

Infrastructure for Structural Transformation: A Comeback of Planning?

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Abstract:

This article examines how infrastructure development may best support structural transformation in developing countries. It critiques ongoing emphasis by multilateral financial institutions and other actors on infrastructure as an asset class and their focus on bankable projects. The article considers this approach too narrow for real economic transformation and argues development requires a more holistic approach, one that includes project assessment based on developmental criteria. Drawing on the pioneers of development and more recent literature on infrastructure systems, the article proposes development planning as a more promising approach and assesses how developing countries are faring regarding infrastructure planning for growth and transformation.

JEL Classification: H54, O21, O40, P11

Keywords

Infrastructure, investment, economic growth, structural transformation, planning, developing countries

1. Introduction

In the recent past, interest in infrastructure investment has resurfaced in different parts of the world. In 2018, the US administration unveiled a national infrastructure plan, China has launched the Belt and Road initiative and Germany has proposed a ‘Marshall Plan for Africa’. Multilateral financial institutions have also launched initiatives around infrastructure investment in developing countries with the aim of supporting the internationally agreed 2030 development agenda and its sustainable development goals. The World Bank has led these initiatives by emphasising the need of investments moving from billions

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to trillions through banks' scaling up and leveraging of private capital for infrastructure and other development-related projects.

This article addresses the question of how the current drive to support infrastructure development can most effectively contribute to structural transformation in the developing world. Structural transformation is understood here as the expansion of productive capacities and economic diversification. The motivation to tackle this question arises from the belief that ongoing initiatives led by multilateral institutions (along with private actors) to promote infrastructure in developing countries has important limitations. A key issue is their treatment of infrastructure as an asset class and their focus on the need for bankable projects. Their central argument is that there is a huge financing gap in infrastructure investment, in the order of trillions of US dollars, both in the developed and developing world. The solution they propose is to attract private capital at scale through pooling and securitisation of infrastructure assets. This, however, requires that more infrastructure projects become bankable—that is, projects that provide appropriate risk-adjusted returns to private investors. This is what might be termed the bankability approach. This article sees this approach as too narrow due to its focus on individual projects. The article explores, as an alternative, development planning whereby infrastructure development is approached systemically and integrated into a broader development strategy.

This article has six sections. Section 2 presents the arguments of why planning is necessary to ensure that the contribution of infrastructure to structural transformation is brought to a maximum effect, starting with the views of the pioneers of development on that matter. Section 3 briefly critiques the ongoing approach to infrastructure development, based on the bankability of individual projects. Section 4 discusses what infrastructure planning for structural transformation might look like. Section 5 provides an empirical assessment of how developing countries are faring in terms of embedding infrastructure planning in their national development plans. Section 6 concludes and raises additional policy issues that are important to consider so that planning can be an effective tool to strengthen the links between infrastructure development and structural transformation in developing countries.

2. Infrastructure for Economic Transformation: A Pioneers of Development Perspective and the Role of Planning

The argument that infrastructure is central to economic transformation was at the core of classical development thinking. Rosenstein-Rodan (1943) in his idea of a big push, Nurkse (1953) in his proposal for balanced growth and Hirschman (1958) in his theory of unbalanced growth, all argue that substantial infrastructure investment is a necessary input to development, to be provided for in all economies much before all other types of investment (Shi, Guo, and Sun 2017).

Rosenstein-Rodan (1943) felt that less developed countries were stuck in a low-equilibrium trap characterised by, *inter alia*, unexploited economies of scale due to low investment and a lack of social overhead capital, by which he and his contemporaries working on issues of development meant economic and social infrastructure. Nurkse (1953) argued that infrastructure was an essential component (in the form of social overhead capital) for the development of industry, needed to be provided simultaneously for all sectors, due to indivisibility issues. Hirschman (1958, 53) proposed instead an unbalanced approach in which investment was concentrated in key industries—as the better strategy for development, and that such investments could take above all the form of infrastructure, in response to supply bottlenecks in the wider economy.

But, according to Myrdal (1970), the approach to structural transformation through infrastructure investments could face at least two issues: supply side limitations, including scarcity of skills and of other resources that form inputs to sectoral activities, and a need to restrict certain kinds of investments, supplies and production that pull the economy into unforeseen and undesirable directions. This would point to the need for a planned process of infrastructure creation led by public involvement, which was the hallmark of the successful early industrialisers. Indeed, Myrdal firmly held the view that, through planning, the state should ‘initiate, spur, and steer economic development’ (Myrdal 1970, 175).

While Myrdal had in mind the early industrialisers, the Republic of Korea and China are two notable examples of successful late industrialisers where, again, public infrastructure investments guided by state planning were instrumental in achieving rapid structural transformation. The Republic of Korea adopted multi-annual plans during its development trajectory, which identified right from the beginning infrastructure as key to support the development of different industries, initially light industries and later heavy and other, tech-based industries (Ro 2002). A similar story is evident in China (Holz 2011). In both cases, infrastructure constituted not a small but, rather, a large mechanism that planning-backed policy identified as of strategic importance to industries that needed to be developed, thereby playing a critical role in promoting industrialisation (Hausmann, Rodrik, and Sabel 2008; Holz 2011, 221).

Thus, both early and late industrialisers indicate that planning is a policy stratagem that national governments should consider adopting as a means to support a national development strategy that is successful at rapid structural transformation. Planning involves a wide range of choices, from what sectors to prioritise and technologies to adopt—to what degree of macro coordination of investment decisions might be the most effective, how much of resource mobilisation is needed and what tools to employ (Chandrasekhar 2016). To the extent infrastructure development can provide vital contribution to this strategy, infrastructure planning becomes a critical component of development planning. Infrastructure planning, with government playing a leading role, matters for those reasons pointed out by Myrdal, and more. A more recent literature, this time from business, management and strategic planning rather than from development economics, raises the following arguments in favour of planning.

First, most types of infrastructure can be characterised as capital intensive, with large economies of scale, significant positive externalities and involving projects with long gestation periods. Given their scale and scope and the fact that they exhibit several public goods characteristics, infrastructure is predominately provided for by the public sector, or by private agents operating under high levels of regulation.¹ Second, a systemic approach is crucial to the design of infrastructure systems. In transportation systems, for instance, connections need to be made between these systems in order to facilitate movement of people and goods, and it is hard to envisage an agent other than the public sector to address with effectiveness the systemic characteristics of infrastructure projects.

Third, planning is necessary to take account of the interdependencies between different types of infrastructure and to factor in the synergies they generate. These interdependencies, requiring strong planning and coordination, can be of different types, including physical, cyber and geographic—which dramatically increases the complexity of a whole infrastructure system, with both feedback and feedforward effects. Physical interdependencies involve a physical link between infrastructure systems, an example of which is a railroad providing coal for fuel while a coal-fired plant powers the signals, control centres and the locomotives of the railroad; an example of cyber interdependency can be a computerised control system that controls electric power grids feeding computerised systems. Geographic interdependency involves systems being in close proximity to one another and susceptible to common physical damage, such as explosions or natural disasters. Addressing these interdependencies is important to explore synergies that lead to economic development and societal gains, in addition, of course, to reducing the likelihood of infrastructure disruptions (Rinaldi, Peerenboom, and Kelly 2001, 14–15).

Fourth, an equally important feature to highlight is that some forms of infrastructure function through networks. Utilities, which include gas, electricity, water and fixed-line telephone, require fixed networks. Elements of transportation infrastructure such as rail can be considered to have similar features. Creating networked systems can provide significant benefits such as reduced costs from economies of scale (Brooks 2008), but require adequate planning.

Fifth, infrastructure projects should include development criteria as part of their assessment, in order to ensure that their externalities and links with other industries are fully taken into account, and that selected or prioritised projects are those with the greatest potential to contribute to structural transformation (Alberti 2015). Projects should therefore be assessed not on an individual basis, but, rather, under a planning framework, as it is the latter that can ensure a more holistic approach to project assessment is adopted.

Finally, embedding infrastructure planning in a broader development strategy designed and led by the state is important to (i) maximise synergies between different infrastructure sectors and between such sectors and the wider economy and, returning to Myrdal's remarks, (ii) expand investments in the right direction to ensure coherence and ultimate success in such a strategy.

Thus, drawing on Myrdal and the other pioneers of development, plus on recent research highlighting the systemic and interdependent aspects of infrastructure systems, this section shows that development planning and 'developmental' infrastructure investment are not an old or outdated argument. Rather, it is an argument that has been regrettably long absent from the policy debate and that, given the developmental challenges facing developing countries that the SDGs themselves highlight, it must be brought back so that progress towards the SDGs can be transformative and sustainable.

3. A Brief Critique of the Bankability Approach

Bankable projects might be defined as those 'that provide investors with appropriate risk-adjusted returns' (Woetzel et al. 2016, 17). However, proponents of scaling up private finance for infrastructure investments claim that, in many instances, risk-adjusted returns of infrastructure projects are too low to attract private investors. The reasons pointed out include: low preparation capacity, high transaction costs, lack of liquid financial instruments, weak regulatory frameworks, legal opposition and various other risks at the different phases of the life cycle of a project (Battacharya, Romani, and Stern 2012; G20 2011; Serebrisky et al. 2015; Woetzel et al. 2016).

To expand supply of bankable projects, their proponents suggest that new paths should be explored to enhance prospective returns and minimise risks that often arise during the life cycle of a project. To enhance returns, projects should be able to generate sufficient revenues over their life cycle, through adoption of user charges, public sector support and additional funding. Proposed measures to reduce risks and uncertainties include: clear identification of actual returns and possible risks (including of default); development of governance structures to ensure approval of stakeholders, including through compensation schemes; provision of de-risking instruments such as sovereign and credit guarantees; and government mapping of long-term investment paths to reduce investors' uncertainty about the future (G20 2011; Woetzel et al. 2016).

A first limiting aspect of the bankability approach is the expected scale of private sector engagement, and role, in infrastructure development. Historically, domestic public financing for infrastructure development has been dominant, and private capital participation in the past suggests public sector dominance should remain even if private finance grows in the years ahead. In Africa, domestic public finance accounts for 66% of total infrastructure finance (G20 2011, 7). Where private finance exists, it

comes in together with public funding. In Latin America, instances in which private participation in infrastructure (PPI) takes place have public finance accounting for a third of total project funding (Fay et al. 2017, 8).² Moreover, PPI is concentrated in sectoral terms, as about 50% of it is directed to the telecommunications sector. In LICs, this proportion is nearly 75% (G20 2011, 10). In Asia, the Asian Development Bank shows that private investment dominates in the telecommunications sector and that it also has a significant presence in the energy sector, but its participation is very small in transport and virtually non-existent in water and sanitation (ADB 2017, Figure 3.3). Thus, while private sector involvement in infrastructure investment may grow with an increase in the supply of bankable projects, any rapid recovery of overall infrastructure investment that may occur in the future will critically depend on governments' capacities to carry on its leadership role in planning and executing new infrastructure projects.

In essence, the reasons for public sector dominance in infrastructure have to do with the intrinsic characteristics of infrastructure projects. These include their long gestation periods, capital intensity, difference between private and social returns, complexity of planning and execution, their feedback loops with growth and economic development—whose strengths depend on what kinds of investment are pursued, the specificities of the countries executing infrastructure projects and non-linear impacts of infrastructure investments; all this is in addition to macro, institutional and environmental risks and uncertainties, factors that have a strong bearing on the viability and profitability of such projects. Bankable projects can mitigate some of these problems, but they do not eliminate them entirely. More broadly—and as argued in the previous section, infrastructure sectors are closely interdependent, and therefore it is critical that infrastructure development is approached systemically—and by the state, which is the actor with the required political power and coordination capacity for this type of undertaking. Leaving the leadership role vacant and expecting the private sector to fill the gaps will likely lead to an outcome in which a fragmented infrastructure landscape emerges, characterised by under-investment, sectoral concentration of resources and large infrastructure gaps.

4. What Infrastructure Planning for Transformation Might Look Like

Infrastructure planning, proposed by the pioneers of development and also by a more recent business, management and strategic literature, is likely to assume different forms in different contexts, given the feedback loops between infrastructure, growth and structural transformation. Ideally, each country should set out its plans based on its economic, social and geographical realities and aspirations, rather than any pre-established blueprint to guarantee a successful outcome. Yet, design and execution of an infrastructure plan may take into account the following broad and specific factors: a country's stage of development, existing infrastructure, industrial capabilities and expansion plans, urban versus rural divides, levels of policy ambition, existing infrastructure institutions and their coordination, availability of new financial, technical or other resources and the existence of political and managerial capacity for effective implementation.

A promising design of infrastructure planning might be one that includes the following elements: a vision for the infrastructure sector in the long term and its integration into the country's broader national industrial development strategy; a consistent timeframe between infrastructure and development planning; a life-cycle analysis that allows for feedbacks and improvements and that takes into consideration broader economic and social benefits (market access, poverty alleviation); and a systemic approach that addresses sectoral interdependencies. In addition, it is important that planning has flexibility to respond to possible technological forecasts and potential disruptions or to path-changing

contingencies such as the need to promote green technologies as a result of climate change. Finally, good coordination between different government levels and departments is key to planning design and execution (Alberti 2015; Schweikert and Chinowsky 2012; WEF and PWC 2012).

Some models of infrastructure planning guidelines have been developed in recent years with the purpose of providing a road map to national governments.³ These guidelines present additional aspects to those just outlined, such as setting up of an adequately staffed central infrastructure unit, under the supervision of the prime minister or president to ensure projects are prepared and executed; understanding of current infrastructure situation and preparation of a list of infrastructure deficiencies that need addressing; ability to take decisions and find solutions (including cheaper ones such as improved maintenance and bottleneck upgrades) with greatest economic and social benefits while observing negative social and environmental aspects; the laying out of the framework and modalities for private sector participation; and moving from planning to action by publishing the plan, ensuring the necessary policy changes for the selected projects and finalising detailed project preparation.

Other aspects highlighted that are, nonetheless, more closely related to a market-oriented approach to infrastructure planning, include deciding who should pay, prioritise projects based on available cash resources, and ensure that the project preparation process results in 'value for money "bankable" projects [that] can be tendered' (WEF and PWC 2012, vi). However, a good deal of complexity and costs in infrastructure planning will probably be greatly reduced if bankability of projects is de-emphasised as a policy objective, since what adds considerable complexity to projects are the financial arrangements needed to bring the private sector on board.

It should be noted that the costs involved are not just those of fees for banks or consultants on financial engineering, or upfront financial incentives, but equally important are contingent liabilities that build up in the course of a project. The latter are hard to fully anticipate, often creating looping effects further ahead on government fiscal capacity necessary to maintain support for infrastructure development. Each country government, therefore, should decide on their own terms what level of private sector involvement it wants in its infrastructure planning strategy and what instruments it may want to deploy to encourage their involvement, taking into account the trade-offs that this involvement implies, both in financial and strategic terms.

5. Experiences with National Development Plans: Country Evidence

Since the early 2000s, at least, many developing countries have started to prepare national development plans. These planning initiatives do not necessarily imply that countries adopt them in practice. Many countries have initially produced them as a follow-up to national (or poverty reduction) strategies under IMF–World Bank–funded programmes, with uncertain government commitment or resources for effective implementation. At the same time, under the broader frameworks of the millennium development goals and, more recently, the sustainable development goals, these plans have evolved and increasingly taken the form of an incipient, broad-based national effort to build a coherent development strategy. Their underlying motivations seem based on a growing shared understanding that only through development planning developing countries will be able to accelerate growth, develop their productive capacities and achieve greater economic diversification.

This article looks at national plans of 40 developing countries to assess whether these plans have therein any infrastructure plans and to what extent the latter address some of the issues raised above, seen as important elements for successful development outcomes.

While over 80% of all 40 national development plans contain some sort of infrastructure plan, this assessment looks specifically at whether such infrastructure plans have a vision of the country's infrastructure into the next 20–30 years, and whether these plans seek alignment with the country's broader development strategy. In addition, it looks at whether these plans are comprehensive or focused, what sectors they cover, whether they make explicit links with other policy objectives such as industrialisation and economic diversification, adopt a multisectoral approach or acknowledge infrastructure interdependencies. Other aspects the assessment covers include: is there a clearly designated centralised decision-making unit or agency? Do they identify clear funding sources and adopt a multi-year budget approach? Do they specify a role for the private sector, and for international donors or agencies? Do they have in place a review mechanism? Do they address specific constraints, such as in the areas of human resources, capacity, legislation, environmental impacts, financing sources? Do they provide a detailed pipeline of projects and conduct a life-cycle analysis of project preparation, and to what extent does the latter account for productive linkages or externalities and therefore is not strictly based on a traditional cost–benefit analysis?

The results of the assessment are first summarised in Figure 1. They are based on judgement and therefore should be seen merely as indicative of plans' levels of coverage and depth. Overall, plans score well in terms of vision, alignment with the broader country's strategy and links with policy goals such as industrialisation or productive diversification. Most plans also identify clear funding sources and a role of the private sector in infrastructure development. However, these plans score considerably less well beyond these broad features. Fewer than 40% of such plans address the important issue of infrastructure interdependencies, just above 20% make clear references to central decision-making and only about 15% include multi-year budgets. In addition, less than 40% of such plans, and in some cases less than 20%, address different sorts of constraints such as in the areas of human resources, environmental impacts or financing sources.

Even where assessment is more positive, such as in the areas of vision, alignment and links with industrialisation/diversification goals, a more detailed reading of the plans suggests that visions are not fully developed or really long term or anticipate possible challenges (of technological nature, other) or obstacles; alignment does specify the channels through which infrastructure development may support a broader development strategy; and links with industrialisation/diversification do not clearly articulate how development of certain types of infrastructure might lead to the latter, lacking description of specific linkage identification or which tools might be needed to establish such linkages.

Next, depth of infrastructure plans is assessed from the perspective of individual countries. Figure 2 displays the results, showing that, of the 40 country plans, only seven, or 17% of the total number of plans under analysis, cover at least 70% of the areas this article considers important in an infrastructure plan, such as vision, alignment or review mechanisms. By contrast, 20 infrastructure plans, or 50% of the total sample, cover less than 50% of the areas under consideration. This individual country perspective just reaffirms the initial assessment displayed in Figure 1, that infrastructure plans do not, on the whole, cover most of the areas this article highlights as important.

A last question is whether there is a relation between levels of depth in infrastructure plans and other variables. There is no *a priori* theory as to what may explain depth of infrastructure plans, but it would be reasonable to believe that the higher the GDP per capita of a country, the better a plan would be, in terms of design and depth. This, however, could be read another way: that the lower a country's GDP per capita, the greater the need for a carefully designed infrastructure plan. This ambiguity is reflected in the coefficient of correlation between depth of an infrastructure plan and country's GDP per capita, which this article finds at just 0.02, in a range from 0 to 1 in which 0 means no correlation and 1 perfect correlation. The article further considers the following: country population size and country's population

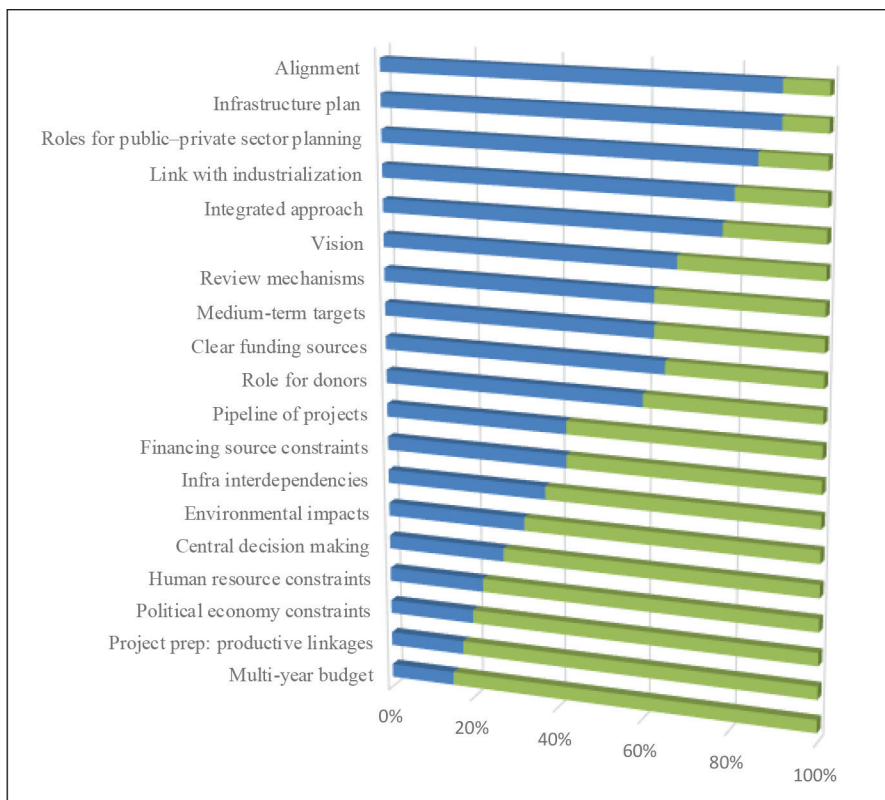


Figure 1. Infrastructure Planning: Level of Adoption, by Individual Characteristics. % of total

Source: Authors' elaboration, based on national development plans (or strategies) of 40 countries. These are: Africa: Botswana, Burkina Faso, Chad, Ethiopia, the Gambia, Guinea, Kenya, Lesotho, Malawi, Mozambique, Namibia, Somalia, South Africa, Tanzania, Uganda, Zambia. Asia: Afghanistan, Bangladesh, Bhutan, Cambodia, Fiji, Malaysia, Papua New Guinea, the Philippines, Solomon Islands, Tajikistan, Thailand, Timor-Leste, Turkey, Vanuatu, Vietnam. LAC: Bolivia, Colombia, Costa Rica, Ecuador, Guatemala, Jamaica, Nicaragua, Peru, Trinidad and Tobago.

density (per square km). A positive correlation between depth of a plan and population size could suggest, say, pressing need for different types of infrastructures delivered in a planned way given population pressure, or simply availability of human resources for planning and design. As for population pressure—say over a delimited geographic area, population density may be a more relevant variable. This article considers both variables. The highest correlation coefficient is between depth of plans and country's population size at 0.4; the correlation coefficient between depth of plan and population density is at 0.25.⁴ Other variables that might be relevant to explain depth of infrastructure plans, which are not explored here, are levels of alignment with the Washington consensus or with a New York consensus.⁵ Experiences with infrastructure development in the recent past might have been richer on the ground than what the infrastructure plans surveyed convey. However, if these plans do capture the level of governments' commitment to infrastructure planning and development, then considerable more work is needed, for both more robust national infrastructure and development strategies, to ensure infrastructure development does play the fundamental role it can have in transforming developing economies.

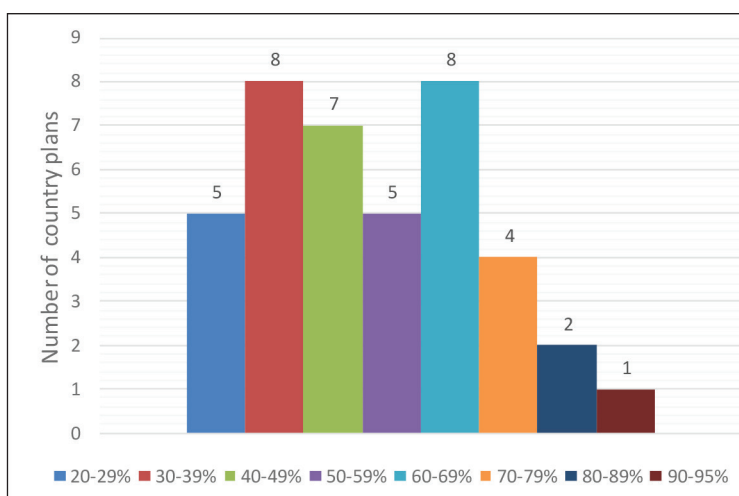


Figure 2. Infrastructure Planning: Level of Adoption, by Individual Country Plans % of characteristics' adoption

Source: Authors' elaboration, based on national development plans (or strategies) of 40 countries. These are: Africa: Botswana, Burkina Faso, Chad, Ethiopia, the Gambia, Guinea, Kenya, Lesotho, Malawi, Mozambique, Namibia, Somalia, South Africa, Tanzania, Uganda, Zambia. Asia: Afghanistan, Bangladesh, Bhutan, Cambodia, Fiji, Malaysia, Papua New Guinea, the Philippines, Solomon Islands, Tajikistan, Thailand, Timor-Leste, Turkey, Vanuatu, Vietnam. LAC: Bolivia, Colombia, Costa Rica, Ecuador, Guatemala, Jamaica, Nicaragua, Peru, Trinidad and Tobago.

6. Conclusions

This article critiques the bankability approach to infrastructure development, recommended as a way to attract private finance at scale to infrastructure projects. The article sees this approach as too narrow and closely linked to the very idea of developing infrastructure as a new asset class. The international community has rallied behind this idea with great enthusiasm. The UN Economic and Social Council (ECOSOC) in its forum on financing for development follow-up recommendations, states that it 'will explore new instruments for mobilizing resources for long-term infrastructure investment, including developing infrastructure as an asset class' (United Nations 2018, 3).

However, despite the great enthusiasm of scaling up private finance for infrastructure projects notwithstanding the problems with viewing infrastructure as an asset class, the fact is that PPI projects have declined in recent years (United Nations 2019, 161–162). Indeed, this decline is acknowledged by ECOSOC, which, in the same document, notes 'with concern that private participation in infrastructure has fallen each year since the Addis Ababa Action Agenda was adopted in 2015' (United Nations 2018, 3).

This article suggests caution with regard to private sector participation for two reasons: (i) infrastructure investments share a set of characteristics including long-gestation periods, capital intensity, externalities and risks not easily susceptible to mitigation, which places the public sector as the most capable articulator of infrastructure development; and (ii) leaving the role for the private sector to play will inevitably result in the development of a fragmented infrastructure system ill-suited to the promotion of accelerated growth and structural transformation. Financing of infrastructure projects is a critical issue,

but the current infrastructure deficits are as much as about an austerity policy instance that ties government hands to engineer home-grown solutions that could render a greater role for national financial institutions, notably national development banks, that in recent past have in selected developing countries shown to play an effective role in mobilising resources for sustained infrastructure development. There is, of course, the mid-ground in which both public and private actors play jointly a role in infrastructure provision. However, recent evidence of public–private partnership has pointed to disappointing results. It seems to be necessary that the terms of this partnership are rewritten by the public sector. The crucial question is how to do it in a manner that delivers more positive and transformational outcomes.

The way forward seems to require a combination of strategic policy choices that include the role planning can play in this regard. The article sees as encouraging the comeback of national development plans in many developing countries. However, although somewhat brief, assessment of these plans suggests such initiatives are part of an incipient process whose main weaknesses seem the lack of a true articulation between infrastructure plans and a country's development strategy. The challenge is to establish clear links between these two dimensions. This requires a great deal of work and negotiation between a country's different stakeholders and strong state coordination so that the different infrastructure–economy linkages can be built and development ensued in the process.

Key elements in development and infrastructure planning include a vision about a new infrastructure architecture in the long term, but not only. Close coordination between infrastructure and development planning more broadly is also critical, as is a systemic approach to the development of different types of infrastructure and full consideration of the linkages between infrastructure and industrial projects and other externalities that escape from a narrow cost–benefit analysis. This undertaking also necessitates top political commitment, central coordination to ensure policy consistency and effectiveness, development of capacities for planning, project preparation and execution, a clear system of penalties to ensure plans are followed through but also of accountability to minimise unnecessary costs and ensure legitimacy. Finally, political consensus and cross-party support is essential to ensure continuity of development plans involving the build-up of large and complex infrastructure systems over very long periods of time.

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1. These characteristics are found mainly in energy, water and telecommunications sectors, although variations exist within such sectors, across countries and over time (Kasper 2015; Markard 2011; Torrisi 2009). According to Markard (2011, Table 3), capital intensity is judged as very high in electricity and water supply, sanitation and road transport; regulation intensity stronger in water and sanitation; systemic importance is highest in electricity

- supply, railway transport and telecommunications, and public sector dominance is found in water supply and sanitation, and railway and road transport.
2. This portion of public finance comes from development banks, export credit agencies and other public authorities and companies (Fay et al. 2017, 20).
 3. Examples of planning tools include those developed by Schweikert and Chinowsky (2012) and the WEF and PWC (2012).
 4. Further research might be undertaken on this topic, using quantitative techniques, provided a dependent variable on coverage of adoption (or depth) is less based on judgement and more on hard data, and that some solid theory can underline the choice of explanatory variables.
 5. New York consensus means alignment with New York-based UN agencies (see Elkins, Feeny, and Prentice 2018).

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