Funding Infrastructure: Time for a new approach?
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Overview

As a nation we clearly need to invest in infrastructure. Citigroup has estimated that greater than AUD770 billion needs to be spent in the 10 years to 2018. According to a recent paper produced by the Grattan Institute a lack of infrastructure spending has detracted from Australia’s productivity performance. However, with such a large infrastructure gap, the big question is how to fund the nation's growing infrastructure need.

Harnessing broader application of user charges is needed to ease the funding burden. Both the private sector and government have critical roles to play in future infrastructure funding. One mechanism used to date, Public Private Partnerships (PPPs), has been popularly characterised as government shifting all the project risk and the entire funding burden to the private sector: examples cited include toll roads, which have resulted in financial failures and an evaporation of investor appetite. In the current environment alternative approaches are required with government stepping up to be a true partner of the private sector.

To succeed, alternative funding models whereby the government shares in the funding and risk management of infrastructure projects, must be appropriate to both the individual project circumstances and government’s prevailing investment objectives. This paper identifies a range of such models which enable government to:

• leverage private sector investment in infrastructure assets
• earn a potential return and recycle government capital
• reduce the costs of financing new infrastructure and share in future recovery of financial markets
• address demand risk for economic infrastructure.

Government investment in infrastructure raises questions such as: At what stage does government co-funding get invested? How does the government protect its investment? What risks should government retain? How can government capital be recycled? There is no single answer to these questions as it depends on the specific circumstances of each project. However, the various models described in this paper can all be categorised as hybrid funding solutions designed to deliver economic benefits from infrastructure investment, while maximising the ability to leverage private sector capital.

The models described in this paper include government providing debt and equity, establishing infrastructure development companies and exploring new funding instruments like infrastructure bonds. Each model is different and has varying impact on financial efficiency and the ability to leverage private capital. Selection of the right model must be made on a case-by-case basis in light of each project’s specific risk profile and will require government to apply sound commercial principles and a strong contribution to delivery. Now is the time for Australian governments to cement their position as global pioneers of innovative infrastructure funding models.

1 Citigroup Economic & Market Analysis, Australia’s Infrastructure Supercycle, 20 June 2008
2 Grattan Institute, Australia’s Productivity Challenge, Saul Eslake and Marcus Walsh, February 2011
Introduction

As a nation we clearly need to invest in infrastructure

Many influences shape Australia's pressing need for infrastructure investment: solid levels of population growth, the resources boom, a need to remain competitive in the international market, the recovery effort from some of the worst natural disasters in our history and an over-riding desire to maintain the quality of life enjoyed by current and future generations through sustainable economic growth.

Whatever the driver, the unprecedented need for infrastructure investment is not subject to debate. Citigroup has estimated that greater than AUD770 billion needs to be spent in the 10 years to 2018. Around half of this backlog is government owned infrastructure and most governments face budget and credit rating pressures which mean they cannot fund all of these projects traditionally.

What presents a very real challenge to governments around Australia is how best to fund the shortfall in investment. This is particularly true in light of the budgetary constraints which are being experienced at all levels of government in the post-GFC environment, with a keen focus on returning to, or remaining in budgetary surplus.

More specifically, wherever possible governments are focussed on how to maximise the value derived from their investment in infrastructure, through leveraging government funds with private sector investment, through the efficiency dividend that private sector involvement can bring in project delivery and management and/or from maximising the ability to earn a return on (or a return of) their investment, to enable capital to be recycled into future projects.

The funding challenge

Both the private sector and government have critical roles to play in infrastructure funding.

Where infrastructure projects are financially viable (with acceptable risk returns) and do not require a government concession to grant the necessary rights to undertake the project, the private sector will invest with minimal government involvement. The resources sector and its ability to self fund mines, rail and ports is an obvious example.

However, most public infrastructure does not have adequate commercial opportunities to be fully self-funding. It is then the responsibility of government, more often the States, to invest in the infrastructure needed for them to fulfil their fundamental service delivery obligations. From transport to health care, schools to stadia: the States' responsibilities in this respect affect all aspects of our day to day lives. The investment has to happen; but with limited government funds the issue becomes one of prioritisation and innovative structuring to provide the optimal mix of public and private finance to maximise leverage from the States' investment in order to fund more of the project backlog.

In addition to the States, and notwithstanding its own budgetary constraints, the Commonwealth Government is focussed on helping address the funding gap for infrastructure projects of national significance with strong economic viability. Through Infrastructure Australia and the Department of Infrastructure, the Commonwealth has identified national priorities centred around networked infrastructure, improving our competitiveness and enhancing the liveability of our cities. A recurrent theme across the projects submitted by the States and given priority by Infrastructure Australia is the need to address congestion on all modes of transport, with a predominance of transport projects in Infrastructure Australia’s Reform and Investment Priorities (2010).

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3 Citigroup Economic & Market Analysis, Australia’s Infrastructure Supercycle, 20 June 2008
4 Infrastructure Australia, (2010, June), Getting the fundamentals right for Australia’s infrastructure priorities (pp49-51)
Unlike many other government sponsored projects, transport projects often provide scope to access independent revenues from the imposition of user charges (road tolls, rail access charges, ticketing revenues, port access fees, etc). Such third party revenues can greatly assist with long term project affordability and the ability to leverage private sector investment. In addition, transport projects often give rise to indirect revenue benefits, such as rent streams from retail or selling airspace above stations, coal royalties increasing density in property generating more transfer duty and land tax and increases in council rates through increased property values in the corridor serviced by the project.

Broadening the scope of user charges, through the application of such measures as time-of-day tolling and congestion pricing, may ease the funding burden. However, how these revenues affect the timing, quantum and risk profile of government investment and the impact on key financial measures (such as net debt and credit ratings), is fundamentally influenced by the commercial and financial structure and underlying financial viability of each project.

Government will wish to explore pricing reform to support financial viability and assist investors capture the full benefits of infrastructure investment in order to achieve market based returns. Government planning aims to provide certainty and reduce information asymmetry for investors; pricing can then be used as a tool to create efficient markets and facilitate return capture. Lastly, the financing decision aims to determine the appropriate fund raising mechanism, including the need to develop private financial markets and mechanisms for government investment.

Only if pricing reform and regulation can sufficiently offset market inefficiency, will government funding intervention be deemed necessary. Whilst some pricing reform has been initiated with port tariffs and road tolls, further education is needed to foster community acceptance. At this stage concepts such as congestion pricing are politically challenging.

When considering how best to fund these projects, government is rightly focussed on optimising the commercial and financial structure to strike the right balance between government and private sector funding, and how each shares in the project’s revenues and risks.

In this respect there exist a number of challenges:

- Many of the infrastructure projects in the pipeline are of a very large scale and need to be retro-fitted into developed urban environments. The absence of existing land reservations often necessitates use of high capital cost tunnels. They are ‘mega-projects’ with multi-billion dollar capital costs and present significant challenges to successful delivery (e.g. Melbourne Metro and the East West Link in Melbourne, North West Rail and M4 East in Sydney, Cross River Rail in Brisbane).

- For some projects, their large scale means they will need to be delivered in stages, with initial stages suffering from diminished project revenues until the user benefits of the total project are realised on full completion. This staged delivery can significantly undermine the financial viability of initial stages and therefore the ability for investors to earn a commercial return, at least in the short term.

- For other projects, capital costs are so great (or revenue potential so inherently limited) that they will never be financially viable on a stand-alone basis. This may well be the case notwithstanding the investment rationale remains sound, with clear, albeit non-financial, economic benefits.

- Because of the prevalence of external economic benefits that do not translate to financial benefits – such as relief of congestion on competing transport routes and environmental gains – reliance solely on direct third party revenue potential may likely lead to systematic underinvestment and failure to achieve the public policy purpose.

- Even where projects at bid stage are viewed as financially viable and perform well operationally, recent high profile financial failures in the toll road sector (including Cross City Tunnel, the Lane Cove Tunnel and most recently Clem7) have severely undermined private sector appetite for demand risk in greenfield projects where new links are added. This aversion for demand risk effectively extends to any project where the private sector is required to develop and obtain bank debt based on its own long term patronage forecasts, without the benefit of a proven track record of usage.

- Finance costs and availability of finance remain significantly worse than in a pre-GFC environment. The absence of monoline insurance has led to inability to access the capital markets and the gap left has been (to a large extent) filled by banks. The limited availability, high cost and short tenor of bank finance is a further constraint on the viability and value for money of private sector finance. This issue impacts economic and to a lesser extent social infrastructure projects.

Notwithstanding these challenges, there have been many success stories where infrastructure has been delivered. Melbourne Citylink is the project that gave birth to Transurban. The Westlink M7 tollroad has brought economic growth to Western Sydney. The successful sales of Queensland ports demonstrate that infrastructure can provide stable and growing cash flows of real attraction to investors.
Accordingly, government now needs to develop new models for funding these projects. To succeed, these models must be appropriate to both the individual project circumstances and government’s prevailing investment objectives.

This paper identifies a range of such models which enable government to:

- leverage private sector investment in infrastructure assets
- earn a potential return and recycle government capital
- reduce the costs of financing new infrastructure and share in future recovery of financial markets
- address demand risk for economic infrastructure.

Throughout this paper we have drawn on relevant Australian and international experiences in successfully funding infrastructure projects. The map on the opposite page illustrates where forms of the models discussed in this paper have been used around the world, including Australia. There are strong foundations to build on and leverage in developing and implementing successful funding models in the future. Australia has been one of the world leaders in developing new models for funding infrastructure and continued innovation will allow Australia to build a successful future. In fact, we shouldn’t necessarily expect to find all of the answers elsewhere.

Greater than AUD770 billion in infrastructure spending required in the 10 years to 2018

The investment has to happen: but with limited government funds the issue becomes one of prioritisation and innovative structuring

Government needs to develop new models for co-funding infrastructure projects with the private sector
Figure 1: Alternative funding models around the world

Model 1: Public sector subordinated notes; Model 2: Public sector debt capital; Model 3: Public sector minimum guarantees; Model 4: Public sector development company (with traditionally delivered infrastructure); Model 5: Public sector development company (with availability based PPP delivered infrastructure); Model 6: Alternative new funding models
Models for government co-investment

The models

The following models are defined and assessed in this paper, including a summary of where variants of the models have been adopted in Australia and internationally.

For each model, there will be a range of alternative approaches to their implementation. Further, as each model achieves different outcomes and objectives, it may be appropriate to adopt more than one model for some projects to deliver the most efficient funding structure. An assessment on a project by project basis will be required.

With overwhelming demand for Australia’s pipeline of infrastructure projects to be accelerated, implementation of any of these models will go a long way toward delivering more of the nation’s infrastructure agenda.

Assessing the models

In this paper, we have assessed each model against the criteria outlined below. While the suitability of each model will depend on the specific investment objectives for any project, these criteria reflect a representative range of government and private sector investment objectives which are likely to apply.

Government objectives

When investing in infrastructure projects, government generally has three overarching objectives:

1. Deliver projects with greatest economic, social and environmental benefits

   Investing in infrastructure should stimulate the productivity of the economy and have a multiplier effect, generating broader economic, social and/or environmental benefits (such as reductions in travel time, reductions in congestion costs, reduction in crashes, environmental benefits and carbon reduction) in addition to financial benefits.

   Infrastructure Australia’s investment evaluation framework for prioritising projects is based on economic cost benefit analysis. Economic and social benefits also apply for models which encourage private sector participation with delivery of cost efficiencies and improved risk allocation. Optimising user charges also leads to economic efficiencies, especially where higher prices in the peak shift some usage to the offpeak and congestion is reduced.

2. Minimise budget impacts

   The objective to minimise budget impacts includes the desire to:
   • Return to/maintain surplus in the next few years
   • Reduce uncertainty over budget forecasts and minimise contingent liabilities
   • Retain net debt levels within acceptable levels (minimising consequent impacts on credit ratings)

   A key consideration for the Commonwealth Government is its clear objective to return to budget surplus in the next few years. For State Governments, the primary concern is to avoid any deterioration in the State credit ratings while delivering as much infrastructure as possible.
When considering budget impacts, applicable accounting guidance becomes relevant. Under the current accounting guidance, the key tests have related to allocation of ‘risk and reward’ (most commonly adopted), ‘control’ and ‘specific rights and obligations’. However, new draft guidance emphasises ‘control’ rather than ‘risk and reward’. The draft guidance makes it more likely that an infrastructure project, subject to some form of government concession, will be on the government’s balance sheet.

However, when assessing credit ratings, the rating agencies focus more on financial ratios and debt burden (along with various qualitative factors) rather than the accounting treatment of the asset. Specifically, the rating agencies focus on the net debt ratio (i.e. ratio of selected groups of financial assets to financial liabilities) and the net debt to revenue ratio. It is the credit rating that affects the cost of debt; so the focus on credit rating rather than financial accounting, is arguably the key overriding objective.

Moreover, the Australian Bureau of Statistics will look closely at the underlying economic intent and classify the structure accordingly. This will then determine, in some cases, whether cash flows show up on measures like the underlying cash balance.

Thus, the fact that an asset is on the government’s balance sheet does not necessarily mean the credit rating will be affected, as the broader impact on ratios will be considered.

3. **Recycle government capital (wherever possible)**

Historically, when the government has contributed funds to infrastructure projects, it has commonly done so in the form of a grant, (which is not repaid and earns no return). Less often governments give equity injections to State Owned Corporations and this approach can avoid an impact on the budget result, but is often followed by an impairment if the investment is not commercial. If government is investing in financially viable infrastructure projects, then it should be possible for government capital to be returned and reinvested in new infrastructure projects, thereby maximising the impact of public sector money.

For this to be feasible, the government will clearly need to invest in projects with an independent revenue stream (such as from user charges). Moreover, it will be necessary for the project to be sufficiently financially viable to amortise capital and generate a return (to both the private sector and then government investors, as applicable).

The challenge for government is that these objectives can compete. For example, an infrastructure project with a strong economic benefit may not necessarily be financially viable. In such a case, government may choose to contribute funds to the project, achieving the first objective, but its capital will not be returned, such that it fails to meet the third objective. Moreover, non-financial public policy objectives may be better realised where government retains more control over infrastructure projects with associated greater risk retention.

### Private sector appetite

Following the GFC financiers have become more risk averse to investing in economic infrastructure, and have generally had greater appetite for projects which benefit from some form of government support.

This shift in risk appetite has been particularly evident in the context of their willingness to accept demand risk for greenfield projects, where the private sector sponsor is not necessarily well placed to assess and manage the risk. Demand for infrastructure and willingness to pay user charges can be difficult to assess as it involves consideration of many factors beyond the narrow scope of the project (such as capacity of users to pay, price regulation, the overall infrastructure supply chain and alternative ways of meeting demand). This has been demonstrated in the recent experience with Australian toll-roads, where historically private finance has solely relied upon the adequacy of toll revenue to service debt and provide a return to equity.

However, the success of the Australian toll-road model is heavily dependent upon the accuracy of demand forecasts and patronage estimates have proven in certain cases to be highly optimistic. High profile projects in Sydney, such as the Lane Cove Tunnel and the Cross City Tunnel, and most recently the Clem7 project in Brisbane, have failed to meet expectations with actual traffic only 30 – 40% of forecast volumes. Against this background private investors have been reluctant to finance infrastructure assets that have demand risk attached.

The inherent characteristics of infrastructure in generating stable cash flows in the lower risk, operational (post ramp-up) phase for essential activities within the economy mean that it remains a popular vehicle for private investment and interest is now re-emerging with new players. However, in the face of continuing market inefficiency and inadequate price signals that can not be sufficiently addressed by regulation, new models under which the government shares or retains demand risk are now needed for economic infrastructure to attract market appetite for private sector investment.
Model 1: Public sector subordinated notes

How would it work?

It is undeniable that demand risk financial models, if these are even considered, would be much more conservative post-GFC. The heady days of complex financial engineering are gone (for now at least), with lower gearing and downside scenarios dominating bankers’ mindsets.

As such, for certain projects there may now be more scope for upside performance through future financial restructuring, when the riskier build and ramp-up phases are completed (depending on how conservative initial usage forecasts were). Once revenue has stabilised and construction risk is overcome, infrastructure projects, such as toll roads or ports, typically present stable cash flows with relatively lower risk.

Consequently a rise in gearing should eventually be possible post a ramp-up period where the forecast is met, and the equity return requirement should drop, commensurate with the “de-risked” project. The result is a lower cost of capital and a financial gain over time.

Critically, government needs to participate in future upside if (in order for the project to proceed initially) public sector capital is contributed up-front. This means utilising more complex funding instruments rather than simple upside sharing of revenue. One way to achieve this is through government-issued subordinated notes.

By providing a subordinated loan, government can fill important gaps in the financial structure between senior loans and equity. These government loans can then be repaid if the project performs as expected with revenues in line with base case forecasts, rather than the downside case. Subordinated loans give the government the right to receive a share of ongoing revenues as interest on the loans, subject to a cash flow ‘waterfall’ designed to safeguard senior lenders’ debt service. Moreover, there is the real prospect of early repayment of the subordinated loans if a favourable refinancing of the asset can be completed once it is operationally stable and generating surplus net cash flows.

Subordinated loans are repaid after debt service on senior loans but before returns to equity holders. Upside returns can be generated through revenues exceeding base case (through real patronage increases, higher CPI escalation or cost savings) and/or through refinancing parameters exceeding base case assumptions. The model would need to include mechanisms for government to share in these returns (either through accelerated repayment mechanisms or separate upside sharing arrangements).

Let’s say AUD3 billion capital is needed to fund a toll road. Assume that AUD1.5 billion of debt and equity can be raised from the private sector to fund the project, with the remaining AUD1.5 billion required from the public sector. The public sector contribution to the project funding could be structured as subordinated notes. The return on the private sector investment would come from the revenue produced by the toll road, on the back of a conservative assessment of patronage forecasts. Any toll revenue surplus should then be shared with the government, allowing participation in any future upside traffic performance.

The timeframe for repayment of the subordinated debt to the government would need to be structured as medium to longer term, with repayments occurring at the back end of the concession so as to be consistent with the priority given to senior debt. This will commit government to long term investment but early potential for recycling of capital exists under favourable refinancing scenarios.

One of the challenges for use of public sector subordinated notes is resolving the inter-creditor issues between the government and the senior debt providers. The government is playing two roles, as lender and procurer. In particular, the government will face restrictions on exercising typical creditor rights that would force termination.

Depending on the portion of private finance to government-issued subordinated notes, the majority of the project risks could be transferred to the private sector. However, the government would share proportionately in all project risks.

Where has it been used before?

Spanish toll roads

In Spain toll roads have been funded partly through Subordinated Public Participation Loans (SPPLs) that gave the public sector the right to receive returns. The government provided its support to the concessions to mitigate risks difficult for the private sector to manage (e.g. regulatory risk and, in some cases, traffic risk) and to increase financial feasibility of projects which were socially desirable.

While the government can design SPPLs for specific projects, they are regulated by Spanish law and must have the following characteristics:
They are always subordinated to senior debt – the government will be paid back only after the concessionaire has met its obligations to the senior lenders but will be paid back before equity receives any dividends.

The expected rate of return of SPPLs has to be related to the performance of the concession – the better the actual traffic numbers the greater the rate of return of SPPLs.

The expected rate of return to be obtained by the government must reflect the level of risk retained – the expected yield of SPPLs should be market-based.

The characteristics of SPPLs are defined by the government in the bidding terms, which establish a maximum SPPL amount to be requested by the bidders. Usually the SPPL is capped at 50% of the predicted investment, although the government can in exceptional circumstances permit a higher percentage.

Although SPPLs have mostly been implemented in toll road concession contracts awarded by the central government of Spain, they have also been implemented by regional and local governments for motorway and airport concessions.

**M2 toll road, New South Wales**

Subordinated rates were used on the M2 toll road as a mechanism to share in revenues rather than participate in funding.

The M2 toll road project was delivered around a concession deed which provided for government to receive a rent in consideration for the granting of the concession. The financial viability of the project was assessed through a base case financial model and a target equity return was set as a hurdle.

Until the equity hurdle return was achieved, the concessionaire could elect to provide promissory notes in lieu of rent. In practice there is no sharing of revenue and no payment to government until equity has been fully compensated. It is anticipated that the promissory notes will only become payable towards the back end of the concession.

Further, there is less financial incentive on equity to perform when the promissory notes fall due, as equity will have earned its full target return and the concession is closer to its expiry date.

**Student Housing Projects**

Australian universities have been asked by the private sector to contribute part of the capital cost of providing student accommodation on campus, in order to make projects financially viable while still providing affordable rents for students. Rather than the University capital being provided in the form of a grant, Universities have examined the prospect of their capital being repaid through sharing rental revenue. Surplus revenue can be generated, for example, if rental escalation occurs at a greater than anticipated rate over a full concession term, or if target occupancy rates are exceeded.

In contrast to the M2 toll road experience, universities have been eager to share contemporaneously with the private sector as surplus returns are earned. Recognising that some smoothing for exceptional years is warranted, revenue sharing above the base case has been contemplated on a rolling three year basis. The typical revenue sharing split starts at 50:50 but there is a strong case for a higher level of sharing for government depending upon the quantum of capital initially contributed and the prospect of upside.

**Transport Infrastructure Finance and Innovation Act (TIFIA) program, USA**

The three largest infrastructure PPP projects to reach financial close in the USA in 2009 all featured subordinated debt from the TIFIA Credit Program.

For eligible surface transportation projects, TIFIA offers three types of credit assistance: direct secured loans, loan guarantees and standby lines of credit. The secured loan has been the most commonly used form of support and provides deferred repayment schedules (up to 35 years), fixed interest rates equivalent to treasury rates, potential deferral of debt service for up to five years post commencement of operations and flexible amortisation schedules.

TIFIA fills market gaps and leverages private co-investment by providing supplemental and subordinated capital for up to a maximum of 33% of eligible project costs.

**European Union (EU) and European Investment Bank (EIB)**

The EU has recently launched the Europe 20 Project Bond Initiative. The purpose of the initiative is to consider mechanisms under which the EIB can support projects raising bond finance in the absence of a monoline insurance market. The EIB is considering introducing credit guarantees of sufficient scale to provide an investment grade rating of senior loans to support broader appeal to capital markets (allowing projects to access lower costs and longer tenors in that market).

Alternatively, the EU is considering investing in projects through subordinated loans of sufficient scale to leave the remaining debt at investment grade. This initiative is expected to be targeted to large projects of strategic priority.

**Critically, government needs to participate in future upside if ... public sector capital is contributed up-front**
Meeting the objectives

Social and economic benefit

✓ Government can prioritise nationally significant infrastructure projects that would otherwise not be delivered.
✓ The private sector has the potential to deliver cost efficiencies with responsibility for construction and operation risk.
✓ Private sector financiers are incentivised by the financial outcome.
✓ User charges would be encouraged and represent the source of private sector return.

Impact on government budget

✓ The subordinated notes would have a neutral (or potentially positive) impact on net debt as they would likely be classified as a financial asset in the government accounts and would offset any government borrowings required to fund them.
✗ Depending on the project’s financial characteristics, the amount of private sector capital raised up-front could be relatively low, as it is constrained by downside scenarios.

Recycle government capital

✓ The government shares in the financial success of the project and its interests are aligned with the providers of private sector capital.
✓ The government capital has the potential to be repaid before private sector equity has earned its full target return.
✗ Government’s capital will only be recycled if the projects are successful and deliver revenue above expectations. The key is getting rights for government to share in the upside early and not allow the a disproportionate share to be retained by the private sector.

Private sector appetite

✓ Subordinated loans provide a mechanism facilitating investment from those keen to invest in infrastructure but who do not invest due to the current perceived imbalance between risk and return.
✗ The amount of private sector debt and equity that can be raised may be limited as it is fully exposed to project risk (including demand risk). The government needs to consider whether it is accessing sufficient private sector capital for each specific project.
✗ It can be difficult to negotiate the appropriate sharing of risk and return with private equity as this depends upon the assessment of revenue uncertainty and the prospects of securing upside.
✗ The government is playing two roles, as lender and procurer, and while it will be aligned with typical lender protections offered by a security package and inter-creditor rights, on some matters, such as termination, government will likely be restricted from acting and become a ‘benevolent financier’.

Subordinated loans are repaid after debt service on senior loans but before returns to equity
Model 2: Public Sector debt capital

How would it work?

While the cost of government funding is returning to pre-GFC levels, the cost of private finance has remained stubbornly high, with debt margins for BBB credit around 250 basis points. Moreover, while debt capacity has re-emerged, availability of credit for economic infrastructure projects (even those without revenue risk) is constrained by application of more conservative debt sizing covenants.

Consequently, this model is based on the premise that government funding could be used to either substitute or supplement private finance, through providing project debt on a pari-passu basis.

The rates of return, or cost of debt, could either be similar to commercial rates (reflecting the project risks to which government would be exposed under this model), or set at a discount to reflect government access to cheaper funding.

Commercial pricing creates fewer issues for the overall project funding structure and would provide an exit strategy for government through future sell-down of its debt. However, it does not assist with enhancing overall project financial viability if this is an objective (rather than simply filling a funding gap).

Discounted debt capital would enhance project financial viability but does not reflect the project risks to which government would be exposed under this model. This would mean taxpayers would be assuming risks they are not compensated for.

Obviously, the higher the level of government debt contribution, the lower the portion of private finance will be. It is, therefore, necessary to consider the optimal level of private finance to ensure the private sector has enough “skin in the game” to ensure they are properly incentivised. For example, one of the key risk transfer benefits brought by private finance is the incentive to complete construction on time and to budget, as the revenue stream (and source of repayment) is significantly dependent on successful completion being achieved.

As soon as any discount government debt is drawn down to pay for work during construction, the financial incentive to complete is diluted. Therefore, it is preferable for any government debt contribution to be made through lump sum or milestone payments (subject to independent certification), after a substantial portion of commercial senior debt and equity has been drawn down.

In addition, government needs to consider remedies if completion never occurs. To mitigate this risk and protect government against delay and consequential loss, it may seek liquidated damages from the design and construct contractor, similar to the senior debt provider. Moreover, government should occupy the last loss position with respect to termination, while the private sector provides the “at-risk” capital. Government should avoid being left with a thinly capitalised private sector vehicle with greater risk of special purpose vehicle (SPV) failure and the prospect of needing to “step-in” and directly manage the underlying contracts until they are re-let.

Moreover, under this model it is essential for government to adopt a financial credit perspective when contributing to the project. Government needs to accept that in contributing debt capital, its ability to be repaid is subject to all project risks (not just those relating to demand). However, in a downside risk analysis, government may be provided with a safety net based on the value of returned assets transferred to government under termination scenarios.

Ideally, construction risk would be substantially transferred to the private sector but the demand, operations and maintenance risks will be shared by the government and the private sector.

Under the Public Sector Debt Capital model it is critical to consider the optimal level of private finance to ensure the private sector has enough “skin in the game”
Where has it been used before?

SEQ Schools, Queensland
While not economic infrastructure, the SEQ Schools project is using a combination of private and public debt also known as the ‘Supported Debt Model’ to allow cheaper government funding to substitute for more costly private finance. The model is a variation of the conventional (fully privately funded) PPP model. The private sector will provide all financing for the project (both debt and equity) during the high risk construction phase, but only around 30% of the funding required for the operations phase. Queensland Treasury Corporation (QTC) will provide the balance of the finance (around 70%) through first ranking senior debt on completion of construction. The QTC funding will be drawn down in tranches, subject to completion and certification of various stages of the project.

The Supported Debt Model received a mixed market response during the procurement of SEQ Schools. The private sector found it difficult to get comfortable with the Queensland Government in two roles – ‘debt provider’ and ‘procurement authority’ – and the associated inter-creditor issues. There were also concerns around the cost and availability of the private sector mezzanine debt provided during operation. However, the Queensland Government and the private sector successfully worked through the issues to achieve financial close.

Wide Equity Model, Canada
The Wide Equity Model was used by Partnerships British Columbia in the procurement of the Fort St John Hospital as a response to the increased cost of debt during the GFC. Proponents were required to base proposals on specified financing assumptions (reflecting normal market conditions) in addition to sourcing actual debt. The actual debt terms offered were considered unaffordable and eliminated.

Under the Wide Equity Model financial structure negotiated, a larger amount of equity was to be invested by the private sponsor (20%, compared to 10% for typical social infrastructure PPP projects) with the balance of funding contributed from government as debt capital.

In order to preserve the more traditional risk allocation within PPP structures, under the Wide Equity Model structure, a portion of the service payments are held until the last two years of the agreement to ensure the private sector is motivated to provide high levels of service until the end of the agreement.

As the government effectively stepped into the shoes of private sector debt providers under the Wide Equity Model, government assumed the typical due diligence role of senior lenders and, indeed, retained advisers to perform the due diligence functions normally undertaken by senior lenders. The government construction milestone contributions rank senior to equity and have a significantly reduced risk exposure.

P3 Canada Fund, Ottawa
The P3 Canada Fund was created to improve the delivery of public infrastructure and provide better value, timeliness and accountability by increasing the effective use of PPPs / Alternative Financing and Procurement (AFP). The P3 Canada Fund will provide financial contributions up to 25% of a project’s eligible direct construction costs. The level, form and conditions of any financial support may vary, depending on the needs of a given project.

Loans and loan guarantees are available to help concessionaires find sufficient capital to construct a project. The P3 Canada Fund will provide construction financing where the concessionaire expects to derive significant user-paid revenues during the operating/maintenance period of the concession. (e.g. tolls, user fees). The P3 Canada Fund will participate alongside other lenders to the concessionaire.

European Investment Bank (EIB)
The bank raises substantial funds on the capital markets and lends them on favourable terms to projects furthering EU policy objectives. It has continued to provide substantial funding throughout the GFC to EU projects, particularly transportation projects (e.g. London’s M25 redevelopment, noting here that the project was not tolled, but delivered under an availability-based PPP model).

Variant – Capital Contribution Model
Capital contribution models provide capital funding to a project to supplement private sector funding, without any expectation of a return. The intent of the capital contribution model is to provide liquidity support and/or reduce the net cost of private financing, whilst seeking to maintain the value drivers and risk allocation benefits of a private financed PPP model.

The capital contribution models seek to retain the same project risk transferred to the private sector as might be achieved without any government funding support. However, the structure of the capital contribution and the timing of payments will ultimately determine the effectiveness of that risk transfer.

The Gold Coast Rapid Transit Project adopted a State capital contribution as a means to improve value for money given the continuing high debt margins post-GFC; the capital contribution is used to reduce the amount of privately financed debt. PwC developed a structure which optimised the value to the State contribution while maintaining effective risk transfer under PPP (the contribution represented around 35% of total funding).
Meeting the objectives

Social and economic benefit

✓ Government can support private funding of nationally significant infrastructure projects either through filling a funding gap and/or through enhancing financial viability (where debt capital is provided on discounted terms).

✓ The benefits of the PPP model in cost efficiencies and risk transfer are preserved, with cheapest whole of life cost optimised through construction and operation synergies, reinforced through performance and handback regimes. The amount of long term private capital must be sufficient to provide a financial incentive throughout the operational phase, rather than just the construction phase.

Recycle government capital

✓ As project risk reduces following completion of construction and the project moves into a mature sustainable operational state, it may then be possible to refinance or sell-down the government debt and recycle the capital. This clearly depends upon how the government contribution is financially structured and the project’s financial performance over time.

✗ The ability to repay government debt capital is entirely dependent on the outcome of project risk and the credit ranking of the project.

Impact on government budget

✓ The government debt would have a neutral (or potentially positive) impact on net debt as it would likely be classified as a financial asset in the government accounts and would offset any government borrowings required to fund it.

✗ Depending on the project’s financial characteristics, the amount of private sector capital raised up-front could be relatively low, as it is constrained by downside scenarios.

Private sector appetite

✓ Potential mitigation of issues with the availability of finance, with the government providing long-term debt capital.

✗ As the private sector is concerned about financial viability as measured through gearing and debt service coverage tests, government debt may simply crowd out private sector capital and not leverage any additional funding unless subordinated (along the lines of Model 1).

✗ Government is playing two roles, as lender and procurer. This creates inter-creditor issues, which potentially increase the cost of the private sector’s risk capital.
Model 3: Public sector minimum guarantees

Government support for demand risk until a threshold is met

How would it work?
Under this model the government would provide minimum patronage or revenue guarantees for a defined period. The government support would be a contingent guarantee, with the expectation that it would not be triggered unless an adverse outcome emerged.

The guarantee would cover debt service, but not necessarily equity. Ideally, the guarantee would fall away once certain revenue thresholds have been met. Depending on the accuracy of the forecasts to which the guarantee relates, the guarantee could fall away as early as three to four years after the new infrastructure has been opened.

A minimum patronage or revenue guarantee is provided, under which concessionaires are compensated when patronage or revenue falls below an annual threshold. The minimum patronage or revenue threshold could be set below (e.g. 10% – 30%) the expected base forecasts in order to reduce government exposure, while providing sufficient coverage to protect debt capital.

Patronage and revenue guarantees retain the private sector’s financial incentive in the project, provided the minimum guaranteed revenue stream does not provide for a “full” return on equity.

In return, the concessionaire enters into a revenue sharing agreement in which it shares a percentage of revenue with the government once a threshold is exceeded. The government’s share of the upside can be utilised to fund other infrastructure projects.

The tender process and commercial structure for previous toll road contracts in NSW, Queensland and (arguably) Victoria, may have been a factor in bidders using more aggressive traffic forecasts in proposals to make projects financially attractive for government, whether through offering business consideration fees, lower tolls or lower government capital contributions for returned works.

The approach of bidding patronage forecasts has been largely discredited by the subsequent financial failures, with broader implications for market appetite for demand risk on greenfield projects in other sectors too.

A new approach, linked to the notion of government guarantees, would be for government to nominate a band of projected revenue in the formal request for proposals, thus containing or removing the traffic forecast bidding parameter. This could be achieved through a number of means, including:

- Government nominating a base case volume forecast (by reference to which bidders bid the ‘cap’ and ‘collar’ for the guarantee and revenue upside sharing mechanisms).
- Government nominating the relationship of the ‘cap’ and ‘collar’ to the base case, which bidders are required to bid.
- Government to include a reset mechanism for forecasts to be brought in line with actual traffic volumes at (say) the end of the ramp-up period, with bidders bearing the risk on their long term growth rate assumptions thereafter.

The majority of the project risks will be transferred to the private sector. However, the government would retain an exposure to demand risk for the project until such time as the guarantee falls away.
Where has it been used before?
The concept of ‘caps’ and ‘collars’ on project revenues have featured off and on and in varying forms in project financings in a range of sectors for some decades.

**Latin America and Asia**
Minimum revenue and traffic guarantees are common forms of government support in most Latin American countries, such as Mexico (e.g. the City-Toluca project), Chile (e.g. the South Access to Concepcion project and the Talca-Chillan project) and Columbia (e.g. the Buga-Tulúa project and the El Cortijo-El Vino project), and in Korea.

The minimum traffic guarantee for the Mexico City-Toluca project provides for an extension of the concession term in the event traffic falls below minimum levels. However, concession term extensions are of limited value in providing cash flows to make debt service payments in the event of low traffic volumes (i.e. they are only relevant to supporting equity returns). The South Access to Concepción project uses a minimum revenue guarantee with cash compensation if revenue falls below the minimum level.

The Colombian Buga-Tulúa project includes a minimum traffic guarantee with cash compensation and a maximum traffic ceiling above which all revenues are transferred to the government.

However, the duration of the guarantees, as seen internationally, has tended to extend for as long as half, to the full length of the concession. This is essentially a function of the accuracy of the initial long term forecasts to which the guarantees apply.

**Sydney Harbour Tunnel, Australia**
The Sydney Harbour Tunnel was the first modern private sector owned toll road project in Australia. The RTA makes monthly payments to the concessionaire to meet its financial obligations in relation to the tunnel operations. Debt was provided in the form of bonds with a State guarantee. The concessionaire is guaranteed an Ensured Revenue Stream “ERS” over the term of the lease. Full market (traffic) risk resides with the RTA.

The ERS payment is calculated by reference to a formula which is based on theoretical traffic volumes, a toll, bridge toll collection costs, actual tunnel toll revenues and a weighted index. The ERS effectively guarantees all of the debt service. As a result the project was virtually fully financed with debt.

Compared to the minimum guarantee model outlined above, the guarantee from government for the Sydney Harbour Tunnel bonds never expired and minimal private finance was raised as a result; this reflected the reluctance of the market to take risk at the time.

A variant
In respect of Puerto Rico’s Toledo Moscoso Bridge project, the private sector has an option to cancel its contract with government, with reimbursement of its equity investment and the government taking over its debt, if certain traffic forecast levels are not met. The option expires if traffic meets or exceeds forecast levels over five consecutive years. There is also a sharing of additional profits by the private sector with the government if toll revenues exceed pre-determined levels.
Meeting the objectives

Social and economic benefit

- The government can provide contingent support to help fund nationally significant infrastructure projects that would otherwise not be delivered.
- The private sector can be fully tasked with delivery of the project with associated cost efficiencies and risk transfer.
- User tariffs will need to be set upfront but the existence of the contingent support will emphasise the partnership between government and the private sector.

Impact on government budget

- Government can support private financing for a project that it would otherwise have to fund itself, while limiting its financial exposure to the contingent risk that revenue may fall (well) below the expected case.
- The impact on the government budget will be uncertain as the actual cost to government, if any, will only be known if and when the minimum guarantee is triggered. Likewise, upside returns will only be known when the upside sharing provisions are triggered but at least provide access to excess profits.
- The guarantee (a liability) and the financial asset (from the upside share) will have opposite impacts on net debt/credit rating. As traffic forecasts decrease net debt will increase due to an increase in the guarantee and a decrease in the upside value (both being based on probability estimates of the likely outcome). This could create volatility if actual project revenues and forecast revenues vary significantly year to year.

Recycle government capital

- Government support is limited to contingent support and the project is entirely funded with private sector capital. Provided the revenue thresholds are met, the guarantees fall away and the contingent government support can then be provided for other projects. This maximises leverage of private sector capital.
- Government is exposed to the majority of the demand risk for the project.

Private sector appetite

- The private sector will take comfort in the fact that government and the private sector are sharing demand risk and financial interests are aligned.
- Attractive to the private sector as its financial exposure to demand risk is limited by the guarantee. Debt would expect to be fully protected. Nevertheless, the appetite from equity is likely to be more circumspect and will still focus on the long term sustainability of the project.
- Expected to attract superfund investors, depending on breadth of the guarantee. Due to their long-term investment horizon and conservative risk profile, super funds are logical long term investors in economic infrastructure assets and the guarantee provides a bridge or safety net, which eventually falls away. However, the private sector is likely to prefer that the guarantee does not fall away after the defined period.
Model 4: Public sector development company (with traditionally delivered infrastructure)

Government retains substantially all project risks (until divested)

How would it work?

This model is based on the premise that if the private sector is initially unable to cost effectively finance the project because of revenue risk, then the government should take responsibility for the project during the development stage and look to sell the developed project later. The government would design, finance and build the asset and operate and maintain it in the initial years. The intention would then be to refinance the project with private sector capital after it is built and revenue streams have been proven.

An example might be the development of a toll-road. Government could set up a special purpose company funded with debt and equity to develop the project – let’s call this entity Toll-road Company. When the underlying road is built and the traffic levels are established, the government could look to sell Toll-road Company to the private sector. The risk profile of the project has been mitigated and the realisation of the consequent uplift in value goes to the government. The uplift received from the project would be invested in future infrastructure projects.

Under this model we assume government would fund the project, accessing cheaper financing by sourcing government debt. However, the discipline of private finance (based in finite funding, rigorous due diligence and tight project management) is lost.

The loss of private financing discipline may be mitigated by introducing private finance of the underlying assets (without exposure to demand risk) into the model. We explore this option in Model 5.

Under a government funded approach, the government could enter into a long-term operations and maintenance (O&M) contract with an O&M provider. Further, the government could involve the provider in the early stages of designing and developing the asset to ensure the asset is developed with efficient operations and maintenance in mind. In this way, it could mimic some of the attributes of private finance, by encouraging a whole of life approach to the design, construction, operation and maintenance of the project.

The issue then becomes how best to divest the project once it has successfully completed construction and has a proven usage track record for private sector investors to assess.

As a practical point there should be a robust transition plan for how the asset is to be sold to the private sector. The transition plan will need to ensure continuity of service to the user and ensure satisfactory levels of service are maintained during and after the transfer of ownership to the private sector. A timetable needs to be developed at an early stage, including when initial market engagement, market soundings, identification of interested parties, and selection of the preferred process for disposal would be undertaken.

The nature and terms of the underlying contracts for design and construct, and operation and maintenance of the project assets will affect the prospect of achieving a sale. For example, while the contracts should be capable of being novated, the contract obligations in terms of latent defects, warranties and ongoing performance KPIs will affect value and marketability. Moreover, investors will be influenced by such factors as the scope for operational involvement and relevance of the asset with corporate strategic objectives.

Notwithstanding the use of design and construct or operation and maintenance contracts, under this model government retains substantially all project risks as principal, until the project is divested.

Clearly, the significant risk of this model is that government may not ultimately be able to sell the project to recover its development cost. This risk is greatest where sustainable projects’ revenue may be insufficient to generate acceptable commercial returns for private sector providers of capital as required by market conditions prevailing at the time of intended disposal.
Where has it been used before?

Queensland Motorways, Australia
Queensland Motorways Limited was established in 1995, a wholly-owned entity of the Queensland Government, and operates the Gateway Bridges, the Logan Motorway, the Port of Brisbane Motorway and the Gateway Extension.

Queensland Motorways is currently delivering the AUD2.12 billion Gateway Upgrade Project using a combined Design, Construct, Maintain contract, but with full public sector funding and no private sector funding. At the time the upgrade was being procured, there was appetite from the private sector to take on demand risk, in part given the available historic patronage data. The decision to use Queensland Motorways as the delivery entity with public sector funding would have reflected confidence in the demand outlook and less value from transferring this risk.

The Queensland Government included Queensland Motorways, with a market value of around AUD3 billion, as part of its privatisation program. In late 2010, it was announced that Queensland Motorways would be sold to the State’s investment arm, Queensland Investment Corporation (QIC). QIC has since paid an agreed market value, which has resulted in AUD3.1 billion of direct government debt being repaid.

Queensland Ports
As part of the successful asset sales programs recently conducted in Queensland, the Government disposed of established port infrastructure. This included the sale of the Port of Brisbane and Abbot Point Coal Terminal.

The Government was able to generate a significant return of capital to the Queensland taxpayer by selling assets that the Government had originally constructed, funded and assumed operating risks. Now that these assets had been significantly de-risked, the private sector was able to make an informed investment decision regarding the likely risks and returns that would be generated. By assuming the early project and operating risks in assets that the private sector may find problematic, the Government was able to ensure that vital economic infrastructure was put in place in a timely manner, while at the same time preserve future value uplift for its taxpayers.

The asset sales program in Queensland is an essential part of the Government’s strategy to regain the State’s AAA credit rating over the longer term. By allowing the private sector to own (including through long-term leasehold interests), fund and operate established economic infrastructure assets, the State has been able to free up the State’s balance sheet and redirect funding to other priority areas, such as essential service delivery.

The Queensland Government retained potential for future value creation in relation to greenfields assets that would otherwise have been unattractive to the private sector due to the unacceptably high initial risk profile.

Highway 407, Ontario, Canada
During the 1990s Ontario developed highway 407 as a public toll road. The highway opened in 1997 and cost roughly CAD1.6 billion to develop. In 1999, the highway was leased to a private consortium for CAD3.1 billion. The deal included a 99-year lease agreement, including unlimited control of the highway and its tolls.

The asset disposal was a negative experience for the Ontario province. In the initial years after the sale, the government and the operator were in disagreement over toll rates and customer service, resulting in legal action. Following a change in government, the government interpreted the contract as requiring its approval prior to the operator raising tolls on the highway. In contrast, the private consortium understood that under the concession it had been given the right to raise tolls without requiring government permission. The parties eventually settled out of court. This action resulted in the Ontario government introducing a formalised PPP procurement framework for future transactions.

The highway is now valued at around CAD9 billion based on the recent purchase of a 10% stake by Canadian Pension Plan (CPP) and the government has been subject to criticism for the terms of the lease and the low value originally applied to the road. This criticism highlights the importance of developing an effective disposal strategy, at an early stage, for the asset.

Defence Housing Australia (DHA)
DHA constructs (or acquires) housing stock to meet requirements for housing Defence personnel. More than 800 new properties per year are provisioned through construction or acquisition, the majority of which are sold and then leased back. While the DHA sale and leaseback scheme is similar to Model 1, it differs in that it is for a smaller set of assets and DHA retains the demand risk.

Government would design, finance, and build the asset and maintain and operate it in the initial years
Meeting the objectives

**Social and economic benefit**

✔️ Government retains control over setting user charges prior to sale to the private sector. At that point a regulatory or contractual framework can be applied to protect public interests.

❌ While government can utilise its capital to fund nationally significant infrastructure projects, responsibility for delivering the asset remains with government and the benefits of private sector cost efficiencies and scope for risk transfer which exist under PPP approaches are lost.

**Impact on government budget**

❌ Government can utilise government debt where the project risk profile and other characteristics impede the provision of private sector capital on a value for money basis.

✔️ Government can realise the value uplift as the project reaches stable operations.

❌ Government retains demand risk until the time of sale.

❌ Traditional government funded D&C delivery of the underlying project assets would impact on the government balance sheet and hence the budget. While the capital cost to government would be offset by the asset’s projected revenue stream over time, the revenue stream is not booked upfront. Hence, any borrowings required to fund capital costs would negatively impact on net debt. The financial structure of the government owned SPV would influence the nature and extent of any such impacts.

✔️ Longer term, subject to a successful outcome of the sale process, there could be no ongoing liability to government.

**Recycle government capital**

✔️ Government can realise its capital and the entire value uplift when the project reaches stable operations in the initial years of the project. The extent of this realisation will be dependent on the ultimate financial viability of the project. Longer term, sale proceeds can be invested in other infrastructure projects.

❌ There is no guarantee that government will be able to recycle its capital, as project risks need to be successfully addressed.

❌ There is no certainty of the future market environment and hence the preferred disposal strategy for government. Government may not be able to sell the project in the future due to a depressed financing market.

**Private sector appetite**

✔️ While the private sector is reluctant to accept demand risk on greenfield projects, they are willing to take demand risk on brownfield projects, where project revenues have been proven. As the government will be selling the asset once it has reached a stable operating state, the private sector will be keen to invest in the asset based on its assessment of the projected revenue stream.

❌ May not access private sector financing until the time of the sale.
**Model 5: Public sector development company (with availability based PPP delivered infrastructure)**

**How would it work?**

This model is a refinement of the government owned development company model described above, but with availability based PPP delivery of the underlying project assets. Under this approach:

- The private sector designs, builds, finances, operates and maintains the asset for the concession term. Thus, this model addresses the key weakness of the previous model, through benefitting from the value that can be delivered through (1) a whole of life approach to project delivery, (2) effective transfer of associated risks to the private sector and (3) private sector innovation.

- Payments are made by the government to the concessionaire based on the availability of the asset after construction. These payments are used to repay the private sector funding and provide a return to equity providers. The payments are reduced if the asset is not available in an agreed condition throughout the concession term.

- Government would receive third party project revenues (e.g. toll revenue) and retain the risk on its forecast of these revenues.

Thus, depending on the underlying financial viability of the project, government could either enjoy a surplus of project revenues (over annual PPP service payments), or suffer a deficit. As is the case under Model 4, this dynamic could well change over the life of the project.

The options for future divestment of the project are similar to those under Model 4. It would be possible to retain the PPP structure for operation of the underlying assets and simply divest the market for future divestment of government’s interest in the project. However, the inclusion of PPP delivery of the underlying assets would likely limit (but not eliminate) the market for future divestment of government’s interest in the project. This is because under this model, government would essentially be selling the entitlement to the future revenue stream only.

**Another weakness of this model is that a traditional availability based PPP project would not fully align the interests of the PPP proponent with that of government (as recipient of project revenues). However, the availability model could be refined to introduce a (limited) element of demand risk exposure for equity (while still fully shielding debt from demand risk).**

Transfer of some demand risk to equity could be achieved by including in the availability payment mechanism financial incentives linked to actual revenue. In the case of toll roads, such a model has been implemented under a number of alternative structures:

- A small element of the payment mechanism is linked to traffic volumes (for instance through a shadow toll style payment).

- An element of active traffic management payment (which links payment to the efficiency of traffic flow, as measured by the average speeds achieved for different bands of traffic volumes).

- A simple revenue sharing formula under upside traffic scenarios.

The majority of the project risks will be transferred to the private sector. However, the government would retain full demand risk throughout the project.
Where has it been used before?

**Mexican road projects and the A1 in Poland**
A small element of the payment mechanism is linked to traffic. The availability payment structure element makes up around 85% of the payment and covers operations and maintenance costs, debt service and a baseline level of equity return and the remaining 15% increases the return of equity in the event of traffic being higher than forecast.

**Autoroute 30, Quebec, Canada**
A PPP project where the private sector will design, finance, construct, maintain and operate about 42 kilometres of road, including a tunnel and two bridges and will finance, operate and maintain a supplemental 35 kilometres of road. One of the bridges is to be tolled.

Payments to the private sector are made by the government, with deductions for failure to comply with required standards, as in the availability model. In addition, the private sector collects the toll revenues from the bridge on behalf of the government, but with a revenue sharing beyond established limits.

**Norwegian tollroads**
In 2001, the Norwegian government approved the National Transport Plan, including three tollroad projects to be delivered under a PPP model:
- E39 Klett Bårdshaug
- E39 Lyngdal – Flekkefjord
- E18 Grimstad – Kristiansand

These roads are now in operation.

Under the PPP arrangements, the government makes a base annual payment to the concessionaire based on delivery of service to agreed specifications. The annual payment consists of:
- Availability payment: linked to the road being open and available.
- Maintenance monitoring payment: linked to output specification of road delivery (friction, visibility of signposts, air quality in tunnels, winter maintenance etc).
- Safety bonus linked to the number and seriousness of accidents.
- Compensation for unexpected traffic volumes.

There is no transfer of traffic risk to the private sector. The government remains the recipient of toll revenues on roads.

**Gold Coast Rapid Transit Project, Australia**
While a public sector development company has not been established, the Queensland government’s availability style PPP for the design, construction, finance and operation of the new light rail project in the Gold Coast is a variant of this model. Government has retained demand / patronage risk for the project. The payment mechanism incorporates some variable payments for increases in the number of services delivered, but does not include any sharing in patronage revenues.

Meeting the objectives

**Social and economic benefit**
- Private sector finance is used to fund nationally significant infrastructure projects, with the private sector fully engaged in delivering the project and addressing project risk on a whole-of-life basis.
- Government retains control over revenue, including the discretion to change public policy settings such as tariffs, tolls and network impacts.

**Recycle government capital**
- Where the revenue stream is greater than the availability payment, the government can utilise the surplus to invest in other infrastructure projects.
- The availability payment and associated private funding is locked in for the project term, creating a less flexible structure (particularly when it comes to disposal).

**Impact on government budget**
- The government shares in the upside revenue that may be generated by the project.
- The government will be required to make agreed availability payments on a periodic basis. This payment obligation will be reflected in government accounts. The impact of this is that, if the project revenues cannot be brought onto the government balance sheet upfront (the starting position), the impact on the balance sheet will be as if the government had funded the project itself.
- Further, while the government will receive the revenue stream, there is no certainty regarding the level of revenue. Consequently, the net impact on the government budget each period will only be known when revenue is actually realised, but there will be a benefit from revenues above forecast.

**Private sector appetite**
- The private sector will be very keen to enter into an availability based project, as it provides the private sector with a ‘guaranteed’ income stream subject only to management of the project risks largely within its control.
- While the government retains the majority of revenue risk, it would be possible to include demand incentive mechanisms to assist in aligning the private and public sector interests.
Model 6: Alternative new funding models

The preceding models focus predominantly (but not exclusively) on how to address the issue of demand risk allocation for economic infrastructure projects. However, in a post-GFC environment characterised by continued constraints on the availability of finance, expanding the potential infrastructure funding market is an equal priority.

The models below seek to access new funding sources through:

• Capturing the broader economic benefits generated by infrastructure projects, via the local rates mechanism.
• Aligning Australia’s increasing household savings base with our long term infrastructure needs.

Tax Increment Financing

How would it work?

Tax Increment Financing (TIF) is a model of investment which is well established in the United States and which has recently started to gain traction in the UK. The model uses the revenue generated by infrastructure development, specifically an increase in local or state taxes due to increase in property values, to repay loans used to fund new infrastructure.

Most typically used in urban renewal projects, the key features of TIF are:

• Tax increases generated by infrastructure development are ring-fenced to repay loans used to finance infrastructure development.
• TIFs are not a new tax, but they obtain the right to the extra tax revenue stimulated by the infrastructure.
• TIF normally requires enabling legislation which allows schemes to be ring fenced e.g. a TIF district would be created. It is from this district that the rates uplift will apply and the incremental rateable revenue is applied to debt service.

• TIF can be used to fund enabling infrastructure such as road improvements alongside private investment in areas such as new housing and commercial development.
• TIF can be used to fund major regional infrastructure. In the UK the Northern Line extension project is being mooted as being funded through TIF.
• In order to achieve social equity objectives, some jurisdictions have placed limits on the amount of TIF funding as a percentage of future rates uplift (e.g. restricting borrowing to 50% of expected future rates increases).

The security related to ring-fenced funding has allowed infrastructure projects to be delivered, which would otherwise have been delayed or would not have proceeded. For example, through changes in legislation, local councils may be permitted to borrow via TIF schemes and in doing so may access incremental finance (based on securitising future rates increases).

TIF has predominantly been used to facilitate councils (in the UK) and municipalities (in the US) investing in urban regeneration projects. There is significant potential to facilitate much needed investment in Australia’s urban infrastructure through TIF.

However, the scope of TIF could be extended to transport and economic infrastructure projects procured at State level. Railway and road extensions (similar to the Northern Line extension in London) could be financed through TIF.

The success of this application lies in creating an effective link between the cost of infrastructure provision and those who benefit from it. Social equity issues tend to be addressed where this link is legitimate.

Where has it been used before?

**Gold Coast Rapid Transit Project, Australia**

The Gold Coast City Council (GCCC) is contributing around $100 million to fund the Gold Coast Rapid Transit Project, alongside State and Federal Government.

The GCCC is raising a significant portion of its contribution through the City Transport Improvement Charge, which is incurred by all ratepayers. The charge assists Council to fund improvements to local roads and to partner with public and private organisations to improve State roads and provide expanded bus services, Council cabs, ferry services, bicycles, pedestrian and rapid transport. The increase in density and property values from the GCCC will provide a further boost to rate revenue.
Infrastructure Bonds

How would it work?

Infrastructure Bonds have had a chequered history in Australia, with the previous scheme introduced in the 1990s ultimately being abandoned as a result of concerns over unintended tax outcomes for the Commonwealth.

However, infrastructure bonds have re-emerged as a potential funding mechanism. The common objective of creating a market for infrastructure bonds has focused on leveraging private investment through the provision of incentives to invest, thereby removing some of the barriers. Two specific approaches are possible:

• Create a tax incentive by allowing interest on infrastructure bonds to be tax deductible for issuers but tax exempt for investors.
• Provide some form of credit enhancement through the provision of government guarantees.

The absence of monoline insurance post the GFC has undermined the ability of pre-operating phase infrastructure projects to access capital markets debt. The EIB and EU (as discussed earlier in this paper) are considering a guarantee or subordinated debt scheme to achieve A-rated debt for selected projects and facilitate capital markets debt.

As infrastructure bonds are based on incentives for investment, such incentives would need to be strictly controlled and:

• Linked to eligibility criteria aligned to government’s infrastructure priorities (such as may be assessed by Infrastructure Australia).
• Capped, either in relation to individual projects and/or for the market as a whole.
• Structured carefully to avoid unintended taxation outcomes and/or to target the needs of specific investors (such as superannuation funds).

As well as providing and leveraging private sector investment, infrastructure bonds would provide a competitive alternative to the banking market where the limited competitive environment in Australia has eroded terms and conditions (most notably price and tenor).

Meeting the objectives

Social and economic benefit

✓ Under TIF private sector finance is used to fund projects against projected economic benefits and provides a transparent link between funding and amortisation through benefit capture.
✓ Infrastructure bonds can be restricted to eligible projects which are rigorously economically justified.
✓ TIFs and Infrastructure Bonds can be used alongside private sector investment to deliver cost efficiencies.

Recycle government capital

✓ TIFs provide for recycling of government capital provided that the incremental rateable revenue is delivered as projected.
✓ Infrastructure bonds will remain on government balance sheet if supported by guarantees.
× The impact of the TIFs in the securitisation of rateable revenue may eliminate a principal source of local government income, however there should be incremental revenue reflecting the government infrastructure investment.
× It is likely that investors in TIFs will require some form of support from government to substantiate the future uplift in value of the rateable revenue.

Impact on government budget

✓ Under TIF loan repayments secured against future uplift in value.
× Government balance sheet capacity would be utilised under any guarantee or support provided for TIF or infrastructure bonds. This may have consequential impacts on credit ratings.
× Government may bear additional project risk through its participation in the funding structure.
× Infrastructure bonds, if government guaranteed, will overlap with traditional bond funding and incur additional cost.

Private sector appetite

✓ Facilitates return to capital markets with appetite for long-term investment.
✓ Institutions will be encouraged to invest in TIFs or infrastructure bonds on the basis of incentives provided through guarantees or tax incentives.
Efficient delivery of infrastructure remains one of Australia’s most important challenges given limited government funds. Developing effective, robust and innovative solutions will be critical in meeting our growing infrastructure demands and overcoming the cost and availability of private sector finance.

Consider the alternative models

The models described in this paper represent a range of approaches which have individually (and in some cases in combination) been used to relieve financing constraints both in Australia and across the world. These models are practical, (in most cases benefitting from significant precedent) and are clearly targeted at addressing the impediments which exist in Australian infrastructure funding today.

The six models discussed in this paper are compared below from a government perspective in terms of ability to:

- enhance financial impact (retain risk, achieve cost efficiencies and apply user charges)
- increase leverage (impact on balance sheet and ability to attract private sector capital).

Recognising the selection of the best model will depend upon each project specific assessment.

Public sector minimum guarantees (Model 3) best addresses the government’s and private sector’s objectives as it has the greatest impact in terms of both increasing leverage and enhancing financial impact. Public sector debt capital (Model 2), Public sector development company (with availability based payment structure) (Model 5) and TIFs and Infrastructure bonds (Model 6) also increase leverage while enhancing economic impact, but to a lesser degree. While Public sector subordinated notes (Model 1) enhance financial impact, they do not achieve a significant increase in leverage. Meanwhile, Public sector development company (with traditionally delivered infrastructure) (Model 4) will increase leverage but does not have a significant enhanced financial impact.

Figure 4: Six models
Establish more effective partnerships

The key test for government will be to step up to the challenge of deeper and more effective partnerships with the private sector in order to leverage capital and maximise economic impact.

While initiating priority projects to address infrastructure gaps is the responsibility of government, delivery of infrastructure requires a partnership approach between the Commonwealth Government, State Governments, local governments and the private sector.

Clearly there is now a case for greater government intervention in the form of funding support, to accelerate project delivery and maintain momentum of public policy imperatives. However, innovative funding solutions are required to ensure government is treated as a true partner of the private sector, with consideration of how public sector capital is secured and ranked alongside private sector debt and equity, rather than simply contributing grant funding.

Heightened investment by the Commonwealth Government (putting current budgetary constraints aside) will require co-ordination with the States, particularly where infrastructure projects form part of a larger network (such as in the transport sector). The information asymmetries between the Commonwealth and the States need to be addressed; the latter simply have more information and more history to call on. To become more effective in determining priorities and delivering policy imperatives, the Commonwealth needs to strengthen its contribution to infrastructure delivery over time (at some considerable expense).

A more pro-active Commonwealth role requires building on the framework provided by agreements already reached by COAG in relation to city planning, infrastructure and federal financial relations. These general frameworks need to be complemented by State specific agreements which, while common in structure, would inevitably differ in detail to reflect the individual circumstances of the States and to provide for specific project level arrangements.

Drawing these into a coherent strategic framework with appropriate integration between Commonwealth and State Governments will provide the best outcomes. For example if Commonwealth investment took the form of infrastructure bonds with guarantees for strategic priority projects, capital markets could be re-opened for infrastructure investment. Australia’s long-term investment base could be corralled into its infrastructure priorities. Further, supporting infrastructure bonds on a guarantee basis might provide portfolio benefits allowing greater leverage of government’s investment and access to new and cheaper finance to stretch the infrastructure dollar further.
Select the right model

While most of the models outlined in this paper may be generally applied, the selection of the right model must be undertaken on a case-by-case basis. Moreover, it is expected that the challenges of some projects will require hybrid or variant solutions. The characteristic which best defines most projects of national significance is their complexity.

Some of the criteria which will likely be relevant to framing the right solution include:

- The nature of the project’s third party revenue stream, with a robust assessment of probability for upside and downside scenarios.
- The certainty of the user charging mechanism, including the potential impacts of future changes and/or regulation.
- The scale and complexity of the project and its impact on funding capacity and bankability for the private sector.
- The prospect of further expansion of the project and/or issues associated with staged delivery of larger network solutions.
- The identification of specific project risks, particularly the outlook for demand and mitigating factors.

Establish the right framework

Any form of government funding intervention requires the development of sound commercial principles for how government will be involved in project governance on an ongoing basis.

Issues will need to be resolved in such matters as stakeholder representation, arrangements for future sale, ongoing reporting and supervision of management and distribution policy. If government funding intervention is warranted, sufficient resources must also be allocated to support delivery to maximise the effectiveness of government’s role.

<table>
<thead>
<tr>
<th>Model</th>
<th>When appropriate to use</th>
<th>When not appropriate to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1: Public sector subordinated notes</td>
<td>• High level of downside case revenue to attract sufficient private sector interest</td>
<td>• Project financial risk profile substantially restricts the quantum of private sector capital that can be raised</td>
</tr>
<tr>
<td>Model 2: Public sector debt capital</td>
<td>• Only in combination with significant private sector capital</td>
<td>• Quantum of private sector capital that can be raised means that the private sector does not have enough “skin in the game”</td>
</tr>
<tr>
<td>Model 3: Public sector minimum guarantees</td>
<td>• High level of expectation of base level of revenue meaning guarantee unlikely to be triggered</td>
<td>• Significant uncertainty of achieving the forecast revenues</td>
</tr>
<tr>
<td>Model 4: Public sector development company (with traditionally delivered infrastructure)</td>
<td>• Private sector is initially unwilling to finance the project because of revenue risk</td>
<td>• Significant interface risk between construction and operation and high levels of ongoing maintenance/service delivery costs</td>
</tr>
<tr>
<td>Model 5: Public sector development company (with availability based PPP delivered infrastructure)</td>
<td>• Government needs to retain control over revenue stream at least in short term</td>
<td>• Government intends to divest its interest in the future</td>
</tr>
<tr>
<td>Model 6: Alternative new funding models (TIFs)</td>
<td>• Local taxes can be levied and ring-fenced</td>
<td>• Future tax receipts are not sufficiently tangible</td>
</tr>
<tr>
<td>Alternative new funding models (Infrastructure bonds)</td>
<td>• Superannuation funds can be attracted to invest in eligible projects that would otherwise not be appealing</td>
<td>• Eligible projects not rigidly assessed leading to abuse of tax/credit enhancement benefits</td>
</tr>
</tbody>
</table>
Our experts

Martin leads our Infrastructure Advisory practice in Sydney. He has specialised in advising on infrastructure for 20 years. He has advised both public and private sector clients on strategic, financial and commercial aspects of project financing covering the entire process from pre-feasibility to financial close.

Most recently, Martin has been advising government on the Gold Coast Rapid Transit Project, Darwin Marine Supply Base, and the Oakajee Port and Rail Project. These projects are being delivered under a PPP model and are earmarked to receive funding from both State and Federal Governments.

Martin joined PwC in 2001 after a successful career in investment banking with the Deutsche Morgan Grenfell Group. He has significant international experience having been based in Australia, Asia, South Africa and UK and has had extensive involvement across a wide range of sectors.

Kate is a Partner in the Melbourne Infrastructure Advisory team. Kate has extensive experience providing strategic, commercial and financial advice to governments on the successful development and implementation of infrastructure projects spanning a wide variety of sectors.

In recent years, Kate has been particularly involved in the transport and water sectors. During this period Kate played a leading role advising the Victorian State Government on the AUD3 billion + Victorian Desalination Project (the largest global PPP to be closed at the height of the GFC). She also successfully closed the AUD759 million Peninsula Link Project, the first availability payment based road in Australia. Kate continues to advise the Linking Melbourne Authority on its future major roads projects in Victoria.
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