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The Future of PPPs in the Western Balkans

Jan Kees Martijn, Yan Sun, Armine Khachatryan, William Lindquist, Yen Mooi, Ezgi Ozturk, and Hoda Selim.

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The Future of PPPs in the Western Balkans

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ABSTRACT: Public-Private Partnerships (PPPs) are increasingly an important vehicle for several Western Balkan countries to increase investment to reduce their infrastructure gaps. While there are benefits to well-designed and implemented PPPs, they also carry a potential for large fiscal risks and increased costs if not managed well. Countries with successful PPP programs typically benefit from a clear and well-designed PPP governance framework, which covers all stages of the PPP life cycle. Western Balkan countries need to address gaps in their PPP governance frameworks to fully reap the potential benefits from PPPs.

Keywords:	Infrastructure, Public-private partnerships, Western Balkans
Authors' E-Mail Addresses:	akhachatryan@imf.org wilindquist@imf.org ymooi@imf.org eozturk@imf.org hselim@imf.org

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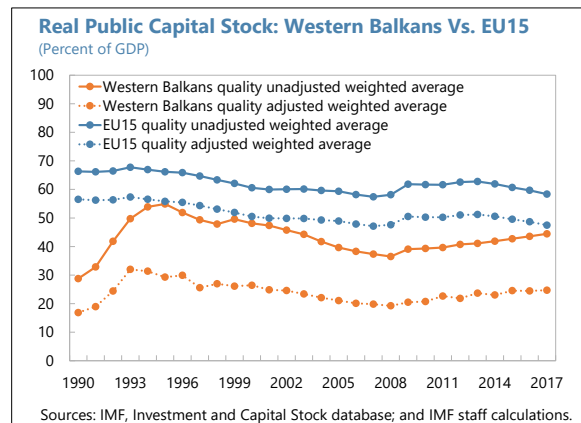
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Glossary

AFC	Asian Financial Crisis
CESEE	Central, Eastern, and Southeastern Europe
EMDE	Emerging Market Developing Economies
EU	European Union
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GFSM	Government Finance Statistics Manual
ICT	Information and Communications Technology
IPSAS	International Public Sector Accounting Standards
PPP	Public-Private Partnership
PPIAF	Public-Private Infrastructure Advisory Facility
SOE	State-owned Enterprises
USP	Unsolicited proposal

I. Introduction

1. Public infrastructure in the Western Balkans remains underdeveloped relative to the EU and other regional peers, posing a significant obstacle for higher economic growth and faster income convergence.¹ This stems from historical reasons, such as the political fragmentation and regional conflict in the 1990s, which largely depleted the capital stock. In recent decades, major international institutions and other development partners have supported infrastructure development in the region through various initiatives (e.g., the Stability Pact for the Balkans and several EU funds). While the infrastructure gap has narrowed compared to the 1990s, a substantial gap remains in the quality-adjusted real public capital stock.² The 2019 Global Competitiveness Index shows that for infrastructure, the Western Balkan countries average at a rank of 78 (out of 141 countries), compared to EU-15 countries which average at 17 and CESEE countries at 51. Furthermore, the average belies a large variation amongst the Western Balkan countries – ranging from Serbia at 51 to Albania at 98 (out of 141).



2. Increasing the level of quality infrastructure investment in the Western Balkans region can bring about significant potential growth benefits. Higher public infrastructure investment can increase short-term output by boosting aggregate demand and longer-term output by expanding the productive capacity of the economy, in both advanced (Abiad et al, 2016) and developing countries (Furceri and Li, 2017). Public infrastructure spending can also contribute to job creation through direct employment effects (Moszoro, 2021).

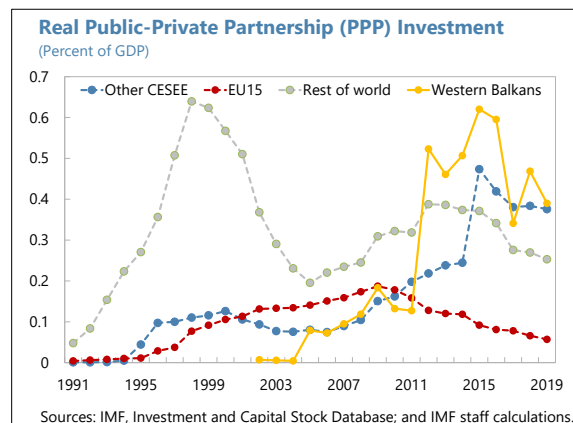
3. A key challenge for increasing public investment in the region is the lack of fiscal space. Public debt levels as a share of GDP are elevated — ranging between 36 percent of GDP in Bosnia and Herzegovina and 87 percent of GDP in Montenegro as of 2021, and on average increased from 54 percent in 2019 to a projected 62 percent in 2022. Fiscal deficits have also widened considerably, in part due to the COVID-19 pandemic and recently the war in Ukraine. The shocks from the pandemic and war have brought about increased economic and geopolitical uncertainty, including higher inflation expectations and financial market tightening, which increases government borrowing costs (IMF, 2022).

4. The choice of an appropriate financing mechanism to meet development needs without compromising debt sustainability is thus a pertinent question for the region. Due to their relatively underdeveloped domestic financial sectors and low revenue collection, and given the large spending needs, some Western Balkan nations have financed public investment through external borrowing such as through Eurobond issuance and bilateral financing. Closing the infrastructure gap with more external debt financing could potentially add to fiscal vulnerabilities as well as exchange rate, interest rate, and refinancing risks.

¹ See Annex 1 for country coverage.

² The quality adjustment is based on the World Economic Forum's measure on overall infrastructure quality based on business executives' assessments and follows the methodology applied in IMF (2020) and IMF (2014).

5. Several Western Balkan countries have turned to PPPs as an option to close the infrastructure gap. Indeed, since 2012, PPP investments in the region as a share of GDP, at around 0.5 percent on average, has been higher than the EU and global averages. Given the lack of fiscal space in the region, there might be a temptation to use PPPs for the perceived additional fiscal space afforded (“fiscal illusion”, IMF 2021), generated by the long-term nature of PPPs and the different time profile of government cashflows. While PPPs grant certain advantages and have a role to play in some public investment programs, their successful utilization depends on many factors. PPPs that are not well designed and managed could in fact increase costs and introduce significant fiscal risks, due to the complex risk allocation structure and long-term nature of the projects (Section III). Moreover, risks could also materialize in the context of shocks. The full impact of shocks from the COVID-19 pandemic and war in Ukraine are still playing out, with implications for the resilience of investment projects financed by PPPs.



6. PPPs could also play an important role in meeting energy transition goals, by pooling resources (capital and expertise) and sharing risks between the public and private partners. This is particularly useful as much of the innovation and technological solutions in green energy are being developed in the private sector. Across emerging market developing economies (EMDEs) worldwide, clean energy sources have been financed mostly by private sources, although some segments, such as hydropower, nuclear power, have relatively high participation of SOEs.³

7. This paper seeks to provide an overview of and guidance for the use of PPPs in the Western Balkans. It explores the trends and use of PPPs in the Western Balkans countries, relative to global and regional peers. Arguments in the literature on the benefits and drawbacks of PPPs are examined. The paper also explores how PPPs could be deployed effectively in the region and discusses the additional policies that are needed to support the proper use of PPPs. Our main conclusions are:

- **PPPs carry a potential for large fiscal risks and increased costs if not managed well.** While the conceptual advantages of PPPs have been well-documented in the literature, PPPs remain highly controversial. Existing evidence of PPP performance and effectiveness based on country experiences is at best mixed. As PPPs have become an increasingly important investment tool in the region, policymakers should carefully consider their design and implementation, and closely monitor and manage the associated risks so that the potential benefits can be fully reaped.
- **A sound PPP framework is a critical element in ensuring the success of PPP projects.** While most Western Balkan countries have introduced a legal framework for PPPs, there are still many gaps in the underlying governance structure compared to internationally established benchmarks. Improvements are needed to (i) strengthen the institutional control over PPPs, in particular to establish common public investment planning processes for both PPP and traditional public procurement

³ International Energy Agency (2021). Typically, long-term power purchase agreements (PPAs) are at the heart of energy sector PPPs (See World Bank, PPP Legal Resource Center, *Energy and Power PPPs Public Private Partnership*).

projects, and to provide the Minister of Finance with effective powers to ringfence PPP risks; (ii) enhance competitive procurement processes by restricting the scope for direct negotiations or unsolicited proposals; (iii) ensure more resilient contracts, including by spelling out specific criteria for contract renegotiation; and (iv) further improve the management and reporting of fiscal costs and risks, particularly related to the accounting for and disclosure of PPPs.

8. The rest of the paper is organized as follows. The second section provides a historical overview of PPPs in the region, placing it in the broader global and European context. The third section examines the literature on the benefits and drawbacks of PPPs and surveys the existing empirical evidence on PPP successes and failures. The fourth section lays out a framework for assessing PPP governance frameworks in the Western Balkans, focusing on the institutional elements needed to support effective management of fiscal costs and risks. To conclude, the paper draws lessons that Western Balkan policymakers can learn from the experience of other countries on the use of PPPs and provides some policy recommendations.

II. History and Landscape of PPPs – A European Perspective

Origins of PPPs

9. A public private partnership (PPP) is often characterized as a project governed by a long-term, risk-sharing contract between a government and a private company. Typically, the company makes an investment in an asset and uses it to provide services to the government or the public, and is usually required to satisfy a set of performance criteria. Through performance criteria and benchmarks, the two parties agree on their respective responsibilities and a risk-sharing arrangement. PPPs can be broadly grouped into two types based on their funding sources (see Box 1).

10. PPPs have a long history in Europe, with origins tracing to the Roman Empire (Bezancon, 2004 as cited in PPIAF, 2009a). The fall of the empire brought along the demise of these first PPPs, which were mostly in the postal sector. In the 12th and 13th centuries, PPPs reappeared in France for the construction of new fortified towns and the occupation of new lands (PPIAF, 2009a). In the 16th and 17th centuries, PPPs gained more traction, covering works such as canal construction, road paving, waste collection, and public transportation (Fabre and Straub, 2021). PPPs further expanded in Europe in the 19th century, ultimately driven by changes in society, including industrialization, rapid urbanization, and expanding markets. These

Box 1: Types of PPPs

Broadly, PPPs can be categorized into two types based on their funding sources:

(i) **Government-funded or availability-based PPPs**, where the government either (a) makes predetermined payments for the services over the duration of the PPP contract in return for making the asset available after the project completes, or (b) makes payments per volume of service provided (IMF 2018, IMF 2021, Vecchi et al 2021).

(ii) **User-funded PPPs**, where the users pay fees for the services. Also often referred to as “concessions”, though definitions vary across countries. Sizeable government spending may still be needed to subsidize the investment or guarantee the private company’s debt or revenue (IMF 2018, IMF, 2021).

PPPs can also be a combination of government- and user-funded types (**mixed PPPs**).

partnerships built both inter-urban infrastructure, such as railways and telegraphs; and intra-urban infrastructure, such as trams and water supply (Goldsmith, 2014). However, interest in PPPs waned during most of the 20th century, with two major wars creating an environment for a more state-driven role, and greater prominence of state-owned enterprises (SOEs).

Stylized Facts and Trends

11. A resurgence of interest in PPPs globally has quadrupled PPP-funded capital stock between 2001 and 2019.⁴ The median global PPP capital stock increased from 0.6 percent of GDP in 2001 to 1.8 percent of GDP in 2011, and further to 2.5 percent by 2019. This increase can be seen across countries for all income groups (Figure 1). At end-2019, emerging markets (EMs) had the largest PPP capital stock as a share of GDP (about 3.7 percent), driven by Asian EMs. Advanced economies had the largest stock in per capita terms, reflecting large capital stocks of physical infrastructure. At end-2019, ten European economies were listed among the top 20 countries with largest per capita PPP capital stocks (Figure 1).

12. Globally, the median of annual PPP investments peaked at 0.2 percent of GDP in 2010. Median PPP investments as a share of GDP have increased until 2010 but have declined since then to about 0.1 percent of GDP, with lower investments in both advanced economies and EMs (Figure 1). In contrast, PPP investments in LICs have remained stable over the past decade at around 0.2 percent of GDP. Asia is the only region where PPP investments as a share of GDP have recovered and even exceeded pre-2010 levels. Most regions saw a partial recovery after the GFC, except for Europe and the Middle East and North Africa.

13. The use of PPPs was severely disrupted during the Asian Financial Crisis (AFC, 1997-98) and the Global Financial Crisis (GFC, 2008-2009). For EU PPP transactions, heavily concentrated in advanced countries, their value declined by 50 percent from 2007 to 2009 (Kappler and Nemoz, 2010). The number of PPP projects also declined by around 40-50 percent both in the EU and Europe as a whole during the GFC, and following the Euro Area crisis because of project cancellations. Interestingly, PPP investments in developing countries did not suffer during the GFC as much as they declined during the AFC (Cuttari and Mandri-Perrott, 2013).

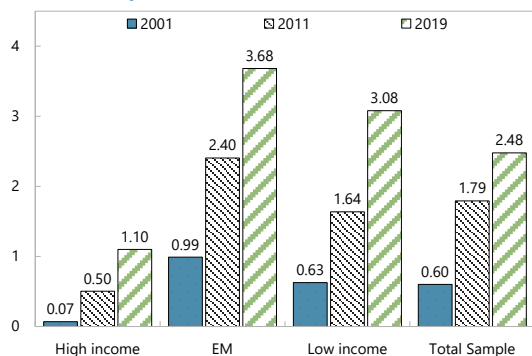
14. Annual PPP investments are typically small. Only five countries (Brazil, China, India, Turkey, and the UK) had PPP investments exceeding USD 10 billion (in 2017 PPP international dollars) in a single year. As a share of GDP, PPP investments have generally been lower than one percent (Figure 1), with a few exceptions.⁵

⁴ To adjust for the size of the economies and different demand levels for infrastructure, PPP investments are measured as a share to GDP, and PPP capital stock either as a share to GDP or in per capita terms.

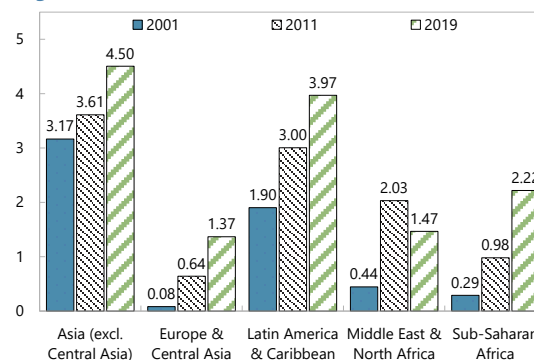
⁵ In Lao PDR, the ratio was on average above five percent of GDP during 2006-2016 and was around 15 percent in 2012. For another subset of countries (Bolivia, Bhutan, Cambodia, Lao PDR, Malaysia, and Djibouti), the ratio was higher than three percent of GDP.

Figure 1. Median PPP Capital Stock: Income Groups and Regional Groups

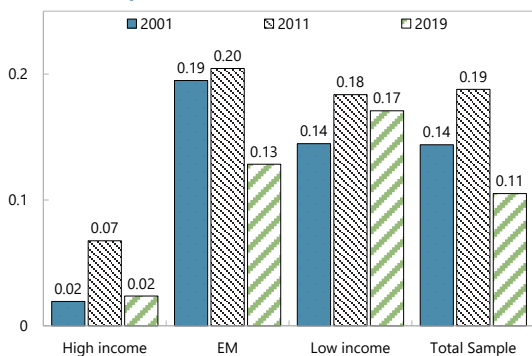
Median Public-Private Partnership Capital Stock by Income Group (Percent of GDP)



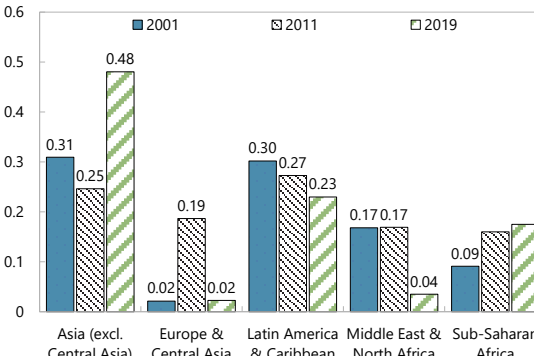
Median Public-Private Partnership Capital Stock by Region (Percent of GDP)



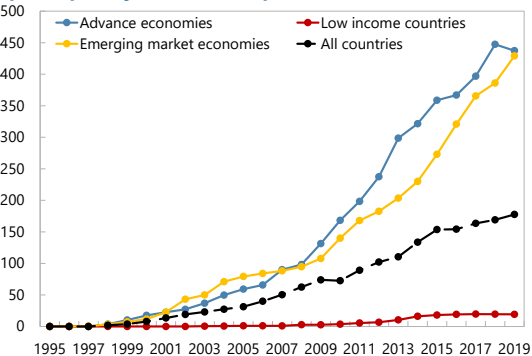
Median Public-Private Partnership Investment by Income Group (Percent of GDP)



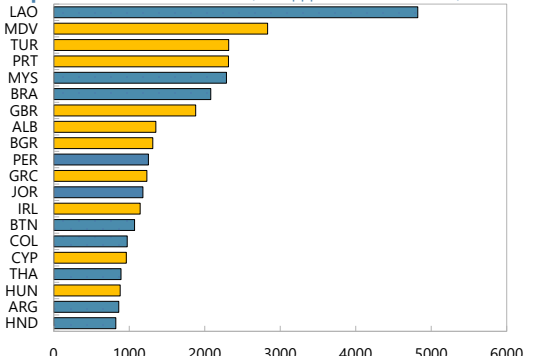
Median Public-Private Partnership Investment by Region (Percent of GDP)



Median Public-Private Partnership (PPP) Capital Stock per Capita by Income Group (2017 ppp international dollars)

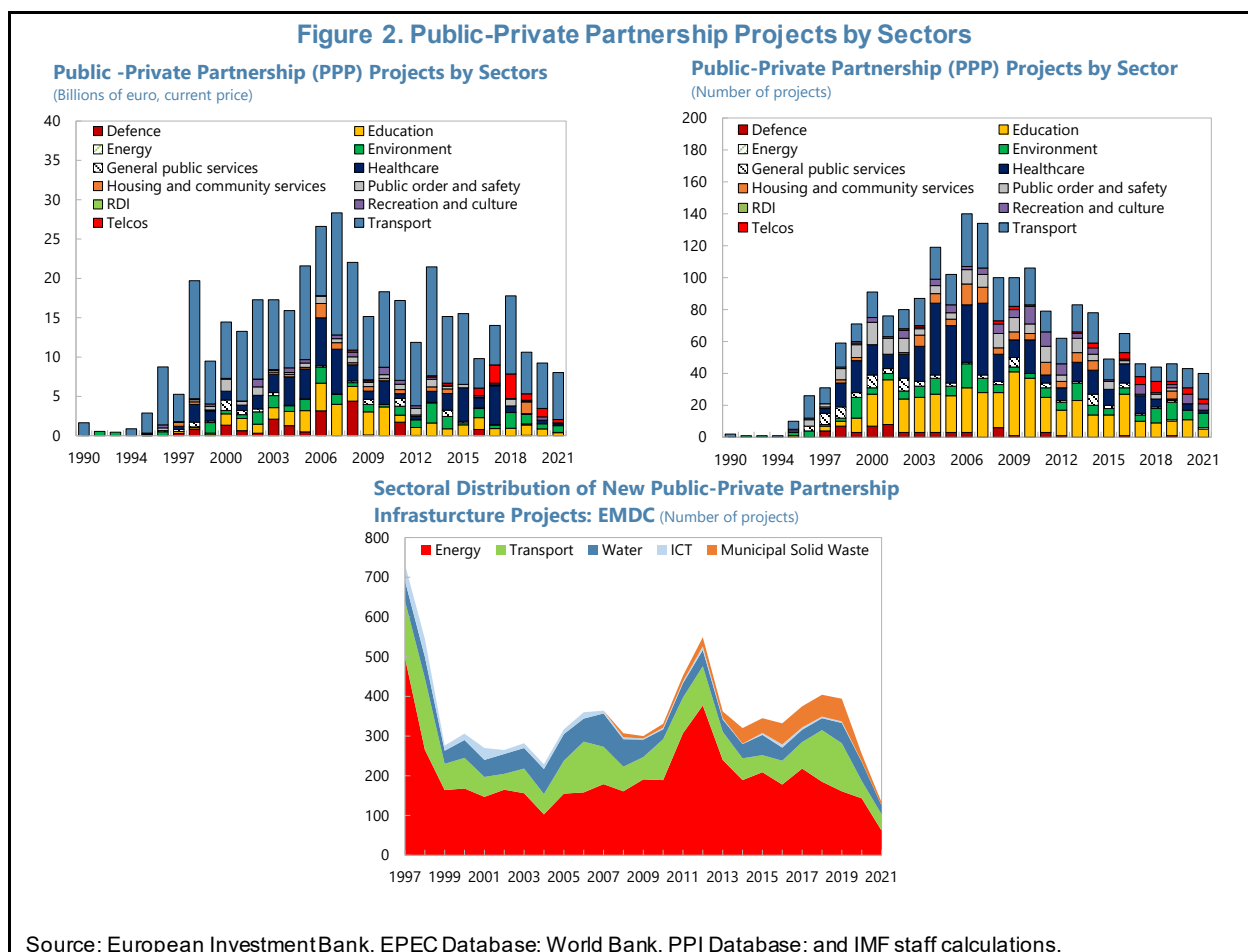


Public-Private Partnership (PPP) Capital Stock per Capita, Top 20 Countries in 2019 (2017 ppp international dollars)



Source: IMF, Investment and Capital Stock Database; IMF, WEO Database; and IMF staff calculations.

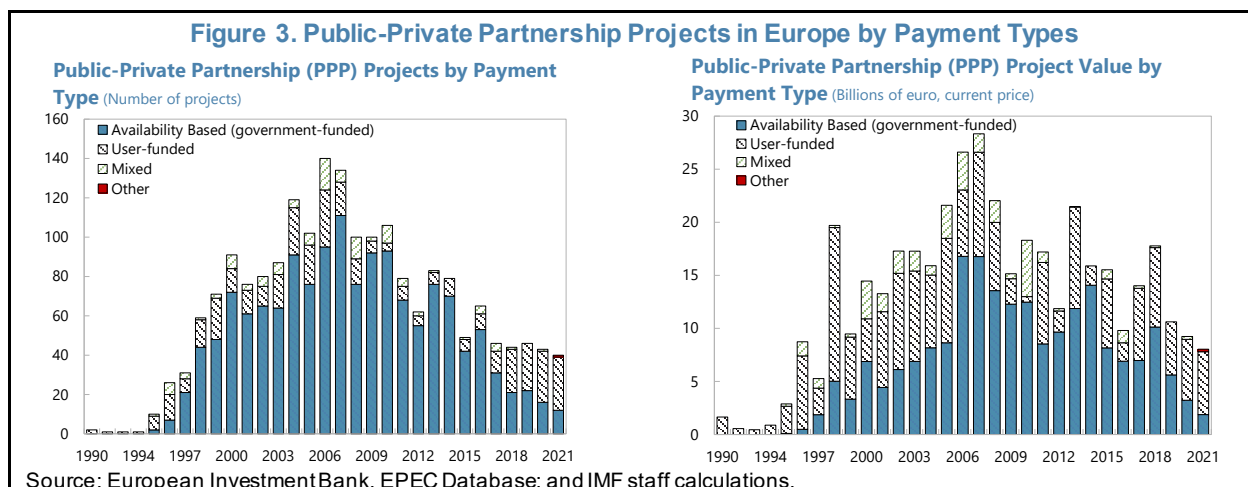
15. In Europe, PPPs have been primarily used for infrastructure. PPPs in Europe tend to be concentrated in the transportation sector, in terms of the *value* of projects (Figure 2). By *number* of projects, PPPs in transport remain important, though education and healthcare were dominant in the mid-2000s (Figure 2).⁶ Meanwhile, in European and global EMDEs, PPP investment in infrastructure has been concentrated in the energy sector, followed by transportation (Figure 2).^{7,8} By type of PPPs, the number and value of user-funded projects in Europe has increased since 2020 (Figure 3).



⁶ Source: European Investment Bank database.

⁷ Source: World Bank Private Participation in Infrastructure Database.

⁸ Differences in sector concentrations between the advanced economies and EMDEs could reflect possible differences in database definitions and coverage, but also distinct needs according to the stage of development.



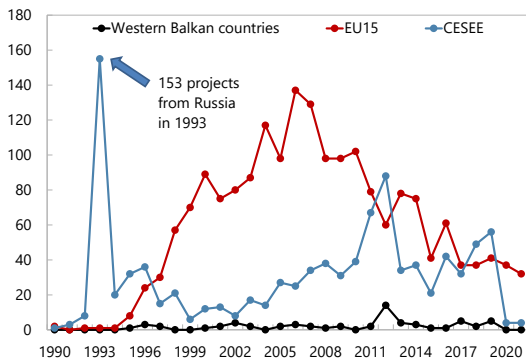
16. In the Western Balkans, while the number of PPP projects has remained low relative to the EU-15 countries and CESEE peers, they account for a relatively large share of GDP and total capital stock. PPP capital stock as a share of GDP and of total capital stock in the Western Balkan countries have been rising since 2005, with a sharp acceleration in 2012/13. As of 2019, this share is higher in the Western Balkans than in the EU-15 or CESEE countries. Annual PPP investment as a share of GDP is more volatile but has also grown since 2005, particularly in Albania, Bosnia, and Serbia. While these data might not be fully comparable, they broadly suggest that PPP projects in the Western Balkans tend to be larger in percent of GDP compared to PPP projects in the EU.⁹ This implies that the failure of an individual PPP project could create a larger burden for these countries.

⁹ The coverage of PPP projects drawn from different sources might vary across countries.

Figure 4. PPP Projects by Country and Regional Groups in Europe

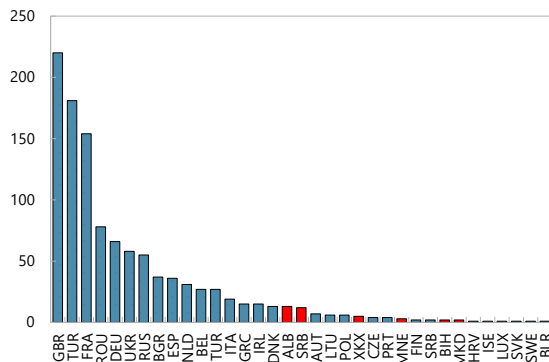
Public-Private Partnership (PPP) Projects

(Number of projects)



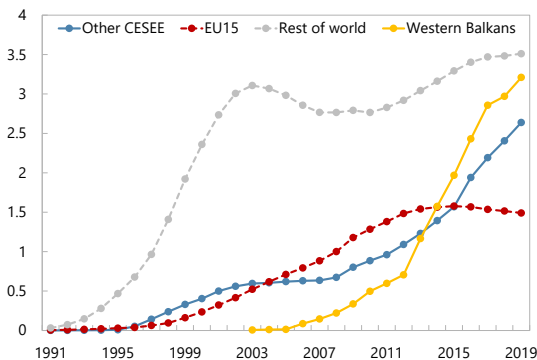
Public-Private Partnership Projects, 2010-19

(Number of projects)



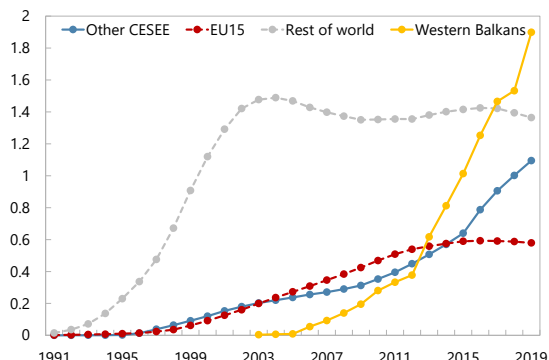
Public-Private Partnership (PPP) Capital Stock

(Percent of GDP)



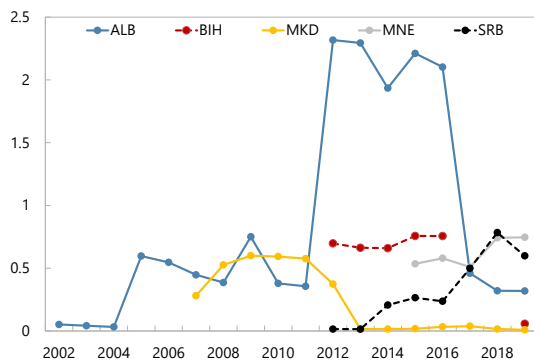
Public-Private Partnership (PPP) Capital Stock

(Percent of total capital stock)



Public-Private Partnership (PPP) Investment

(Percent of GDP)



Source: European Investment Bank, EPEC Database; IMF, Investment and Capital Stock Database; World Bank, PPI Database; and IMF staff calculations.

III. Evidence of the Pros and Cons of PPPs

This section discusses the published literature on PPPs, surveying both the conceptual arguments for and against PPPs, as well as the evidence on the impact of PPP projects in practice.

Conceptual Arguments for and Against PPPs

a) Efficiency arguments

17. From an *efficiency* standpoint, the traditional argument for PPPs has been that PPPs can complement public provision of capital and social infrastructure to generate a more efficient allocation of public resources (IMF, 2015, Irvin and others, 2018). The use of PPPs can offer a clear division of labor based on the respective comparative advantage of the public and private sectors. In a typical PPP, public authorities focus on planning, policy making, and regulation, whereas private companies provide services in their area of specialization and expertise. When structured properly, this clear division of labor can result in a win-win outcome — services provided would be of higher quality, at acceptable or lower costs than if they were to be provided by the government. Bureaucratic rigidities and the lack of organizational ability and incentives are often a constraint for public sector entities to manage large, long-term projects effectively and efficiently. In contrast, a dedicated private company whose profits depend on the success and cost-effectiveness of the project over its entire lifespan can have the right incentives and tools to do so (Engel, Fischer and Galetovich, 2020). Well-designed PPPs can generate efficiency gains that can more than compensate the higher cost of private financing (EIB 2005, IMF 2015).

18. Nevertheless, there are also arguments against PPPs compared to traditional public investment financing mechanisms. Key drawbacks include (PPIAF, 2009d): (i) the complexity of PPP structures, which increases the cost as authorities implement processes outside their normal field of competence and confidence; (ii) long-term commitments with the private sector cannot be made flexible and comprehensive enough to regulate the appropriate changes in the project when facing unforeseen circumstances; and (iii) the cost efficiency of PPPs is questionable in practice, especially for small-scale projects – PPP procurement costs can reach 5-10 percent of the capital cost for a large project, and do not decline proportionately for smaller projects. On costs, it is also important to incorporate the whole economic picture (including social returns) while assessing cost efficiency (Buffie et al, 2016), further emphasizing the necessity to consider any PPPs within the investment strategy of a country and not in isolation.¹⁰

b) Fiscal space arguments

19. From a *fiscal space* perspective, some governments have claimed that the private financing of PPP projects creates fiscal space. Countries with already high debt levels might see PPPs as an attractive

¹⁰ Buffie et al (2016) note that in a partial equilibrium analysis, PPPs would be compared with regular procurement by comparing direct returns, which is the return on infrastructure minus the return paid to the private partner in case of PPPs, or the interest paid on public debt in case of public sector investment. In a general equilibrium approach, however, picking the winner is more complicated as it also considers social returns such as employment and poverty reduction. They conclude that a PPP paying a lower direct return might be preferable to an own public sector investment because the former provides higher social returns, although these would be hard to measure.

solution to the lack of fiscal space, as a government does not need to issue debt or use existing public resources to provide new infrastructure in a PPP project. An empirical analysis of the cross-country and cross-industry determinants of PPPs in developing countries in the period 1990-2003 (Hammami, Ruhashyankiki, and Yehoue, 2006) shows that PPPs tend to be more common in countries where governments suffer from heavy debt burdens and where aggregate demand and market size are sizable (see also Annex IV).

20. The fiscal space argument for PPPs has been rebuked, and instead can be viewed as a “fiscal illusion” (IMF, 2021). The resources “saved” by a government that does not finance the investment upfront are offset by future revenue flows that now go to the private company (Engel, Fischer, and Galetovic, 2013). Hence, PPPs may only have an impact on the intertemporal allocation of government revenues and expenditures rather than provide extra fiscal space in present value terms (Fabre and Straub, 2021).

21. The “fiscal illusion” and perceived scope for postponing the disclosure of costly decisions can lead to governments proceeding with low-quality and fiscally costly projects that would otherwise have been rejected. Poor contract design, optimistic assumptions about revenues from users, and minimum income guarantees provided by governments often result in large fiscal risks or eventual fiscal costs (IMF, 2015). In addition, some governments use their political power to prompt regulatory decisions to lower prices. This weakens the finances of PPPs and can lead to underinvestment, lack of maintenance, and quality problems of these projects, and can eventually result in nationalization of the PPPs (Spackman, 2002, Klein, 2016).

c) Fiscal risk arguments

22. A related notion—that has also been discredited— holds that as long-term contracts, PPPs are a mechanism for converting future financial risks into identified liabilities and can thereby support predictable medium-term budgetary management (IMF, 2015, 2021). However, infrastructure projects are risky by nature, and contracting them through a PPP structure does not remove those risks. In particular, PPPs often involve repeated renegotiations as risks materialize. Because the government is ultimately responsible for the provision of public services, the bargaining advantage usually rests with the private company, which thus increases the associated fiscal risks. Furthermore, long-term contracting brings additional risks — the contractual relationship over a long period would need to be managed. There could also be implicit risks when PPPs are poorly designed, or when the country has poor infrastructure governance.¹¹ In addition, arrangements such as institutional PPPs (entities jointly owned by public and private parties) – while relatively uncommon – can lead to an inefficient allocation of risk in favor of the private partner.¹²

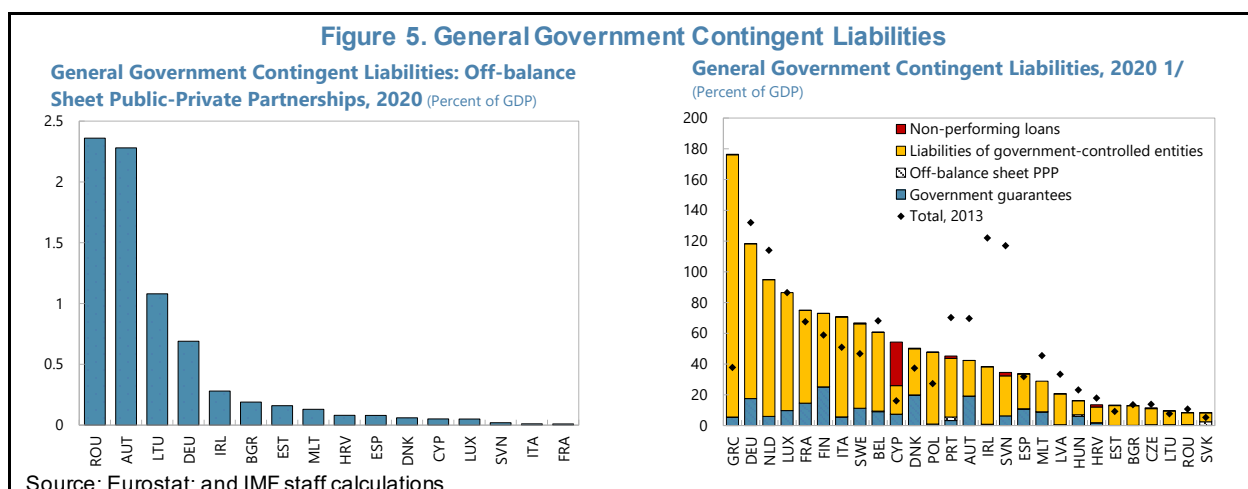
23. PPP projects create direct and contingent liabilities for the public sector. The timing and amount of the payment commitments for direct liabilities are known, whereas contingent liabilities (including in the form of guarantees) depend on uncertain future events. PPPs are a natural source of large contingent liabilities, given the nature of the projects. Moreover, only very few countries have good monitoring and reporting frameworks for contingent liabilities. To manage a PPP-related shock, it is important for policymakers to develop techniques to consolidate PPP-related contingent and direct liabilities, calculate the probability of

¹¹ For more details on fiscal risks, see IMF (2021), which discusses fiscal risks associated with PPPs and how governments can manage them.

¹² Unlike conventional PPPs, both private and public parties are shareholders of an institutional PPP. Examples include some projects in the UK (the Public Finance Initiative, PFI 1 and 2) and Italy (hospital projects to renovate public hospitals to transform them from general care facilities into specialized care facilities, Cappellaro and Longo, 2011). Although some had successful results, there were several failed projects due to unclear contractual agreements, and the lack of complete commitment by both parties.

realization of the risks, and include a provision for potential defaults in both the medium-term budget and annual budget (Aslan and Duarte, 2014).

24. While official data on contingent government liabilities (including those related to PPPs) can illustrate the risks that PPPs pose to the general government budget, it remains limited. Data for contingent liabilities related to off-balance sheet PPPs are available only for a limited number of European countries, with ratios lower than 2.5 percent of GDP.¹³ Some of the contingent liabilities recorded as government guarantees or liabilities of government-controlled entities might also be related to the PPPs. Thus, it is possible that the PPP-related risks on the government budget are much higher than that suggested by the contingent liabilities related to off-balance sheet PPPs. Data on the materialization of the PPP-related risks is also very limited.¹⁴



Empirical Evidence on the Success and Failure of PPPs

25. Most of the literature focusing on the impact of PPPs attempts to assess efficiency gains and are constrained by scope and coverage issues. These assessments are typically based on a point-in-time analysis, anecdotal evidence, and case studies. Given that attribution is debatable, and counterfactuals are hard to establish, the findings can be controversial. Furthermore, much of the empirical evidence stems from studies of private participation in infrastructure (PPI) investments, which is broader in scope than PPPs. Other forms of participation include works and services contracts with private companies, where the extent of private

¹³ For instance, Albania does not have data on contingent liabilities of PPP projects in the Eurostat as they use an older accounting standard. However, Open Data Albania reports that the PPP-related contingent liabilities as of September 2020 accounted about 1.5 billion euro (about [10] percent of GDP).

¹⁴ Bova, Ruiz-Arranz, Toscani, and Ture (2019) have a dataset of contingent liability realizations from 1990-2014 for 80 countries and include PPPs as well as state owned enterprises, financial sector, natural disasters, and subnational government. Their sample excludes realizations with a gross payout lower than 0.2 percent of GDP. It covers 192 contingent liability realizations with only 8 of related to PPPs, and 4 of them are from Europe. In Hungary, the payout was around USD 1.7 billion (1.5 percent of GDP) which resulted in nationalization of the PPP on motorways in 2005; in the United Kingdom, the payout was USD 6.1 billion (0.2 percent of GDP) and it resulted in nationalization of the PPP on the London Underground in 2010; in Portugal the payout was around USD 1.4 billion (0.6 percent of GDP) and as a fiscal response, a large stock of PPPs was reclassified into central government debt in 2014.

sector participation is smaller than in PPPs, and full privatization – in most cases, the results cannot be disentangled.¹⁵

26. There is some weak evidence that PPPs generate efficiency gains, though context matters.

Several case studies on PPPs (Ruiz-Nuñez et al, 2016) have documented efficiency gains in infrastructure assets and services. The institutional context matters – efficiency gains are found to depend on the type and size of the projects, as well as the regulatory environment, governance, and the historical and political landscape (Park, Kim, and, Lee, 2018, and Fabre and Straub, 2021).¹⁶ Studies on PPIs also show improvements in sector performance and quality (Andres et al, 2013, and Estache and Saussier, 2014) though empirical findings are highly sensitive to the changes in control variables (Estache and Saussier, 2014). Depending on the sector, the efficiency gains resulting in cost-savings also do not necessarily translate into service price reductions to final consumers (for instance, in energy or water tariffs). “Value for money (VfM)”¹⁷ studies, which aim to determine whether a PPP is better value for public services than traditional public procurement, have offered mixed results.¹⁸

27. Much of the anecdotal and empirical evidence has also suggested a mixed performance of PPPs.

There are numerous examples of failed PPPs with poor design and excessive costs across Europe (Fabre and Straub, 2021).¹⁹ In addition, the existing empirical evidence is not conclusive and more quality studies with convincing identification strategies are needed.²⁰

28. The cancellation or renegotiation of a PPP contract is usually perceived as a form of PPP failure as they are associated with high costs and the disruption of public services.

(See Annex III for a description of cancelled and distressed projects). In several cases in Europe, the anticipated benefits of PPPs often did not materialize as the infrastructure could not be completed within the planned time and cost, and

¹⁵ The World Bank’s Private Participation in Infrastructure database covers: (i) management and lease contracts (some are considered as PPPs, when they have defined performance targets and base their fees in part of their fulfilment); (ii) greenfield projects, under which a private company builds and operates a new facility for the prespecified period. Most, where ownership does not pass to the private sector, are considered PPPs; (iii) brownfield projects, where a private company takes over an existing asset, improves or extends it, and often takes over the operations of the asset and then undertakes the capital investment; (iv) divestitures, under which a private company buys an equity stake in a state-owned enterprise (PPI Glossary, World Bank).

¹⁶ They find that cost-saving in a PPP structure is possible as the private company has the incentive to (i) minimize the life cycle costs of the infrastructure; and (ii) avoid cost-and time-overruns, which are common symptoms of large-scale government projects.

¹⁷ This definition may vary from one institution to the next. The UK Treasury, for example, defines value for money in their guideline as “the optimum combination of whole-of-life costs and quality (or fitness for purpose) of the good or service to meet the user’s requirements.” For more details, see PPP KnowledgeLab | PPP Reference Guide “Assessing Value for Money of the PPP.”

¹⁸ Park, Lee, and Kim (2018) analyze three major PPP road projects in Korea using an ex-post VfM test and show that only one out of three delivered VfM. Ismail (2013) shows that private sector technical innovation and competitive tendering are the two key drivers that enhance the VfM achieved from PPP projects in Malaysia.

¹⁹ For example, the U.K. government decided to abolish PFI contracts altogether in 2018 in light of the considerable fiscal costs arising from the failure of the London Underground’s biggest contractor Metronet in 2009, and of the construction firm Carillion in 2018.

²⁰ See Fabre and Straub (2021), which summarizes the impact of PPPs in different sectors by reviewing empirical evaluations of the effectiveness of PPPs. They also note that whether PPPs succeed or fail in resolving service shortages is closely related to the institutional context in which they are implemented, the historical and political landscape in which they operate, and the specific contracts and design of regulations.

increased costs were usually linked to renegotiations (European Court of Auditors, 2018).²¹ Given the inherent perverse incentives of PPP contract renegotiation (Engel, Fischer, and Galetovic, 2006, 2020) – which carry implications for cost-bearing by the next generation users of the infrastructure or future governments – safeguards are thus needed. An example is a contract that limits the present value of the private sector’s compensation to the amount in the original bid, and specifies that any additional work should be auctioned again for the lowest bid (Engel, Fischer, and Galetovic, 2020). In India, the government reserves renegotiations for very exceptional circumstances to minimize moral hazard in the bidding and project specification processes (OECD, 2015).²²

IV. Strengthening PPP Governance Frameworks

29. Most countries with successful PPP programs benefit from a clear and well-designed governance framework. As previously discussed, poor infrastructure governance is a key factor contributing to the failure and increasing fiscal risks from PPPs. It is therefore critical to have a strong set of PPP governance policies and practices to maximize the possible benefits of PPPs, while increasing the authorities’ abilities to monitor and mitigate the accompanying risks. A well-designed framework will help to ensure that the rights and responsibilities of public and private parties are clearly delineated.

30. An adequate framework should cover all stages of the PPP lifecycle, including preparation, procurement, and contract management (World Bank, 2014). *During the preparation phase*, priority investment projects should be identified regardless of their financing modality. Possible PPP projects should then be identified based on an appraisal showing that among other priorities, the PPP modality is expected to maximize value for money compared to conventional financing tools. In the second stage, *PPP contracts are designed* to prepare the project for the *procurement process*. Once the winner is selected and contracts are signed, the last phase begins and involves *managing the PPP contract* over its lifetime. Appropriate safeguards should be in place to ensure that PFM controls are not bypassed, and that government exposure to PPPs-related fiscal risks is controlled (IMF, 2021).

31. This section assesses PPP governance frameworks in the Western Balkans, with a focus on the elements needed to support effective monitoring and management of fiscal costs and risks. The Western Balkan PPP frameworks are compared to those in Turkey and three Eastern European countries and benchmarked against a set of comparators in advanced Europe.²³ The assessment looks at 19 specific aspects which play a role in managing fiscal risks and costs in PPPs, with standards consistent with Fund advice. The evaluation for each subcomponent allows the construction of a matrix showing the scores across countries (see Annex II).

The subcomponents are grouped into three main categories:

²¹ For instance, between 2007-2011, two Spanish motorway contracts were renegotiated soon after the contracts were signed to modify the planned works, and these renegotiations increased the cost by 300 million euros, borne by the public partner. Similarly, in Greece the construction of three motorways, for which the PPPs were negotiated in 2007-2008 was delayed by four years, on average, and the renegotiations of the PPPs led to billions of euros of additional costs borne by the public partner although the scope of two out of the three projects was reduced considerably.

²² As a result, up until 2015, there were no renegotiations, although there were requests by private companies.

²³ The three comparators from Eastern Europe are Belarus, Moldova and Ukraine. The sample of advanced European countries include Belgium, Denmark, France, Germany, Ireland, Portugal, Spain, and the UK.

- ***Institutional control over PPPs.*** Institutional weaknesses in the early stages of the project cycle may lead governments to select poor quality projects, for which PPPs may not be the best financing structure. Such decisions may be associated with fiscal risks in the future.
- ***Practices for public procurement and contract management.*** PPP contracts create both present and contingent public sector liabilities, which could be a source of fiscal risks if not well designed or executed.
- ***Management and reporting of fiscal risks.*** Fiscal costs and risks of PPPs must be monitored and controlled along the different stages of the cycle (IMF, 2021).

32. The assessment of PPP frameworks is based primarily on an overview of PPP legislative and regulatory frameworks and, where possible, judgement about a country's actual PPP practices. This section reviews the dedicated laws and regulations that govern the PPP project cycle.²⁴ As well-designed frameworks are not always implemented effectively, to the extent possible, the section also tries to identify cases when practice deviates from the processes described in legal frameworks.

33. Most Western Balkans countries and comparator countries have adopted some form of PPP governance framework. Nonetheless, improvements are still needed to (i) strengthen institutional control over PPPs, especially to establish common public investment planning processes for both PPPs and traditional procurement projects, and to provide the Minister of Finance with adequate powers to ringfence risks from PPPs, particularly veto power in approving PPP projects, (ii) enhance competitive procurement processes by establishing tighter regulations for direct negotiations and unsolicited proposals, (iii) ensure more resilient contracts by citing specific circumstances justifying contract renegotiation, and (iv) further improve frameworks for the management and reporting of fiscal risks.

(i) Institutional Control of PPPs

34. Successful PPP management begins with a strong institutional framework covering the preparation and planning stage. These controls include a legal framework governing PPPs; the integration of PPPs with a country's investment strategy, infrastructure priorities and budget; and strong powers of the Ministry of Finance in maintaining control over the possible fiscal consequences of PPP projects (OECD, 2012; and Schwartz and others, 2020). Too often, countries place PPPs on separate tracks from other public investment projects, leaving them out of investment management and budgetary processes. This might have stemmed from a popular perception that PPPs are "free" infrastructure (i.e., the "fiscal illusion" as described in Section I), but in practice, fiscal implications are rarely avoided once PPP projects move forward.

A. Scope and Coverage of the PPP Legal Framework

35. A clear and sound legal and regulatory framework for PPPs helps ensure that the rights and responsibilities of public and private parties are clearly delineated so that contracts will be

²⁴ The limited scope of this paper does not permit a detailed assessment of all elements of the PPP legal framework in a particular jurisdiction, nor a detailed cross-jurisdictional comparison. The full PPP legal framework includes not only PPP-specific legislation and regulations, but also all legislation that affects PPP contracts, decision-making processes, and implementation procedures (World Bank, 2014). However, a comprehensive and detailed assessment of national legislative and regulatory frameworks, which would consider, among other things, constitutional aspects, system of law, and legal tradition in a country, is beyond the scope of this paper.

implemented and honored. International experience suggests that PPPs should be governed by a sound framework that would include policies, procedures, institutions and rules that would determine aspects related to project selection, procurement, assessment and monitoring of fiscal risks, the delivery of service and sustainability of the PPP project over time. While there is no single model PPP framework that would ensure ultimate success, PPPs should not be implemented on an ad-hoc basis or through contract-level legal provisions which could impede government plans to scale-up PPPs (Queyranne, Daal, and Funke 2019). The legal framework should clearly define PPPs and apply uniformly to all PPPs. Otherwise, a fragmented legal framework risks creating uncertainty, raising the cost of compliance for private partners, and ultimately, increasing the cost to the public sector. In this regard, the PPP legal framework may comprise of a PPP-specific legislation and regulations; official PPP-specific government guidelines, manuals, or other legally-binding official documents; or other non-PPP-specific legislation and regulations relevant for PPP projects (e.g., sector-specific legislation or regulations and general procurement, contract, company, arbitration, or environmental law).²⁵

36. Most Western Balkans countries have established legal frameworks to govern PPPs though not all of them have adopted PPP-specific frameworks. Albania, Kosovo, Montenegro, and North Macedonia as well as Belarus and Moldova have adopted a single PPP-specific primary legislation. In other countries, the PPP legal framework is governed by multiple pieces of legislation, suggesting that not all PPP projects are treated uniformly. In Serbia, for instance, in addition to the main PPP and Concession Laws, the PPP framework also includes other laws on public investment and public utilities. In Bosnia and Herzegovina²⁶, and Turkey²⁷, PPPs are governed either by laws on concessions and public procurement, or other laws governing the private sector delivery of public services, or other sector-specific laws.

37. In some cases, the PPP framework does not apply to all sectors. In Albania, for example, the law does not apply to the air transport, roads, Information and Communications Technology (ICT) sectors, and some renewable energy projects. In Serbia, the PPP legal framework excludes some ICT projects, water and irrigation, and some ground transportation projects, among others. In Montenegro, projects related to the exploration, exploration, and exploitation of mineral resources, use of water resources, and many other natural resources, and natural resources for generation of electrical and/or heat energy are not covered by the PPP Law, but by the 2019 Law on Concessions. Large PPP projects in the energy sector in Ukraine are not governed by the PPP law.

38. A similar variation can be seen across the legal frameworks for PPPs in advanced countries in Europe. Not all countries have adopted single PPP frameworks and some countries like France, Spain, Germany, UK, and Denmark have multiple PPP or concession laws, including for specific sectors. Most PPP contracts in EU member countries are regulated by EU directives on the award of concession contracts.

²⁵ See also World Bank PPP Legal Resource Center.

²⁶ Bosnia and Herzegovina is a largely decentralized state. The laws regulating PPPs and concessions operate at the national level, sub-national levels and cantonal levels. All ten cantons within the Federation of Bosnia and Herzegovina possess their own legal frameworks, procedures and bodies. In total, there are 14 Concession laws and 12 PPP Laws (i.e., non-concession PPP Laws) in force (EBRD, 2018).

²⁷ PPPs are also allowed by Turkey's constitution.

B. Integration of PPPs with the National Investment Strategy and Budget Process

39. PPP projects should originate from a national investment strategy to ensure they are aligned with public priorities. PPPs are but one modality among others to finance infrastructure, and it is important to create a level playing field across these modalities (World Bank, 2014). All public investment projects need to be aligned with the government's strategic priorities and should be selected through a thorough and evenhanded public investment planning process, as well as integrated into medium-term national investment strategies (Schwartz and others, 2020 and OECD, 2012).

40. Furthermore, all PPP fiscal costs and risks (whether explicit or contingent) should be approved in national budgets, and preferably through the Medium-Term Budget Framework (MTBF). This is to ensure that they do not circumvent budgetary restrictions (including in future budgets) and remain under the control of the Ministry of Finance (IMF, 2021 and Queyranne, Daal, and Funke 2019). Alternatively, the creation of parallel processes for PPP approval outside of the budget — even if rigorous — may weaken fiscal discipline and undermine the role of the Ministry of Finance (OECD, 2012).

41. Western Balkan countries tend to plan PPPs through parallel investment planning processes. While legislation in most Western Balkans countries and Turkey requires that PPP projects are aligned with either national or sectoral strategies, projects are typically not integrated with the public investment process. Projects are appraised, prioritized, and selected through a separate pipeline from other projects. In the case of Albania, the law allows the contracting authorities to select the projects to be financed via PPPs (Funke, 2019 and Darcy and Steger, 2022). Among the advanced European countries, Germany, Ireland, Spain, and UK require that all investment projects (regardless of the form of procurement) be assessed through the same investment planning process.

42. Furthermore, in all Western Balkan countries, PPPs are not approved through the budget (Figure 6). Albania is the only country in the region where the legal framework requires contracting authorities to ensure that future obligations related to PPPs are covered in the approved annual budget as well as within the MTBF — nevertheless, in practice, PPPs are still managed outside of the Public Investment Management (PIM) and budget process (Funke, 2019). In contrast, most of the advanced European countries have PPPs in the budget approval process in some form.

C. Ministry of Finance Veto Power

43. The Minister of Finance should have the authority to veto projects — throughout their lifecycle — that lack value for money, are considered unaffordable, or entail significant fiscal risks. The legal and regulatory framework should provide the Ministry of Finance with a clear mandate to perform this function (Irwin, Mazraani, and Saxena, 2018, and IMF, 2021).²⁸ This role also often means that contracting agencies should only offer guarantees or enter into multi-annual spending commitments with prior review and approval by the ministry of finance (IMF, 2021). The approval by the minister should be required at the early stage of a project (for example pre-feasibility and feasibility) to avoid the politically more difficult choice to terminate a project that has already gained momentum. This power is needed through contract signature as the final cost of a project is not known until then (World Bank, 2014).

²⁸ A gateway process is an institutional mechanism that empowers the ministry of finance to prevent a project from advancing through successive stages of the PPP cycle if it fails to meet certain critical conditions (Irwin and others, 2018).

44. PPP laws in the Western Balkans require the involvement of Finance Ministers in varying degrees (Figure 6). PPP legislations in Albania, Bosnia and Herzegovina, Kosovo, and Montenegro explicitly require the Finance Minister's approval of PPP projects both before the procurement launch and before contract signature. In Albania, however, PPP decisions remain very politicized in practice (Darcy and Steger, 2022). In North Macedonia and Ukraine, the Ministry of Finance has the authority to approve PPP projects before the launch of the procurement process but not before contract signature. The Finance Ministers of Serbia (for projects exceeding EUR50 million), Turkey and Ukraine may only issue non-binding opinions, while in North Macedonia and Moldova, their assessment is required only if a project requires a direct participation from the budget.

45. In advanced Europe, the Minister of Finance's approval is required in several countries. The gateway process was first established in the UK to safeguard overall fiscal sustainability and is now practiced in France, Germany, and Portugal. In addition, in almost all countries, evidence must be presented that PPP projects are fiscally affordable. In Denmark, France and Portugal, a financial analysis is required to compare the cost of implementing the project as a PPP relative to traditional procurement.

D. PPP Units

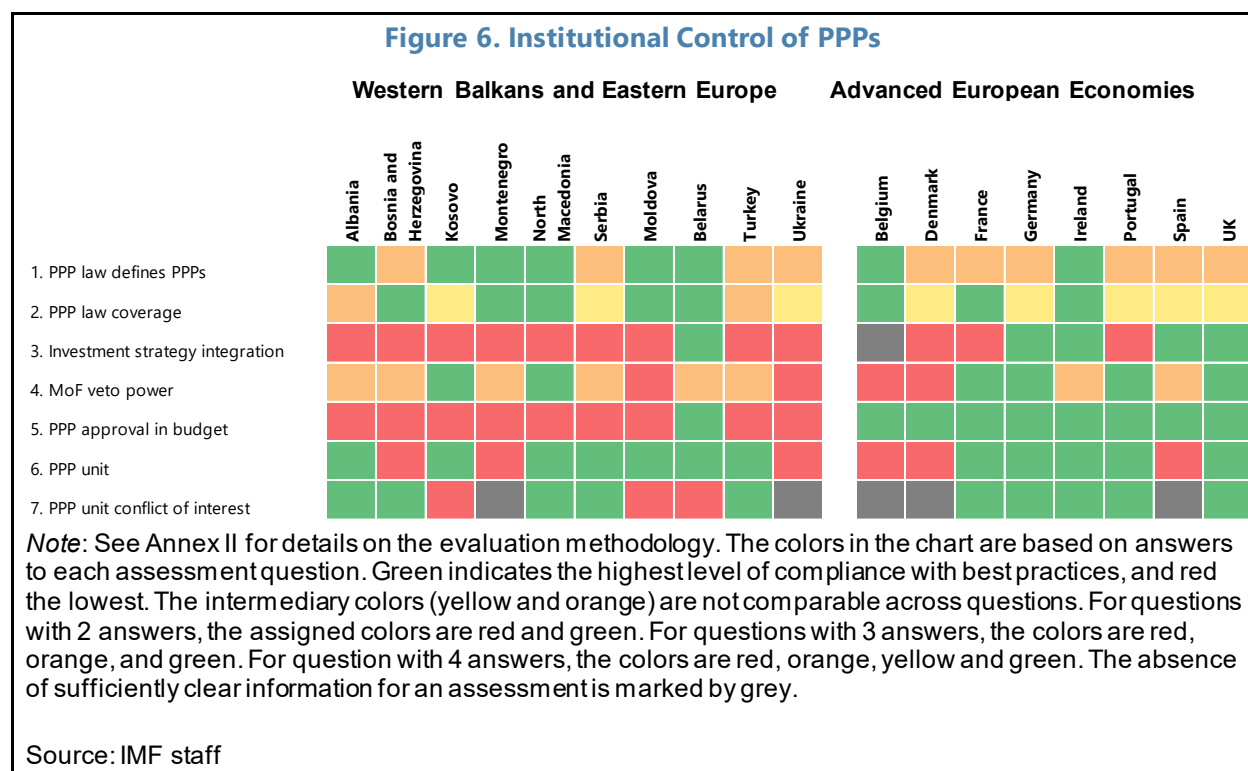
46. PPP units can provide technical support for PPP projects. PPPs are complex transactions that likely require legal, technical, and financial knowledge beyond the scope of expertise of the procuring authorities. The establishment of specialized PPP units can pool these skills and offer support on project identification and assessment, standardization of procurement procedures, capacity building for implementing agencies, as well as a demonstration of political commitment (OECD, 2010). PPP units may also improve coordination and reduce transaction costs by filling information gaps (World Bank 2007). It is also important for staff working in the PPP unit to have the necessary technical skills to manage PPP transactions including negotiation skills, finance, and regulation, among others (OECD, 2010).

47. The institutional framework needs to address potential conflicts of interest that may arise from the dual promotion and gatekeeping functions that some PPP units have. Granting PPP units a gatekeeping function of reviewing and approving PPPs, in addition a promotion function, may create conflicts of interest or political influence over approval decisions—especially if the units are established within the Ministry of Finance. For this reason, it is preferable to separate technical support functions (including PPP promotion and procurement) from gatekeeping functions, for example by establishing Chinese walls within the unit or by creating a separate unit, or even an independent agency responsible for fiscal management (IMF, 2021).

48. The PPP units established in Western Balkan countries vary in the roles they play. In Albania, Bosnia and Herzegovina, Kosovo and Serbia, PPP units assist the authorities in preparing and evaluating PPP projects through technical support and are also responsible for PPP promotion. In Albania, while the PPP unit is dependent on the Ministry of Finance, it is not formally mandated with fiscal management functions. In North Macedonia, the PPP units seem to have more limited or advisory roles (World Bank, 2020a). In case of Montenegro, while a new agency has been tasked to support the promotion of PPPs (Montenegrin Investment Agency), with a role in supporting preparation, it is not yet clear what role it will play in procurement and implementation. The Concession Commission has some role in supporting implementation but not full responsibility for preparation, procurement, and implementation. In Turkey, there is no central PPP unit, but the Department of the Strategy and Budget provides technical support (project analysis and evaluation) to the overall public investment program which includes PPPs. The units in Kosovo and Serbia carry out both PPP

promotion and fiscal management functions, which could raise conflict of interest concerns. PPP units in advanced Europe have broadly similar functions and only a few carry out gatekeeping functions, including in Ireland and Portugal.

49. To conclude, while the PPP governance frameworks in Western Balkans countries have shown improvement over time, institutional shortcomings remain (Figure 6). *First*, in some countries, the PPP legal framework remains fragmented, in some cases involving sector-specific legislation. *Second*, most countries need to establish integrated public investment planning processes for identifying priority projects, as a basis for the creation of a pipeline of PPP projects. *Third*, governance frameworks need to provide the Minister of Finance with a key and active role in managing a gateway process for approving PPP projects and in assessing the PPP fiscal costs and risks. *Finally*, PPP units, especially those that were recently created, need to be assigned effective and clear-cut roles. Meanwhile, in advanced Europe, while the PPP governance frameworks are broadly stronger, shortcomings still exist, particularly where PPPs selection is not nestled within a broader planning process.



(ii) PPP Procurement and Contract Management

50. Strong legal and operational frameworks are needed to govern PPP procurement and renegotiation. PPP transactions are expensive, lengthy, and risky. Procurement laws should ensure that the bidding process is transparent, fair, and competitive to reduce perceptions of corruption and thereby attract high-quality bidders (World Bank, 2020b). Furthermore, PPP contracts create definite and contingent public sector liabilities. To ensure that these are not a source of undue fiscal risks, contracts need to be well-designed, flexible, and include provisions on renegotiation and efficient dispute resolution.

A. Public Procurement and Direct Negotiations

51. Procurement legislation should ensure a competitive bidding process and strictly regulate direct negotiations. Direct negotiations typically limit transparency and avoid competition, which may also create opportunities for corruption. Therefore, direct negotiations should only be permitted under limited circumstances such as for very small or very urgent projects, or if there is only one possible counterpart (World Bank, 2020a).

52. Public procurement legislations in the Western Balkans include principles for competitive bidding, though direct negotiations are allowed in most countries. In the Western Balkans, PPP procurement frameworks require that bids are submitted through open tender processes (Figure 7).²⁹ Direct negotiations are prohibited in Belarus, Moldova, Montenegro, North Macedonia, and Ukraine, while they are allowed under certain circumstances in the remaining Western Balkan countries. Some of these circumstances are well-defined but others are less clear, referring, for example, to “unforeseeable events” (Albania, Bosnia and Herzegovina, and Kosovo). In Turkey, direct negotiations are allowed when procurement does not exceed a minimum amount. In advanced European countries, direct negotiation is allowed under tight restrictions, except for Belgium and Portugal where it is prohibited.

53. Unsolicited proposals (USPs) should normally be avoided, or at a minimum, be subject to strict scrutiny. USPs for PPP projects typically arise outside the public investment planning framework. They can leverage knowledge and innovative ideas from private investors and can help overcome challenges related to early-stage project identification and assessment, but they risk diverting investments from strategic priorities and may generate projects with poor value for money, especially in the absence of a transparent and competitive environment (World Bank, 2018). If USPs are allowed, procurement laws should (i) require that the government undertakes independent feasibility analysis; and (ii) ensure a competitive bidding process that gives other bidders adequate time to prepare bids (Delmon, 2015). Preferably, the government takes control of project development and contract design (World Bank, 2018). However, there is evidence indicating that the vast majority of tenders for unsolicited PPPs present a single bidder, therefore suggesting that USPs may not necessarily lead to competition even under competitive procurement. This is the case because potential competitors are often discouraged from bidding as they perceive that the firm having presented the USP already has an advantage over them (IMF, 2021).

54. In the Western Balkans, USPs are subject to such strict procedures in only a few countries (Figure 7). In Albania and Bosnia and Herzegovina, procurement laws subject unsolicited proposals to the same competitive procedure as government-initiated projects and require that feasibility studies are carried out for those proposals. However, in Albania, USPs represent a sizable share of PPP contracts, especially in the energy sector (Darcy and Steger, 2022), which may signal issues with the application of the legal requirement. In Montenegro and Serbia, USPs are awarded through the same competitive process as other PPPs, but there is no requirement for independent feasibility studies. Except for Serbia in most of the Western Balkan countries, feasibility studies for USPs are not explicitly proposed for implementation. In Ukraine, USPs are awarded through competitive bidding (provided there are multiple bidders). In Belarus, USPs are not subject to a

²⁹ It should be recognized that while de-jure public procurement frameworks may be strong, in practice, contracting authorities may not always follow strictly the legal standards for public procurement. An assessment of de facto practices, however, is beyond the scope of this paper.

competitive bidding process or a proper feasibility study. Most legislations in advanced European countries do not make a reference to USPs, with a few exceptions.³⁰

B. PPP Renegotiations and Dispute Resolution

55. The legal framework for PPPs needs to ensure that contracts are well-designed and include provisions for renegotiation and dispute resolution. As PPP contracts often span beyond 20 years, it is natural for unpredictable circumstances to arise, that could not have been foreseen at the time of contract signing. A well-designed PPP contract should provide both flexibility and certainty for all parties by including mechanisms for renegotiation³¹ and dispute resolution. In this regard, the legal framework, rather than individual contracts, should spell out the required provisions to standardize contract clauses and ensure consistency (IMF, 2021). As contract renegotiations offer possible opportunities for corruption on both sides or collusion between the private sector and complicit government officials (World Bank, 2020b), they should be restricted under the PPP framework. For example, contract amendments during the first few years can be prohibited or limits imposed on the number of amendments (Guash, 2004, and World Bank, 2020a).³² The PPP legal framework should also describe institutional mechanisms for alternative dispute resolution mechanisms (ADRs) (World Bank, 2020a).

56. Renegotiation and dispute resolution are regulated in most legal frameworks in the Western Balkans, though there is room for improvement. Only the PPP laws in Albania and Serbia describe in detail specific circumstances, including in scenarios that could create uncertainty (e.g., Force Majeure) that would justify a contract renegotiation. The laws in other Western Balkan countries also outline some circumstances, though are less comprehensive in dealing with uncertainty. The Serbian law allows renegotiations if these do not increase the initial contract value by more than 3 percent. Some laws require that renegotiations are approved by the Ministry of Finance (Albania, Serbia) or the cabinet (Turkey). In Bosnia and Herzegovina and Moldova, the PPP laws do not include standard clauses for renegotiation but require that specific PPP contracts do so, which could create inconsistency across projects and contracts. Most laws in the Western Balkans also make a reference to ADRs.

57. In contrast, contract renegotiation seems more flexible and clearer in advanced European countries. In the UK, Ireland and France, renegotiations are limited to changes affecting the risk allocation of the PPP contract as well as other amendments that may be considered a “substantial” change. Furthermore, EU member countries adhere to EU norms by which contract amendments are allowed as long as they are below 10 percent of the amount of the initial contract for service and supply contracts or 15 percent of the amount of the initial contract for works contracts.³³ Following the COVID-19 pandemic, contract renegotiation

³⁰ In Ireland, the procurement law prohibits recourse to USPs. In Spain, the law explicitly requires that USPs are awarded through the same competitive process as other PPPs and also undertake feasibility studies for those proposals.

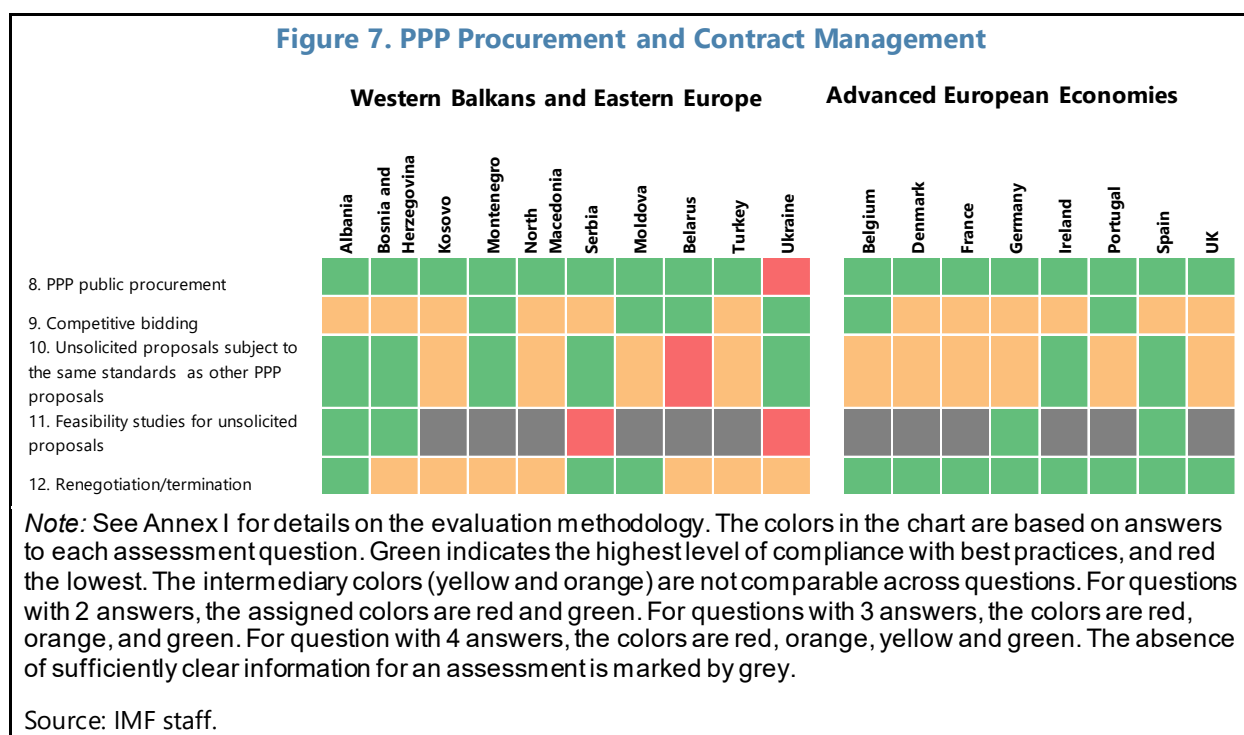
³¹ Renegotiation refers to changes in the contractual provisions of a PPP contract when these changes are negotiated between a project company and the government outside rather than through the adjustment mechanisms contemplated in the contract (World Bank, 2020b).

³² Ideally, it is better to avoid renegotiation through a good project preparation and good identification and allocation of risks upfront (Guasch, 2004).

³³ Article 72 of the EU Directive on “Modification of contracts during their term”.

and definitions of force major have been further revised in several European countries, adding more clarity, flexibility, but also accountability to these processes (e.g., the UK, Spain, Portugal).

58. In sum, while PPP legislations in the Western Balkans typically cover key aspects of procurement, renegotiation, and dispute resolution, there is room for improvement in several areas. *First*, there should be tighter regulations for recourse to direct negotiations (this applies also to some advanced European countries). *Second*, for countries that do not prohibit unsolicited proposals, it would help to limit fiscal risks by either prohibiting them as a first best solution or requiring the same competitive procedure as for other proposals. *Finally*, PPP legislations (rather than individual contracts) should specify the circumstances for contract renegotiation and offer space for ADRs before resorting to more formal mechanisms.



(iii) Management and Reporting of Fiscal Risks

59. PPPs inevitably distribute risks to the public sector. Examples of such risks include construction risk (design problems, and cost and schedule overruns), (ii) financial risk (cash flow falling short of the level needed to repay project loans and capital invested), and (iii) demand risk. If not properly assessed and ringfenced, these risks and their fiscal impact can be substantial. While risks cannot be fully eliminated as governments turn to using more PPPs, they can be managed with adequate risk management frameworks. The magnitude of fiscal risks is influenced by fiscal institutions that constrain government decisions toward PPPs. These include fiscal rules/targets, budgeting procedures, accounting and auditing standards, and the assignment of responsibilities for fiscal decisions among different parts of government.

60. To manage fiscal risks from PPPs, the authorities need to develop a framework for identifying and assessing fiscal risks. A comprehensive fiscal risk management framework includes: (1) the identification of fiscal risks; (2) an assessment of their magnitude and likelihood of realization; (3) reporting of

fiscal risks; and (4) actions to mitigate and manage exposures (Queyranne, Daal, and Funke 2019). The authorities should also make sure that the legal and regulatory framework provides for adequate risk sharing with the private sector. The IMF-World Bank PPP Fiscal Risk Assessment Model (PFRAM) can be used to help quantify the fiscal costs and risks of PPPs (Box 2).³⁴

61. Overall, the management and reporting of fiscal risks remains one of the weakest areas in the Western Balkans and Eastern Europe (Figure 8). While initial efforts are being made, at the time of writing none of the developing European countries in the paper's sample have well-established frameworks to assess fiscal risks from PPPs. Specific systems to account for explicit or implicit liabilities from PPPs remain largely absent or are at early stages of development. In some countries, comprehensive databases are still being established. A few countries have Fiscal Risk Units (e.g., Albania, Serbia, and Moldova) in their respective Ministries of Finance, though they are yet to operationalize assessments of fiscal risks from PPPs.

Box 2. PFRAM Technical Assistance

The PPP Fiscal Risk Assessment Model (PFRAM), developed by the IMF and the World Bank, is an analytical tool to assess the potential fiscal costs and risks arising from PPP projects. PFRAM helps country authorities quantify the macro-fiscal implications of PPP projects, understand the risks assumed by governments, and identify potential mitigation measures. PFRAM provides a structured process for gathering information on a portfolio of PPP projects in an Excel-based platform, following five main questions:

1. Who initiates the project?
2. Who controls the asset?
3. Who ultimately pays for the asset?
4. Does the government provide additional support to the private sector?
5. What does the PPP contract risk allocation tell us about macro-fiscal risks?

Using this information, the module generates outcomes for a portfolio of PPP projects based on project-specific and macroeconomic data.

Several countries in the region have received technical assistance (TA) on PFRAM from the World Bank or the IMF's Fiscal Affairs Department.

A. PPP Ceilings

62. It is important for a government to ensure that its total PPP-related commitments are consistent with its fiscal and debt sustainability priorities. Traditional fiscal rules (such as limits on government debt or fiscal deficit) may fail to consider contingent liabilities from PPPs to the extent that PPPs are not recognized on the government balance sheet (see also section IV.ii above on the integration of PPPs

³⁴ To assess fiscal risks, PFRAM requires the following information: (1) the contract parameters—when the contract starts and ends; (2) the funding, i.e., who pays for the service; (3) the financing—how the investment will be financed, that is, what portion will be financed by debt and equity, respectively; (4) the asset—the value of the total investment, the length of the construction period, and the expected useful life of the asset; (5) the service to be provided—the demand and the price per unit of the service; (6) the cost of the service, i.e., the maintenance and operation costs; (7) guarantees, if any—whether the government provides any debt or minimum revenue guarantees (MRGs). For details, see page 8 of PFRAM.

into the budget framework). Ceilings or limits on PPPs themselves can help ensure that PPPs remain fiscally affordable (Funke, Irwin, and Rial 2013). Ceilings can cover both the stock and annual flow of PPP payments and provide incentives for the prioritization of investment projects. A further element of a strong budget process is an established framework to assess the magnitude of contingent liabilities related to PPP projects.

63. Except for Albania, no country in the Western Balkan region has enacted ceilings on PPPs. This corroborates the earlier finding in section I.B. that few countries in the paper's sample fully cover or approve PPPs through the budget. The exception, Albania, has a ceiling on total government payouts to PPPs (5 percent of the previous year's tax revenue), which could benefit from further clarification in the sample of advanced European countries, only a few ceilings are established. Nevertheless, several countries have established checks and balances, through the assessment of contingent liabilities and transparent accounting, to help ringfence fiscal risks of PPPs and improve their management (see below).

B. Accounting and Statistical Standards

64. A bias towards PPPs can stem in part from a statistical treatment in which investment costs are not reflected in a government's deficit and debt during construction (Irwin, Mazraani, and Saxena 2018). Modern public sector accounting, such as the International Public Sector Accounting Standards (IPSAS) 32,³⁵ and statistical standards including the Government Finance Statistics Manual (GFSM) 2014,³⁶ which consider the concepts of asset control and economic ownership, provide guidance on how to treat PPPs in determining the fiscal balance and debt. These standards help a government decide whether a PPP-related asset is public or private, and therefore whether a PPP should be considered as on- or off-balance sheet, and how it affects fiscal indicators. Recognizing that the full adoption of IPSAS 32 and GFSM 2014 may not be in the near-term horizon, countries that still apply cash accounting are advised to treat a PPP as part of the government for accounting purposes, by including the PPP partner's spending/debt as government spending/debt (Irwin, Mazraani, and Saxena 2018).

65. In the developing countries in our sample, progress in this area has generally been slow. Most countries still use cash accounting, lack tests to determine whether a PPP should be placed on the government's balance sheet, and have not fully adopted GFSM 2014 or IPSAS 32. An outlier is Turkey, which has made significant progress in these areas, having adopted accrual accounting and GFSM 2014 and IPSAS 32 standards. Turkey has also developed a test to classify PPP-related assets as public or private, but it has not yet fully applied the results of the tests, currently choosing only to record PPP liabilities that are clearly on balance sheet and above the line in the budget. Albania has determined that PPPs need to be on balance sheet if the public partner bears construction, availability, or demand risk, but in practice, the authorities have not registered PPP transactions in a systematic way. In contrast, most advanced European countries follow some form of IPSAS 32 and ESA 10, a close substitute of GFSM 2014.

³⁵ Under IPSAS 32, PPPs are recorded on the government's accounts if the PPP asset is regarded as a public asset. A PPP asset is a public asset if the public entity controls the asset and controls any significant residual interest in the asset at the end of the contract. In practice, under IPSAS 32, most PPPs would be treated on-balance sheet because PPPs are used to deliver a public service, and the government usually controls such services. Once on-balance sheet, the fiscal implications of a PPP are similar to those of traditional procurement. See Queyranne, Daal, and Funke 2019 for further details).

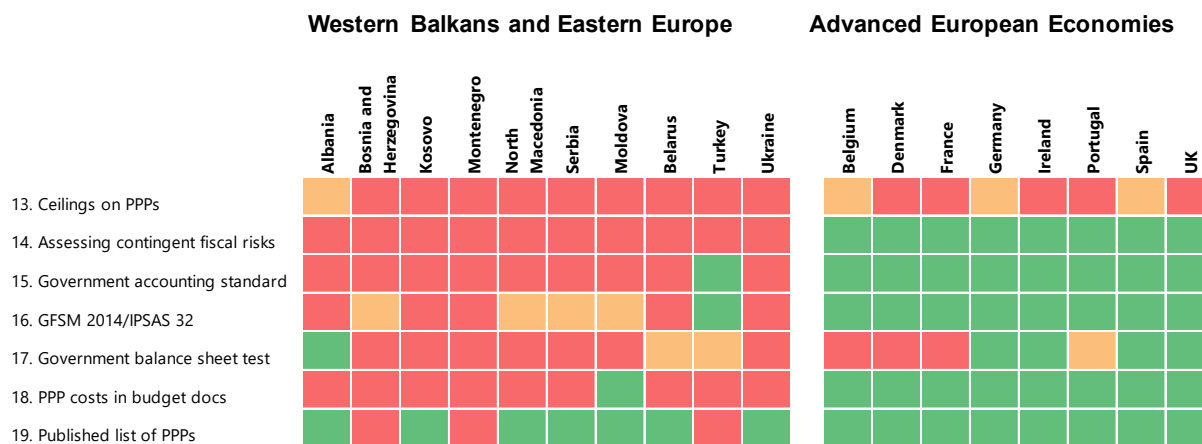
³⁶ GFSM 2014 considers who bears most of the project's risks and rewards. If the government bears most of the risks and rewards, then PPPs are included in the fiscal deficit and gross debt. Government-funded PPPs are mostly treated on-balance sheet, while the treatment of user-funded PPPs is less straightforward and requires a detailed assessment of the allocation of underlying risks. (For details see IMF 2014.)

C. Information Disclosure and Transparency

66. A transparent disclosure of information on PPP projects is essential to informing all stakeholders about the size, scope, and risks of the government’s PPP portfolio. As recommended in the IMF’s Fiscal Transparency Handbook, budget documents should include details on government obligations under PPPs, covering both direct and contingent liabilities (Irvin and others, 2018). These disclosures should include baseline forecasts for payments under PPPs and a discussion of risks to the baseline. Systematic disclosure of information related to PPP projects – including contracts, where feasible – is also important for accountability and good governance (World Bank, 2017).

67. Western Balkan countries should improve their information disclosures. None of the Western Balkan countries discloses PPP-related costs in their budget documents. Several countries in the paper’s sample (including Albania, Kosovo, North Macedonia, Serbia Moldova, Belarus, and Ukraine) publish a full list of active PPP projects, with information on each project. In contrast, all the advanced European countries in the paper’s sample not only publish a list of PPP projects but also disclose their costs in budget documents.

Figure 8. Managing and Reporting of Fiscal Risks of PPPs



Note: See Annex I for details on the evaluation methodology. The colors in the chart are based on answers to each assessment question. Green indicates the highest level of compliance with best practices, and red the lowest. The intermediary colors (yellow and orange) are not comparable across questions. For questions with 2 answers, the assigned colors are red and green. For questions with 3 answers, the colors are red, orange, and green. For question with 4 answers, the colors are red, orange, yellow and green. The absence of sufficiently clear information for an assessment is marked by grey.

Source: IMF staff

V. Concluding Remarks

68. PPPs are increasingly an important vehicle for Western Balkan countries to increase investment to reduce their infrastructure gaps. While the gap of Western Balkan countries compared with the EU-15 has narrowed somewhat over the past 15 years, it remains large. In addition, the quality of infrastructure also compares poorly with other CESEE countries. Further large-scale improvements in infrastructure are thus, in part, an important ingredient for the Western Balkan region to continue catching up in terms of economic growth. Moreover, countries in the broader region that are members of the EU stand to benefit from the new push for infrastructure spending through Next-Gen EU funding, which could put further pressure on Western Balkan countries to keep up.

69. While there are benefits to well-designed and implemented PPPs, they also carry a potential for large fiscal risks and increased costs if not managed well. The conceptual potential benefits of PPPs have been well documented in the literature and include efficiency arguments based on the allocation of resources according to the comparative advantages of the public and private sectors. When well-designed and executed, and applied to the right projects, PPPs bring many potential benefits. The proper use of PPPs can support infrastructure development and enhance public service delivery. Nevertheless, PPPs as investment tools also carry potential drawbacks, chiefly due to their complexity and difficulties in accommodating unforeseen deviations in the long-term — these problems are reflected in a lack of cost efficiency in real world examples. PPPs can also create a “fiscal illusion” for governments, or a perception of expanded fiscal space, which could lead to a take-up of low-quality and fiscally costly projects that would otherwise have been rejected. Often, the direct and contingent liabilities created by PPPs on the public sector are not adequately recognized, recorded, and/or managed, which can be a significant source of fiscal risks.

70. Countries with successful PPP programs typically benefit from a clear and well-designed PPP governance framework, which covers all stages of the PPP life cycle. These include: (i) institutional control over PPPs, such as a legal framework to govern PPPs, integration with a country’s investment strategy and budget, and strong powers of the Ministry of Finance in maintaining control over the possible fiscal consequences of PPP projects; (ii) practices for public procurement and contract management, to ensure a transparent, fair, and competitive bidding process, and well-designed and flexible contracts that include provisions on renegotiation and efficient dispute resolution; and (iii) management and reporting of fiscal costs and risks throughout the life cycle of PPPs. To implement some of these changes, the legal frameworks may need to be amended.

71. Western Balkan countries need to address gaps in their PPP governance frameworks to fully reap the potential benefits of PPPs.

- **In terms of institutional control, while PPP governance frameworks have improved over time, several shortcomings remain.** Most Western Balkan countries need to establish integrated public investment planning processes for identifying priority projects, as a basis for the creation of a pipeline of PPP projects. PPP priorities should be aligned with respective national investment strategies. Governance frameworks also need to provide the Minister of Finance with a key and active role in managing a gateway process for approving PPP projects and in assessing fiscal costs and risks of PPPs. Finally, PPP units, especially those recently created, need to be assigned effective and clear-cut roles. Consolidating the PPP planning, promotion, and negotiation processes within one centralized PPP unit staffed with enough

qualified personnel would allow governments to focus on priority projects across multiple sectors, reduce room for potential corruption, and pool qualified resources. Separating the gatekeeping functions by allocating it to a different entity (i.e., procurement and subsequent contract management) will also help prevent conflicts of interest.

- **Similarly, on public procurement and contract management, there is room for improvement along several dimensions.** There should be tighter regulations for recourse to direct negotiations. For countries that do not prohibit unsolicited proposals, these should be prohibited as a first best solution, or the same competitive procedure should be required for them as for other proposals. Finally, PPP legislations (rather than individual contracts) should specify the circumstances for contract renegotiation and offer space for alternative dispute resolution before resorting to more formal mechanisms.
- **The management and reporting of fiscal risks remain one of the weakest areas for the Western Balkan countries.** Countries should establish frameworks to assess fiscal risks from PPPs, including specific systems and comprehensive databases to account for explicit or implicit liabilities from PPPs. These assessments should then be operationalized to better manage fiscal risks from PPPs. Improvements to accounting standards to better reflect PPPs and disclosure in national budgets would help give a fuller picture of the true risks of PPPs.

Annex 1. Country Coverage

The **Western Balkans** refers to:

- Albania
- Bosnia and Herzegovina
- Kosovo
- Montenegro
- North Macedonia, and
- Serbia

EU-15 countries refer to:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom.

Central, Eastern, and Southeastern Europe (CESEE) includes:

Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, Moldova, Montenegro, North Macedonia, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Turkey, and Ukraine.

Annex II. PPP Governance Framework Evaluation Methodology

The paper evaluates a country's PPP governance frameworks based on a PPP governance "scorecard" that builds on the answers to 19 specific questions about the current state of a country's PPP governance framework. The answers, provided through an IMF staff desk review, are assessed against "best practices" identified by the IMF and World Bank. The questions cover three main areas—institutional control of PPPs, PPP procurement and renegotiation, and management and reporting of fiscal risks. Our sources for evaluation include country PIMA reports, survey results in a World Bank report¹, and individual country legal documents and databases. The assessment also tries, to the extent possible, to take account of situations where practice deviates from the processes described in legal frameworks. The responses benchmarked against best practices are then "translated" into colors in the chart, based on answers to each question.

Institutional Control of PPPs

1. Does a PPP law exist that clearly defines PPP and their scope?
 - a. Yes, there is a PPP law that defines PPPs and applies uniformly in the country.
 - b. Yes, but there are multiple PPP laws depending on sectoral and/or regional coverage.
 - c. No, there are no laws regarding PPPs.

2. Does PPP legislation apply to all PPPs?
 - a. Yes, PPP legislation applies to PPP in all sectors.
 - b. PPP legislation applies to PPPs in all sectors, with a few specific exceptions that are governed by other laws.
 - c. Multiple areas of PPPs are not governed by PPP legislation.
 - d. There are no laws regarding PPPs.

3. Are PPPs integrated with the overall government investment strategy?
 - a. Yes, PPPs are evaluated alongside investment projects procured through the budget.
 - b. No, PPP projects are planned outside the regular public investment cycle.

4. Do PPP projects require approval in the budget?
 - a. Yes, all PPP projects must be approved in the budgetary process.
 - b. No, PPP project approval is completely outside the budget.

5. Do PPP legislation/rules/regulations give the Minister of Finance the power to veto PPP projects on the grounds of budget affordability or debt sustainability considerations?
 - a. Yes
 - b. An opinion is required, but it is not a binding veto.
 - c. No

¹ "Procuring Infrastructure Public-Private Partnerships" World Bank, 2020

6. Does a PPP unit exist that provides support on the preparation, procurement, and implementation of PPPs?
 - a. Yes
 - b. No

7. Is the PPP unit separated from the fiscal control responsibilities of the Ministry of Finance?
 - a. Yes
 - b. No

PPP Procurement and Renegotiation

8. Does the legal framework for public procurement cover PPP projects?
 - a. Yes
 - b. No

9. Does the legal framework for public procurement of PPPs establish transparent mechanisms for competitive bidding on PPPs?
 - a. Yes, all PPP project bids must be submitted through open tender processes
 - b. Yes, but there may be some instances in which direct negotiations between a private party and the authorities are possible.
 - c. No, contracts can be awarded directly without a formal and transparent procedure.

10. Are unsolicited proposals subject to the same standards and competitive bidding procedures as other PPP proposals?
 - a. Yes, all unsolicited proposals must be awarded through the same competitive bidding procedures as other PPP proposals
 - b. Unsolicited proposals are not explicitly prohibited or allowed
 - c. No, unsolicited proposals can be accepted and awarded to a private party without a formal competitive process

11. Are feasibility studies related to unsolicited proposals required to be verified/re-assessed by a government agency or a third party?
 - a. Yes, feasibility studies for unsolicited proposals must be verified or re-assessed.
 - b. No, feasibility studies from the proposing party are accepted without further analysis.
 - c. Not applicable (answer (b) from question 10)

12. Does the PPP legal framework contain explicit guidelines for the renegotiation and termination of PPP contracts?
 - a. Yes, the legal framework contains explicit guidelines, including for a wide range of specific scenarios under which renegotiation or termination may occur.
 - b. Yes, but the legal framework omits specific guidelines for some scenarios that may lead to uncertainty.
 - c. No, the legal framework does not contain explicit guidelines.

Management and Reporting of Fiscal Risks

13. Is there any type of binding ceiling on PPPs, either on the total stock of PPPs or on the annual expenditure on PPPs specified in law or regulations?
 - a. Yes, there are ceilings on both the total stock of PPPs and total annual expenditure on PPPs.
 - b. There is a ceiling on the total stock of PPPs only.
 - c. There is a ceiling on total annual expenditure on PPPs.
 - d. No, there are no ceilings.

14. Is there an established framework to assess the contingent fiscal risks related to PPP projects?
 - a. Yes
 - b. A framework is being developed but is not complete or not yet in operation.
 - c. No

15. What accounting standards are used for government fiscal accounts?
 - a. Accrual accounting
 - b. Cash/modified cash accounting

16. Have GFSM 2014 or IPSAS 32 statistical and accounting standards been adopted?
 - a. Yes
 - b. Not yet adopted but concrete progress is being made towards adoption
 - c. No

17. Is a test applied on whether PPPs should be considered on the government's balance sheet, such that on-balance sheet PPPs are accounted for in the headline fiscal deficit and public debt indicators?
 - a. Yes
 - b. Test exists but not yet fully applied
 - c. No

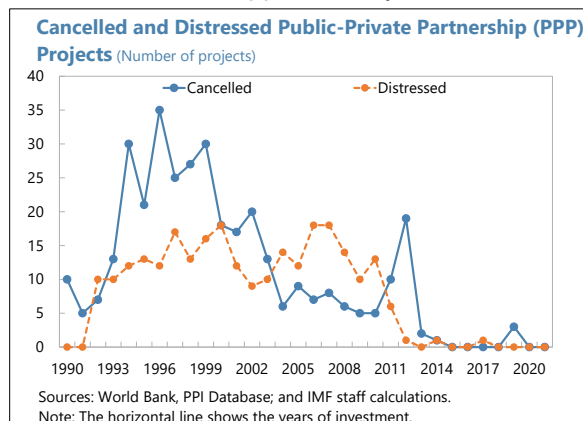
18. Is information on realized and contingent costs of PPPs included in budget documents?
 - a. Yes
 - b. No

19. Do the authorities publish a list of active PPP projects, with information on each project?
 - a. Yes
 - b. No

Annex III. Cancellations and Distressed PPPs

Historically, only a small share of PPP projects has been cancelled. Less than 4 percent of PPP investments have been cancelled between 1990 and 2021, with a total value of approximately USD 80 billion. Countries with the largest number of cancellations include China, India, and Argentina with more than 30 canceled PPP projects. Project cancellations were especially high during the early 1990s when PPPs started becoming popular (Figure A1), This lends support to the notion that greater experience handling PPPs contributes to the likelihood of success.

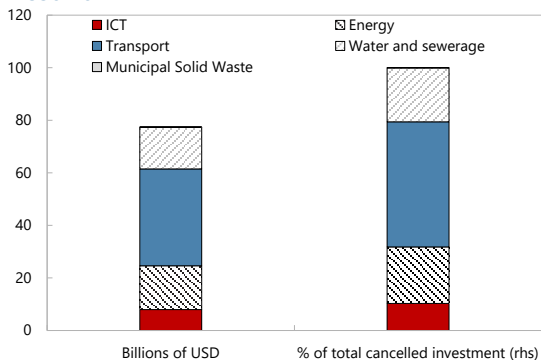
PPP project cancellations tend to occur in larger projects, in the water sector, and during years of financial crises. Between 1990 and 2021, the average investment value of cancelled projects was about USD 410 million versus USD 222 million for active projects.² In some years, the average value of cancelled projects was at least double the value of active projects during the same year. In terms of sectors, the water sector had the highest cancellation rate with more than 15 percent of projects being cancelled compared to 6 percent or less in the energy and transport sectors. Notwithstanding this observation, almost half of all canceled PPP investments in nominal terms occurred in the transport sector, reflecting the large share of PPP investments in this sector. Finally, cancellations increased in the late 1990s during the AFC and in 2012 during the European economic crisis, in the aftermath of the GFC.



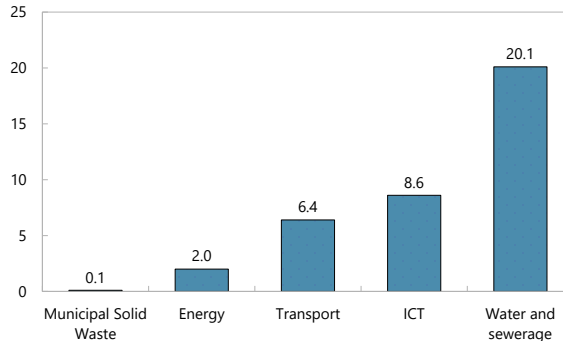
² This average accounts for the cancellation of a huge project in Brazil in 2014 (USD 3.7 billion). The average decline to about USD 280 million without the PPP project in Brazil.

Figure A1.

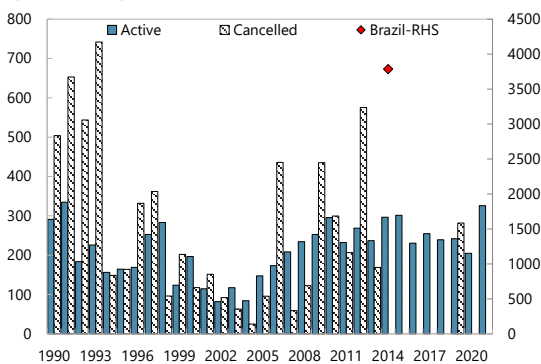
Public-Private Partnership (PPP) Investment by Sectors, 1990-2021



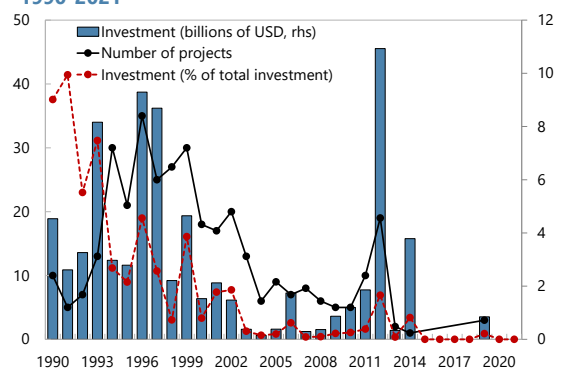
Cancelled Public-Private Partnership (PPP) Investment by Sector (Percent of total investment in each sector)



Active Vs. Cancelled Projects, 1990-2021 (Millions of USD)



Cancelled Public-Private Partnership (PPP) Projects, 1990-2021



Source: World Bank, PPI Database; and IMF staff calculations.

1/ The marker for Brazil represents the cancelled project that increases the average dollar value of cancelled projects – footnote 2.

Annex IV. Macro-Institutional Determinants of PPPs

This annex uses empirical techniques to explore the macro institutional determinants of PPPs. There is no comprehensive theoretical framework identifying the main macroeconomic drivers of PPPs. Nonetheless, studies have identified several macro-institutional variables as potential determinants – these include the size of the economy, fiscal indicators, and institutional characteristics (e.g., corruption, regulatory quality, and rule of law).³ The empirical analysis in this annex investigates these determinants using PPP data between 1996 and 2019 for a sample of around 100 countries. Overall, the results are weak and not robust.

Data

The analysis relies on the IMF Investment and Capital Stock Dataset (ICSD) which merges and harmonizes two separate databases from the World Bank and the EIB. The ICSD comprises PPP capital stock and investment time series based on information from the EIB's European PPP Enterprise Center (EPEC) database and the World Bank's Private Participation in Infrastructure (PPI) database. The PPI database covers 137 emerging economies and developing countries, whereas the EPEC database covers 27 advanced and emerging European economies.⁴ Moreover, the EPEC database covers social infrastructure sectors (such as education and health) in addition to economic infrastructure sectors (such as transportation and communication), whereas the PPI database covers mainly the latter. As a result, the two databases have some data overlaps and discrepancies on values for PPP projects for several countries. The EPEC database includes information on the value of the project (a stock variable) whereas the PPI database has the investment amounts over the years for each project. The IMF database adjusts and harmonizes the series to make them consistent over time and across countries.⁵

PPPs and macro-institutional characteristics

The analysis explores the role of several variables in attracting PPPs. We explore the role of (i) size of the economy (growth, inflation, income levels and capital stock per capita), (ii) fiscal indicators (debt, fiscal balances and the fiscal vulnerability index⁶) and (iii) some institutional characteristics (corruption, regulatory quality and rule of law⁷). As a first exercise, we compare PPP investment levels as a share of GDP and of per capita PPP capital stocks across country groups. To this end, we divide the sample into two subgroups based on a threshold – the median value – for the variable of interest. For instance, countries are classified into high versus low inflation groups depending on whether their inflation is above or below the median of the (average)

³ For a literature review of these determinants, please see Jensen and Blanc-Brude, 2005, Hammami et al., 2006, Araya et al., 2013, Prats and others, 2021; and Schomaker, 2014. It is worthwhile to note that there is mixed evidence on the role of corruption in affecting PPP investments in developing countries (Hammami et al, 2006 and Moszoro et al., 2015 vs. Cuadrado-Ballesteros and Peña-Miguel, 2021 and Banerjee et al., 2006).

⁴ For more information, please see <https://ppi.worldbank.org/en/ppidata> and <https://www.eib.org/epec/>.

⁵ For more information, please see [InvestmentandCapitalStockDatabaseUserManualandFAQ_May2021.pdf](https://www.imf.org/external/pubs/ft/working/papers/2021/01/InvestmentandCapitalStockDatabaseUserManualandFAQ_May2021.pdf) (imf.org)

⁶ Because a high level of debt-to-GDP ratio alone is not necessarily an indicator of lack of fiscal space or a sign of debt vulnerabilities, we use the fiscal vulnerability index constructed by IMF. The vulnerability index includes information on (i) public debt, (ii) REER misalignment and other financial sector indicators, and (iii) other indicators on the composition of domestic credit.

⁷ To measure governance, we use the Worldwide Governance Indicators from the World Bank database (<http://info.worldbank.org/governance/wgi/>).

inflation of all countries in the sample. We present both the median and the average of the subgroups, and test whether these statistics are significantly different from each other. The same analysis is replicated for different time periods, dividing 1996-2019 into four sub-periods (1996-2001, 2002-07, 2008-13 and 2014-19).

The preliminary evidence shows that PPP investments are higher in countries with higher growth and lower income levels (Annex Table 1A). However, the evidence is not consistent across all time periods. After 2007, PPP investments (as a share to GDP) are larger (and this difference is statistically significant) in high growth countries and those with a per capita income lower than the median income. Results that PPP investments tend to be higher in countries with a low public capital stock per capita are also not consistent across time periods.

Using the PPP capital stock per capita, there is evidence, after 2002, that high-inflation countries tend to have a significantly lower PPP capital stock per capita than low-inflation countries, confirming that private investors prefer countries with price stability for their long-term PPP engagements. Countries with higher per-capita incomes also tend to have a larger PPP capital stock per capita than poorer countries, consistent with their higher capital stocks in general (Annex Table 1B).

There is some evidence that debt-constrained economies tend to use more PPPs. High-debt countries seem to have a higher PPP capital stock per capita than low-debt countries, though this result is only statistically significant after 2007 (Annex Table 1B). Also, the results show that countries with high fiscal vulnerabilities tend to have a lower PPP capital stock per capita compared to countries with lower vulnerabilities. These results indicate that countries with high debt may be fiscally constrained and resort to PPPs to finance their long-term infrastructure projects.

Good governance is associated with more PPPs. The results suggest that countries with stronger governance (better control of corruption, higher regulator quality and better rule of law) tend to have a higher PPP capital stock (Annex Table 1C). However, this may reflect the well-established positive correlation between good governance and high per-capita levels of income and capital, rather than a specific inclination to favor PPPs.

Regression Results

Cross country regressions suggest that higher income levels lead to a decline in PPP investments in advanced and emerging market economies.⁸ Annex Table 2 presents the cross-country regression results for four non-overlapping time periods. A few significant results can be summarized as follows: in both emerging market and advanced economies, a higher income level leads to a decline in the share of PPP investments in GDP, and this result is statistically significant mainly in the time periods following the GFC. During 1996–2001, high inflation led to lower PPP investments in the full sample and in the emerging markets sample. However, none of these results are robust to changes in country samples or time periods.

The results from panel data regressions are weak and not sufficiently robust (Annex Tables 3A and 3B). We use three techniques: (i) fixed effects panel regression (FE Panel); (ii) generalized least squares (GLS) and (iii) generalized method of moments (GMM). The results, although lacking robustness, can be summarized as follows:

- **Higher growth** leads to a small increase in PPP investments in advanced economies (GMM specification) though the opposite result is found for emerging markets. **Inflation** leads to less PPPs (GLS for overall sample).
- **A higher income level** leads to less PPPs, suggesting that LICs and other countries with infrastructure needs tend to invest more through PPP but some specifications for emerging market economies show the opposite.
- **Higher debt** levels lead to lower PPPs in advanced economies. However, the opposite could be found for EM and LIC estimations.
- **Controls for corruption** lead to more PPPs in all countries (GLS for overall sample and EMs, and GMM for AEs). **Regulatory quality** leads to more PPPs in EMs (GLS), whereas it leads to less PPPs in AEs (both GLS and GMM). A better **rule of law** shows inconsistent results across country groups (panel FE) (Table 6B).

Taking into account the above evidence, the positive impact of better governance on the use of PPPs stands out as the most robust result. Furthermore, the results offer broad support for two findings of earlier studies: the adverse impact of macroeconomic instability in the form of high inflation on PPP investments and the typically positive impact of high debt, reflecting fiscal constraints.

The lack of robustness in the cross-country and regression results could reflect several factors. First, as in other empirical studies, PPP investments are treated similarly to FDI and other forms of private investments that primarily respond to macroeconomic conditions and business climate characteristics, and not considering other important drivers of PPPs such as their ability to correct specific government failures in some sectors and the need of the private party to attract financing. The role of these factors in explaining the use of PPPs has so far been examined only in the context of specific case studies. Second, as some country experiences have shown, engaging in PPPs could reflect political preferences or reflect other political economy dynamics (Gawel, 2017; Bayliss and Van Waeyenberge, 2018 and Prats and others, 2021). Third, as discussed in Section IV, successful PPP implementation hinges on a well-designed governance framework that manages the entire PPP lifecycle, and this remains to be adequately quantified in empirical literature. Moreover, the analysis is constrained by limited data, given that PPP investments are still very new to several countries in our sample. Finally, the macro analysis has not taken into account the exact form of PPP projects and sector risk which could also affect the attractiveness of a PPP investment.

Annex Table 1.A PPP Investments/GDP in Countries with Different Macro-fiscal Features

	number	1996-2001	number	2002-2007	number	2008-2013	number	2014-2019
Full sample	83	0.21 [0.46]	95	0.18 [0.35]	101	0.25 [0.54]	102	0.17 [0.40]
High inflation countries	41	0.24 [0.48]	48	0.15 [0.35]	51	0.21 [0.61]	51	0.23 [0.36]
Low inflation countries	40	0.18 [0.45]	47	0.21 [0.36]	50	0.26 [0.48]	50	0.15 [0.45]
High growth countries	41	0.27 [0.51]	48	0.20 [0.37]	51	0.25 [0.77*]	51	0.31** [0.52]
Low growth countries	41	0.16 [0.41]	47	0.16 [0.34]	50	0.24 [0.31]	50	0.12 [0.28]
High income per capita countries	41	0.21 [0.37]	48	0.19 [0.26]	51	0.21* [0.28**]	51	0.11** [0.27*]
Low income per capita countries	41	0.21 [0.56]	47	0.16 [0.44]	50	0.29 [0.81]	50	0.32 [0.54]
High public capital stock per capita countries	41	0.16** [0.35]	48	0.17 [0.29]	50	0.22 [0.36]	50	0.12*** [0.25*]
Low public capital stock per capita countries	40	0.27 [0.58]	47	0.20 [0.42]	50	0.27 [0.74]	49	0.35 [0.61]
High debt countries	35	0.28 [0.55]	47	0.22* [0.50**]	50	0.26 [0.77*]	50	0.15 [0.46]
Low debt countries	35	0.21 [0.37]	47	0.14 [0.22]	50	0.24 [0.32]	50	0.20 [0.35]
High primary budget balance countries	39	0.20 [0.47]	47	0.16 [0.21**]	51	0.24 [0.69]	51	0.20 [0.36]
Low primary budget balance countries	39	0.21 [0.51]	47	0.23 [0.49]	50	0.26 [0.39]	50	0.16 [0.45]
High fiscal risk index countries	41	0.16 [0.49]	48	0.20 [0.47*]	51	0.25 [0.53]	51	0.20 [0.49]
Low fiscal risk index countries	41	0.21 [0.43]	47	0.16 [0.23]	50	0.24 [0.55]	50	0.16 [0.32]

Notes: Statistics correspond to sample medians, and sample means are in brackets. High and low states indicate the countries that have higher or lower features than the median of the sample. For example, high inflation countries have higher average inflation during the indicated period than the median of the average inflation rates of all countries during that episode. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively. Significance refers to the difference between two groups mean or medians.

Annex Table 1.B. Per capita PPP Capital Stock in Countries with Different Macro-fiscal features

	number	1996-2001	number	2002-2007	number	2008-2013	number	2014-2019
Full sample	81	30.11 [103.64]	99	72.50 [203.35]	112	120.52 [299.77]	112	191.70 [428.71]
High inflation countries	40	20.48 [63.45]	50	35.64** [145.25]	56	55.60*** [191.72**]	56	96.68*** [258.84***]
Low inflation countries	39	34.88 [134.94]	49	85.57 [262.63]	56	198.68 [407.83]	55	402.48 [591.66]
High growth countries	40	35.74 [67.98]	50	42.42 [192.06]	56	72.91* [247.14]	56	154.2 [393.50]
Low growth countries	39	20.90 [127.61]	49	81.06 [214.86]	56	161.76 [352.40]	55	218.22 [455.41]
High income per capita countries	40	63.36*** [143.58**]	50	107.49*** [311.50***]	56	198.67*** [430.42***]	56	390.64*** [566.75**]
Low income per capita countries	39	13.57 [49.73]	49	24.88 [93.001]	56	47.48 [169.12]	55	84.38 [279.01]
High public capital stock per capita countries	39	42.26 [122.06]	49	85.76** [273.31*]	56	203.4*** [440.84***]	55	402.4*** [585.40***]
Low public capital stock per capita countries	39	14.38 [74.344]	49	41.08 [136.77]	55	51.91 [161.15]	54	113.54 [272.03]
High debt countries	35	40.46 [99.09]	50	80.75 [225.15]	56	170.08*** [444.0***]	55	248.52*** [596.7***]
Low debt countries	34	25.58 [131.17]	49	51.67 [181.32]	55	67.16 [158.13]	55	121.44 [258.00]
High primary budget balance countries	38	24.66 [101.83]	50	57.82 [146.38]	56	100.37 [263.89]	56	284.07** [505.30]
Low primary budget balance countries	37	40.97 [108.67]	49	83.25 [261.82]	56	140.30 [335.65]	55	152.30 [341.57]
High fiscal risk index countries	40	12.22** [51.78**]	50	32.61*** [141.07*]	56	63.96*** [228.23]	56	88.14*** [318.66*]
Low fiscal risk index countries	39	49.83 [145.14]	49	85.96 [268.70]	56	174.34 [371.23]	55	371.51 [531.60]

Notes: Statistics correspond to sample medians, and sample means are in brackets. High and low states indicate the countries that have higher or lower features than the median of the sample. For example, high inflation countries have higher average inflation during the indicated period than the median of the average inflation rates of all countries during that episode. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively. Significance refers to the difference between two groups mean or medians.

Annex Table 1.C. Per Capita PPP Capital Stock in Countries with Different Governance Features

	number	1996-2001	number	2002-2007	number	2008-2013	number	2014-2019
Full sample	81	30.11 [103.64]	99	72.50 [203.35]	112	120.52 [299.77]	112	191.70 [428.71]
High control of corruption countries	40	45.86 [138.47*]	50	85.86** [285.00**]	56	192.84*** [437.19***]	56	390.64*** [586.50***]
Low control of corruption countries	39	20.90 [54.897]	49	37.77 [120.03]	56	61.23 [162.35]	55	78.05 [258.89]
High regulatory quality countries	40	72.89*** [155.18***]	50	92.26*** [285.79**]	56	192.84*** [412.69**]	56	411.59*** [582.10***]
Low regulatory quality countries	39	13.05 [37.755]	49	33.99 [119.22]	56	61.23 [186.85]	55	83.15 [263.38]
High rule of law countries	40	45.86** [144.10**]	50	84.41 [272.59*]	56	165.8** [398.96**]	56	357.7*** [562.41**]
Low rule of law countries	39	20.06 [49.119]	49	43.13 [132.69]	56	74.11 [200.58]	55	83.15 [283.42]

Notes: Statistics correspond to sample medians, and sample means are in brackets. High and low states indicate the countries that have higher or lower features than the median of the sample. For example, high rule of law countries have higher average rule of law index during the indicated period than the median of the average rule of law index of all countries during that episode. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively. Significance refers to the difference between two groups mean or medians.

Annex Table 2. Regression Results: Cross country

dependent variable: PPP investment, % of GDP	1996-2001				2002-2007			
	All	Advanced Economies	Emerging Markets	LICs	All	Advanced Economies	Emerging Markets	LICs
Real GDP growth, %	0.004 (0.021)	-0.158 (0.107)	-0.013 (0.045)	0.086** (0.038)	0.001 (0.017)	0.023 (0.034)	0.010 (0.016)	-0.043 (0.102)
Inflation, %	-0.002 (0.003)	0.172 (0.120)	-0.010 (0.008)	-0.027* (0.013)	-0.003 (0.006)	-0.106 (0.059)	-0.007 (0.005)	0.030 (0.066)
log(Real GDP per capita)	0.162 (0.119)	-0.529 (0.531)	0.265 (0.246)	0.290 (0.276)	-0.189 (0.123)	-1.176** (0.303)	0.061 (0.123)	0.111 (0.412)
log(Public capital stock per capita)	-0.046 (0.086)	0.572 (0.502)	-0.184 (0.197)	0.207 (0.178)	0.133* (0.067)	-0.099 (0.163)	0.094 (0.089)	0.158 (0.142)
GG gross debt, % GDP	0.004* (0.002)	-0.018 (0.006)	0.006 (0.004)	0.003 (0.003)	-0.001 (0.002)	-0.004* (0.002)	0.001 (0.001)	-0.004 (0.011)
GG primary budget balance, % GDP	0.012 (0.013)	-0.096 (0.048)	0.044 (0.034)	-0.103 (0.069)	-0.039** (0.017)	-0.032* (0.015)	-0.007 (0.018)	-0.084 (0.084)
GG total expenditures, % GDP	-0.019** (0.009)	0.006 (0.005)	-0.025* (0.014)	0.016 (0.011)	-0.001 (0.014)	-0.014 (0.008)	-0.006 (0.007)	0.036 (0.061)
GG effective interest rate, %	-0.000** (0.000)	0.262 (0.110)	0.041 (0.038)	0.000 (0.000)	-0.045 (0.033)	0.151** (0.045)	0.010 (0.014)	-0.223 (0.134)
Constant	-0.264 (0.802)	-1.024 (4.435)	0.011 (2.851)	-4.050 (2.347)	1.167 (1.010)	13.840*** (2.853)	-1.042 (1.426)	-1.426 (3.339)
Observations	69	11	36	22	95	14	49	32
R-squared	0.114	0.951	0.209	0.555	0.109	0.920	0.116	0.299

dependent variable: PPP investment, % of GDP	2008-2013				2014-2019			
	All	Advanced Economies	Emerging Markets	LICs	All	Advanced Economies	Emerging Markets	LICs
Real GDP growth, %	0.125 (0.088)	0.073 (0.046)	-0.039 (0.026)	0.378* (0.197)	0.043 (0.049)	0.041 (0.041)	-0.021 (0.039)	0.076 (0.106)
Inflation, %	-0.037** (0.017)	-0.039 (0.063)	-0.028** (0.012)	-0.058 (0.044)	-0.014 (0.009)	0.150 (0.160)	-0.014 (0.012)	-0.031 (0.028)
log(Real GDP per capita)	-0.350 (0.231)	-1.634*** (0.439)	-0.373*** (0.137)	0.662 (0.957)	-0.239 (0.156)	-0.531 (0.434)	-0.149 (0.147)	-0.106 (0.380)
log(Public capital stock per capita)	0.249 (0.173)	0.225 (0.463)	0.087 (0.078)	0.641 (0.568)	0.148 (0.151)	0.140 (0.287)	-0.005 (0.122)	0.497 (0.530)
GG gross debt, % GDP	0.008* (0.005)	-0.001 (0.005)	0.003 (0.004)	0.017 (0.014)	0.002 (0.002)	0.000 (0.002)	0.001 (0.004)	0.004 (0.009)
GG primary budget balance, % GDP	-0.005 (0.024)	-0.017 (0.022)	0.011 (0.030)	-0.154 (0.113)	0.010 (0.043)	0.004 (0.028)	0.030 (0.025)	0.016 (0.155)
GG total expenditures, % GDP	-0.004 (0.020)	-0.023 (0.019)	-0.003 (0.005)	-0.011 (0.076)	-0.007 (0.011)	-0.001 (0.007)	0.001 (0.007)	-0.017 (0.044)
GG effective interest rate, %	-0.116 (0.099)	0.133 (0.141)	0.022 (0.023)	-0.512 (0.309)	0.034 (0.060)	0.047 (0.046)	0.084 (0.052)	0.001 (0.117)
Constant	1.572 (1.809)	15.908** (5.455)	3.241*** (1.183)	-9.656 (7.432)	1.285 (0.799)	4.027 (4.942)	1.598 (1.255)	-2.098 (3.432)
Observations	100	15	49	36	99	14	50	35

Notes: Averages of each variable are used in the cross-country regressions for each episode. The signs ***, **, * indicate significance at 1%, 5%, and 10%, respectively. Standard errors are in parenthesis.

Annex Table 3.A. Regression Results: Panel Data

dependent variable: PPP investment, % of GDP	All countries						Advanced economies					
	Panel FE		GLS		GMM		Panel FE		GLS		GMM	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
PPP investmetn, % of GDP, lag					0.604*** (0.020)	0.602*** (0.019)					0.743*** (0.041)	0.819*** (0.041)
Real GDP growth, %, lag	-0.015** (0.006)	-0.012** (0.005)	0.003 (0.005)	-0.001 (0.005)	-0.007 (0.010)	-0.011 (0.010)	-0.001 (0.003)	-0.004 (0.003)	0.005 (0.004)	0.011* (0.006)	0.009*** (0.003)	0.009*** (0.003)
Inflation, %, lag	0.001 (0.003)	-0.002 (0.002)	-0.010*** (0.002)	-0.008*** (0.002)	-0.006 (0.006)	0.000 (0.005)	-0.004 (0.019)	-0.003 (0.023)	-0.002 (0.010)	0.009 (0.013)	0.004 (0.007)	0.003 (0.008)
log(Real GDP per capita), lag	0.185 (0.185)	0.395** (0.182)	-0.315*** (0.041)	-0.216*** (0.040)	-0.118 (0.143)	-0.059 (0.136)	-0.189 (0.190)	0.446** (0.192)	-0.795*** (0.068)	-0.445*** (0.090)	-0.160** (0.078)	0.080 (0.076)
log(Public capital stock per capita), lag	-0.222 (0.147)	-0.277** (0.139)	0.165*** (0.035)	0.167*** (0.033)	0.148 (0.147)	0.101 (0.146)	0.267 (0.259)	-0.410** (0.159)	-0.276*** (0.046)	-0.281*** (0.065)	0.175** (0.079)	-0.084 (0.080)
GG gross debt, % GDP, lag	-0.002 (0.001)		0.001 (0.001)		0.002 (0.002)		-0.006*** (0.001)		-0.005*** (0.000)		-0.003*** (0.001)	
GG primary budget balance, % GDP, lag	0.014 (0.012)		0.002 (0.005)		0.003 (0.009)		-0.012*** (0.002)		-0.022*** (0.003)		-0.003 (0.002)	
GG effective interest rate, %	0.008 (0.020)		0.012 (0.008)		0.011 (0.022)		0.101** (0.034)		0.088*** (0.018)		0.028* (0.016)	
log(Fiscal risk index), lag		0.067* (0.040)		0.071*** (0.014)		0.020 (0.045)		0.012 (0.021)		0.015 (0.010)		0.005 (0.008)
Number of observations	1,573	1,686	1,573	1,686	1,492	1,592	225	210	225	210	218	203
Number of countries	99	100	99	100	99	100	11	11	11	11	11	11

dependent variable: PPP investment, % of GDP	Emerging market economies						Low-income countries					
	Panel FE		GLS		GMM		Panel FE		GLS		GMM	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
PPP investmetn, % of GDP, lag					0.805*** (0.029)	0.783*** (0.029)					0.605*** (0.032)	0.596*** (0.030)
Real GDP growth, %, lag	-0.016*** (0.006)	-0.011** (0.005)	-0.005 (0.005)	-0.007 (0.005)	-0.017*** (0.006)	-0.014** (0.006)	-0.013 (0.012)	-0.011 (0.011)	0.024* (0.013)	0.012 (0.012)	0.004 (0.015)	-0.005 (0.014)
Inflation, %, lag	0.001 (0.002)	-0.005* (0.003)	-0.009*** (0.002)	-0.007*** (0.001)	-0.009** (0.004)	-0.005* (0.003)	-0.000 (0.005)	0.002 (0.005)	-0.015** (0.007)	-0.016*** (0.006)	-0.010 (0.009)	-0.008 (0.008)
log(Real GDP per capita), lag	0.301 (0.379)	0.344 (0.309)	-0.149*** (0.048)	-0.086* (0.046)	0.472*** (0.118)	0.349*** (0.109)	0.110 (0.305)	0.326 (0.288)	-0.057 (0.129)	-0.210** (0.107)	0.000 (0.186)	0.103 (0.181)
log(Public capital stock per capita), lag	-0.239 (0.381)	-0.224 (0.294)	0.026 (0.035)	0.011 (0.034)	-0.390*** (0.120)	-0.363*** (0.114)	-0.269* (0.142)	-0.290* (0.151)	0.337*** (0.073)	0.336*** (0.067)	0.010 (0.188)	-0.029 (0.185)
GG gross debt, % GDP, lag	-0.003 (0.002)		0.002*** (0.001)		-0.003** (0.001)		0.002 (0.004)		0.005** (0.002)		-0.000 (0.004)	
GG primary budget balance, % GDP, lag	0.013 (0.008)		0.017*** (0.005)		0.002 (0.006)		0.026 (0.029)		-0.018 (0.012)		-0.020 (0.017)	
GG effective interest rate, %	-0.018 (0.018)		0.032*** (0.007)		0.029* (0.016)		0.032 (0.045)		-0.090*** (0.025)		0.076* (0.040)	
log(Fiscal risk index), lag		0.170** (0.068)		0.086*** (0.015)		0.020 (0.027)		-0.071 (0.075)		-0.080 (0.068)		0.015 (0.102)
Number of observations	850	907	850	907	813	863	498	569	498	569	461	526
Number of countries	51	51	51	51	51	51	37	38	37	38	37	38

Notes: Panel FE stands for panel regressions with country fixed effects; GLS stands for generalized least squares, and GMM stands for generalized method of moments. The signs ***, **, * indicate significance at 1%, 5%, and 10%, respectively. Standard errors are in parenthesis.

Annex Table 3.B. Regression Results including Governance Indicators: Panel Data

Table. Regression Analysis: Panel Data												
dependent variable: PPP investment, % of GDP	All countries						Advanced economies					
	Panel FE		GLS		GMM		Panel FE		GLS		GMM	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
PPP investmetn, % of GDP, lag					0.404*** (0.032)	0.405*** (0.031)					0.592*** (0.056)	0.652*** (0.059)
Regulatory Quality, Estimate	-0.242 (0.215)	-0.201 (0.203)	-0.003 (0.062)	-0.015 (0.060)	-0.126 (0.255)	-0.169 (0.254)	-0.206 (0.156)	-0.210 (0.157)	-0.220*** (0.070)	-0.011 (0.084)	-0.141*** (0.065)	-0.112 (0.069)
Control of Corruption, Estimate	0.280 (0.251)	0.290 (0.253)	0.276*** (0.077)	0.276*** (0.076)	0.380 (0.302)	0.483* (0.283)	0.055 (0.135)	-0.014 (0.177)	-0.014 (0.062)	0.029 (0.070)	0.160** (0.066)	0.168** (0.072)
Rule of Law, Estimate	0.481 (0.315)	0.411 (0.269)	-0.241*** (0.093)	-0.172* (0.089)	0.431 (0.355)	0.214 (0.343)	0.213 (0.160)	0.477*** (0.137)	0.044 (0.074)	0.160* (0.085)	0.098 (0.088)	0.205** (0.090)
Real GDP growth, %, lag	-0.016* (0.009)	-0.013* (0.008)	0.005 (0.006)	0.001 (0.006)	0.007 (0.014)	0.007 (0.014)	0.002 (0.004)	-0.002 (0.004)	0.009** (0.004)	0.010* (0.005)	0.008*** (0.003)	0.006** (0.003)
Inflation, %, lag	0.005* (0.003)	0.003* (0.002)	-0.009*** (0.003)	-0.009*** (0.003)	-0.002 (0.008)	-0.002 (0.008)	0.001 (0.026)	-0.002 (0.029)	-0.001 (0.013)	0.025 (0.016)	-0.000 (0.009)	-0.003 (0.010)
log(Real GDP per capita), lag	0.149 (0.264)	0.212 (0.255)	-0.347*** (0.056)	-0.321*** (0.052)	-0.435 (0.764)	-0.112 (0.697)	-0.331 (0.234)	0.358* (0.177)	-0.746*** (0.088)	-0.600*** (0.110)	-0.345** (0.148)	0.157 (0.119)
log(Public capital stock per capita), lag	-0.406** (0.194)	-0.463** (0.201)	0.175*** (0.043)	0.179*** (0.041)	-1.446*** (0.498)	-1.378*** (0.488)	0.705 (0.491)	-0.155 (0.446)	-0.303*** (0.050)	-0.223*** (0.066)	0.153 (0.257)	-0.596*** (0.202)
GG gross debt, % GDP, lag	-0.002 (0.001)		0.002** (0.001)		0.000 (0.003)		-0.008*** (0.002)		-0.007*** (0.001)		-0.005*** (0.001)	
GG primary budget balance, % GDP, lag	0.016 (0.014)		-0.003 (0.006)		0.013 (0.012)		-0.008 (0.005)		-0.021*** (0.004)		-0.004 (0.003)	
GG effective interest rate, %	-0.018 (0.034)		0.006 (0.009)		0.001 (0.040)		0.075** (0.030)		0.116*** (0.022)		0.046** (0.023)	
log(Fiscal risk index), lag		0.001 (0.031)		0.056*** (0.018)		0.103 (0.074)		-0.012 (0.023)		0.048*** (0.010)		-0.000 (0.010)
Number of observations	1,284	1,293	1,284	1,293	1,102	1,107	175	169	175	169	158	150
Number of countries	95	96	95	96	95	96	11	11	11	11	11	11
Emerging market economies												
dependent variable: PPP investment, % of GDP	Panel FE						Low-income countries					
	Panel FE		GLS		GMM		Panel FE		GLS		GMM	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
PPP investmetn, % of GDP, lag					0.740*** (0.041)	0.725*** (0.040)					0.415*** (0.053)	0.420*** (0.052)
Regulatory Quality, Estimate	0.094 (0.130)	0.124 (0.148)	0.152*** (0.045)	0.165*** (0.043)	-0.085 (0.157)	-0.127 (0.147)	-0.701 (0.549)	-0.758 (0.572)	0.016 (0.194)	-0.245 (0.177)	-0.365 (0.471)	-0.266 (0.449)
Control of Corruption, Estimate	-0.197 (0.149)	-0.225 (0.162)	0.124* (0.069)	0.113* (0.067)	0.096 (0.155)	0.035 (0.146)	0.803 (0.559)	0.919 (0.589)	0.290 (0.207)	0.457** (0.200)	0.143 (0.530)	0.199 (0.518)
Rule of Law, Estimate	0.131 (0.158)	0.075 (0.228)	-0.132* (0.068)	-0.071 (0.063)	0.215 (0.192)	0.341* (0.175)	0.972 (0.688)	0.914 (0.656)	-0.068 (0.264)	-0.107 (0.263)	0.427 (0.530)	0.167 (0.512)
Real GDP growth, %, lag	-0.015** (0.006)	-0.010** (0.005)	-0.005 (0.005)	-0.006 (0.005)	-0.009 (0.007)	-0.011* (0.007)	-0.022 (0.020)	-0.021 (0.021)	0.025 (0.015)	0.011 (0.015)	-0.002 (0.020)	-0.008 (0.019)
Inflation, %, lag	0.005** (0.002)	0.002 (0.002)	-0.004* (0.002)	-0.004* (0.002)	-0.005 (0.005)	-0.006 (0.005)	-0.003 (0.007)	-0.001 (0.008)	-0.012 (0.010)	-0.019** (0.010)	-0.005 (0.011)	-0.005 (0.011)
log(Real GDP per capita), lag	0.236 (0.306)	0.277 (0.352)	-0.229*** (0.051)	-0.198*** (0.048)	0.671* (0.367)	0.510* (0.303)	-0.399 (0.558)	-0.326 (0.534)	-0.128 (0.158)	-0.357** (0.145)	-0.083 (1.137)	0.291 (1.050)
log(Public capital stock per capita), lag	-0.413* (0.232)	-0.367 (0.227)	0.050 (0.035)	0.031 (0.034)	-0.645*** (0.202)	-0.650*** (0.195)	-0.380 (0.283)	-0.374 (0.297)	0.349*** (0.095)	0.344*** (0.092)	-0.383 (0.564)	-0.482 (0.577)
GG gross debt, % GDP, lag	-0.003 (0.002)		0.002*** (0.001)		0.003 (0.002)		0.001 (0.003)		0.006** (0.003)		0.000 (0.006)	
GG primary budget balance, % GDP, lag	0.008 (0.006)		0.008* (0.005)		-0.010 (0.008)		0.027 (0.027)		-0.009 (0.014)		-0.013 (0.021)	
GG effective interest rate, %	-0.043** (0.020)		0.022*** (0.007)		0.018 (0.022)		0.021 (0.063)		-0.092*** (0.032)		0.045 (0.066)	
log(Fiscal risk index), lag		0.072 (0.056)		0.076*** (0.014)		0.016 (0.031)		-0.122 (0.113)		-0.131 (0.081)		0.146 (0.155)
Number of observations	692	695	692	695	606	609	417	429	417	429	338	348
Number of countries	49	49	49	49	49	49	35	36	35	36	35	36

Notes: Panel FE stands for panel regressions with country fixed effects; GLS stands for generalized least squares, and GMM stands for generalized method of moments. The signs ***, **, * indicate significance at 1%, 5%, and 10%, respectively. Standard errors are in parenthesis.

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