TRENDS IN PPP IMPLEMENTATION IN THE EUROPEAN REGION FROM 2007 TO 2022

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Abstract
The study analyses the development and implementation trends of public-private partnerships (PPP) projects in the European region between 2007 and 2022. The study aims to assess the dynamics of PPP projects in the European region over the period 2007 – 2022, looking at the implementation pathways, investment attraction and the most active implementers in the process. Using a quantitative research approach, secondary data analysis, time series analysis and comparative statistical analysis, data on the number of PPP projects, investment volumes and sectoral distribution in the Member States are collected. The main results show significant differences in PPP activity between countries, with France, Italy and Greece leading the way. Between 2007 and 2016, the number of infrastructure PPP projects varied between 50 and 125 per year, while the average investment per project increased from 150 to 300 million of euros. In 2016, France led the way with a total investment volume of 2.3 billion of euros, and in 2022, France retains the lead with 21 contracts worth more than 4.2 billions of euros. Institutional investors, in particular pension funds and insurance companies, are playing an increasingly important role in financing, mainly in Western Europe. The 2022 sector analysis points to a focus on energy efficiency, transport, water and social infrastructure. The study examines the take-up of PPP projects in the European region and their distribution by sector and investment size. The results of study can serve as a basis for decision – making and further research by policy makers.
Keywords: public-private partnership, Europe, region, projects.

Introduction

As societies in different regions of the world create demand for quality and modern public services, there is a need for the public sector to invest in modernising service delivery and infrastructure. The introduction of modern standards and the modernisation of existing processes, in a context of limited public sector budgetary capacity, requires the leveraging of private sector financial investment in various forms of project implementation. One of the most popular is the Public Private Partnership (PPP), which provides an opportunity to combine the experience, expertise and technical and financial capacity of several sectors to implement solutions that meet public demand. Akintoye (2016) in his publication describes Public Private Partnership as a contractual arrangement between the private sector and a public agency for joint ownership in which benefits, risks and resources are shared and pooled to achieve efficiency in the production of private and public services or goods. With reference to the definition in the United Nations Secretary-General's report, Clark L., in his 2014 study, describes public-private partnerships as a joint and voluntary relationship in which a non-state actor and the state agree to work together to perform a specific task, achieve a common goal and share responsibilities, risks and rewards. Publications available in scientific databases include Wang & Ma (2020), Wang et al. (2017), Osei-Kyei & Chan (2015), Zou et al. (2016), there is no single definition of PPP, but it is possible to find common characteristics of this legal form: 1. PPP projects are often infrastructure; 2. The private sector participates in the project design, implementation and subsequent maintenance; 3. It is a long-term partnership of up to 30 years; 4. Up to several hundreds of millions of euros or dollars are invested in project implementation; 5. The parties involved share costs, resources, risks as well as profits; 6. The private partner provides financial and knowledge support to the public sector; 7. The private partner's investment yields a long-term return. The public- private partnership model has been increasingly used in recent decades as a strategic solution for the development of public infrastructure, especially in context where the public sector lacks sufficient resources for long-term investment. Despite the European Union's efforts to promote PPP projects, this approach has developed at different speeds in different European countries. The urgency of the problem lies in the need to assess the extent to which the PPP mechanism can effectively deliver infrastructure development, identify regional differences, and determine key success factors in the delivery of PPP projects at the European level. In Latvia, Public Private Partnerships have been described and defined by the Ministry of Finance of the Republic of Latvia, which oversees the implementation of these projects, and the Public Private Partnership Law of 2009 - PPP is a long-term cooperation between the two sectors with the aim of providing public works or a service for the public needs. The study involves quantitative data analysis using secondary statistics to look at the PPP projects in the field of infrastructure development. Particular attention is paid to the geographical concentration of PPP projects, the structure of investments and the cooperation between public and private parties. **Hypothesis**: PPP projects have become an important instrument for infrastructure development in the European region between 2007 and 2022, but their implementation and the level of investment vary considerably from region to region, depending on national institutional capacity, EU support and the level of private sector involvement. **The aim of the**

study is to assess the dynamics of PPP projects in the European region over the period 2007 – 2022, looking at the implementation pathways, investment attraction and the most active implementers in the process. To achieve this objective, the study sets out to: 1) analyse the number of PPP projects, investment volumes and priority sectors in different European countries based on statistical data collected between 2007 and 2022; 2) identify the leading European region countries in terms of the intensity of PPP projects.

Materials and Methods

The study is based on a compilation of publications available in scientific databases and analysis of industry statistics. Monographic and descriptive methods, as well as analysis, synthesis and graphical methods were applied to present and interpret the data in structured way. The information considered was based on scientific publications supplemented by data from publicly available documents, databases, articles by private investment firms, the European Investment Bank annual market reports as well as data provided by the Central Financial and Contract Agency. All data in the study are presented as actual year-end data. The data analysis covers the period from 2007 to 2022. The paper will gather information on a group of economic indicators that measure the impact of infrastructure investment and will compare the European region without distinguishing between EU Member States.

Results and Discussion

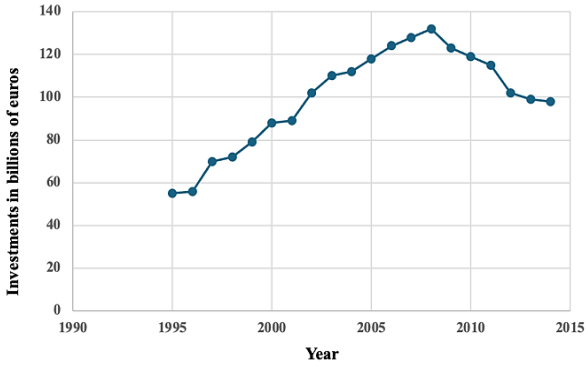
The public sector is under pressure to find sustainable solutions to meet society's growing demand for quality infrastructure. PPPs have the potential to deliver the highest public benefits, but there is a need to gather indicators of the impact of PPP projects. These include economic indicators (EIB, 2024) – investment volume, cost effectiveness, budget savings; social indicators (OECD, 2023) – infrastructure governance to ensure public satisfaction, access to infrastructure; institutional indicators (EPEC, 2021) – to project governance, transparency, partnership sustainability; environmental indicators (WB, 2024) – climate change aspects, CO2 emission reductions, energy efficiency improvements in projects. While these indicators provide important insights, it would be useful for future studies to include structural and institution indicators that were not analysed in depth in this study. For example, the quality of public governance, based on sources such as the World Bank's Governance Indicators (WB, 2022), can help to understand how the effectiveness and transparency of governance affects the delivery of PPP projects. It is also important to assess the role of EU financial instruments (EC, 2014), including European Investment Bank loans and EU founds, on the financing models of PPP projects. It is also worth paying additional attention to the investment climate's reliability ratings which influence private investors decisions in the context of long-term commitments. Taken together, these economic and institutional indicators could provide not only a quantitative and dynamic assessment of evolution of PPP projects but also a deeper understanding of conditions that determine the effectiveness and spread of PPP projects in different European regions (ECA, 2018a).

Public-private partnerships in the European region

Stephane Saussier and Elisabetta Iossa 2018 publication on PPPs in Europe *(Public private partnerships in Europe for building and managing public infrastructures: an economic perspective (2018))* analyses the provision of construction and public services with private sector support in a period of severe budget constraints. The authors analyse OECD data and conclude that emerging and developing economies need to increase the level of investment in infrastructure modernisation to ensure economic growth and meet environmental targets. OECD data show that to meet the 3.5% of GDP required for total infrastructure investment between 2007 and 2030, at least USD 71 trillion need to be invested in transport logistics, electricity generation and transmission, water supply modernisation and telecommunications by 2030. And in a paper published in 2015 Perqin (Perqin, 2015) a private investment data company based in London, points out that alongside infrastructure modernisation, additional investment is need in social services – hospitals, schools, prisons and community housing, which in Europe generates between 10 billion and 18 billion euros of investment each year. Public funding is commonly used to secure such investments, but PPPs with private sectors input are an option in a context of constrained public sector budgets. OECD data from 2013 shows that 15% of annual government capital investment in Europe is delivered through the PPP project management model.

Figure 1

Infrastructure investment in Europe 1995-2014, million euros



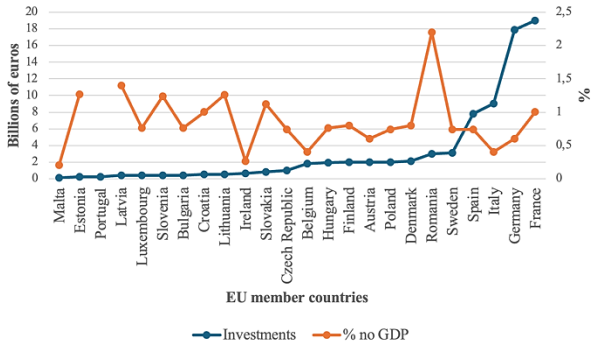
Source: made by the author from (*Public Private Partnerships in the EU*, 2018).

Figure 1 shows how investment in infrastructure modernisation in Europe, has exceeded 100 million euros annually since 2003, reaching a peak in 2007,

followed by a 25% drop until 2014 due to the economic crisis and other circumstances.

Figure 2

Infrastructure investment by countries in the European region (billions of euros) and share of GDP (%) in 2014

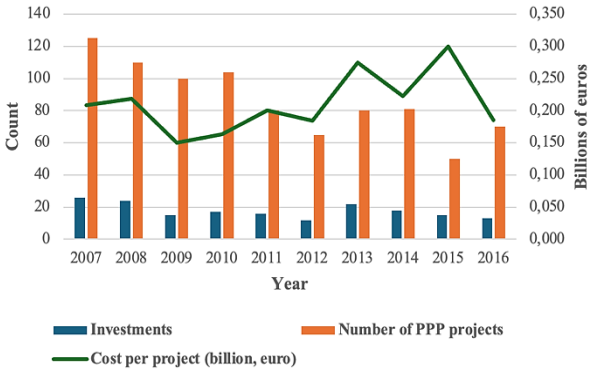


Source: made by the author from (*Public Private Partnerships in the EU*, 2018).

From the data in 'Figure 2', it is possible to conclude that there is some variation in the level of investment in each European region country, with Romania investing 2% of its GDP and Ireland investing only 0.2%. In 2014, Latvia contributed 1.4% of its annual GDP, or 400 millions of euros, more than average of 0.86% of GDP for the countries listed, in infrastructure modernisation. The OECD calls for more efficient use of public funding, with more private partner financing for infrastructure development through concessions or accessibility agreements. This type of contractual arrangement was first used in the UK in the 1990s for urban and social infrastructure modernisation projects.

Figure 3

Investment volumes and timetable of infrastructure PPP projects in European region 2007 - 2016

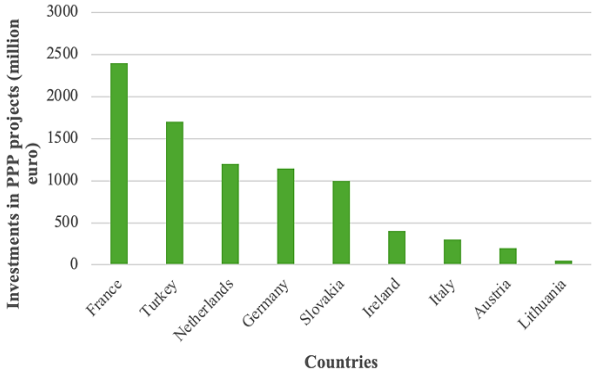


Source: made by the author from (*Public Private Partnerships in the EU*, 2018).

From the data in 'Figure 3', it is possible to conclude that the number of PPP projects implemented between 2007 and 2015 ranges from 125 to a low point 2015, with only 50 projects completed. The amount of investment has varied from € 150 million per PPP project in 2009 to € 300 million per project in 2015. This demonstrates a trend of increasing average project costs alongside a reduction in the number of projects. This could indicate the influence of external factors such as economic development and stakeholder assests on the dynamics of PPP implementation.

Figure 4

Top 10 most financially intensive infrastructure PPP countries in the European region in 2016, millions of euros



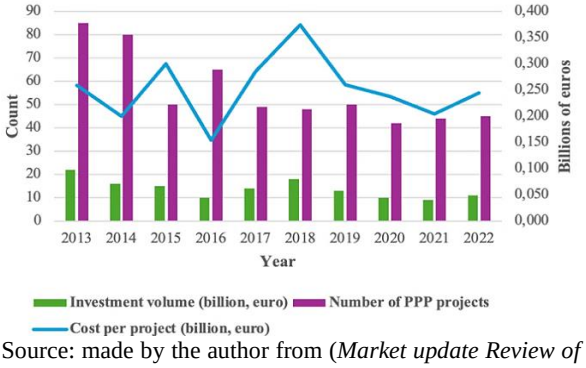
Source: made by the author from (*Public Private Partnerships in the EU*, 2018).

From the data in 'Figure 4', it is possible to conclude that France leads the way with € 2.3 billion invested in PPPs in 2016, the Netherlands, Germany and Slovakia invest over one billion, while Austria and Lithuania show much lower investment figures. The analysis points to significant differences in the financing of PPP projects, leading to different regional experience of project implementation.

Already in March 2023, the European Investment Bank's Market Update Review (EPEC, 2023) of the European public-private partnership market in 2022 shows that 45 PPP deals worth € 9.8 billion have been signed in Europe in 2022, representing a 17% increase compared to 2021 (€ 8.4 billion). 15 countries have signed at least one PPP contract, with France being the most active implementing country. Transport logistics is seen as the most numerically popular and financially intensive sector, accounting for 70% of total deals.

Figure 5

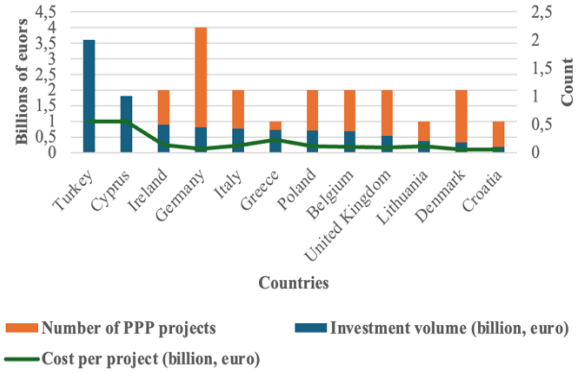
PPP project investments and number of investments in the European region 2013 - 2022



Source: made by the author from (*Market update Review of the public-private partnership market in 2022*, 2022).

From the data in 'Figure 5', it is possible to conclude that the number of PPP projects has remained relatively constant over the last three years since 2022, while the average transaction volume per PPP project has increased by around 14.2% from € 190 million in 2021 to € 217 million in 2022. The recovery of PPP market after the turmoil caused by the COVID-19 pandemic has not been significantly affected by the rise in inflation or the increase in construction costs. The three largest deals – the redevelopment of the port of Larnaca in Cyprus (1 billion of euros), the construction of the French military accommodation point CEGELOG (€ 1.4 billion) and the Turkish Antalya airport concession (€ 1.8 billion) – account for 44% of the total PPP market in 2022, with Turkey raising € 2 billion in PPPs overall.

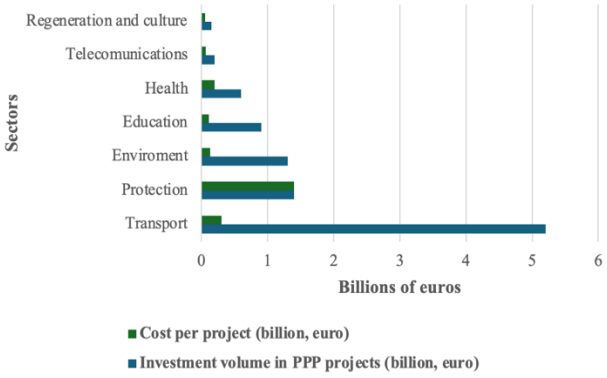
Figure 6
Countries in the European region value of number of PPPs in 2022



Source: made by the author from (*Market update Review of the public-private partnership market in 2022*, 2022).

From the data in 'Figure 6', it is possible to conclude that in 2022, nine countries, including Cyprus and Turkey, have at least two PPP deals and fifteen countries in the European region have at least one deal. Turkey stands out as the country with the highest investment in PPP projects, with a total investment of more that € 3.5 billion in infrastructure modernisation. France signed 21 deals worth more than € 4.2 billion in 2022, a significant increase on the 18 PPP deals worth € 1.6 billion signed in 2021. These figures show the interest of investors in the implementation and development of the PPP model of financing infrastructure projects.
From the data in 'Figure 7' it is possible to conclude that transport reached € 5.2 billion in 2022, down 14% on the previous year, with 17 PPP projects, four of which modernised ports and four build roads. The € 1.3 billion has enabled ten environmental PPP projects to be implemented, five of which are French district heating solution.
In the UK, Germany and Belgium, eight schools and their infrastructure have been modernised, and half a billion euros worth of Danish and Turkish healthcare projects have enabled the construction of hospitals. In the Europe region, PPP projects are not only financed by the financial capacity of private investors (ECA, 2018b).

Figure 7
Breakdown of PPP projects by sector and investment volume in the European region in 2022



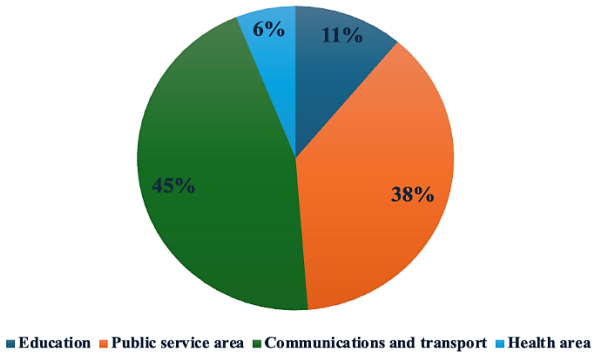
Source: made by the author from (*Market update Review of the public-private partnership market in 2022*, 2022).

In 2022, 17 out of 45 deals involved insurance companies or pension funds, which have become very popular in Western Europe. While local authorities, national governments and the European Union play a relatively small role in financing PPP projects, the European Investment Bank supported four PPP projects with a total value of one billion of euros. In addition, a new PPP structure, the NeuConnect Interconnector (EUAC, 2023), was launched in 2022, financing projects worth more than 3.3. billions of euros. The data shows that France with fifty projects, Italy with thirty projects and Greece with twenty-eight projects are the leading countries in the implementation of PPP projects. Greece has been particularly active in PPP projects over the last three years, ensuring a transparent procurement process and efficient mobilisation of EU funding. Around half of its PPP projects focus on upgrading pipelines and water infrastructure, as well as building student hostels and schools. Lithuania has also seen its position in the European PPP market strengthened. According to the Lithuanian PPP Competence Centre, by December 2022, 68 PPP contracts had been signed in the country, attracting private partner investment of € 213 million for the development of recreational, cultural and sports projects. Lithuanian regional authorities are focusing on improving energy efficiency in public infrastructure, street lighting and parking, as well as improving safety, including seven sports infrastructure projects.
The Law on Public-Private Partnership in Latvia entered into force on 1 October 2009, but the first references to PPPs in the Latvian economy appeared as early as 1999, when the importance of PPPs for the development of the innovation economy was analysed in the bulletins published by the Latvian Academy of Sciences. In 2010, the Baltic Institute of Social Sciences (BISS, 2010) published a study analysing the development of PPP policy in Latvia. The study t noted

that while PPP was one of the components of the National Development Plan (2007-2013), its implementation was slow until 2009. Furthermore, the global financial crisis (2007-2010) led to the suspension of project implementation in accordance with an agreement between the Latvian government and the International Monetary Fund.

Figure 8

Structure of PPP projects implemented in Latvia in 2011, % by sector



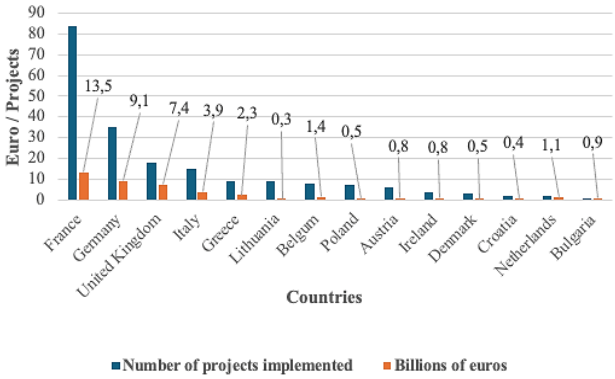
Source: made by the author from (*Impact of the 'Promoting PPP in Latvia' programme on the quality and availability of public services at national and regional level, 2022*).

A 2011 Ernst & Young Baltic study, see 'Figure 8', concluded that until 2009, PPP development in Latvia was coordinated by the Latvian Investment and Development Agency (EPPA, 2011). While the agency had launched five project initiatives, only one the modernisation of the Ogre Art School, was ultimately implemented. Overall, by March 2011, in Latvia, 70 PPP contracts worth € 56.9 million were signed, most of them for long-term service provision and construction. In the end, ten public service projects were implemented – waste management in Sigulda, heating in Incukalns and Ventspils – which were later suspended due to lack of private funding. Construction of pre-school educational institution in Kekava, Marupe, Tukums and Ogre, forty-eight transport and communications projects, and a development project for the Jelgava District Hospital. These contracts were often concluded for a 20-year term, with the private partner's profit margin ranging from 4% to 12%m depending on the size of the company. In 2021, The Ministry of Transport of the Republic of Latvia and State Enterprise 'Latvian State Roads' launched a new 'Kekava bypass' PPP project to modernise the public service. This project is the first in the Baltics in which a private partner takes part and is responsible for design, construction, financing and maintenance for 23 years, ensuring the initial quality of the project until 2048. The 'Kekava bypass' project provides an alternative to the Bauska highway from Kekava to Riga, where traffic volumes can reach up to 25 000 cars per day. At the end of the construction phase of the project and upon its commissioning in 2022, the Cabinet Order No 951 of 2022 clarified the reverse value added tax for the private partner of the project, adjusting it to the construction volumes and setting the Gross Availability Payment for design, civil works and royalties, and the remainder for maintenance, fundraising fees and replacement of the asphalt pavement.

The August 2024 publication of the Bank of Latvia states that since the Covid-19 pandemic, PPP implementation has focused on health projects, while the geopolitical situation in 2023 led to more active PPP development in South America and Asia, with an emphasis on the transport sector, where 73 % of new projects have been implemented.

Figure 9

Number of PPP projects implemented in the European region 2019 -2023, number of list / billions of euro



Source: made by the author from (*PPPs - global experience and Latvian practice*, 2024).

From the data in Figure 9, it is possible to conclude that Germany and France are currently the leading PPP countries in the European region, whereas in the past this title was held by the UK, where projects in health and education sectors were often implemented, as well as local projects coordinated by a municipality to manage waste or develop a lighting system. The European region is planning to increase the intensity of PPPs in the coming years, with almost 200 new projects aimed at meeting the climate targets. In France, almost 50% of the new projects focus on the modernisation of waste management and heating as well as the development of transport logistics, thus contributing to climate neutrality (FM, 2020). Other countries in the European region can follow suit, and Latvia has the potential to implement emission-reducing projects in the coming years, such as –the development of transport and logistics solutions and public service provision in energy-efficient facilities. The Bank of Latvia's experts see low-cost rental housing management and a construction programme for which the State Joint Stock Company 'State Real Estate' plans to invest between 100 and 125 millions of euros in 17 regional municipalities as a potentional PPP breakthrough. This form of the project management would help to promote the quality of the public service and ensure its sustainable development.

Conclusions

1. The dynamics of Public-Private partnership infrastructure project development in Europe between 2007 and 2022 show a structural shift from quantity to quality. Data analysis shows that while the total number of projects has remained relatively stable between 2021 and 2022, the average investment per project has increased from € 190 million in 2021 to € 217 million in 2022, an increase of around 14.2%, in 2015 the average investment reached more than € 300 million. This indicates an increasing trend for countries to focus on larger, strategically important infrastructure projects. This finding confirms the growing importance of PPPs as a tool for diversifying public funding and delivering large capital projects of public interest.

2. France, Italy, Germany and Greece have consolidated their position as the main PPP leaders in the European region, regularly implementing a large number of projects with a significant total investment volume. For example, France alone signed 21 contracts worth more than € 4.2 billion in 2022. These results clearly demonstrate the strong link between institutional frameworks, political support and long-term strategic vision. This concentration in Western Europe reveals territorial asymmetries and opens the way for more detailed policy analysis aimed at activating the potential of PPPs in other EU regions.

3. PPP projects in Europe are mainly concentrated in areas of public interest – transport, health, education and the environment account for the bulk of all investment in this area. This sectoral structure has remained stable over the period analysed and reflects the essence of PPPs: providing critically needed services with private sectors participation, while keeping the public interest at the forefront. This suggests that PPPs are not only an investment instrument, but also function as a component of public development policy, especially in constrained public budget contexts.

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