

# Discussion

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## 1. Era Dabla-Norris

Long-term investment in productive assets is needed to support growth prospects and job creation in advanced and emerging economies alike. The global financial crisis, and the ensuing deleveraging and retrenchment of long-term credit, has led to a significant contraction in investment in many advanced and emerging economies, which has yet to recover to pre-crisis levels. Going beyond the crisis, investment needs remain pressing for many countries. Creating sufficient fiscal space to support productive public investment is an additional challenge for some countries.

Against this background, this paper provides an extremely useful policy primer on the preconditions and trade-offs associated with public infrastructure provision. Clearly, governments have a central role to play in putting in place policies and institutional frameworks conducive to infrastructure investment. However, decisions associated with project selection, infrastructure priorities and the modalities of efficient delivery continue to loom large in policy debates. This paper makes an important contribution in providing a conceptual framework for addressing these issues.

These remarks focus on two aspects of the paper: (i) grounding the discussion on public infrastructure within a macroeconomic perspective; and (ii) elaborating on the guiding principles for infrastructure provision, taking into account risks and returns at various stages of the infrastructure process.

### Bringing a macroeconomic perspective to bear

From a macroeconomic perspective, arguments for boosting public investment in physical and social infrastructure to boost growth rest on the high returns to such investments, and existing pressing deficiencies in these areas. Improvements in infrastructure raise the productivity of human and physical capital not only directly, but also indirectly through lower transportation and transaction costs, which increase economies of scale, productivity and thus growth.

The link between public infrastructure or capital spending and capital stock accumulation, and hence long-run growth, however, is often undermined by the low efficiency of public investment. The notion that public investment spending is equal to capital accumulation rests on the assumption that public investment is inherently productive. This assumption is particularly problematic, as poor project selection and a high degree of inefficiency and waste can distort the impact of public spending on capital accumulation, leaving a trail of poorly executed and ineffective projects (Pritchett 2000).

A growing body of theoretical and empirical evidence recognises the importance of the quality and efficiency of investment spending in determining the marginal productivity of investment and its growth impact. Following Barro (1990), a large number of endogenous growth models show

that productive government investment can raise the long-run rate of growth by permanently increasing the returns to other factors of production. More recent theoretical studies show that inefficiencies in the provision of public infrastructure services can reduce the quality and effectiveness of public capital, firms' incentives to invest, and hence growth (Chakraborty and Dabla-Norris 2011).

In summary, the theoretical literature suggests that the link with productivity and growth outcomes depends critically on the quality and efficiency of public infrastructure. Recent work at the International Monetary Fund has focused on developing indices that capture the institutional environment underpinning public investment management across four different stages: project appraisal, selection, implementation and evaluation (Dabla-Norris *et al* 2012). Building on this, research has found that the quality of public investment, as measured by variables capturing the adequacy of project selection and implementation, is statistically significant in explaining variations in economic growth across countries (Gupta *et al* 2011). These studies highlight the importance of going beyond discussions of spending levels and addressing issues of the broad institutional framework underpinning the provision of investment. Indeed, as the paper by Poole, Toohey and Harris points out, 'financing decisions must follow the investment decision'.

Country efforts to 'invest in the investment process' can thus play a critical role in raising the returns on public and private investment, and in ensuring that public infrastructure investment reaps the required growth dividends, while maintaining fiscal sustainability. In this spirit, the paper by Poole *et al* rightfully notes that this effort encompasses several aspects: country capacity to carry out technically sound and non-politicised project appraisal and selection; appropriate mechanisms for implementation, oversight and monitoring of investment projects; and adopting the most efficient modes of infrastructure delivery. The transparency and accountability of these functions and processes contributes to ensuring that productive public investment is supported. Indeed, as the paper discusses, a necessary first step in ensuring that good projects – ones that generate the highest net social benefits – are chosen is to get the planning and institutional framework right.

## Guiding principles

Drawing on the extant literature, the paper discusses how infrastructure could be financed in different ways: privately (ranging from management contracts to temporary or full private ownership), through public-private partnerships (PPPs), or directly through public procurement. Further, different financial instruments could be used. Some may be tied directly to the proceeds of the infrastructure, others may be partly or wholly guaranteed by the public sector, while yet others can be funded out of general public resources. All these approaches involve opportunity costs and efficiency trade-offs. Asymmetric information and incomplete contracts, and transaction costs associated with monitoring and contracting, in turn, have a bearing on the appropriate modalities.

The traditional question 'Are governments, banks or capital markets best placed to finance infrastructure?'; however, is too simplistic. A typical infrastructure project has several distinct phases – planning and design, construction and operation. Each phase exhibits different risk and return characteristics and entails different incentive problems, requiring a different role for governments, banks and other private investors.

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The paper could benefit from providing a more structured framework for thinking about the appropriate role of different agents and aligning appropriate incentives in these distinct infrastructure phases. For instance, the provision of credit or cash flow guarantees by governments, which fully insure the private sector against any potential losses, could eliminate incentives for cost minimisation and quality maintenance and lead to cost overruns. In this case, pure government procurement could be more effective, as funding costs can be lower while incentive structures conceivably remain the same. But transferring too much risk to the private sector could also lead to poor incentives and inefficiencies. While the paper addresses the question of why risk allocation is important and the associated practical considerations, it could delve into these issues in greater detail.

To this end, a number of distinct questions are of import from a policy perspective:

- What are the key risks for the involved parties at various stages of the infrastructure process? What is the appropriate distribution of risks and returns at the various stages and how should this be determined?
- What are some best practices in structuring risk transfers in infrastructure projects (e.g. to minimise cost overruns or failures)? How can projects be structured to ensure incentive compatibility to promote efficiency gains (e.g. from private sector contracting)?
- What is the role for policy in promoting greater intermediation of the savings pool and matching the demand for and supply of financing?

Answers to these questions would serve to strengthen the wealth of practical information and guidance for government decision-making about public infrastructure investment contained in this paper.

## References

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## 2. General Discussion

Much of the discussion revolved around the nature of the analysis used in infrastructure project selection and appraisal. The discussion began with one participant picking up on a central point of the paper – the importance of rigorous analysis when selecting infrastructure projects. The participant questioned whether rigorous *ex post* project evaluation was also important to encourage better accountability and governance. Another participant accepted the paper's emphasis on cost-benefit analysis in infrastructure project selection, but noted that a number of inferior techniques, such as input-output models, are being used as substitutes for this analysis. The participant also highlighted the development of the 'wider economic benefits' literature, which argues that externalities arising from infrastructure projects, such as agglomeration benefits and effects on GDP, should be recognised in project appraisal. Although there is debate about the magnitude of these benefits, the participant proposed that wider economic benefits could provide a link between the macroeconomic literature that suggests there are substantial gains from additional infrastructure and traditional cost-benefit studies. Another participant described these wider economic benefits as general equilibrium effects, and suggested that it would be a simple extension of the paper to mention these benefits, such as improvements in land use, trade flows, competition and economies of agglomeration. Peter Harris noted that the paper's advocacy of cost-benefit analysis largely reflects the fact that it is prevalent enough for all parts of government to understand it, but that the paper in no way advises against more sophisticated forms of analysis. Mr Harris argued, however, that it is important for any type of analysis used in project selection to have sufficient market credibility. To the extent that the appraisal of potential projects incorporates improbable sources of benefits, the government's credibility will be undermined and potential investors will be driven away. Finally, Mr Harris reiterated that rigorous cost-benefit analysis will be valuable regardless of whether a given project is going to be publically or privately financed.

Another participant applauded the framework for decision-making that was put forward by the paper, but questioned why few governments adhere to such rigorous analytical frameworks when selecting infrastructure projects. The participant went on to ask whether the authors had any advice on how to encourage governments to implement this framework. In response, Mr Harris reiterated that one of the key points of the paper is that if infrastructure project selection should be done in a systematic and transparent way – rather than having a government sharing only specific investment propositions with the public – the ability for potential investors and stakeholders to assess these projects and react to them will result in a pipeline of valuable projects being developed.

The remainder of the discussion largely focused on PPPs. One participant drew attention to the noticeable decline in recent years in the volume of PPPs in Australia and the United Kingdom. The participant argued that these two jurisdictions have been the most successful in shifting demand risk to the private sector and claimed that in doing so, many of these projects, such as Sydney's Lane Cove Tunnel, had failed financially and that this appears to have reduced private sector interest in PPPs. The participant also noted that recent PPPs have involved substantially more risk being explicitly retained by the public sector than in the past, and that private investors'

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returns on these projects have been 'disappointing'. Based on these observations, the participant questioned whether there is a future for the PPP model as an alternative to public investment or privatisation. In response, Mr Harris contended that the Productivity Commission's analysis and liaison – primarily with large financiers such as pension funds – suggests that there is ample private financing available for PPPs, but that a lack of attractive investment structures is holding this back. Mr Harris suggested that PPPs could be better designed without the government simply reabsorbing demand risk. Furthermore, he argued that if the government retains demand risk, it is unclear what risks, other than construction risk, it is transferring to the private sector and therefore how potential efficiency gains are being generated.

Another participant agreed with the paper's identification of the need to improve the efficiency of government procurement, but argued that the result of this process is a more general improvement in government efficiency. The participant went on to question whether there is any need for PPPs once the government has become efficient. The participant drew on the example of Finland, describing how most of Finland's government-procured infrastructure is efficiently procured using techniques usually associated with the private sector. The participant then argued that one way to look at PPPs is as a mechanism of insurance against government failure in infrastructure provision – that is, to compensate for the fact that most countries' governments are unlikely to evolve into something like the 'super-efficient Finnish government' in the near future. In response, Mr Harris emphasised that the point of the paper is to discuss ways to improve public access to private sector financing for infrastructure investment by highlighting some key lessons from others' experiences of PPPs. He went on to identify that the pre-eminent lesson is that the fundamental features of PPPs are the transfer of risk and the efficiency improvements that follow from these transfers.