in public-private participation in transport

Accumulated by the World Bank, an extensive database consisting of more than 4100 projects implemented during the period of 1990–2014 in 139 low- and middle-income countries, provides comprehensive information on the global experience in investment infrastructure projects through public-private partnerships and an extensive material for the compilation, analysis and adoption of good practices for other countries. According to the World Bank database[5], between 1990 and 2014, there were over 6462 projects with private participation in infrastructure in low- and middle-income countries, with the total public and private investments in these projects amounting to 2319,107 million USD.

The chart below shows the number of PPP projects by low- and middle-income countries and by infrastructure sectors over the period of 1990–2014.

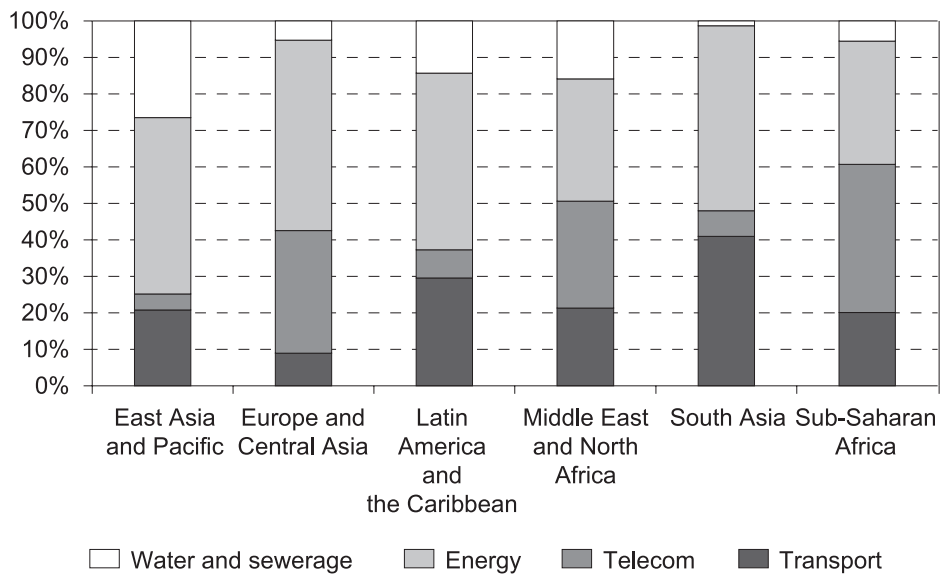

Figure 1. The number of PPP projects by sector and region (million USD) 1990–2014

Source: own elaboration based on World Bank PPP database, www.worldbank.org.

As shown in Figure 1, the ratio of PPP projects in transport to the total amount of PPP projects in low- and middle-income countries is 25.3% (1635 projects), which places transport on the second place among the other sectors of infrastructure. This fact speaks for the wide dissemination of PPP for the transport infrastructure development. At the same time, as presented in the chart below, the value of PPP projects in the transport sector occupies the third place (473,700 million USD or 20% of the total amount of investments), following the value of

[5] World Bank database, 2015, www.worldbank.org.

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the investment for the telecom sector (949,122 million USD or 41% of the total amount of investments) and the energy infrastructure (817,465 million USD or 35% of the total amount of investments).

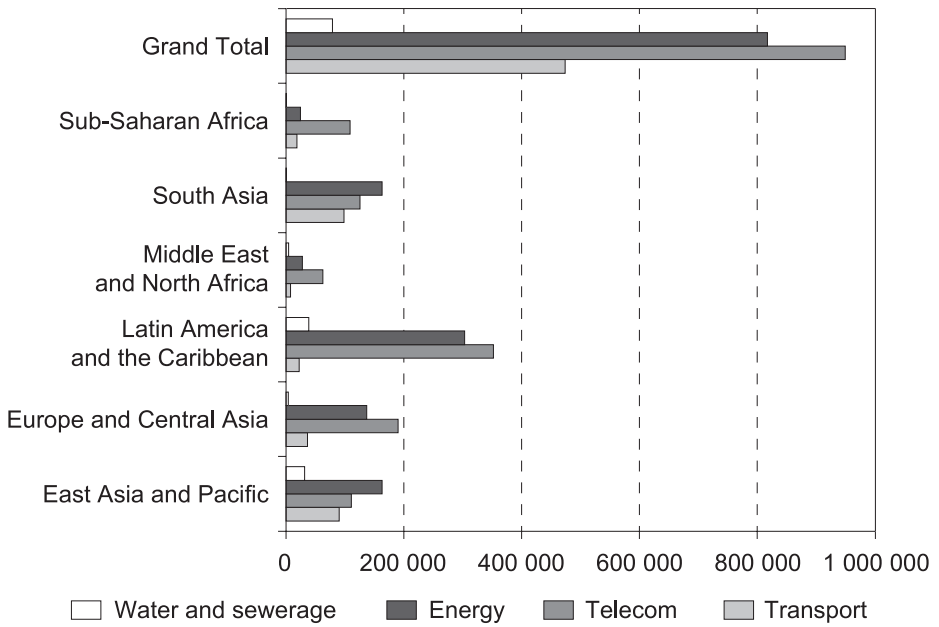

Figure 2. The value of PPP projects by sector and region (million USD)

Source: own elaboration based on World Bank PPP database, www.worldbank.org.

As seen in Figures 1, 2, the average value of investment per project in transport infrastructure is 289.7 million USD; in telecom infrastructure — 1108.8 million USD; in energy infrastructure — 265 million USD and in water and sewerage — 89 million USD. The results of calculations are evidence of an enormous capital intensity of the telecom projects, more than triple that of transport and energy infrastructure projects and more than 12 times that of water and sewerage infrastructure projects[6].

Out of the total cumulative investments within PPP of 2,319,107 million USD, the ranking of regions ordered by volume is as follows: (1) South Asia, (2) Latin America and the Caribbean, (3) Sub-Saharan Africa, (4) East Asia and Pacific, (5) Europe and Central Asia and (6) Middle East and North Africa (Figure 2). Among the developing countries, more than 30% of the projects of the last 24 years have been signed in Latin America and about 30% in East Asia. The largest projects tend to be

[6] In the absence of data for a more particular comparison of the infrastructure sectors, this conclusion has rather a probabilistic character and could just be a reference point for further research.

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in the Middle East and North Africa with an average project size of about 617 million USD, followed by Europe and Central Asia with projects of about 420 million USD on average. In Latin America and the Caribbean and South Asia the average projects are about 350 million USD on average, in other regions they are less than 300 million USD.

The rise of PPPs in transport has its roots in broader, worldwide privatization initiatives during the 1990s. Figure 3 provides a snapshot of the dramatic increase in the involvement of the private sector in the development and funding of public facilities and services across infrastructure activities during the 1990s and since 2005. This illustrates a small share of investment commitments for the transport sector. There is also a relatively small share of investment needs of the transport sector in the developing countries.

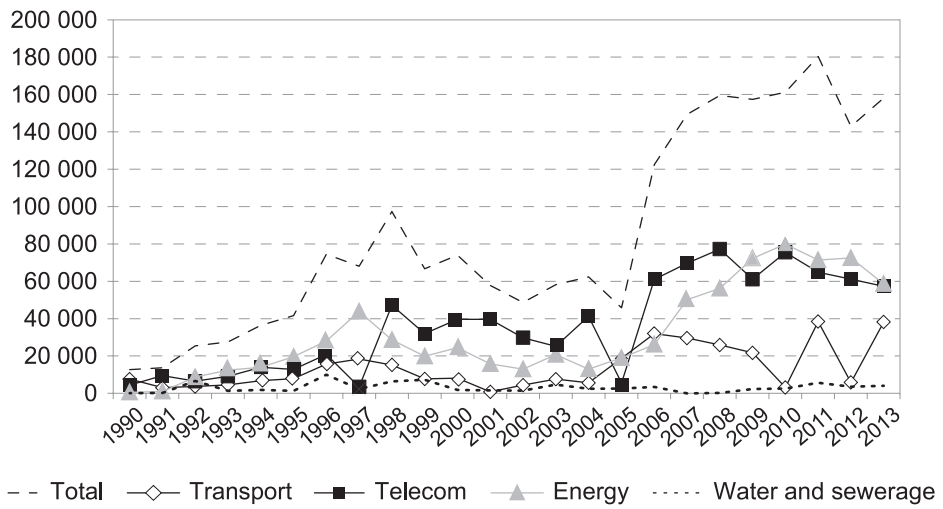

Figure 3. Investment commitments in infrastructure projects within PPP in developing countries by sector (million USD), 1990–2013

Source: own elaboration based on World Bank PPP database, www.worldbank.org.

However, despite the fact that the number of investment commitments is just a small share of investment needs of the sector, they are very significant. On average, these represent about 20,000 million USD annually in the transport sector in the developing world and about twice that of the developed countries. There are about 68 projects per year in the transport sectors in developing countries.

The distribution of projects across the subsectors of the transport infrastructure is also interesting. About two-thirds of the projects concern roads, 26% seaports, 10% airports and 8% rail. The average values of the projects vary significantly across subsectors of the transport infrastructure. The greatest average value of projects is observed in the rail subsector (714 million USD), the smallest average value occurs in the seaports subsector (about 179 million USD). The average value of projects

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in roads is 265 million USD and in airports — 378 million USD. Therefore, in 139 low- and middle-income countries in the period of 1990–2014, PPP projects in the roads subsector had the majority share by both the number of projects and volume of investments.

The chart below shows PPP investment projects in development countries by type. According to the World Bank classification, there are four forms of private participation in transport, including: greenfield projects, such as Build, Operate, Transfer (BOT) projects; Concessions; contracting out of services; divestiture.

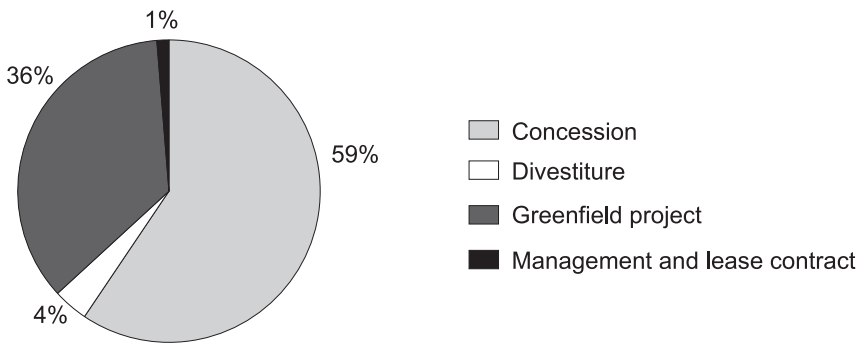

Figure 4. Investment in projects by type (million USD)

Source*:* own elaboration based on the World Bank PPP database, www.worldbank.org.

Concession contracts, followed by greenfield projects have constituted the majority of PPPs in the transport infrastructure over the last 24 years. They represented about 95% of all contracts signed in developing countries in the transport sector. Divestitures were much less common in transport than in energy or telecoms, for instance, but they do occur in all the sectors, in particular airports, the sector for which management contracts are also relatively more common than in the other transport subsectors.

Challenges of public-private partnership

First of all, it is important to underline that there is still a great need for infrastructure financing in developing countries that cannot be fulfilled by limited public funds. According to Moody's, deteriorating public finances have created unprecedented volatility in the cost of borrowing, but have also increased the attractiveness of PPPs as an alternative way to finance infrastructure in some countries. Since 2007 the total PPP market has contracted and the EIB has expanded its funding (of PPPs). Clearly PPPs remain very much on the agenda in the development banks, both in Central and Eastern Europe and in Africa, Asia and Latin America[7].

[7] *Infrastructure in the Developing World: Does It Need PPPs?*, Bankwatch mail no. 51, CEE Bankwatch Network's newsletter on international development finance March 2012, p. 6.

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There is a question of whether to involve private capital in infrastructure in developed countries. The main point is the source of public service financing: from the public or private sector, further discussion concerns risk allocation and benefit for both sectors. Developing countries, in turn, do not have this kind of possibility to choose between the public and private sector — the government is uncompetitive in financing infrastructure through the public funds, because of low budgetary allocation. Public bond market is either absent or not developed sufficiently to improve public funding. As a result, in practice governments of developing countries do not have real possibilities to invest in own economy, instead, they just grant to the private sector the right to develop the assets in the name of the public sector and to share both risks and benefits of the deal. This way is quite optimal, because without private sector participation the assets could not be delivered or may be delivered at the high level of alternative costs, such as withdrawal of public funds for other needs. In other words, in some cases venture capital of the private sector is the only source of financing.

For this reason, PPP is one of the methods of mixed funding under the condition of economic development and receiving of economic and social benefits. On the other hand, there are still some problems of PPP implementation even in developed countries. The there-is-no-alternative claim has been used repeatedly to support PPPs in the UK. Ministers have insisted that investment would not take place except through PPPs and almost all new hospitals built in the last ten years have been delivered through private finance. Several of these hospitals are now in huge debt because of PPP and only recently the government has had to announce a bail-out of 1.7 billion GBP for seven of them[8].

Inefficient preparation of PPP projects in transport infrastructure development could provide great challenges for the national economy. A quick solution of private financing for the public infrastructure could lead to consequences for public service delivering. In some cases, the involvment of private financing is just an accounting trick which reduces the value of public debt. But, it is important to underline that PPP debt is still public debt which is just registered in another way than direct public financing. For this reason Eurostat adopted a new mechanism of the PPP debt accounting[9]. This mechanism of PPP accounting depending on a deal structure takes into account the financial risk of the public partner involved.

Apparently PPP is a complicated procedure, which has to be implemented carefully to improve the use of financial resources. The decision on the PPP implementation in the transport infrastructure development always depends on the

[8] Ibid., p. 7.

[9] *Risk Distribution and Balance Sheet Treatment. Practical Guide*, PPP Expertise Centre — European PPP, Second Edition, November 2014, p. 5.

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evaluation of the policy- and decision-makers. It is impossible to know in advance all the consequences. That is why the decision on the PPP implementation in the transport infrastructure in each case requires specific preparation.

Conclusion

Despite the changes in the transport infrastructure of developing countries and the recent credit crisis, there is still a great demand for the financing of transport infrastructure projects. The transport infrastructure projects have higher commercial, political, legislative and demand risks. They also face the unwillingness of private partners to allocate more than 5–10% of own capital to the PPP projects in transport infrastructure development. Efforts of the PPP in transport in developing countries include changes from new projects to rehabilitation and maintenance of existing public facilities. That is why the key and overriding factor of PPP in transport is establishment of public facilities with lower risks and also stable revenue stream.

One of the features of PPP projects in transport is a large number of actors, such as: investors, bankers, sponsors, insurers and operators. The same applies to other infrastructure PPP projects, in transport projects about fifteen to twenty actors appear. As the actors become well-known and the transport policy and institutions are stronger, PPP will become an efficient approach of the public policy in developing countries. The biggest spread of PPP is obvious for seaports, airports and high traffic roads. For the developing countries with high commercial, institutional or political risks, PPP is not an optimal method of transport infrastructure development. There will certainly be a lot of successful cases of PPP implementation in transport all over the world in the future.

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Public-private partnership in the transport infrastructure of developing countries

Summary

For developing countries the financing of the transport infrastructure development only by public funds is an unresolved problem. A lack of public funds and necessary investments for the transport infrastructure development is huge. That is why the role of private financing becomes more obvious. For this reason every year the number of PPP in transport rises. Despite the experience in PPP implementation, there are still some challenges, such as demand forecast and land designation policy. PPP in transport has specific features which should be considered in the beginning.

Partnerstwo publiczno-prywatne w infrastrukturze transportowej krajów rozwijajacych się

Podsumowanie

Dla krajów rozwijających się finansowanie rozwoju infrastruktury transportowej wyłącznie ze środków publicznych jest problemem pozostającym bez rozwiązania. Brakuje wystarczających środków publicznych na rozwój infrastruktury transportowej, dlatego rola inwestycji prywatnych staje się coraz bardziej oczywista. Z tego powodu co roku rosną liczby PPP w transporcie. Mimo doświadczenia w realizacji projektów PPP nadal istnieją pewne wyzwania, takie jak prognoza popytu i polityka gruntowa. PPP w transporcie ma specyficzne cechy, które należy wziąć pod uwagę na początku planowania projektów PPP.

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