Financing infrastructure investment: old roads and new paths?

Robert J. Bianchi and Michael E. Drew

Griffith University

Introduction

One of the many concerns raised by leaders at the recent St Petersburg G20 summit (2013) was the anaemic outlook for global economic growth. One investment initiative canvassed at the summit, for the purpose of moving economic growth towards potential, was the imperative for new infrastructure investment in both developed and emerging economies. It is generally agreed that investment in new infrastructure projects is positively correlated with output and growth. However, despite widespread accord regarding the economic benefits of infrastructure investment, there remains a substantial deficit in new infrastructure investment globally. The aim of this short essay is to frame the current challenges to greater investment, and to consider potential new paths for financing in the future.

The economic viability of every infrastructure project rests on the robustness of the capital budgeting decision and cost/benefit appraisal. A best-of-breed project appraisal methodology can assist in the identification of the highest priority infrastructure projects and ensure that scarce capital (public and/or private) can be deployed in the most efficient and effective manner. Investment appraisal that is informed by the principle of opportunity cost can see capital flow to projects that can be accretive to productivity growth, national output and (from a public finance perspective) increased tax receipts. The investment decisions regarding infrastructure to be made globally over the next decade will provide the foundations for raising potential GDP growth, with associated improvements in a range of economic and social factors, including, but not limited to, productivity growth, time savings, improved health standards and sustainability. While we can generally agree on (and be advocates for) the benefits from new infrastructure investment, it is timely to consider some of the roadblocks (pardon the pun) that are hampering efforts to turn these opportunities into reality.
Current infrastructure challenges

There are numerous barriers currently inhibiting new infrastructure investment around the world. We divide these challenges into three main categories: fiscal constraints and public sector debt; changes in global banking regulation; and the investment characteristics of infrastructure.

Fiscal constraints and public sector debt

In the post-global financial crisis (GFC) period, investors have heightened concerns regarding the level of public sector debt around the world. The old notion of governments simply issuing new sovereign bonds to finance infrastructure projects may not stand the scrutiny of global credit ratings agencies (for instance, Standard & Poor’s, Moody’s Investors Service and Fitch) unless there are additional levels of comfort in terms of creditworthiness (and/or the capacity to repay these new lines of debt). Any new model of infrastructure financing must directly address current concerns surrounding public sector borrowings.

Changes in global banking regulation

In the pre-GFC era, the global banking sector provided syndicated (and/or non-tradable medium-term bank loans) to long-life infrastructure projects in a global investment environment which was conducive to increasingly higher levels of financial leverage. This is not the investment climate in which we reside today. Global deleveraging and the introduction of the Basel III accord (demanding higher liquidity obligations on the balance sheets of banks around the world) are the contemporary themes in the sector. These changes to the architecture of the global banking system make the economics of providing non-tradeable debt to finance long-term illiquid infrastructure projects more challenging. The liquidity constraints placed on the sector will see domestic and international bond markets become vital sources of new debt finance going forward for infrastructure projects. An important headwind facing the development of new paths for infrastructure financing is that bank finance may be limited (particularly compared with the experience before the GFC) and that the direct issuance of bonds will be vital in the current investment climate.

Investment characteristics of infrastructure

There is much debate about the possibility of pension (and defined-contribution (DC)/superannuation) funds providing a new funding source for new infrastructure projects.
While this concept seems reasonable in theory, private sector investors face numerous risks when evaluating a new infrastructure investment proposition. The asset owner (this may take a variety of forms – say, a pension fund, an endowment fund or a mutual fund) must invest in a debt and/or equity security in a long-life asset (in fact, the holding may also take the form of a hybrid/convertible and/or stapled security). However, the size of these ‘lumpy’ infrastructure transactions can be large, even for a major pension fund, and the underlying infrastructure asset is typically illiquid – that is, not easily tradable or converted into cash. In emerging economies – and increasingly in some developed countries also – there may be the issue of heightened sovereign risk.

The commencement of a major infrastructure project may have a multi-year construction phase, during which there are no revenue streams accruing to the investor. Such projects generally require a high level of equity investment during the construction phase, in order to absorb unexpected additional construction costs and due to the fact that the project will not deliver a revenue stream until the construction phase progresses to the operations phase. Given the long-term nature of infrastructure projects, the cost/benefit analysis and predictions associated with these projects deliver high levels of variability between forecast-demand versus actual-demand (and as history has shown this ‘variability’ is typically thought of as risk by investment analysts – that is, as having an attached probability. Reality may suggest that this ‘variability’ may more closely take the form of Knightian uncertainty). One solution to these issues has been the development and growth of private sector investment via public–private partnerships (PPPs) and other financing initiatives; however, empirical evidence suggests that this is not an optimal long-term financing model for all seasons.

These various risks associated with the development of new infrastructure projects culminate in a reluctance of asset owners (say, pension and DC/superannuation funds) to finance new infrastructure proposals. Instead, asset owners are more willing to invest in mature infrastructure projects well after the construction phase, when the plethora of risks during the construction phase has been mitigated and the cash flows of the operations phase are established. This phase permits more traditional asset valuation models to be employed by prospective investors with a higher level of confidence. However, as we know from the National Income Identity (or GDP), there are only marginal benefits in the secondary market trading of financial securities. If our goal is to simultaneously improve GDP growth and its potential, we need to consider a new way in which to stimulate new investment in infrastructure.
New paths for financing infrastructure?

The previous section briefly canvassed some of the major challenges to new infrastructure investment, and we term this the ‘old roads’ in the debate. In this section, we consider some ‘new paths’ to advance the debate regarding infrastructure investment throughout the G20. Perhaps it is timely for the policy-makers to consider a sovereign government’s budgetary position as being divided into two distinct parts, namely, an operations account and a capital (that is, investment) account. The elected government of the day would place an emphasis on the operations account (which is based on the structural/cyclical aspects of tax receipts and expenses over time), while the capital account contains segregated accounts where the assets and liabilities of current and future infrastructure projects are centralised and reported.

The commencement of a new infrastructure project would see the creation of a segregated account where the issuance of infrastructure bonds to finance the individual project is recorded as a liability. The construction of the infrastructure is recorded as the asset in the same segregated account. Infrastructure projects that charge users will generate a cash flow that is used to repay the debt obligations of the infrastructure bonds. Surplus revenues from the project can be deployed to construct, say, new social infrastructure. Infrastructure that does not earn a direct revenue stream from its users will require the government of the day to deliver a cash receipt from the sovereign nation’s operations account to the capital account, to fulfil the debt obligations of the respective infrastructure bond issue. Put another way, the sovereign government carries the contingent liability of each infrastructure project.10

The concept of segregated accounts for each infrastructure project promotes two important ideas. First, the separation of the infrastructure projects allows infrastructure bond investors to assess the individual risks and viability of each project and price the infrastructure bond accordingly. Second, the concept of segregation provides encouragement to the government of the day to design, build and operate economic infrastructure as a first priority. This acts as an incentive for the sovereign to minimise the aggregate contingent liability of all infrastructure projects. The issuance of infrastructure bonds that are directly linked to each project would create a mechanism by which market discipline is forced upon each infrastructure project, due to the signal sent by the indicative pricing of each series of bonds. This encourages good infrastructure project appraisal within the current environment of fiscal austerity and avoids the poor infrastructure project evaluation influenced by short-term political cycles. The bottom line is that new infrastructure projects must translate into higher GDP, which in turn produces higher tax revenue. While the sovereign nation retains the
contingent liability for each infrastructure project, the concept of segregated accounts promotes transparency in the monitoring of each infrastructure project, which in turn provides a higher level of comfort for credit rating agencies who ultimately evaluate the credit ratings of the sovereign and the infrastructure bonds relating to each project.

Financing solutions via infrastructure bonds may provide a credible new path towards new infrastructure projects. However, the question remains: why not encourage pension funds as a debt and/or equity investor in new infrastructure projects? New infrastructure projects are termed ‘greenfield’ investments where assets are yet to be constructed. By design, new infrastructure projects carry enormous risks (as previously stated), whereby the government is best positioned to retain this risk. It may be the case that such risk is beyond the appetite (mandate) for many pension funds. This is a potential reason why many pension funds are reluctant to invest in greenfield projects. The high level of risk is a potential rationale for sovereigns to promote the issuance of ‘sovereign-like’ infrastructure bonds in the early years of a new project. At a later date, the government can elect to sell the new infrastructure project, when it evolves into a more mature infrastructure asset.

The second source of finance is the transfer of mature infrastructure projects as an asset into a new segregated account. A well-established infrastructure asset owned by the sovereign nation can be used as collateral to support the credit quality of the infrastructure bonds on issue, which are used to develop a new infrastructure project. Furthermore, revenues arising from mature infrastructure assets (such as ports, airports and toll roads) can be employed to fund the bond coupons and maturities of the infrastructure bonds as they fall due. This form of finance may be useful in the development of social infrastructure, as the revenues of current economic infrastructure assist in the financing of new social infrastructure projects. The transfer of existing infrastructure assets from the government to the segregated account means that the incoming cash flows from mature infrastructure projects are directed to the sovereign’s capital account.

A third source of finance is via the sale of current public infrastructure assets to the private sector to the highest bidder, subject to legislative constraints to control the potential creation of a private sector monopoly entity. The proceeds can be recycled into a new segregated account for the development of new infrastructure projects. The privatisation of existing infrastructure assets means that asset owners (pension and DC/superannuation funds) can play an important role in the bidding process of these mature infrastructure projects.

Concluding remarks
In a world of public finance austerity for many countries around the world, it is imperative that new infrastructure projects demonstrate improvements in GDP and deliver meaningful price benefits (such as increases in tax receipts to the public sector as a payback mechanism for the financing of these new projects) and non-price benefits to the community. The global stakes are high and new infrastructure investments can unlock this new economic potential for all nations during the current sustained period of benign economic growth. We know that infrastructure investment can provide significant economic and social pay-offs over various timeframes (short-, medium- and long-term). We encourage the policy-makers from the G20 to take the first tentative steps on some ‘new paths’ to reform global infrastructure financing.

**Notes**

1. Professor Michael Drew and Associate Professor Robert Bianchi, Department of Accounting, Finance and Economics at Griffith Business School, Griffith University.


10. An alternative solution is the creation of a new institution owned by the sovereign nation who owns the new infrastructure projects as assets and issues its own infrastructure bonds as the source of finance. It is important to note that this new financing authority is not a sovereign wealth fund. The sovereign nation would act as the guarantor of this new infrastructure financing authority.