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Analyzing The Impacts Of PPP Projects In The Macroeconomic Performance

(Some Successful And Unsuccessful Global Examples)

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***Abstract*—Through a well-defined combination of public policy objectives with private sector efficiency and investment, Public-Private Partnerships (PPPs) have become an important tool in affecting macroeconomic performance and enhancing economic development. The relationship between PPP projects and macroeconomic performance is complex, been both positive and negative, depending mainly on factors such as how well these projects are designed and managed. A well-structured/managed PPP project can create jobs, improve infrastructure, and support fiscal stability, enhancing therefore the economic growth, but the success of PPPs depends on the careful management of risks. Meanwhile, a poorly designed/managed PPPs can negatively affect long-term economic stability, creating inflation, increase in public debt, etc.**

PPP projects, especially in infrastructure development, are often potentials in creating significant numbers of direct and indirect jobs, including construction workers, engineers, planners, and administrative staff. Partnerships with the private sector, are also a potential in contributing to human capital development, through knowledge and skills transfer, which is essential for long-term economic growth. PPPs in healthcare and education can improve access to essential services, creating positive social outcomes. This can lead to improvements in human development indicators, which are crucial for sustainable economic growth.

While Public-Private Partnerships (PPPs) have several positive impacts, especially in infrastructure development, there are also negative consequences and challenges which need to be carefully addressed. A key concern with PPP projects is the long-term fiscal impact they may have on governments. Many PPP agreements involve long-term commitments of public funds, such as guaranteed payments or subsidies. PPPs in sectors like healthcare and education may have also unintended consequences, especially when it comes to equitable access to services. Through some successful and unsuccessful global examples of PPPs, this paper tends to examine the positive and negative implications of PPPs on macroeconomic performance, exploring how they can both stimulate and constrain growth depending on governance, risk allocation, and sectoral focus. It concludes that while PPPs have the potential to significantly boost a country's economic development, their success depends on transparent planning, effective governmental regulation, proper risk allocation and financial viability.

Keywords—PPPs; macroeconomic performance, risk, education, healthcare, infrastructure, economic growth

I. INTRODUCTION

Public-Private Partnerships projects (PPPs) represent a collaborative arrangement between the public sector and the private sector with the aim to finance, design, implement, and operate different types of projects and services in offering public goods and services. These collaborative arrangements combine need of the public sector in providing public goods and services, and the expertise of the private sector in innovation and management, as well as their financial capacity [1].

Governments of developing economies, often face budget constraints that limit their ability to fund large-scale infrastructure projects. In this situation, they choose to use PPPs to ensure the provision of the private capital which allows them to address infrastructure deficits without relying solely on tax revenues or debt financing [2]. The role of private sector is not only limited in creating the possibility of offering public goods and services, but they can also lead to innovations in project design, management, and cost control, benefiting the public sector [3]. By using private sector capital, expertise, and innovation, PPPs can help bridge the financing gap for critical infrastructure, such as roads, energy systems, healthcare facilities, and education.

As a mechanism for fostering growth, PPPs are seen also as a tool to improve service efficiency, reduce fiscal strain on governments, and stimulate job creation and local economic development [4]. PPPs has a valuable contribution in financing infrastructure projects, which is the efficiency gains expected in the services delivery [5].

PPPs can also stimulate local economies by creating jobs and developing local industries. The relationship between the PPP and jobs creation is positive and this take in consideration the direct and indirect jobs [5]. A significant number of jobs can be created in the construction phase, while permanent positions can be created at the operational phase.

While these partnerships are often considered as mutually beneficial collaborations, there are several challenges and risks—especially in developing economies—that can affect their effectiveness and impact. These negative aspects usually come from the inherent complexities of aligning public and private interests, as well as the financial and social implications of such arrangements.

The analysis of different dimensions of PPPs designing and implementation has continually been in focus of our academic research during this two last years. Through the below papers, we have tried to give an overview of PPPs importance, some positive and negative aspects of these projects, with the aim to give also some recommendations of how they can result on good impacts in economy and society:

-The challenges and benefits of implementing PPP contracts were discussed at the *Limen Conference* in December 2023, highlighting the complexities and potential advantages of such arrangements [6].

-In a study published in the *Euro Mediterranean Journal* (2024), we explored how public-private partnerships (PPPs) can drive digital transformation and enhance global competitiveness in the post-COVID era [7].

-During the *Eraz Conference* in June 2024, a paper was presented by us on the role of green finance components in promoting sustainable development.

- At the *Resilnat Conference* in June 2024 we presented a paper detailing the contributions of the private sector in the entire lifecycle of PPP initiatives, from initial concept to final completion

In continuation to our research work, this paper gives an overview of the positive and negative impacts of PPPs in the economy. *This paper consists on 4 parts*:

The first part is a brief introduction of what PPP can do for the economic growth, and how they can work in contrary.

The second part explains some of the positive impacts of PPPs on macroeconomic performance, combining it with some concrete cases.

The third part explains some of the negative impacts of PPPs on macroeconomic performance, combining it with some concrete cases.

The last part gives some conclusions of the analysis of this paper.

II. POSITIVE IMPACTS OF PPPS ON MACROECONOMIC PERFORMANCE

This part of the paper shall describe the impact of some PPP projects in macroeconomic indicators. A well designed or a successful implementation of a PPP project can contribute to the economic development components such as: economic efficiency, risk management, technology and innovation, healthcare and education, infrastructure development, local economic growth and sustainable development. PPPs are mainly used in developing infrastructure projects such as roads, bridges and utilities. The main valued gain of the PPPs in these cases is the efficiency in providing the services and ultimate use of the assets.

The table below gives a brief overview of sector project macroeconomic impact sources, which will be explained in details after.

Table 1. Sector Project Macroeconomic Impact Sources

Transportation	Mumbai Metro (India)	- **Funding & Financing**: Private capital reduced public sector financial burden, enabling resource optimization. - **Increase in Property Value**: Enhanced real estate investments, higher tax revenues, and local economic development. - **Employment Creation**: Generated direct (construction, operations) and indirect jobs (real estate, retail). - **Investment Attraction**: Positioned the city as a business hub due to modern infrastructure.	[8] [9] [10] [11]
Education	French National Education PPP	**- Job Creation**: Construction and maintenance activities boosted employment. **- Efficiency Gains:** Delivered high-quality infrastructure without immediate fiscal strain.	[12]
Healthcare	Finnish Healthcare PPP	- **Inclusive Growth**: Improved healthcare access in rural areas reduced regional inequalities, fostering balanced economic growth. - **Job Creation**: Stabilized healthcare employment through	[13] [2] [14]

		infrastructure and service roles. - **Medical Tourism**: Attracted international patients, boosting revenue and creating a multiplier effect in local economies.	

Sources: Authors

PPPs play a critical role in infrastructure development by facilitating the financing, risk-sharing, and innovation required for large-scale projects. A successful project is the developed PPP project of Mumbai Metro in India, which has significantly improved transportation and reduced traffic congestion in one of the world's busiest cities. This project combined public investment with private expertise, capital, and risk-sharing, creating though a sustainable model for urban mobility and therefore contributing to the sustainable development. The main benefits of this project were:

-*Funding and financing*: The private partners brought in funding opportunities for construction and operational phases, reducing in this way the public sector's financial burden [8]. If a PPP project brings in private capital for both the construction and operational phases of a project, can significantly reduce the financial burden on the public sector. This is particularly important in countries with limited fiscal space or in situations where public finances are constrained, such as during periods of economic downturn or in developing economies.

-*Increase of property value*: One positive macroeconomic impact of PPPs especially in the transportation sector including metro systems, is the increase in property values. This is as a result of the improved infrastructure. According to [9] the proximity to metro stations leads to higher residential and commercial property values, concluding to more investment in the construction sector, boosting employment and overall economic activity in the region. The resulting increase in property values has also other several macroeconomic benefits, such as increased tax revenues, therefore more funds for other investments on public goods and services.

-*Direct and Indirect Employment increase*: The construction, operation, and maintenance of the Mumbai Metro created numerous direct and indirect job opportunities [15] ranging from engineers to drivers and station staff [16]. The real estate boom around Metro stations leads to increased demand for services such as retail, hospitality, and transportation, which created further employment opportunities [11].

-*Investment attractions*: Businesses are more likely to invest in cities with modern, efficient transportation networks, enhancing the city's attractiveness as a business hub [10]. The involvement of private sector in Metro development under PPP models concluded on attracted private investments and reduced the fiscal burden on the government [17].

Public-Private Partnerships (PPPs) have been successfully utilized also in the healthcare and education sectors, with significant positive impacts on economic performance. A successful case is French National Education PPP project developed by the Ministry of National Education and the private sector. Its aim was the development and maintenance of modern educational facilities, including primary and secondary schools as well as universities. The macroeconomic outcomes of this project were:

-*Job creation*: The development and subsequent maintenance of educational infrastructure have created jobs not only in the education sector but also in construction and facility management, stimulating local economies [12].

-*Efficiency gains*: This project brought expertise and efficiency in delivering high-quality educational infrastructure without creating an immediate financial strain on public budgets [12].

A successful case of a PPP project in healthcare is the project developed in Finland. Its main focus was to upgrade and build hospitals with private sector partners. The partners in this case, were involved in sectors such as financing, construction, and maintenance [13]. As Finland, historically, faced disparities in the availability and quality of healthcare services between urban centers and rural regions, one of the main aims of the Finnish healthcare PPP project was to address regional imbalances in healthcare access through the construction of hospitals and clinics in underserved rural and remote areas. This project brought benefits toward macroeconomic performance, such as:

-*Inclusive Economic Growth*: With the aim to address regional imbalances by constructing hospitals and clinics in rural and underserved areas [13], this project reduced healthcare disparities. This ensured that all regions in Finland benefit from improved health outcomes. Providing healthcare services in underserved areas helped reduce regional inequalities, significant for ensuring balanced economic development, where all regions are given the opportunity to thrive [2].

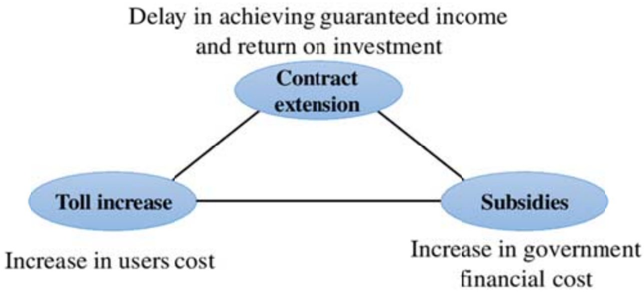
-*Job creation*: The increased capacity of hospitals helped the stabilization of the healthcare employment [13]. The construction and operation of new and upgraded hospitals created a significant number of direct and indirect jobs. The construction phase involved numerous jobs in building, design, and engineering, but the long-term impact extended far beyond just infrastructure. Once the hospitals were operational, a range of healthcare roles was required, including medical professionals, nurses, technicians, administrative staff, and support staff [13]. With an increase in hospital capacity, the demand for healthcare professionals stabilized, leading to better job security and career prospects within the sector. A well-supported and adequately staffed healthcare workforce is crucial for ensuring the efficient delivery of services [3].

-*Economic development through medical tourism*: This investment which expanded capacity and advanced technology, attracted medical tourism and international patients [14]. The influx of medical tourists brought in additional revenue through direct payment for medical services, as well as through related services such as accommodations, transportation, and other tourism-related activities, contributing in this way to the economic growth [2].

III. Potential Risks and Negative Implications

While Public-Private Partnerships (PPPs) have often been evaluated as a solution to infrastructure gaps and service delivery challenges, they can also have negative implications for the economy. This part of the paper shall describe some potential risks and negative implications of some PPP projects in fields such as infrastructure, health and education.

Figure 1. Negative implications of PPP projects



Source: [25]

In general, some potential risks and negative implications include:

Risk of Debt Burden: Due to the long-term feature of the agreement, the government is required to make regular payments to private partners leading to unsustainable debt levels. One of the most notable examples is the deal associated with hospital construction “Royal Liverpool Hospital”. The initial estimated cost of this project was £335 million to build, however, the total cost to the taxpayer over the 30-year contract was expected to be around £1 billion due to the high interest rates and management fees charged by the private partners [26]. This created a lasting impact on the government's fiscal budget.

Inefficiency in Cost Allocation: Based on the financing structure, it may happen that the private sector’s financial returns are not aligned with the optimal use of public funds [18]. This creates additional burdens on taxpayers in the long run. An example of inefficiency in cost allocation is the case of the M6 Toll Road in the United Kingdom. The total cost of the construction was estimated at around £900 million, when the majority of the funding came from the private sector. The private consortium’s financial structure required significant toll revenues to recover their investment and provide a return [18]. It was quite high, ranging from £5.60 to £11 for cars [19].

Value for money: One of the main problems of PPPs is the evaluation and perception if such a project can achieve the value for money. This can happen due to the complex contractual structures in PPP agreements [20]. There are some issues related to value for money concept such as cost escalations, overestimated risk transfer, government bailouts, economic conditions, technological change, cost-cutting, public procurement alternatives, unanticipated contract amendments, etc. London Underground PPP (2003–2010) is a PPP project that resulted in failing project in delivering the expected benefits in terms of efficiency and service quality. The initial aim of this project was to reduce public spending and improve efficiency, but it happened to increase the public debt, fail in delivering the promised service improvements and to cause delays in infrastructure upgrades, raise costs to taxpayers [21] and expose the government to risks [22], all of them potentials for compromising the value for money.

Competition reduction: In some cases, the private partner may become the only provider of essential services, causing a lack of competition and leading the potential for price manipulation or poor service quality [23]. In this case, it reduces the overall welfare benefits of the infrastructure investment. In PPP projects, the government enters into long-term exclusive contracts with a single private company or a small group of companies, creating monopoly or oligopoly. This long-term nature of many PPP contracts (often 20–30 years) also can result in high barriers to entry for other firms. Poorly designed contracts in PPPs can also give the private partner too much control over key aspects of service delivery, resulting difficult for competitors to challenge the incumbent provider. Some negative impacts of the creation of such structure are higher prices for consumers, reduced innovation and efficiency, inefficient allocation of resources, higher operational costs in the long running, lower-quality jobs. Examples of such impacts are the water utility PPPs in some developing countries, where the exclusive rights granted to private operators have led to price hikes. The Sydney Desalination Plant project in Australia, is an example of PPPs leading to the reduction of competition. With a contract of 30 years, the deal effectively restricted competition in the provision of desalinated water. This happened because the operator was granted exclusive rights to sell water to the government at a fixed price, leading to higher prices for the water supplied to Sydney residents.

Failure to Meet Public Needs: One of the key challenges of such projects, is the failure to meet public needs. The private sector's focus is on profitability, creating conflicts with the public sector’s broader goals, such as the provision of universal access to services or the maintenance of long-term sustainability [23]. An example is the offering of privatized water utilities, where the private parties are interested on investing more in high-income, urban areas because the customers there can afford higher prices and deliver better returns, than in rural areas [23]. A concrete example is the privatization of water supply in Bolivia in the late 1990s, where the private sector's focus on profitability, led to dramatic price increases, reducing access to water for lower-income residents. Another problem that can rise, is the long-term sustainability of services. The public sector contracts typically focus on ensuring that services remain accessible and sustainable for the long-term, while the private sector companies may prioritize short-term profitability over long-term investment in infrastructure and service continuity.

Moral Hazard: This problem happens when private sector partners underestimate or misrepresent the risks involved in the project. The company may downplay the risks in the initial project planning stages when it expects a bailout or believes the government will cover any unforeseen losses [24]. This can lead to a moral hazard, where the private sector's actions undermine the sustainability of the project, especially in sectors such as infrastructure, healthcare, and public utilities. In some energy sector PPPs, private investors have reduced costs on safety standards, environmental protections, or long-term maintenance. One of the most significant impacts of moral hazard in PPPs is the likelihood of cost overruns. Private companies, knowing that they will not bear the full risk of project failure, may overestimate their ability to complete projects within budget and timeline. An example is the Sydney Cross City Tunnel, a toll road in Australia, which experienced major cost overruns during its construction. The private sector partner, Transurban, had taken on significant debt to finance the project, but when traffic projections fell short, the government was pressured to renegotiate terms and offer subsidies to ensure the project's survival.

IV. Conclusions and Discussions

Public-Private Partnerships (PPPs) have emerged as a powerful tool for driving macroeconomic growth and addressing critical infrastructure deficits, especially in developing economies with fiscal constraints and urgent infrastructure needs. Due to fiscal constraints, governments in these economies are limited in their investment abilities in large-scale infrastructure projects, using in this case PPPs. They use expertise, capital, and innovation to enable governments to finance, design, construct, and operate large-scale public infrastructure projects such as transportation networks, healthcare facilities, and educational institutions. These collaborations often improve efficiency, create jobs, foster local economic development, and expand infrastructure. The ripple effects of such partnerships can stimulate local economies by creating opportunities in ancillary sectors. In developing countries, where unemployment rates can be high, the economic benefits of job creation from PPPs can significantly contribute to poverty alleviation and social stability. To benefit from the full potential of PPPs and ensure that they deliver meaningful benefits, it is essential that the partnerships are carefully structured, well-governed, and rigorously monitored. A well-structured PPP has the potential to create substantial numbers of jobs during the construction phase and operational phase, requiring skilled labors in engineering, design, construction, and project management, as well as in healthcare facilities, public transportation systems, or schools.

But governments must ensure that PPPs are designed in a way that aligns with public interests and avoids unintended negative outcomes, such as excessive debt accumulation, poor service delivery, or exacerbated social inequalities. Governments must struggle to have the capacity to oversee these projects, enforce contracts, and ensure that the private partner adheres to agreed-upon performance standards. If there is not a strong regulatory oversight, there is a risk that private sector partners may prioritize profit over public welfare, leading to suboptimal outcomes [2].

Proper risk allocation is also a key to the success of these projects. While private sector partners often take on financial, operational, and technical risks, governments must manage political, social, and regulatory risks. This requires clear agreements to specify how risks will be shared, and provisions for risk mitigation.

One of the major challenges of PPPs is ensuring financial viability. Governments must carefully consider the financial models used in these partnerships with the aim to ensure that the public sector does not bear an undue share of the financial burden.

Another critical issue in the design of PPPs is ensuring that they do not exacerbate social inequities. While PPPs can enhance service delivery, there is a risk that they may prioritize the interests of wealthier populations or urban areas, leaving marginalized groups underserved. In these cases, governments should include measures in their contracts ensuring equitable access to services and infrastructure, particularly for low-income or rural populations [4].

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