Infrastructure Public Private Partnership Investments:
A comparative analysis of Western Balkan and Emerging Countries

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ABSTRACT
The private sector participation is crucial to country development bringing more funds, technical knowledge and efficiency in several sectors (energy, telecommunication, transport, water and sewerage), particularly to developing countries. The demand for infrastructure projects has increased considerably in the recent years especially in emerging and developing countries, which can be attributed primarily to the rapid economic growth and the vast urbanization and industrialization of these economies. Moreover, much investment will be needed in these countries for achieving the Millennium Development Goals, specifically the goal of poverty reduction. In order to ensure the private participation in infrastructure projects, it is necessary to deepen the government-private sector cooperation through Public Private Partnerships (PPPs). These partnerships have proved to be successful instruments to country development as much in developed countries as in developing countries.

The aim of this paper is to analyze the determinant factors of PPPs in infrastructure development in Western Balkan and Emerging Countries. This will build on previous empirical analysis performed and the data of World Bank Database for Public Participation in Infrastructure for the period 2002-2013. The study focuses on the Western Balkan and Emerging countries because these countries need PPP arrangements in infrastructure. Additionally, the Western Balkan countries will need to integrate into European Union in the near future and therefore the needed structural reforms and development strategies require much more investments.

For the purpose of this study a comparative analysis of countries of the Western Balkan and Emerging economies is undertaken by using data of the Public Participation in Infrastructure projects by type of sectors for the period 2002-2013. The result of the analysis confirms previous conclusions that countries with small size of the market have lower number of PPPs as compared to those with big size of the market. Regarding macroeconomic stability the data strongly confirm that macroeconomic situation favor foreign investors to get involved in PPP projects, but their small size of the market discourages these countries to have high PPP projects. The findings of this study are a good reference for those interested to study and make further analysis of PPPs in infrastructure.

KEYWORDS
Public-private partnership, infrastructure development, Western Balkan countries, Emerging countries, determinant factors

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1. INTRODUCTION

Public Private Partnerships (PPPs) are widely spread and are considered beneficial instruments to the economic development of any country. Their aim is to deliver better quality services by bringing in new investment, which cannot be provided by the Government alone. This is because of the scarce sources to fully finance big infrastructure projects such as airports, roads, water supply, energy, sewerage etc. Investing in infrastructure projects has positive social impacts meeting public needs, as well as economic ones through contribution to GDP growth. PPPs have proven to be a successful instrument as much in developed countries as in developing countries. This is shown by the increased number of PPPs from the World Bank PPI database over the years in different sectors mainly energy, telecom, transport and water and sewerage.

The demand for infrastructure projects in emerging and developing countries can be attributed primarily to the rapid economic growth and the vast urbanization and industrialization of these economies. Moreover, much investment will be needed in these countries for achieving the Millennium Development Goals, specifically the goal of poverty reduction. PPPs in these countries are successful partnerships especially for large infrastructure projects due to advanced technology provided by the private sector.

By application of this scheme, governments benefit quality public services within an optimal time and at low cost. Sectors that most need investments are energy, telecommunication, water and sewerage and transport. In Eastern Europe PPPs took rise starting from 1990s. In countries such as Hungary, Baltic States, Bulgaria, Croatia, Czech Republic, Poland, Romania, Serbia, Slovakia, Albania etc the degree and area of participation of PPPs is different.

This article aims to describe PPPs in developing countries by showing the factors determining their participation with a special focus on Western Balkan and emerging countries because these countries need PPP arrangements in infrastructure. First part of this paper presents the theoretical background that justifies PPPs, empirical studies on main factors impacting PPPs in developing and emerging countries and main benefits and risks of PPPs. In the second part we run a comparative analysis of determinants of PPPs in infrastructure in Western Balkan and emerging countries. The last part gives conclusions and recommendations.

2. LITERATURE REVIEW

Before listing the theories that justify PPPs, our review starts with definition of PPP. There are many definitions but a most common is the following: “cooperation between public-private actors in which they jointly develop products and services and share risks, costs and resources, which are connected with these products and services” (Van Ham & Koppenjan 2001; quoted in Hodge & Greve, eds. 2005).

PPP are not new to the governments. The theoretical concept of PPPs can be traced to the theory of x-efficiency of Leibenstein (1966). According to this author inefficiencies in public institutions result from both distortionary government interventions as well as states’ organization structures, which are highly bureaucratic. Hence, PPPs are necessary to reduce the sources of x-efficiency in public organizations and to allow them to respond to market forces and become more competitive.

Milton Friedman in his book Capitalism and Freedom raises the issue of minimal state and bigger private sector participation. According to this theory public institutions are inefficient to deliver efficient public services and therefore, private sector is necessary to produce more efficient and qualitative goods and services (Friedman, 1982). Inefficiencies of public institutions led to a new era called New Public Management under Margaret Thatcher governance. This period was characterized by huge privatization of public enterprises and this policy was also followed by Ronald Reagan in United States (Pollit & Bouchaert, 2011). The whole idea of this new reform in the public sector was to introduce business principles into public institutions in order to become more efficient and competitive.

There are many empirical studies which have tested the impact of PPPs in economic development and the need of PPPs in developing countries. According to (Dailami & Leipziger, 1998; Fay & Yepes, 2003; Yang, 2008) the vast urbanization and industrialization is putting pressure on existing infrastructure in developing countries. The governments of these countries are short of public funds due to budget constraints to meet the infrastructure demands. Recent data suggests that the governments in developing countries heavily rely on PPP model to plan, finance, build and operate infrastructure projects (World Bank PPI database, 2012).

Previous data have shown that almost 70 percent of infrastructure investment in developing countries is financed by governments, or from non-concessional borrowings, 3 percent from aid and only a small part comes from the private sector (DFID, 2002). Therefore a question has been raised from researches in the field as to what
are factors determining PPPs involvement in developing countries. There are many empirical studies on this issue which will be discussed in section 2.1.2 below.

2.1.1 Benefits and Risks of PPPs

This section presents the benefits and opportunities offered by PPPs, as well as critics made on them. Each government aims to deliver quality services to its citizens. Due to the constraint size of the Government on one hand and increasing demands by its population on the other hand, it becomes impossible for the Government to meet all needs (Harris, 2003). Therefore, improving service delivery drives both the Government and private sector to do what they can do best.

As explained earlier infrastructure investments require huge capital for which the Government finances up to a certain amount. Therefore private sector participation smooths the capital constraint taking into consideration that private sector has a more flexible access to resources. This is especially a necessity in those countries that lack capital market and as a result the flow of capital through private investment increases, which otherwise would be difficult to be obtained.

The private sector brings in an advanced technology, know how because of experiences it acquires in other countries. As a result, public services are delivered with a more cost-efficiency than traditional approaches. There are evidences on savings from cost efficiency that can be used to fund other needed services. In the case of PPP projects in infrastructure in USA and UK the savings amount to 15-30 percent and can be attributed to more efficient project management by the private investor, shorter construction time, as well as lower administrative expenses (Moszoro&Gasiorovski, 2008). But there are critics based on empirical studies that question the efficiency aspect of PPPs toward public sector due to the difficulty of balancing the interest of the poor against the interest of the private sector, because the last aims profit maximization (Nkohma-Mbawa, 2006).

Harris et al.(2003) have shown that PPPs increase access to services, efficiency, provide better quality services and have positive fiscal impacts. Andres at al.(2006) have shown that PPPs can generate significant improvements in labor productivity, efficiency and product/service quality of the electricity firms. Nickson and Franceys (2003) provide evidence which suggests that the general public perception about the affordability of privately managed utility is not correct, as there are clear evidences that the utilities can significantly improve access to basic services to poor at affordable price.

Joha and Janssen (2010) compared the strategic intents and motives for PPPs in three projects using the case study method. Their findings indicated that PPPs were focused on developing new and innovative services and the projects were able to accomplish most of their intents at the expense of higher risks.

Investments in hospitals, schools, highways, power plants, etc bear risks and by including private sector in such investments public sector risk lowers as the risk is shared among different private operators. Also, public sector benefits from highly skilled risk management of the private sector, which is more efficient and innovative. Transferring risk to the private sector reduces the potential for government cost overruns from unforeseen circumstances during project implementation given the government budget certainty. According to a study made by Edwards and Shaoul (2003) on effectiveness of PPPs, very often contractors fail to transfer risk and the public sector has to bear the major cost of the projects, which often leads to failure of PPP projects as in the case of UK.

Public services can be provided at a predictable cost as set out in contract agreements. Therefore, the government budget is improved through the fees collected from the private operators for the services rendered. Another positive aspect is a better public finances management, as the public funds previously planned for public investment can be used for other priorities.

Information is crucial to long term infrastructure projects, especially if information is confidential when the private sector has invested to create intangible assets e.g. pharmaceutical industry. Therefore, private sector participation becomes even more important due to the information it can offer. One of the last but not least benefits is the one related to asset management. The private operator which brings the technology and knows how uses assets provided by the public sector and as a result makes a better use in the long run.

Notwithstanding the advantages PPPs poses risks for both the Government and the private sector. As a result of higher autonomy given to the private sector Government itself might lose its control from the service delivery which was previously under the monopoly of the Government. Also, the costs of PPPs could result higher during the implementation phase because of autonomy the private sector has. In case the private sector fails to offer high quality services with low cost this leads to potential risk for the Government in losing reputation and credibility. Another constraint for the Government relates to its weakened capacity in offering public services since the private sector increases its presence in the form of PPP participation.
Very often consultation process for investing through PPPs is poor and often carried out as a formality at the very late stages with no real intention of taking public opinions into account. This becomes a constraint for the public at wide as they are final beneficiaries of services delivered and also taxpayers. Overall, private investors are faced with the political, legal, economic and financial environment in the host country and as a result their participation is determined to such factors.

2.1.2 Determinant factors of PPPs in Developing Countries

There are many empirical studies made to explain and test the main determinants of PPPs. The last empirical studies by Basilio (2011) and Sharma (2012) take into consideration some variables to test and find out the most important factors with an impact on attracting more PPP projects. In this section are described the results of these empirical studies and other previous studies, which are used for the comparative analysis conducted for the purpose of this paper.

The first factor analyzed is Government’s resource constraint. Governments with large deficits and a heavy debt burden are more likely to have PPPs and soft budget constraints of government provide a little motivation for them to engage in private firms in PPP projects.

The second factor is stable macroeconomic condition. PPP projects and investments are more common in countries with credible and stable macroeconomic conditions. Previous studies for instance Ghura and Hadjimichael (1995), Alleyannis and Weston (2000), De Soto (2000), Estache (2006) and Banerjee et al. (2006) found that macroeconomic stability is an important issue in private sector involvement. Cantor and Packer (1996), Altunbas and Gadanecz (2003), found that some variables such as real GPD per capita and economic growth, inflation rate and international reserves, fuel exports as a measure of a country’s natural resources etc, are important explanatory variables of the capital surge to the countries.

The third factor is size of the market. According to Sharma (2012) a large market is likely to attract more private firms to engage in PPP projects mainly because of the future growth prospects. Size of the market is described by the number of population of a country.

The fourth factor is political environment. It is widely known that foreign investors before deciding to invest in a country consider the political environment of the country. This factor is measured by international rating agencies such as Moody’s, Standard and Poor, International Country Risk Guide and investors get enough information to invest. Also Sharma (2012) in his study takes this factor into analysis and raises the hypothesis that better political environment leads to a large number of PPPs.

Another important factor is regulatory environment. According to Pistor et al. (2000), Hammami et al. (2006) weak and inconsistent institutions and political risk lead to uncertainties about the regulations, which further enhance the country risk. Sharma (2012) has tested the hypothesis that better regulation attracts more private firms for PPP projects. Same tests have been performed by Basilio (2011) based on previous empirical studies which identified that creditor rights index, contract enforcement days are among legal risks which influence PPPs inflow.

In his study Sharma (2012) analysis two other factors such as Government effectiveness and Country (currency) risk, but in our research we will not take into consideration these 2 factors due to lack of data.

The result of Sharma’s study is that macroeconomic stability and size of markets are important determinants of PPPs in infrastructure in developing countries. The evidence also suggests that in developing countries regulatory environments are important consideration in determining PPP projects. Finally, the political environment, soft budget and country risk are not found to be significant factors in determining the number of PPP projects in developing countries. The result of Basilio (2011) for emerging countries is that the market size and purchasing power are critical determinants of PPPs.

3. METHODOLOGY

The main aim of this analysis is to provide a more complete picture of the drivers of infrastructure flows to Western Balkan and Emerging countries. As a starting point the latest empirical studies on factors that impact PPPs in developing and emerging countries are used to identify main tested variables. Second, the data of factors determining PPPs based on identified variables are used to conduct a comparative analysis for the period 2002-2013 for two groups of countries namely: (i) Western Balkan countries including Albania, Former Yugoslav Republic of Macedonia, Serbia, Montenegro, Bosnia and Herzegovina and Kosovo and, (ii) Emerging countries including Brazil, China, India, Russia, Turkey, Mexico. Parallel, data on PPPs by country and type of sectors are analyzed for both groups.
The data are analyzed based on their trend using a qualitative analysis. Main variables analyzed are: Government net debt/GDP, GDP per capita, Inflation rate, political risk and contract enforcement days. These data are extracted from World Bank PPI Database and World Development Indicators of IMF.

4. COMPARATIVE ANALYSIS

The comparative analysis of factors determining PPPs is undertaken for the period 2002-2013 for 2 groups of countries: (i) Western Balkan countries including Albania, Former Yugoslav Republic of Macedonia, Serbia, Montenegro, Bosnia and Herzegovina and Kosovo and (ii) Emerging countries including Brazil, China, India, Russia, Turkey, Mexico. The six countries in Western Balkan have similar characteristics related to market structure, reforms undertaken, culture, and history.

The other six emerging countries are all economies characterized by fast economic growth with very high investments over the last years reaching near 52% of all PPPs in the world (PPI Database, 2013). The data show that PPPs flows have had different tendencies for both categories of groups. Therefore it is worth analyzing main factors influencing PPP flows as identified by empirical studies.

As figure 1 below shows the highest number of PPPs in Western Balkan countries is registered in Albania with 10 projects in total in four sectors. All other countries have few PPPs except for Macedonia which has 4 PPPs in total.

What is evident in almost all countries is that telecom sector receives the highest number of PPPs compared to other PPP types followed by energy. This is due to technology development especially after 1990s when all countries had to invest to cope with innovative developments.

Likewise, all countries having as priority the modernization of their economies have invested in infrastructure with a special focus on energy, as a driver for economic growth. The third sector where PPPs are evident is water. Water is a natural monopoly and usually fragmented. Therefore, PPPs have been lower in this sector than others due to low expected profit by investors where needed. Overall it can be concluded that the total number of PPPs in the Western Balkan countries is low, and this can be explained by their small market size, which goes in line with the factors influencing PPPs in developing countries identified by empirical studies.

Besides small size of the market, another important determinant of PPPs identified is macroeconomic situation. In figures 2, 3, 4 below we observe that countries have had different tendencies in their macroeconomic indicators, some being positive and some negative. Macedonia and Bosnia & Herzegovina have the best trend in the region regarding Government net debt/GDP, while Albania has the best trend in the region regarding inflation. All countries have had positive trends of their GDP/capita demonstrating the development of their economies. The high values of inflation for some countries such as Serbia and Montenegro are because of disturbances their economies have faced in the first years of our analysis mainly due to war with Kosovo.
Figure 2: Government net debt/GDP 2002-2013

[Graph showing Government Net Debt/GDP for Albania, Bosnia & Herzegovina, Montenegro, Serbia, and Macedonia from 2002 to 2013]

Source: World Economic Outlook, IMF

Figure 3: Inflation 2002-2013

[Graph showing Inflation for Albania, Bosnia & Herzegovina, Montenegro, Serbia, Macedonia, and Kosovo from 2002 to 2013]

Source: World Economic Outlook, IMF

Figure 4: GDP/Capita

[Graph showing GDP/Capita for Albania, Bosnia & Herzegovina, Montenegro, Serbia, and Macedonia from 2002 to 2012]

Source: World Economic Outlook, IMF

From the above data it is expected that government with high debt burden and large deficits will be more interested in PPPs to solve infrastructure problems because private investors contribute to levering high public debt. But at the same time these variables could point economic instability as they imply a higher risk of default and larger deficits leading to increased foreign indebtedness, which may become unsustainable over time.
As we have explained earlier in this paper, the empirical analysis have tested that the political risk rating is positively related to the number of PPPs. What we observe is that countries have good ratings on political risk except for Serbia and Bosnia &Herzegovina. But as Sharma (2012) concludes, this factor proved to be not significant determinant in the number of PPPs.

<table>
<thead>
<tr>
<th>Western Balkan Country</th>
<th>Political risk rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>Moderate</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>High</td>
</tr>
<tr>
<td>Macedonia</td>
<td>Moderate</td>
</tr>
<tr>
<td>Serbia</td>
<td>High</td>
</tr>
<tr>
<td>Montenegro</td>
<td>Low</td>
</tr>
</tbody>
</table>

Source: ICRG, 2012

The second group of countries in our analysis is that of Emerging Countries. From the data PPPs in these countries appear to be a key instrument to promote growth and enhance well-being, Figure 5 shows China having the highest number of PPPs (690) in total in four sectors, followed by India and Brazil and to a lesser degree Turkey, Mexico and Russia.

In almost all emerging countries the energy and transport are the sectors that receive high number of PPPs. Due to globalization and vast industrialization and modernization, emerging economies have invested in infrastructure with a special focus on energy, as a driver for economic growth and transport to allow faster integration of their economies with the rest of the world. Overall it is evident that PPPs in Emerging countries are high, which is favored by their big market size.

Figure 5: PPPs in all sectors, 2002-2013

In the following section we present the trend of main macroeconomic indicators for emerging countries for the period 2002-2013. We observe that emerging countries have better tendencies of macroeconomic indicators as compared to Western Balkan countries. Three countries from this group namely Brazil, Mexico and Turkey have positive trends of Government net debt/GDP (figure 6) especially starting from 2005. While China and Russia have good tendencies especially in the last years (figure 7). Exception is made for India, which has high levels of government gross debt (figure 7). The data on Government debt for China, Russia and India are calculated using the indicator government gross debt, which includes financial assets corresponding to debt instruments. The reason is that for these 3 countries the data are reported only for Government gross debt. All countries have rising trends of GDP/capita (figure 9) showing the development of their economies. Also, inflation has followed a more stabilized trend, but for some countries is still high (figure 8).
As Pessoa (2006) mentions, in emerging countries may arise problems related to relevant regulatory framework and underdeveloped capital markets. But what is characteristic for these economies is that Multilateral Development Banks do participate in infrastructure PPPs, therefore private investors sees this as a mechanism to lower potential risks, especially countries such as Brazil, India and Mexico (IBRD, 2011). Table 2 below summarizes data on contract enforcement days and political risk rating for emerging countries.

Table 2: Contract Enforcement Days/ Political Risk Rating

<table>
<thead>
<tr>
<th>Emerging Countries</th>
<th>Contract Enforcement Days</th>
<th>Average for the Region contract enforcement</th>
<th>Emerging Countries</th>
<th>Political Risk Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>16</td>
<td>85</td>
<td>China</td>
<td>Low</td>
</tr>
<tr>
<td>India</td>
<td>182</td>
<td>134</td>
<td>India</td>
<td>Moderate</td>
</tr>
<tr>
<td>Brazil</td>
<td>118</td>
<td>113</td>
<td>Brazil</td>
<td>Low</td>
</tr>
<tr>
<td>Turkey</td>
<td>51</td>
<td>60</td>
<td>Turkey</td>
<td>Moderate</td>
</tr>
<tr>
<td>Russia</td>
<td>13</td>
<td>85</td>
<td>Russia</td>
<td>Low</td>
</tr>
<tr>
<td>Mexico</td>
<td>81</td>
<td>113</td>
<td>Mexico</td>
<td>Low</td>
</tr>
</tbody>
</table>


The above table shows that from almost all emerging economies China, Turkey, Russia and Mexico have positive figures regarding the number of days to resolve a payment dispute through court as compared to the average for the region. Brazil has a slightly difference of 5 days to reach the average, whereas India is yet far from the average standard pointing a potential possibility to impact the legal risk. Regarding political risk according to ICRG (2012) emerging countries have moderate to low political risk, showing that PPPs are favored in these countries.

In conclusion, the data presented above show that overall Western Balkan countries have low PPPs. This can be attributed to the political risk evident for some countries and their small size of the market. But, with the improved economic situation especially in the last years it is expected that the government will be more interested to get involved in PPPs projects considering also their ambition to become part of the European Union.

The data from emerging countries show a different trend regarding PPPs. These countries have received high number of PPPs reaching about half of private infrastructure flows globally. Overall it is evident that PPPs in emerging countries are high, which is favored by their big market size, improved macroeconomic situation, low legal risk and low to moderate political risk. Exception is made for India which is yet far from the average standard for the region regarding the contract enforcement days pointing a potential possibility to impact the legal risk.
5. CONCLUSION

Public Private Partnerships (PPPs) are widely spread and are considered beneficial instruments to the infrastructure development of any country. Their aim is to deliver better quality services by bringing in new investment, which cannot be provided by the Government alone due to the scarce sources to fully finance big infrastructure projects such as airports, roads, water supply, energy, sewerage etc. Benefits of PPPs are many for the Government, private operators and public at wide. The Government benefits cost effective and quality services which are offered in shorter time, thus meeting public needs. Also the private sector besides the business objective specializes in a certain area and becomes more experienced and competitive giving them opportunities for widening such experience in other countries.

The last empirical studies by Basilio (2011) and Sharma (2012) take into consideration some variables to test and find out the most important factors with an impact on attracting more PPP projects. The result is that macroeconomic stability and size of markets are important determinants of PPPs in infrastructure. The evidence also suggests that in developing countries regulatory environments are important consideration in determining PPP projects. Finally, the political environment, soft budget and country risk are not found to be significant factors in determining the number of PPP projects in developing countries. The result of Basilio (2011) for emerging countries is that the market size and purchasing power are critical determinants of PPPs.

A comparative analysis for the period 2002-2013 of factors determining PPPs was conducted for two groups of countries: (i) Western Balkan countries including Albania, Former Yugoslav Republic of Macedonia, Serbia, Montenegro, Bosnia and Herzegovina and Kosovo and (ii) Emerging Countries including Brazil, China, India, Russia, Turkey, Mexico. The data show that PPP flows have had different tendencies for both categories of groups.

Concretely, the data show that overall Western Balkan countries have low PPPs, except for Albania. This low number of PPPs can be attributed to political risk and small size of the market. Regarding macroeconomic stability the trends show that macroeconomic situation could favor foreign investors to get involved in PPP projects, but their small size of the market may discourage high PPP projects. With the improved economic situation especially in the last years it is expected that the government will be more interested to get involved in PPPs projects considering also their ambition to become part of the European Union. The challenge is to find way of attracting foreign investors.

The data from emerging countries show a different trend regarding PPPs. These countries have received high number of PPPs reaching about half of private infrastructure flows globally. Overall it is evident that PPPs in Emerging countries are high, which is favored by their big market size and good macroeconomic indicators.

To conclude, in order for developing countries to increase PPPs flows policy makers must maintain good macroeconomic indicators and improve institutional quality and political risk to allow investors increase their financing. In the Western Balkan countries, which have small size of the market, policy makers should consider encouraging regional infrastructure projects through PPPs in the framework of their ambition to become part of European Union.

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