

8 Funding the NBN

SUMMARY

- To implement its policy objectives and use its resources efficiently, Government should retain full ownership of NBN Co until roll-out is complete; this includes not issuing equity in return for vended-in assets.
 - The peak Government funding requirement will be approximately \$26 billion in Year 6—this would be a temporary funding need since subsequent to this peak, NBN Co is expected to be able to support private sector debt of up to \$32 billion by year 15.
 - Government should be prepared to adapt its funding strategy over time to uncertainties in the capital market and changes in project returns, for example by varying the amount of Government equity or debt, providing guarantees or exploring use of project finance.
 - Government's intention is to privatise NBN Co after roll-out is complete. Acquiring a stake in NBN Co could appeal to a wide range of investors. Given the size and complexity of NBN Co's business however, flexibility should be maintained in the timing and structure of that privatisation, for example by privatising the active and passive assets separately.
 - Funding certainty is important for NBN Co's ability to engage with customers and suppliers, and can be implemented by Government entering into a formal funding agreement with NBN Co.
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Government has outlined specific goals for funding the NBN initiative:

- The funded entity (NBN Co) should build and operate the network on a commercial basis at arm's length from Government;
- Government would welcome private investment and it is anticipated that NBN Co will undergo privatisation, within 5 years following the completion of roll-out, subject to market conditions.

In addition, the implementation approach should limit the use of Government funding where possible.

Determining an appropriate funding model for NBN Co means assessing the extent to which private sector funding can be used over time at reasonable cost and in a way that is consistent with policy objectives—and hence identifying the remaining amount that is to be funded by Government. This funding model will need to be adapted according to changing market environments and project performance scenarios.

A funding mix that is consistent with policy objectives depends on multiple factors: the costs and requirements of different funding types, the changing risk and return profile of the NBN project over time, and changes in the market environment over the life of the NBN.

This chapter has four sections:

8.1 Determining a funding model for NBN Co

8.2 Adapting the funding model over time

8.3 Creating funding certainty for NBN Co

8.4 Funding methodologies and assumptions.

8.1 Determining a funding model for NBN Co

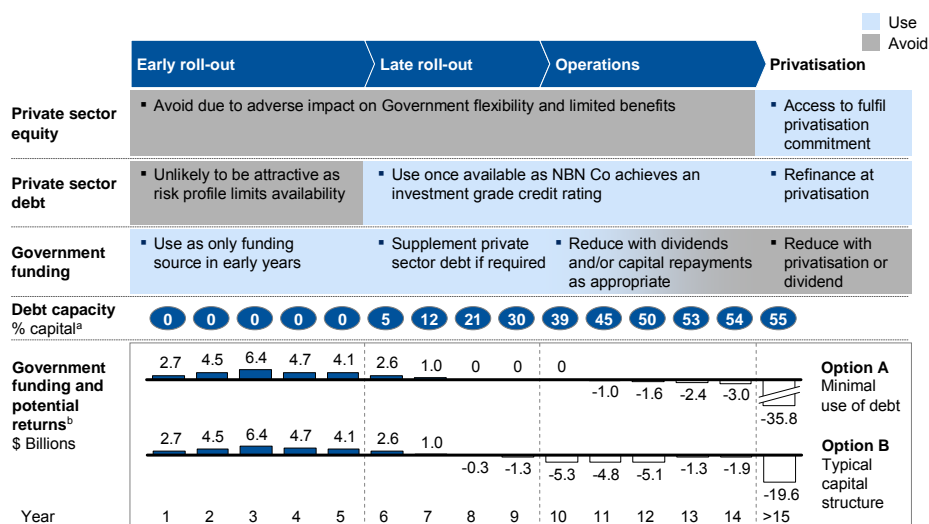
An appropriate funding model for NBN Co is one in which Government achieves its policy objectives and uses its resources efficiently. This can be achieved through the use of Government equity to fund NBN Co during the first 5 years of roll-out. In later roll-out (years 6–9), the company could begin to take on substantial volumes of private sector debt, as cash flows become available to support it. Government intends to privatise NBN Co, however, flexibility should be maintained in the timing and nature of privatisation.

Exhibit 8–1 and the following pages describe the recommended funding model. This is based on the Funding Reference Scenario described in the business case (Chapter 7). This scenario reflects a unilateral build and mid-case demand and take-up. The actual returns could be higher if a favourable agreement is reached to share existing infrastructure on economic terms. Alternative scenarios are explored in Section 8.2.

The following subsections discuss the sources of funding before examining the path to privatisation:

- 8.1.1 Retaining full ownership of NBN Co until roll-out is complete
- 8.1.2 Taking advantage of private sector debt
- 8.1.3 Optimising Government funding to meet NBN Co’s requirements
- 8.1.4 Privatising NBN Co.

Exhibit 8–1. Recommended funding approach



a. Proportion of debt capacity to total capital (debt and equity)
 b. Privatisation occurs at year 15 based on DCF of future cash flows (equivalent to 7.7x EBITDA). Option A—debt maximised to meet funding requirement only. Option B—debt maximised to meet a debt to total capital ratio of 50% by year 15
 Note. Based on funding reference scenario
 SOURCE: Implementation Study

8.1.1 RETAINING FULL OWNERSHIP OF NBN CO UNTIL ROLL-OUT IS COMPLETE

Government should retain full ownership of NBN Co until roll-out is complete. Private sector investors will require a high return on their investment due to a different assessment of the risks and rewards of the NBN initiative to Government (e.g. different perceptions regarding Government's commitment to completing the project and of appropriate compensation for risks). In addition, taking on private sector equity will be detrimental to the pursuit of the Government's policy aims that include social objectives such as achieving widespread coverage and increasing competition. These considerations relate to both traditional methods of raising equity as well as issuing equity for vended-in assets.

As a new start-up with capacity to take on private sector debt at the appropriate time, NBN Co will be able to achieve some of the benefits of private sector equity. Government should restrict NBN Co's ability to raise private sector equity before the end of roll-out.

Recommendation 58. That Government retain full ownership of NBN Co until roll-out is complete; that this include not issuing equity in return for vended-in assets.

Acknowledging the high cost of private sector equity

Private sector equity investors require high levels of return to compensate for project risks. Throughout the build-out phases, required returns for private sector equity are higher than the expected project returns (Exhibit 8-2). Private sector equity will be less costly as time goes on and project risks decline.

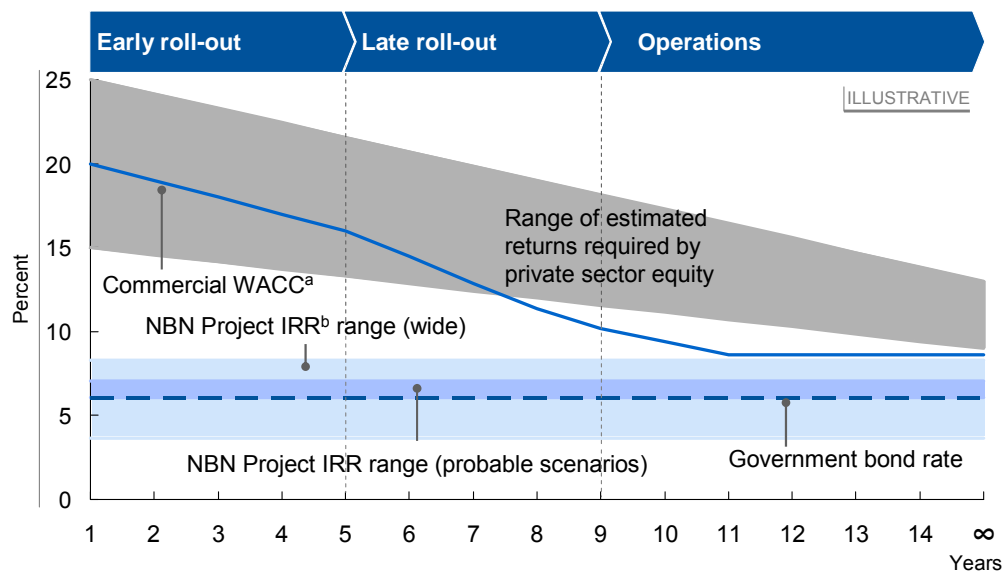
Estimating required returns in roll-out phases

Private sector equity investors would be expected to require returns of 15–25 percent during early roll-out which is 9–20 percent above the NBN project returns generated under a range of conservative business case scenarios. This assessment is based on three approaches:

- Current market experience in Australia shows equity investors in recent infrastructure projects have required a 15–22 percent return on an IRR basis when investing before the beginning of construction;¹⁷²

¹⁷² Discussions with investors mid-2009 indicate that required equity returns increased from around 14–15 percent before the economic downturn to well over 20 percent. Also, evidence from similar projects confirms the increase in expected equity returns (e.g. a small transport project in late 2009 with limited demand risk had an equity IRR of 20.5 percent)

Exhibit 8–2. NBN project IRR versus required returns for private sector equity



a. WACC based on the cost of private sector debt and private sector equity, post tax
 b. Based on full range of scenarios outlined in Chapter 7, likely scenario range is darker, post tax
 SOURCE: Implementation Study; Bloomberg

- International experience with infrastructure investors and operators substantiates the premium required of 5–10 percent over the return generated by a mature infrastructure asset to cover construction and ramp-up risks;¹⁷³
- Implementation Study market soundings with Australian investors further confirm the high costs of equity in early project phases and highlight the limited amount of liquidity and interest in an investment in the early roll-out phase:
 - One investor would only consider an investment during the NBN roll-out as a part of its venture capital allocation rather than as a part of its infrastructure assets allocation. The expected return for a venture investment during the early phases would be around 20–25 percent. The amount invested by the venture capital group would be 10 to 20 times smaller (around \$100 million) than if the investment was made by the infrastructure group after the end of roll-out;
 - Another investor highlighted NBN Co would need to compete for venture capital with risky technology projects. Venture capital investors typically try to realise returns from a few investments in their portfolio which are high enough to compensate for the losses created by the others.¹⁷⁴ Such investors also tend to have a shorter investment horizon. NBN Co does not fit these requirements as its

¹⁷³ ABN Amro 2008, *Concrete Attractions: Transportation Sector*

¹⁷⁴ An equity investor tells us: 'Out of 10 investments, 6 will be lost, 2 might break even and we are hoping the last 2 will generate a good return for the whole portfolio. For infrastructure investments, we need all 10 investments to make a return'

returns are constrained by regulation and will come over a relatively long time period.

In addition, returns required for early investments are particularly high due to the history of some telecommunications investments in Australia, as shown in Exhibit 8–3.

The risk premium demanded by private sector equity should decline as the roll-out nears completion as uncertainties around construction costs, business establishment and customer migration, subside. Nonetheless, the cost of equity for late roll-out remains higher than for the operations phase.

The high returns required during roll-out per Exhibit 8–2 show that private sector equity investors are pricing a high level of risk. The uniqueness of the project, the long roll-out period, the technology, competition and regulatory risks are all factors that can explain the high required returns. Perceived risks will decline over time due to the repetitive nature of the work during roll-out and actual deployment resolving uncertainty around build cost and pace of customer take-up and migration.

Government will view the project as less risky than private sector investors. Government is better placed to gauge its own commitment to the project, and to understand any regulatory uncertainty. Government's view of appropriate compensation for these risks will also differ from that of the private sector. The NBN initiative is designed to meet a

Exhibit 8–3. Investor attitudes towards telecommunications investments

The record of telecommunications and network investment has left investors keen to minimise risk

- Failures in the sector have led to a cautious or negative perception
 - In 1999, One.Tel contracted Lucent Technologies to build a \$10 billion mobile network using 100 percent vendor finance. The company also had bank finance. One.Tel's collapse affected retail and institutional investors.
 - In 2002, Nextgen Networks aimed to provide an \$850 million competitive backhaul network. Equity investors were Leighton Contractors and Macquarie Bank. Debt finance was provided by a consortium of banks with project debt underwritten by Deutsche Bank. A price war resulted with administrators being called in—with secured creditors owed \$281 million. An investor said 'I still have scars from the Nextgen sale'.
- Investors have structured capital contributions to reduce risk
 - The Austar and Powertel roll-outs featured agreements allowing the companies to draw on project finance once certain milestones were achieved such as contracts with customers, kilometres of cable laid or buildings wired, or positive cash flows.
 - Telstra heavily utilised debt in the construction of the Australia-Japan Submarine cable by signing up sponsors to use the cable before raising finance.

Source: Esty, B 2002, *Harvard Business School Case Study: Australia-Japan Cable: Structuring the Project Company*; Madden, G 2003, *World Telecommunications Markets*, Edward Elgar Publishing, Inc. Northampton, MA; Rochfort, S 2003, 'Leighton back for more with Nextgen buy', *Sydney Morning Herald*, 26 December

number of objectives that are not purely commercial, including a coverage target and desired competition structure, as well as achieving socio-economic benefits in areas such as health and education. Government would appropriately see value in such impact—a private owner would not.

Calculating cost of equity in the operations phase

As the project transitions to the operations phase, construction and migration risks are less material and hence the returns required by private sector equity investors are likely to fall. This analysis, based on current market conditions, show a cost of private sector equity between 9–12 percent in the operations phase.

An example of a fibre roll-out that used private sector equity is Reggefiber in the Netherlands (Exhibit 8–4). Partnering ensured lower risks which flowed through to a lower cost of capital. This provides a reference point for the NBN in its lower-risk operations phase, albeit with very different circumstances.

Exhibit 8–4. Differences in cost of equity: Reggefiber case study

Capital cost for a fibre roll-out is 7–12 percent if risks are low or well mitigated

In the Netherlands, Reggefiber's fibre access network—Glashart—was established by investment firm Reggeborgh in 2005. The incumbent, KPN, joined the venture in 2008 by acquiring 41 percent of shares, with an option for up to 60 percent.

Glashart is currently deploying FTTP in 33 municipalities and aims to cover 2 million premises by 2013, i.e. 27 percent of Dutch homes. The company offers open access to active operators (ODF access), who in turn can offer wholesale broadband access to service providers, or provide end-user service themselves.

Most risks have been mitigated. Glashart has:

- Limited demand risk by working with community organisations and city councils to recruit customers. It has committed to roll-out where 40 percent of inhabitants are interested
- Partnered with the incumbent to enable migration from the existing copper network
- Worked within a clear regulatory framework. The OPTA (Dutch telecommunications regulator) ruled on the acceptable rate of return when KPN joined the venture.

OPTA considers 7–10 percent project IRR 'reasonable' given a WACC benchmark of 7–12 percent. This is equivalent to a 12.5 percent return on equity for Reggefiber (taking into account the effect of debt).

Source: Reggefiber 2009, *About Reggefiber*, viewed 1 March 2010, <<http://www.reggefiber.com>>; KPN 2009, *Presentation fiber update conference call*, 15 December, viewed 1 March 2010, <<http://www.kpn.com/corporate/en/ir-3/Presentations/Other-presentations.htm>>; Netherlands Competition Authority 2009, *KPN – Reggefiber: Case 6397*, viewed 1 March 2010, <http://www.nmanet.nl/nederlands/home/Besluiten/Besluiten_2009/6397BCM.asp>

Avoiding the reduction in Government flexibility brought on by private sector equity

Beyond its high cost, private sector equity has other drawbacks during roll-out including the restrictions it places on Government's flexibility. Government needs to maintain flexibility as an owner to ensure its policy goals are achieved despite significant uncertainties in the project and market. However such flexibility is a risk for private sector investors. Such investors will naturally attempt to reduce risk or demand a high price for their investment. To take on private sector investors, Government would need to lock in many choices that could more advantageously be made in the future, including aspects of the regulatory framework and NBN Co's incentives and ultimate structure.

Government's intention that NBN Co be incentivised to deliver competition and social policy goals will impact the commercial returns of the company. For example, satellites will need to be launched to serve rural areas that may not generate a positive economic return. Similarly, the Implementation Study recommends that NBN Co set access network prices in a uniform manner such that within the footprint of any individual technology, the same service will be offered at the same price in different regions to drive take-up. A profit-maximising private sector investor would not necessarily follow such an approach.

Taking such actions with private owners on board could create conflict. The need to report to private owners and to justify actions taken to secure policy goals would distract management attention from daily operations. Minority shareholders are likely to seek rights and protections that would frustrate the achievement of these goals.

Private sector equity investors would require Government to lock in the regulatory regime for NBN Co. This would remove the ability to react to potentially large changes in the telecommunications industry as it shifts from a vertically integrated model to a wholesale, open-access model.

Finally, Government could choose to change NBN Co's structure in response to changes in the industry or to change the competitive industry structure prior to a full privatisation. This could include separating the active and passive parts of the business. Private owners could complicate this process, or even frustrate it entirely, by seeking to use minority rights to earn a premium from any restructure or to prevent it from occurring.

Replicating the benefits of private sector equity

NBN Co may be able to capture some of the efficiency benefits traditionally associated with private ownership by taking on private sector debt and capitalising on the opportunity to create a performance based culture. However, given the policy objectives that NBN Co is expected to fulfil, the company may not be able to replicate fully the benefits of full private ownership.

A number of empirical studies show that private companies tend to be more profitable¹⁷⁵ and grow faster than state owned enterprises.¹⁷⁶ Private firms have the ability to focus on profit maximisation for shareholders and thus have a clear mandate to maximise revenues and scrutinise capital expenditure.

The commercial discipline provided by private sector debt when introduced will help NBN Co capture some of these benefits. The presence of private lenders provides a check on management to encourage the company to act efficiently.

As a start-up with no legacy culture, NBN Co does not suffer from inefficiencies that can build up over many years. NBN Co's board and management have track records in the private sector and have the opportunity to institute a culture of cost saving and value creation. Thus NBN Co has an opportunity to emulate many of the motivations of a private firm.

8.1.2 TAKING ADVANTAGE OF PRIVATE SECTOR DEBT

Private sector debt would provide NBN Co with financial discipline and would reduce Government's funding requirement. The amount of debt that can be raised by NBN Co increases over the course of the project. Under the Funding Reference Scenario, as cash flows become available and grow, NBN Co will be able to support up to \$25 billion in private sector debt by year 12. Given the size of the NBN initiative and constraints in the domestic debt market, NBN Co will need to access international debt markets.

Debt costs have been very volatile over the last two to three years. As such, they are discussed as a key uncertainty in Section 8.2.

Highlight. NBN Co could begin to take on private sector debt once cash flows become positive in late roll-out. The company is likely to obtain an investment grade credit rating and be able to support \$25 billion in debt by year 12.

Understanding the benefits of private sector debt

Taking on private sector debt will increase the financial discipline required of NBN Co. Private sector debt lenders' due diligence investigations will add robustness to NBN Co's business case. Lenders will also require that NBN Co fulfil a number of obligations to continue lending on the agreed terms. These would include achieving business plan targets, meeting debt service payments and complying with financial covenants.

¹⁷⁵ Vining, A & Boardman, A 1989, 'Ownership and performance in competitive environments: a comparison of the performance of private, mixed and state-owned enterprises', *Journal of Law and Economics*, vol. 32, issue 1, pp. 1-33

¹⁷⁶ Erlich, E, Gallais-Hamonno, G, Liu, Z & Lutter, R 1994, 'Productivity growth and firm ownership: an analytical and empirical investigation', *Journal of Political Economy*, vol. 102, issue 5, pp. 1006-38

Government will need full transparency into any conditions imposed or representations made in relation to debt-raising by NBN Co.

Private sector debt helps to focus management attention. It can encourage the company to act efficiently by limiting free cash flow and focusing management on the most important projects. As a contractual commitment that can result in bankruptcy if broken, private sector debt is an important motivator of commercial performance. While such commitments are beneficial, they may also limit flexibility as private debt holders will attempt to limit the risk of their investment by constraining the behaviour of management.

Using private sector debt also reduces the need for Government funding. While Government debt is less costly than private sector debt, private sector funding confers the benefits of greater financial discipline and a reduction in the use of Government funds, consistent with Government policy. Even though the debt would be held by a Government-owned entity, it is held by an independent company and secured against that company's assets and cash flow, so is not classified as Government debt.

Understanding debt market sources and capacity

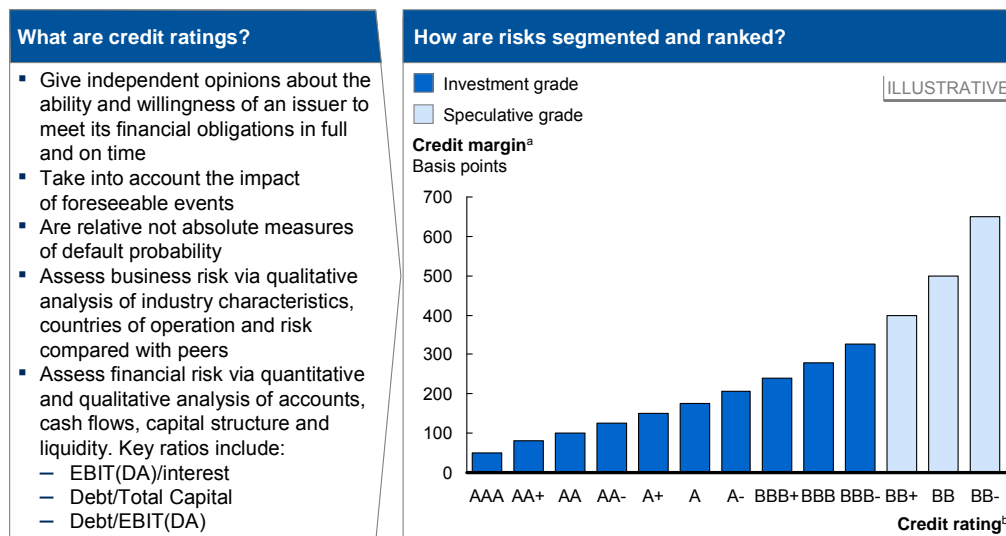
NBN Co has a choice between multiple sources of debt capital. To reach the amount of debt funding contemplated, both bank debt and capital markets will need to be accessed. Project finance debt would be insufficient on its own. Finance from vendors and export credit agencies is limited to the physical equipment purchased for the network roll-out. The limited capacity of the Australian debt markets would likely force the company to tap international markets.

The debt capacity available to NBN Co is conditioned by the credit rating achieved (Exhibit 8–5 explains credit ratings). Although private debt lenders may only require NBN Co to sustain a rating over BBB–, a rating of A– or above is preferable when accessing large amounts of debt.

Highlight. An investment grade rating is required to ensure significant amounts of debt financing. A minimum of BBB– is required for bank debt and A– or higher is needed for amounts over approximately \$5 billion.

NBN Co could raise debt financing in the form of project finance debt or corporate debt. Project finance debt is generally used for greenfield infrastructure projects. It enables debt to be raised against projected cash flows and would allow NBN Co to borrow before it is able to service the debt from current cash flows (see Exhibit 8–6 for details on project finance). By contrast, corporate debt is the traditional source of financing for established operators and would become available when NBN Co generates positive net cash flows.

Exhibit 8–5. Credit ratings in brief



a. Indicative ratings, based on ranges for 3-year credit margins for Australian corporates, speculative grade ratings are estimated
 b. Credit ratings extend beyond those shown, with higher margins for C and D rated debt
 SOURCE: LoanConnector; Standard and Poor's Global Credit Portal

Given the financing needs of the NBN initiative, the market for project finance debt in Australia is likely to be too small to allow NBN Co to access the amount of financing required before corporate debt becomes available. Furthermore, the fact that lenders need to limit their exposure to each issuer would act as an additional constraint on the amount of private sector debt financing NBN Co could raise domestically.

Debt market soundings suggest that the maximum amount of project finance debt NBN Co could raise would be in the \$2–5 billion range. One of the largest project finance deals in recent years was for the \$3.5 billion Victorian Desalination Plant (Exhibit 8–6). It was supported by international interest from major water companies such as Suez Environnement and their connections to international banks.¹⁷⁷ The project also benefitted from a government guarantee to make up any shortfall in syndication of the debt due to the nature of the financial markets following the collapse of Lehman Brothers. Ultimately, the guarantee was not used.

Raising private sector debt later in the roll-out through corporate debt markets would allow NBN Co to raise larger amounts of debt financing at better terms. There are two main sources of capital: bank debt and debt capital markets.

¹⁷⁷ The private partner was Aquasure, consisting of Suez Environnement, Degremont, Thiess and Macquarie Capital Group. Partnerships Victoria 2009, *Victorian Desalination Plant: Project Summary*, viewed 18 February 2010, <<http://www.partnerships.vic.gov.au/CA25708500035EB6/0/8ACBA1C56F57CF23CA25736E0001DCE8>>

Exhibit 8–6. Project finance characteristics

Project finance techniques are used extensively for infrastructure financing

- Project finance deals:
 - Tie provision of finance to management of the project by establishing a separate project company with the project manager or sponsor providing most of the equity
 - Operate with a high ratio of debt to equity
 - Limit recourse of lenders in the event of default
 - Enter into comprehensive arrangements with suppliers and customers
- Benefits for infrastructure financing:
 - Debt can be raised before the entity is profitable, funding capital expenditure during construction
 - Risks can be shifted to project participants who can control them
- Drawbacks for large scale projects:
 - Lenders must approve significant project changes
 - Extensive documentation, including very tight covenant packages can distract management and reduce flexibility
 - Interest costs are high because debt is raised in the early, risky phases
 - Bank fees for lower rated companies are typically 2–3 percent of issued amount
 - Every lender requires due diligence and these costs are ultimately borne by the borrower (e.g. for a project like the Victorian Desalination Plant, about \$20 million per consortium) and can delay the approval of financing
- Example: Wonthaggi desalination plant, Victoria, 2009
 - One of the largest project finance deals in the world at \$3.5 billion in construction costs
 - Two bidders—AquaSure and Bass Water
 - Needed to raise \$830 million of equity and as much debt as possible. Both raised around \$2 billion of debt during the economic downturn. A debt funding shortfall of \$1.7 billion remained.
 - Driven by the financial crisis, the Victorian Government promised to be lender of last resort if debt syndication was unsuccessful and also offered ongoing refinancing liquidity and market disruption support. Ultimately the guarantee was not used.
 - The backing of international sponsors such as Suez Environnement enabled AquaSure to raise the remaining debt finance two months after financial close in September 2009. The debt syndication was \$900 million oversubscribed.
 - Twelve banks arranged debt financing with a seven year tenor and pricing as follows: years 1–5 at 350 basis points, years 6 and 7 at 375 and 400 basis points.

Source: *Infrastructure Journal*, 25 November 2009, 'Australian desalination plant syndication closes', online; *Infrastructure Journal*, 9 November 2009, 'Australian desal syndication significantly oversubscribed', online; *Filtration+Separation.com*, 25 November 2009, AquaSure secures financing for a 3.5 billion Victorian desalination plant, viewed 18 February 2010, <<http://www.filtsep.com/view/5525/aquasure-secures-financing-for-a35-billion-victorian-desalination-plant>>

The Australian bank debt market is limited compared to the size of NBN Co's potential needs, as identified in the Implementation Study market soundings. The market volume for bank debt for companies carrying lower ratings (BBB and below) is similar to the volumes available for project finance debt. There is greater market capacity and appetite for higher rated issuers (A- and above).

The Australian bond market is also limited in its ability to support large projects. The domestic corporate bond market is less than half the size of the US and UK equivalents even when adjusting for relative sizes of the economies.¹⁷⁸

Debt market soundings suggest that the total domestic debt capacity, including bank debt and capital markets, for a company such as NBN Co, is probably around \$9–15 billion.¹⁷⁹ Based on investment metrics, NBN Co could potentially support far more than this amount (\$25 billion in year 12 under the Funding Reference Scenario). Domestic market capacity could, however, be reduced by a potential lack of appetite for the telecommunications sector.

NBN Co will therefore need to consider raising debt on international markets (e.g. Eurobonds) in addition to domestic debt-raising. However, for large amounts of debt, international investors are likely to require that NBN Co have a rating of at least A- or an established brand name with investors outside Australia. NBN Co will only be able to tap this resource once the company is firmly established and generating strong cash flows and a solid investment grade rating has been secured.

When tapping international debt markets, NBN Co will also need to take into account currency risk. As international lenders will provide debt in foreign currencies, NBN Co will require a currency swap to avoid taking on the risk of fluctuations in the relative value of these currencies. Typical costs for these swaps are below 15 basis points, although at some points in the economic cycle there can be disturbances in the market around specific maturities (e.g. costs for 5 year maturities have spiked to about 30 to 40 basis points). Availability of swap contracts does not seem to be a constraint based on market soundings although large amounts may require the participation of several banks and need to be spread over several days or weeks.

NBN Co could procure equipment from overseas suppliers supported by guarantees from export credit agencies (ECAs), which would reduce the cost of debt and increase its availability. Where an ECA guarantees the debt of the importer, the financial institutions providing the debt will generally reduce the pricing for that debt to that appropriate for the rating of the export credit agency.

¹⁷⁸ Between 1994 and 2009, debt capital market deals averaged 3.3 percent of GDP for the US and UK, and only 1.5 percent for Australia, assuming debt capital markets include corporate high-yield and investment-grade bonds and medium-term notes for non-bank, non-government issuances (Dealogic; Global Insight 2009, *World Market Monitor*)

The recent Victorian Desalination Plant project included an export credit facility of \$300 million guaranteed by Korea Export Insurance Corporation (KEIC) to fund the equipment supplied to the project. Although the details were not publicly disclosed, it can be expected that improved pricing was attained given KEIC is rated A.

NBN Co may be able to secure private sector debt through vendor finance. In such an arrangement, NBN Co would purchase goods or services and receive finance for the quantum of the purchase or possibly more. Supported by Chinese development banks, large suppliers of optical network services such as Huawei and Zhong Xing Telecommunication Equipment Company (ZTE) have a history of providing significant levels of vendor finance, including a \$1 billion credit line to America Movil and \$750 million to Reliance in 2009.¹⁸⁰

The amount of vendor financing and ECA guarantees available to NBN Co are limited to the amounts of physical equipment purchased. Thus the maximum amount of vendor finance would be \$11–12 billion or 25–30 percent of project total cost. The impact of ECAs would only relate to the equipment purchased outside Australia. NBN Co needs to balance the benefits of receiving an ECA guarantee or vendor financing with other factors such as equipment cost and quality when choosing a supplier of equipment.

Sizing private sector debt

The amount of private sector debt that NBN Co can support over the course of the NBN project is based on the cash flows of the company. As discussed in the previous subsection, market capacity, and the risk appetite of debt investors might limit the amount of debt that the company can actually raise.

NBN Co will be able to support large amounts of debt, from \$25 billion in year 12 to \$32 billion in year 15.¹⁸¹ The debt capacity of NBN Co is primarily based on the estimated cash flows of the project and their ability to service debt, including repaying it over a reasonable period in a downside scenario.

Discussions with debt market participants confirm that debt financiers want to limit their exposure to roll-out risk. Potential debt financiers will likely wait until NBN Co has proven cash flows before lending significant levels of debt. Therefore, it is preferable and practical that NBN Co wait until EBITDA is positive to raise corporate debt.

¹⁷⁹ One bank's domestic debt stood at \$8.5 billion, which they view as close to the limit; others mentioned \$15 billion as being possible

¹⁸⁰ Lunden, I 2009, 'Vendor Financing: Loan Wars', *Total Telecom*, 27 February, viewed 18 February 2010, <<http://www.totaltele.com/view.aspx?ID=451120>>

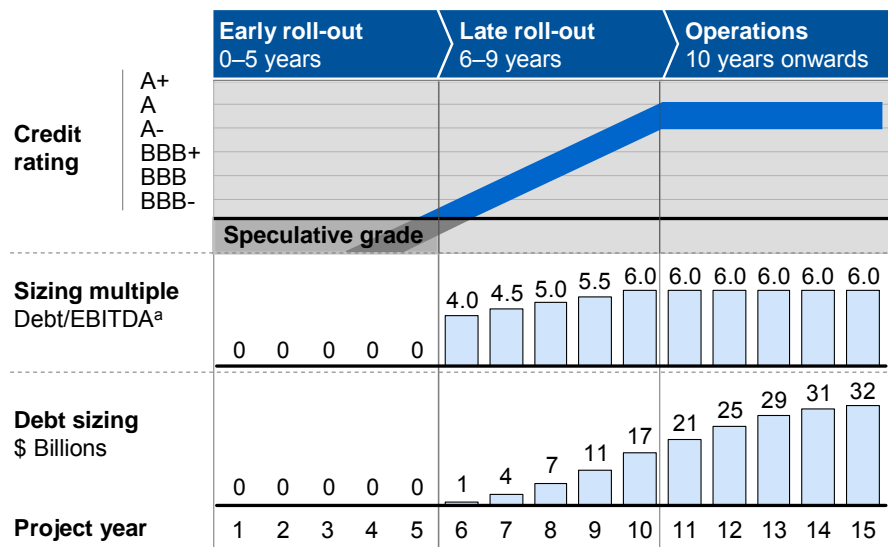
¹⁸¹ Under the Funding Reference Scenario

The calculations of NBN Co’s debt capacity are based on the maximum amount of debt that would allow the company to target a BBB–/BBB rating when it starts raising debt and an A–/A rating when debt requirements become too large for the BBB market.

Discussions with rating agencies¹⁸² and private sector lenders suggest NBN Co could achieve these target ratings and support a debt to EBITDA ratio equal to 4 times the last reported EBITDA midway through the roll-out phase, increasing to 6 times by the operations phase. This ratio is supported by the analysis of infrastructure companies that have an average debt to EBITDA multiple of over 6 times. Once the project is in the operations phase, NBN Co would have a risk profile closer to that of an infrastructure company than a telecommunications company. However, NBN Co will still be exposed to some market risk during the roll-out.

In assessing this ratio versus the target rating, there are likely benefits of NBN Co’s implicit Government support. Having Government as a sole shareholder, the nature of NBN Co’s business and its importance for the country supports a higher rating than the stand-alone financial analysis suggests.¹⁸³

Exhibit 8–7. Debt sizing multiples



a. EBITDA adjusted for any capitalised operating costs (e.g. project management fees during roll-out)
 Note. Assumes Funding Reference Scenario
 SOURCE: Implementation Study; Bloomberg; market soundings

¹⁸² Standard and Poor’s 2009, *Criteria methodology: business risk/financial risk matrix expanded*; Moody’s 2007, *Global telecommunications industry rating methodology*; Moody’s 2009 *Regulated electric and gas networks rating methodology*

¹⁸³ Moody’s 2005, *The application of joint default analysis to government related issuers*

Australian infrastructure companies are highly geared, with a typical debt multiple of around 7 times EBITDA while telecommunications companies have a more conservative level of debt with average debt multiples of approximately 1–2 times EBITDA. (See Section 8.4)

Exhibit 8–7 shows the results of our debt sizing analysis which has been validated against EBITDA ratios from recent infrastructure market transactions.¹⁸⁴ It shows that NBN Co could achieve a target credit rating of A–/A and support up to \$32 billion in debt during the operations period.

Our calculation of Government returns assumes NBN Co does not fully utilise this capacity. If corporate debt is used to the maximum level possible to fund roll-out costs, the company will borrow \$9.8 billion. \$25.9 billion will be borrowed if the NBN Co moves to a typical capital structure of 50 percent debt by year 15.

8.1.3 OPTIMISING GOVERNMENT FUNDING TO MEET NBN CO'S REQUIREMENTS

There are several sources of Government funding that NBN Co could use to meet its funding requirements. These types of lending should be distinguished from any debt issued by Government to fund its investment in NBN Co.

Government equity is required to provide the company with a robust capital structure and encourage private investment. Government debt does not have the benefits of equity from the perspective of private sector investors. The substantive use of grants and subsidies would have a negative impact on the federal budget and also have tax consequences.

Recommendation 59. That NBN Co be funded with Government equity until NBN Co can support private sector debt without explicit Government support and achieve an investment grade credit rating; that private sector debt be permitted to be accessed to repay Government capital while maintaining an investment grade credit rating.

Understanding Government guidelines

Consistent with Government's objective that NBN Co operates commercially, the ABS has classified the company as a Public Non-Financial Corporation (PNFC). Being classified as a PNFC is important for a number of reasons. First, it sets expectations about the company operating on a commercial basis and limits the use of subsidies. Second, as equity investments in a PNFC are not part of the federal budget, it enables those investments to be evaluated in the context of building an enduring business with direct

¹⁸⁴ Debt multiple and pricing comparisons refer to post economic downturn transactions. Comparisons sourced from Merrill Lynch Equity Research 2009, *Australian Infrastructure*, Bloomberg, LoanConnector, Infrastructure Journal, company filings

Exhibit 8–8. PNFC characteristics and their application to NBN Co

PNFC characteristics	Application to NBN Co
<ul style="list-style-type: none"> ■ The Australian Bureau of Statistics (ABS) determines whether the company is a ‘market operator’ <ul style="list-style-type: none"> – Responds to market forces – Is not influenced by the receipt of grants, subsidies, donations or explicit guarantees – Recovers a considerable proportion of its production costs through sales income – Has the goal of profitability in the long term, and covers capital and other costs 	<ul style="list-style-type: none"> ■ NBN Co will independently respond to market forces: <ul style="list-style-type: none"> – Board and management will have commercial objectives – NBN Co will be separately accountable for its actions, obligations and contracts – NBN Co’s independence will not be compromised by subsidies—the company is not likely to require large subsidies and any subsidies will be focused on creating commercial incentives ■ NBN Co will cover capital and other costs and will be profitable in the long run: <ul style="list-style-type: none"> – Once mature, NBN Co will have substantial profit margins – NBN Co will be a source of financial gain to its owner—likely cases show a return on investment above Government cost of capital
<p>Source: ABS 2009, Standard Economic Sector Classification of Australia, cat. no. 5232.0, Canberra</p>	

Exhibit 8–9. Guidelines for NBN Co

Guidelines for:	Detail
Government Business Enterprise (GBE)	<ul style="list-style-type: none"> ■ Must add shareholder value by earning a ‘commercial’ rate of return, recovering the costs of resources employed and working towards financial targets set by Government on a return on assets basis ■ Must have a target ‘optimal’ capital structure—ideally reaching an investment grade credit rating and imposing financial discipline ■ Provision is made to agree on a structure ‘in light of... firm specific factors’
Competitive neutrality	<ul style="list-style-type: none"> ■ Applies to any Government owned ‘significant business’^a ■ Must pay taxes equivalent to any privately owned business ■ Must be under the same regulatory regime as competitors ■ Must provide a commercial rate of return on assets ■ Debt, including Government debt, should be sized and priced commercially ■ Pricing should reflect the market—cross subsidisation should be limited
<p>a. Government business enterprises are defined as significant for the purposes of applying competitive neutrality. To be a business an entity must charge for goods and services, have actual or potential competitors, and have a degree of independence in production, supply and price</p> <p>Source: Department of Finance and Administration 2004, Australian Government Competitive Neutrality Guidelines for Managers February 2004, Financial Management Guidance No. 9, Canberra</p>	

returns rather than being evaluated as part of annual federal budget expenditure. To continue to operate in a manner consistent with that classification, the guidelines outlined in Exhibit 8–8 should be adhered to.

As a Government owned enterprise, NBN Co is also subject to a number of other guidelines as outlined in Exhibit 8–9.

Providing NBN Co with sufficient Government equity

Government equity is needed to fund the initial investments during early roll-out. It is also needed to provide NBN Co with a healthy capital structure—robust enough to navigate any financial difficulties and help raise debt financing.

Government has indicated that it will need to raise the required funds before investing them in NBN Co. It is envisaged that Government will issue debt to raise these funds, which will then be invested in NBN Co as equity.

The capital structure is one of the factors evaluated when rating a company (e.g. debt/total capital ratio). A significant amount of Government equity helps to achieve the targeted investment grade credit rating. Based on Standard and Poor's indicative ratios for corporates and NBN Co's business risk profile, a debt/total capital ratio of about 50–60 percent seems appropriate to achieve a financial risk profile consistent with an investment grade rating. This suggests that approximately \$14.2–17.8 billion¹⁸⁵ of equity funding would be required in the first 10 years to ensure NBN Co's debt/total capital ratio is in line with the average for investment grade infrastructure companies.

In addition, NBN Co will need to satisfy other factors (e.g. debt to EBITDA) which may mean that higher initial Government funding is required. If the private debt funding environment is sufficiently strong, some of this Government funding may be able to be returned through the repayment of capital. Under the Funding Reference Scenario, \$25.9 billion in Government funding is needed, suggesting that the majority of this funding is required to be in the form of equity as it is needed before private sector debt is available. However this is a temporary peak funding requirement—in excess of \$10 billion could be returned to Government as capital repayments by year 11 and \$20 billion by year 15 (Exhibit 8–1).

Government's use of equity to fund all or most of NBN Co's capital expenditure during early roll-out also demonstrates to lenders that Government is committed to making the NBN a success, and provides an implicit guarantee that will help NBN Co raise private sector debt as discussed further in Section 8.2.3.

¹⁸⁵ Based on a total funding requirement of \$35.6 billion

Using Government debt

As well as, or instead of, the Government investing equity in NBN Co, it could provide a loan to NBN Co. Although this form of funding does offer some accounting advantages, it has a number of disadvantages relative to other forms of funding.

Depending on NBN Co's corporate structure, it may be able to pay interest and repay principal on Government debt at a time when it is unable to pay dividends on equity, and it may be able to claim interest payments as a deduction against its taxable income. From a whole of Government perspective Government debt is also lower cost than private sector debt due to Government's low cost of funds.

Under Government guidelines, including those relating to competitive neutrality, any debt provided to NBN Co should be on commercial terms, partly to ensure that NBN Co does not obtain an advantage in its cost of funding over the market.

Market soundings indicate that private sector debt would need to have precedence over Government debt for private sector lenders to be interested in NBN Co. Further, Government debt, even on such a subordinated basis, would not particularly strengthen NBN Co's credit profile, in contrast to Government equity.

In accounting terms, a Government loan to NBN Co would be an asset included in the calculation of the Government's net debt. In other words, if Government raises debt and lends to NBN Co, it could be treated as neutral toward Government's net debt position. However, if Government debt is subordinate to private debt, in certain circumstances it may take on economic characteristics of equity. This classification would not permit the Government debt to be offset.

Restricting the use of grants or subsidies

As an alternative funding mechanism, Government can provide grants or subsidies to GBEs, for example to support ongoing investments and operations in business segments that would not otherwise make an adequate return.

Although NBN Co will be required by Government to invest in areas of business that may not make a fully commercial return (such as satellites and backhaul), these are one-off investments and will not require grants or subsidies to ensure continued commercial incentives to operate these businesses. Under the Funding Reference Scenario, NBN Co will have EBIT margins of 39 percent once roll-out is complete.¹⁸⁶ Even under more adverse scenarios, this margin drops to 29 percent,¹⁸⁷ which would still enable the business to be viable on its own. As a result, grants or subsidies should not be required to support NBN Co.

¹⁸⁶ EBIT margin as at year 12

¹⁸⁷ Based on theoretical worst case scenario, explained in Chapter 7

Grants and subsidies incur an immediate tax liability at the company rate of 30 percent and also have a negative impact on the federal budget. Although such a tax payment would accrue to Government, it directly affects how NBN Co's returns are reported. Grants and subsidies are like an equity investment that is immediately written off, and as such, are inferior to Government equity which retains the potential of a return on investment.

Highlight. Grants and subsidies are not necessary to provide the required incentives to NBN Co to invest in non-commercial elements of the network build and have negative budget impacts and tax consequences.

A significant and ongoing subsidy could compromise NBN Co's PNFC classification. To be classified as a PNFC, NBN Co must be a 'market operator'. Under the Standard Economic Sector Classifications of Australia guidelines, a market operator is not to be 'influenced by the receipt of material financial support in the form of transfers such as grants and donations'. In practice, a subsidy would need to support a significant amount of NBN Co's operating costs over a long period for PNFC classification to become an issue.

There may however be instances where Government chooses to provide a specific grant for policy reasons. For example, wireless operators who may tender to build the fixed-wireless component of the network, could be supported with a grant or subsidy. Alternatively, Government may choose to run this tender through NBN Co, in which case the cost of this portion of the network would become part of NBN Co's equity funding. It is worth noting that the Funding Reference Scenario assumes the conservative position that NBN Co will be required to deploy the wireless network itself.

8.1.4 PRIVATISING NBN CO

Government intends to privatise NBN Co fully within 5 years from the completion of the network roll-out. Of course, as soon as any shares are issued to a private investor, NBN Co has been technically privatised, although may still be majority owned by Government. In this section, privatisation refers to the full sell-down of Government's equity interests in NBN Co. A successful privatisation would require NBN Co to have a stable and proven outlook and for there to be a favourable market for privatisation. The specific path to privatisation and the way to structure the privatisation should be determined based on investors' appetite and preferences at the time. This requires flexibility.

Recommendation 60. That flexibility be maintained in the timing and structure of privatisation of NBN Co: prime determinants of timing should be favourability of market conditions and readiness of the company for private ownership.

Assessing the impact of privatisation assumptions on Government return

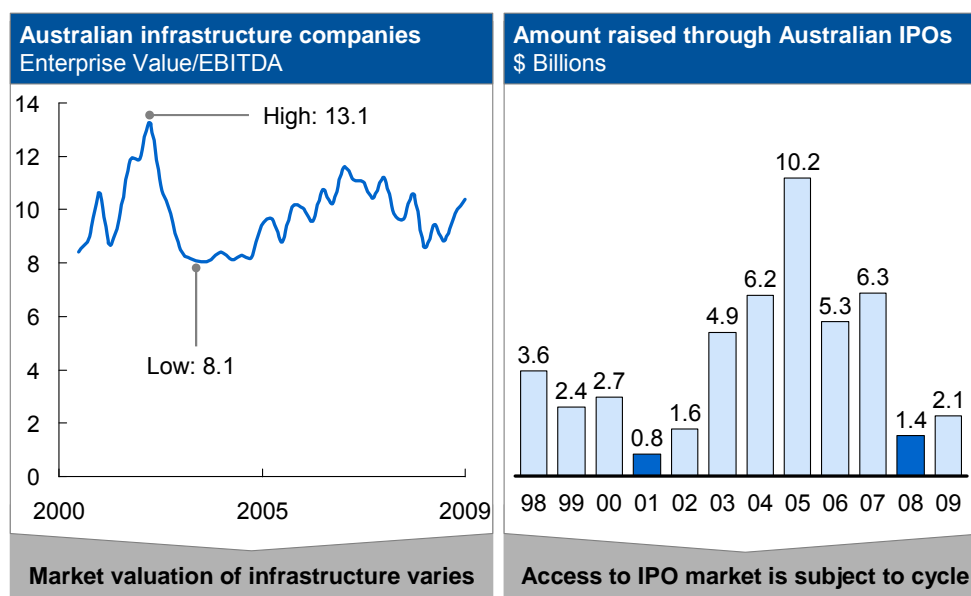
Equity markets are cyclical and volatile. Market valuations can vary substantially as economic conditions and investor perceptions of future prospects change. In addition to valuation levels, access to the capital markets can also be constrained during an economic downturn.

Equity markets have fluctuated over the past decade. A steady rise in the late nineties prompted by high technology and ‘dotcom’ valuations was followed by a sharp decrease in the aftermath of 9/11. In the mid 2000s, cheap credit and rising asset valuations fuelled another bull market before the arrival of the recent economic downturn.

Over this period, average valuations for the Australian infrastructure sector have varied between 8.1 and 13.3 times forward EBITDA (see left part of Exhibit 8–10). Access to capital has been volatile with the IPO market nearly shutting down following the last two economic downturns (see right part of Exhibit 8–10).

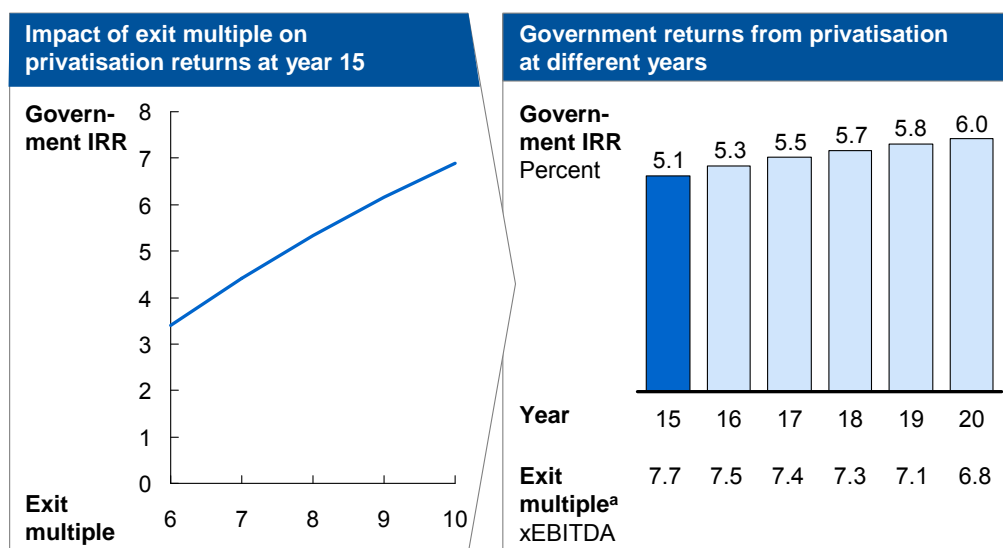
Depending on its objectives at the time and the importance of maximising privatisation proceeds, Government should be prepared to adjust the timing of privatisation given the volatility of equity markets and the uncertainties around preparing NBN Co for privatisation.

Exhibit 8–10. Equity market fluctuations and exit value



SOURCE: Bloomberg; Dealogic; company reports

Exhibit 8–11. Sensitivity of Government returns to privatisation assumptions



a. Based on exit multiple of 7.7 times EBITDA at year 15, derived from a DCF of future cash flows discounted at 9%.
SOURCE: Implementation Study

Government returns will be sensitive to the timing of privatisation. For example, in the Funding Reference Scenario, Government IRR with privatisation is 5.1 percent¹⁸⁸ (equivalent to a project IRR of 6.3 percent). This Government return would rise from 5.1 to 6.0 percent if privatisation was pushed back from year 15 to year 20 (everything else remaining equal), as shown in the right part of Exhibit 8–11.

The most critical assumption is the exit valuation achieved by Government if NBN Co is privatised. As shown in the left part of Exhibit 8–11, across a range of exit EBITDA multiples from 6 to 10 times, Government's return under the Funding Reference Scenario ranges from 3.4 to 6.9 percent. Although the valuation will be determined by NBN Co's future cash flows post-privatisation, Government should keep some flexibility around the timing of privatisation to take advantage of the most attractive pricing environment when selling its stake in NBN Co.

Exhibit 8–11 shows that privatisation could dilute Government's return. For example in the Funding Reference Scenario (with a 6.3 percent project IRR) Government equity IRR decreases from 6.5 percent with no privatisation to 5.1 percent if privatisation occurs at year 15. This is because the assumed private sector WACC (of around 8–9 percent) exceeds the project IRR.

¹⁸⁸ Note that this IRR includes the dilutive effect of privatisation. Without privatisation, Government IRR is 6.5 percent

Alternatives will exist for Government to reduce its effective equity stake in NBN Co and to bring further capital market discipline to NBN Co management. For example, NBN Co could increase its leverage by maximising private sector debt. By year 15, NBN Co will have an estimated debt capacity of \$32 billion. However, it will have raised less than \$10 billion in debt if it raises private sector debt only for new capital expenditure beyond Year 6 but not to facilitate reductions in share capital. Instead of selling its equity stake, Government could refinance NBN Co and, in the extreme, extract an estimated further \$22 billion by maximising private sector debt.

Another option would be for NBN Co to progressively increase the use of debt as its cash flow increases. After year 9, this incremental debt capacity could be used to facilitate reductions in share capital, subject to the availability of debt financing on these terms. In this way NBN Co could move toward a more typical capital structure of 50 percent debt, assuming a sufficient quantum of private sector debt was available in the market. Exhibit 8–1 compares this approach (Option B) with a more conservative use of debt to fund capital expenditure costs (Option A). Using this approach, Government could receive \$20 billion before privatisation (as opposed to \$8 billion), but privatisation proceeds would be consequently lower, reducing from \$35.8 to \$19.6 billion.

Conceptually, this could be seen as NBN Co ‘buying back’ equity. In practice, this could take the form of reductions in share capital. The result would be NBN Co having a typical capital structure and therefore operating on a more level playing field with other operators.

Waiting until NBN Co has a stable and proven outlook

Given Government’s intention is to privatise NBN Co, waiting until the business has reached the operations phase would achieve the most attractive valuation for Government. This is because the returns expected by investors decrease over time as cash flows increase and become more predictable. Market soundings also suggest that infrastructure investors are looking for low risk investment opportunities such as regulated utilities while their investment mandate prevents them from having large exposures to assets with significant risks.

Accordingly, NBN Co needs a stable and proven outlook to be an attractive investment opportunity for private sector equity investors. NBN Co can prove that it has such an outlook by demonstrating:

- A stable business model and proven operational track record;
- A stable regulatory regime and established competitive structure;
- A clear governance structure.

NBN Co should have a proven operational track record and a stable business model prior to privatisation

Before investing, private sector investors generally want to be confident that construction risks are no longer material. Investors are also looking for assurance that operational and technological risks are under control. Current market soundings suggest that a key concern for investors is the competitive interplay between fixed and mobile technologies.

Private sector equity investors will also require proof that NBN Co has a clear business model with the right commercial incentives and transparent pricing for each service (e.g. passive and active layer). If, for example, the independent review of competition prior to privatisation (Chapter 10) recommends a separation of NBN Co into Active Co and Passive Co, privatisation proceeds would be maximised by waiting until the separation is effective and each business has a stable and established record. Ideally, investors would like to see three to five years of stable, satisfactory performance with independently audited financial statements prior to investing.¹⁸⁹ Thus a privatisation would most likely be at least 5 years after the roll-out is completed and any separation is effective.

The regulatory regime and competitive structure should be well established

The market's competitive structure and regulatory regime should be well established prior to privatisation. Equity investors will want clarity in regard to which parts of the value chain will be open to competition to assess the cash flows and value of NBN Co. The extent to which the company has a monopoly over the network layers will impact its value: specifically, the decision as to whether to require NBN Co to structurally separate must be taken well before privatisation.

Investors will also want to know the framework and conditions that determine which areas of the business (if any) will receive future Government support.

Another key consideration will be the impact of regulation on NBN Co's financial performance. Private sector investors will be wary of investing in NBN Co if it is exposed to an adverse change in regulation in the short term. This concern should be minimised by having a proven regulatory framework in place. A review process with a clearly established timeline and methodology would help to reduce this perceived risk.

The competitive state of the industry will be a recurrent concern for equity investors. Many of these concerns will be mitigated if Government only considers privatisation late in the operations phase. The recommended competition review can help to remove uncertainties around the level and scope of competition ahead of any privatisation.

¹⁸⁹ Implementation Study market soundings; consistent with information typically provided in company prospectuses prior to transactions

Investors should be convinced there are no governance issues or risk of political interference

NBN Co already has a clearly-defined company structure and an independent Board of Directors in place. However, some equity investors have raised concerns about the potential influence Government could have on the company, in particular by enforcing decisions about pricing or service requirements that are not purely commercial.

To avoid any potential discount on NBN Co's valuation or limiting investors' interest, Government should clarify its position in relation to NBN Co regarding ownership and control beyond privatisation and policy goals should be explicitly codified.

The risk of policy goals impacting investors' returns (e.g. by forcing NBN Co to undertake activities that are not purely commercial or by limiting pricing flexibility) can be mitigated by the definition of a clear mandate for NBN Co and well-defined licence requirements.

Finally, a Government sell-down could have consequences on NBN Co debt holders. It could result in a full debt refinancing at the time of privatisation or in an increased cost of debt financing for NBN Co as its credit risk may be deemed higher without Government as shareholder. In the event of a full privatisation and complete Government exit, NBN Co may be perceived as losing the implicit backing of a high quality sponsor.

Government should address the risks of seeing NBN Co's debt downgraded at privatisation. Government should provide an indication of its plans to debt providers regarding the timing of privatisation. This allows lenders to 'price' this event and assess consequences early on. Guaranteeing that a good investment grade rating will be achieved ahead of privatisation also reduces potential lenders' concerns that their investment in NBN Co could become a low investment grade or speculative grade investment. Finally, lenders might be interested to know who new investors might be so they can limit aggregation risk.¹⁹⁰

Choosing a path to privatisation and targeting investors

Various types of investors may be interested in participating in NBN Co's privatisation. Given NBN Co's size, Government should choose a privatisation strategy that maximises the value of NBN Co by appealing to a broad pool of investors. Separating NBN Co into Active and Passive companies and retaining the ownership of backhaul assets within Government is likely to attract a wider pool of investors than an integrated NBN Co. A separation could also reduce potential difficulties due to NBN Co's size.

Highlight. Separating NBN Co into Active and Passive companies could make privatisation easier given a greater ability to target different investor needs.

¹⁹⁰ Size of exposure of a bank to a single customer

NBN Co can be sold to different types of investors

NBN Co is an investment opportunity for a wide range of potential investors. Given the large size of the project, its privatisation requires attracting several types of equity investors, both domestically and abroad. Government should keep all options open at this early stage and consider both private placement and an initial public offering.

Institutional investors such as infrastructure funds, superannuation, pension and sovereign wealth funds have shown a strong appetite for regulated businesses with a long term investment horizon. This appetite stems from an increase in the long term liabilities which need to be covered such as pension plans. With an aging population, Australian funds face the need to find domestic assets that face similar economic exposure to their growing liabilities. Most international funds target OECD countries for their investments and Australia is an attractive member of this group given its growth characteristics.

Historically, retail investors have also demonstrated appetite for Australian infrastructure and telecommunication companies, through direct participation in public offerings such as Telstra or SP Ausnet, or in listed infrastructure funds such as Spark Infrastructure or Macquarie Airports (MAp).

Privatising an integrated NBN Co is challenging

The size of NBN Co when it is ready for privatisation could create some challenges if Government is looking for a full exit in one tranche.

Government might not find enough external capital to sell its full stake if relying only on sales of an unlisted NBN Co to infrastructure funds. Currently, it is difficult to anticipate any of the largest pension funds or sovereign wealth investors committing to more than \$1–2 billion each. It is also unlikely that NBN Co would secure investments from more than 3 or 4 of these investors as experience points to difficulties in getting competing funds to invest together. It would also be difficult to satisfy typical negative control requirements for investments in unlisted entities for all investors (e.g. board representation). In addition, some of these investors could already be exposed to NBN Co as lenders, which would reduce the exposure they might be willing to take as equity investors. These difficulties might reduce as asset allocations for infrastructure assets go up, the number of pension and sovereign funds increases and their average size grows.

A full initial public offering (IPO) of NBN Co would be one of the largest in Australia's history. With an enterprise value of \$41 billion,¹⁹¹ NBN Co would be an ASX 20 company today.

Based on the experience of previous large privatisations such as Telstra and CBA, Government may choose to complete the IPO in several tranches. However, a sale in

¹⁹¹ Based on Funding Reference Scenario assumptions and 7.7 times EBITDA or 9 percent discount of free cash flows and privatisation at year 15

several tranches could negatively impact NBN Co's valuation. Investors are generally wary of the risk of political intervention in companies where governments are large shareholders and hence may price NBN Co at a discount because of this. Investors also take into account the risk created by 'share overhang' as Government can decide to sell a large block of shares at an inappropriate moment, creating downward pressure on the stock price. This happened with Telstra shares when the Government's holding was transferred to the Future Fund, and with CBA following its privatisation.

An IPO may reduce interest from institutional infrastructure investors. Institutional investors tend to invest in unlisted assets for their infrastructure portfolios and listed entities for their equity portfolios. Once NBN Co has been listed it will not be in scope for many infrastructure portfolios and would be competing for a place in equity portfolios alongside many other listed companies from the infrastructure and telecommunications sector.

An integrated NBN Co would blend businesses with quite different risk and return profiles—this could lead to the whole being valued at less than the sum of the parts. Investors looking for growth would likely be disappointed by the regulated growth profile of the company. Investors looking for stability, such as pension and superannuation funds would find the market risks on the active layer less attractive.

Separated Active and Passive companies are attractive to different types of investors

NBN Co possesses characteristics of both a regulated infrastructure company and a market based telecommunications operator. Separating NBN Co into two entities could increase investors' appetite at the time of privatisation.

A Passive Co—excluding the unprofitable backhaul assets—would be a strong fit with infrastructure investors' portfolios. NBN Passive Co would be a regulated business, with low variability of cash flows and stable returns determined by what constitutes a fair return on its capital base. Its national presence makes it highly correlated to the Australian economy. The expected long asset life provides investors with a long duration asset which can match long duration liabilities such as retirement annuities. Finally, the ability to increase prices offers a good hedge against inflation.

In addition, a Passive Co may support higher levels of leverage (relative to its size) than an integrated NBN Co. Increasing leverage before privatisation would reduce the amount of equity needed from private sector investors, increasing the chance of a full exit for Government.

By contrast, an Active Co would compete in the telecommunications market and would offer the potential for strong revenue growth, at the cost of higher risk associated with ongoing management of products, pricing and upgrades. Based on the competitive situation at the time, it could be sold to the public via an IPO, to other industry participants directly, or retained by Government.

A separation of NBN Co into two entities would however have tax consequences. In particular, a future transfer of assets from NBN Co to another entity (such as the separation of active assets from passive assets) could give rise to a stamp duty liability in respect of the assets transferred.¹⁹²

The Government should maximise flexibility in future planning and minimise the risk of a stamp duty liability. Government could negotiate with the States and Territories to request a specific exemption in relation to the stamp duty that may arise at privatisation or in respect of reorganisations prior to privatisation. Alternatively, Government could explore legislative mechanisms to exempt NBN Co from the application of stamp duty in the event of separation.

Highlight. Any future transfer of assets (such as in a restructure) may result in a substantial stamp duty liability unless Government negotiates an exemption with the States and Territories.

NBN Co may not benefit from the most common sources of relief from stamp duty. As NBN Co is intended to conduct its business competitively, it is unlikely that NBN Co will be entitled to the exemptions that the Crown enjoys. The various forms of corporate reconstruction relief currently provided by the States and Territories—by statute or by way of grace and favour relief—may not provide comprehensive relief for NBN Co. These reliefs envisage transfers of assets between members of a private corporate group and do not envisage Government as an owner. Furthermore, some of the jurisdictions do not provide relief for transfers to and from trusts, should such a structure be used.

Setting up the appropriate structure for privatisation

Many infrastructure investment vehicles are structured to maximise attractiveness to a wide range of investors. A managed investment trust with a stapled structure is attractive to investors as it is more tax effective than a traditional company structure (Exhibits 8–12 and 8–13).

Government will need to decide whether it is prepared to consider a structure that may reduce tax proceeds, in order to attract additional domestic and overseas investors. It should then evaluate whether the relative returns from maintaining income from taxes under a traditional company structure outweigh gaining a potentially higher price at privatisation by using a more typical structure for NBN Co.

Recommendation 61. That NBN Co be directed to evaluate alternatives for a corporate structure that preserves flexibility and considers transaction costs at privatisation.

¹⁹² Assuming Passive Co is the successor of NBN Co and only the Active assets are transferred to a new Active Co., the stamp duty liability could reach \$230 million (e.g. average of 5.5 percent times \$4.2 billion, which is the book/gross value of the active assets in year 15)

NBN Co has currently been set up as a company with no assets. At privatisation, private sector investors in NBN Co—especially foreign investors—are likely to have a preference for an investment in a stapled trust structure. Setting NBN Co up in a way that is attractive to investors would prevent NBN Co from being at a disadvantage at privatisation relative to other investment options.

A single trust in isolation would likely be treated as a company and not treated as a transparent vehicle. This would defeat the attractiveness of using a trust structure. A stapled structure may be attractive, in which case NBN Co would carry on the operation of the business while certain assets would be held in a trust. The trust would only be allowed to carry on investment type activities, such as leasing of assets to obtain rental income.

Certain provisions could however prevent the establishment of a stapled trust structure after NBN Co acquires assets. For example, there are provisions in the income tax law that may prevent the transfer of assets into a trust from achieving the transparent treatment for the trust. In addition, the transfer of assets from a company into a trust may trigger stamp duty. Ideally, a stapled trust structure should be set up before NBN Co acquires or develops substantial assets.

Highlight. Setting up a Managed Investment Trust at the outset to hold the NBN assets is likely to maximise value and attractiveness to a wide range of investors at the time of privatisation.

When considering the consequences of making an investment in NBN Co more attractive for investors, Government should consider the trade-off between future tax proceeds and privatisation proceeds. To assess the value of a stapled structure for investors, Government needs to understand the difference in cost for investors, both domestic and international, of maintaining a traditional company structure and implications for privatisation proceeds. Government should assess the costs in particular for likely NBN Co investors such as superannuation funds and foreign infrastructure investors. The cost difference between a stapled trust structure and a company structure is driven by the differences in tax regimes between these two structures. As the tax framework will evolve between now and the time of privatisation, this cost cannot be calculated accurately today.

Exhibit 8–12. Example of typical infrastructure structures

Stapled trust structure and shareholder loan arrangement

A trust is a common infrastructure investment vehicle. A trustee holds the assets on behalf of the beneficiaries. A trust deed governs its operation. It is treated as a transparent vehicle for tax purposes: that is, tax is levied in the hands of the investor rather than at entity level.

Using a trust structure for infrastructure assets has advantages:

- Recently enacted Managed Investment Trust provisions potentially provide a concessional tax rate of 7.5 percent for foreign investors on income of the trust and gains on exit. The *Tax Laws Amendment (2010 Measures No. 1) Bill 2010*, released on 10 February 2010, expands these rules;
- When a trust's accounting profit exceeds its taxable income position, this excess may be paid out as a 'tax-deferred' distribution. A company would pay out this excess as an (assessable) unfranked dividend. The tax deferred distribution is effectively a return of the investor's principal on their investment, and would reduce the investor's cost base. Once reduced to nil, further tax deferred distributions would give rise to a gain which may be a concessional tax capital gain for individuals or superannuation funds. This is particularly relevant during a project's early operations.

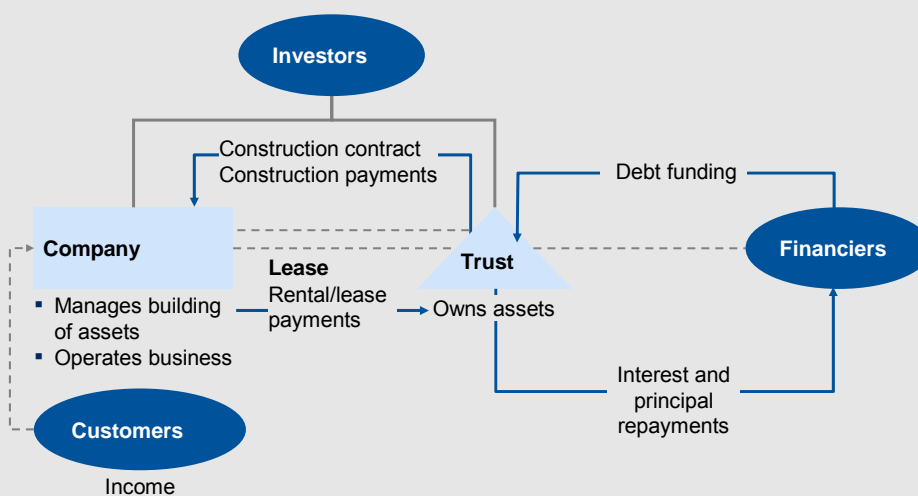
For a trust to achieve these advantages, it must not carry on trading activities. In a stapled structure a trust merely holds the assets, and a company carries on business operations.

Examples of 'stapled' trust structures in the Australian infrastructure sector include Transurban, Macquarie Infrastructure Group, Spark, and DUET.

The treatment of trust tax-deferred distributions may be replicated through a shareholder loan arrangement in relation to a company structure. In this arrangement, part of the investor's capital is contributed in the form of a shareholder loan. However the benefits are limited:

- Foreign investors would pay tax at 30 percent versus 7.5 percent;
- Distributions can only be made up to the value of the loan;
- Charging of interest on the shareholder loans may be undesirable for investors because such interest would be taxable in the hands of the investors (or subject to withholding tax) during the early years of the project when the company is in a tax loss position.

Typical infrastructure investment structure



Source: Implementation Study

Exhibit 8–13. Key attributes of infrastructure projects

		Construction	Ramp up and early operations	Mature operations
Typical profile of an infrastructure project through its life cycle	Cash available for distribution to investors	<ul style="list-style-type: none"> None <ul style="list-style-type: none"> Funding used to construct asset 	<ul style="list-style-type: none"> Some 	<ul style="list-style-type: none"> Significant
	Accounting profit position	<ul style="list-style-type: none"> Minimal profit or loss <ul style="list-style-type: none"> Interest is capitalised 	<ul style="list-style-type: none"> Generates profits Accounting profits lower than cash profits (due to non-cash deductions such as depreciation) 	
	Taxable profit position	<ul style="list-style-type: none"> Losses (due to deductions for interest during construction phase) 	<ul style="list-style-type: none"> Losses (due to depreciation deductions and carry forward tax losses) 	<ul style="list-style-type: none"> Profits
Tax and distribution treatment for various structures	Managed Investment Trust in a stapled structure		<ul style="list-style-type: none"> Investors can receive tax deferred distributions^a 	<ul style="list-style-type: none"> Domestic investors taxable at marginal tax rates Foreign investors may be taxable at 7.5%
	Company		<ul style="list-style-type: none"> Investors receive taxable unfranked dividends^b 	<ul style="list-style-type: none"> Investors receive franked dividends (tax paid at company level at corporate tax rate, currently 30%)
	Shareholder loan ^c		<ul style="list-style-type: none"> Investors receive taxable Interest payments^b Return of principal not assessable (unless principal exhausted) 	

- a. These distributions would be either non-assessable or, if the principal on the investor's investment is exhausted, subject to capital gains tax
- b. Taxable at investors' marginal tax rates for domestic investors or subject to withholding tax for foreign investors
- c. Either in a company or in a stapled structure

SOURCE: Implementation Study

8.2 Adapting the funding model over time

The previous section proposed a funding model for NBN Co. This model is subject to a number of variables and a long time horizon. These variables can positively or negatively affect the project's funding requirements. Given these uncertainties, a funding approach is required that monitors uncertain elements and develops contingencies to ensure funding requirements are met in the most advantageous way.

Government may need to adapt its approach over time to deal with changes to the funding requirement. Government equity or debt could be used to fulfil an increase in the funding required. In the event that Government wishes to further reduce its funding requirement, it may need to explore the use of project finance. Under current modelling and market conditions, project finance is unlikely to reduce Government funding requirements. However, Government should monitor market conditions and progress in NBN Co's business plan to determine if such a solution could be advantageous in the future if debt markets improve. The use of Government guarantees could aid Government in gaining increased levels of private sector debt with the required quantum and tenor to enable a reduction in Government's funding requirement.

Three subsections follow:

- 8.2.1 Planning for uncertainties in the project and market
- 8.2.2 Avoiding project finance under current conditions
- 8.2.3 De-risking NBN Co for private lenders.

8.2.1 PLANNING FOR UNCERTAINTIES IN THE PROJECT AND MARKET

NBN Co is expected to become a high earning business in the long term. However, there are many uncertainties that could influence the funding required to reach this end state or impact Government's returns at privatisation. This subsection highlights key areas of uncertainty and defines their potential impact on the funding profile of the NBN.

Planning for uncertainties in the project

Variables relating to the costs of rolling out the NBN and attracting revenues from customer take-up could increase or decrease funding requirements in the near term.

Various cost and revenue scenarios are outlined in Chapter 7 with the impact on Government's funding requirement and returns covered here. This analysis assumes that NBN Co attains an investment grade credit rating and raises the maximum amount of private sector debt to fund capital expenditure costs.

Taking on debt will leverage the project IRRs discussed in Chapter 7. Leverage works both ways—if the project IRR is below the after tax cost of debt, the effect of debt will be to reduce equity returns to Government; if the project IRR is above the after tax cost of debt, the use of debt will increase Government equity returns.

Under a conservative business case scenario, the Government funding requirement is in the vicinity of \$26 billion. In the Funding Reference Scenario, the basic wholesale service is priced at \$35, with the mid-case for demand. Construction costs remain at the high end of the plausible range but do not blow out (see cell numbered ‘1’ in Exhibit 8–14).

Highlight. Under a conservative business case scenario, Government’s funding requirement is in the vicinity of \$26 billion. This requirement is temporary as from this peak, NBN Co should be able to support substantial private sector debt

Agreement could be reached for the use of Telstra’s infrastructure, reducing the costs of roll-out. Alternately, NBN Co may be able to build the network more cheaply by realising scale benefits, driving ongoing productivity gains, bringing new deployment techniques to Australia such as micro-trenching or negotiating cheaper use of aerial deployment (see cells numbered ‘2’ and ‘3’ in Exhibit 8–14). As most of the costs of construction arise before NBN Co can take on private sector debt, reductions in these costs would also reduce the Government funding requirement. If market conditions remained the same as in the Funding Reference Scenario, these scenarios would reduce the funding requirement.

Under the best case, the network is built cheaply and there is also a high level of market demand. The lower costs of the roll-out combined with a greater ability of NBN Co to service these costs with either revenues or private sector debt results in a Government funding requirement of \$23 billion. Note that due to the majority of roll-out costs being incurred before revenues or private sector debt is available, an increase in revenues does not substantially reduce the funding requirement (see cell numbered ‘4’ in Exhibit 8–14).

However, conditions could also be worse than modelled in the Funding Reference Scenario. In the worst case, fibre deployment costs blow out and lower demand causes a significant decrease in revenues. Under this extreme scenario, Government’s funding requirement is \$32.6 billion (see cell numbered ‘5’ in Exhibit 8–14). However, as discussed in Chapter 7, this is not a plausible scenario in practice as Government would adapt the pace and nature of roll-out to keep returns higher and the funding requirement lower.

Exhibit 8–14. Government funding requirement per scenario

Revenue scenarios		Build cost scenarios			
Revenue scenario	Fibre deployment cost blowout	Build cost at higher end of plausible range	Reasonable infrastructure sharing	Build cost at lower end of plausible range	
Higher demand ▪ \$35 basic service	\$30	\$26	Funding variable	\$23	Government equity IRR (without privatisation)
Mid-case demand ▪ \$35 basic service	\$30	\$26		\$24	Government equity IRR (without privatisation)
Mid-case demand ▪ \$30 basic service	\$32	\$28		\$25	Government equity IRR (without privatisation)
Lower demand ▪ \$30 basic service	\$33	\$28		\$25	Government equity IRR (without privatisation)
					Government funding needed (\$ Billions)
					Scenario discussed in body text

Note: Assumes Government IRR is based on underlying project IRR discussed in Chapter 7, modified by the leveraging (or diminishing) effect of debt finance. The maximum private sector debt is used in all scenarios to the fund roll-out. Dividends paid to Government from operating cash flows.

SOURCE: Implementation Study

Planning for the impact of a migration agreement

The amount and structure of potential agreements with Telstra must be factored in when determining NBN Co's funding requirement. Due to the commercial sensitivity and the uncertainty surrounding such agreements, the mechanics of any such deal are not discussed in detail.

There are three primary areas that could be covered by a deal with Telstra as identified in Telstra's Terms of Engagement with NBN Co announced on 18 December 2009. These are:

- Access to passive infrastructure around ducts, pits and exchanges;
- Access to Telstra's backhaul network;
- Migration of Telstra's traffic from the copper network to the new fibre network.

The impact of an agreement on passive infrastructure and backhaul has been considered above. In terms of an agreement for migration of customers, it would only be considered if it creates value for NBN Co by increasing the revenues to NBN Co during roll-out relative to a compete scenario.

The impact of such an agreement on the Government funding requirement will be determined by a number of factors:

- The size of the payment required;
- Whether the payment is upfront or staged;
- The size and speed of the resulting increase in revenues for NBN Co.

Government would need to fund an upfront payment any time in the first 5 years as NBN Co would not be able to sustain debt. By contrast, a significant proportion of a staged payment could reasonably be assumed to be in line with expected customer migration, only falling due once NBN Co was able to support private sector debt. Thus NBN Co would be able to fund part of a staged payment without Government support. However, it is likely that a staged payment would be larger in size than an upfront payment.

The additional revenues that would result from a migration agreement would enable NBN Co to pay for more of the roll-out costs itself, avoiding additional injections of Government equity. The earlier arrival of revenues would also enable NBN Co to raise private sector debt earlier, which could be used as a substitute for Government funding of roll-out costs. In order for a deal to impact the Government funding requirement positively, these beneficial cash flow effects would need to exceed the size of the cash payment.

Planning for debt market uncertainty

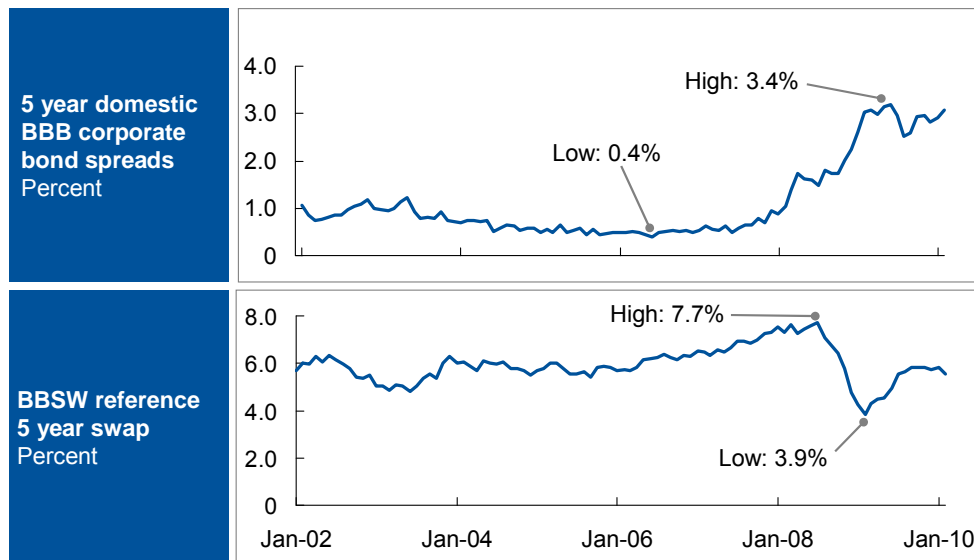
Debt markets are subject to fluctuation. These fluctuations could impact the price and availability of private sector debt at the times when NBN Co needs to access it. We estimate the interest costs for NBN Co could vary from \$4.6–5.9 billion cumulatively between years 1 and 15 of the NBN project.¹⁹³

Highlight. Changes in debt markets could vary interest costs by \$1.3 billion between years 1 and 15 of the NBN project.

The cost of debt can vary over time either because of changes in the Government risk-free rate (base rate) or because of changing credit spreads. Over the last eight years the Bank Bill Swap (BBSW) 5 year swap reference rate which we have used as a benchmark has varied between 3.9 and 7.7 percent (Exhibit 8–15, bottom). When considering credit spreads, the variability has been even higher. In particular, in the last 18 months, spreads for BBB rated debt have risen from a low of 0.4 percent in 2006 and 2007, to 3.4 percent at the peak of the crisis (Exhibit 8–15, top). Although spreads have started to stabilise in the last few months, they are at a much higher level than historically (by over 2 percent) and it is difficult to predict if credit spreads will stabilise at a given level and what this level will be.

¹⁹³ Based on peak private sector debt funding of \$9.7 billion (Option A from Exhibit 8–1)

 Exhibit 8–15. Uncertainty in debt pricing



SOURCE: Bloomberg

A further source of uncertainty is the volume of debt financing that will be available in the market when it is required by NBN Co. In addition to its impact on debt pricing, the global economic downturn has caused a strong decrease in the volumes of debt financing, both in corporate debt and in project finance. Exhibit 8–16 shows the impact of this uncertainty on the market for private sector debt. Given the size of its debt finance requirement, NBN Co’s ability to raise private sector debt could be impacted by a lack of liquidity in the future.

As an example of the difficulties NBN Co could encounter, according to reports, the Dutch company Reggefiber (described in Exhibit 8–4) has been unsuccessful in raising external financing so far (up to the end of 2009). The company’s shareholders, KPN and Reggeborgh, have been forced to step in to provide temporary financing. Looking ahead, Reggefiber expects to secure external financing in the first half of 2010. In particular, the European Investment Bank (EIB) is considering lending €130 million to the project as it supports the renewed Lisbon Strategy to roll out high-speed Internet in the EU.

Exhibit 8–16. The global debt market

The liquidity crisis has left lasting impacts on the global debt market

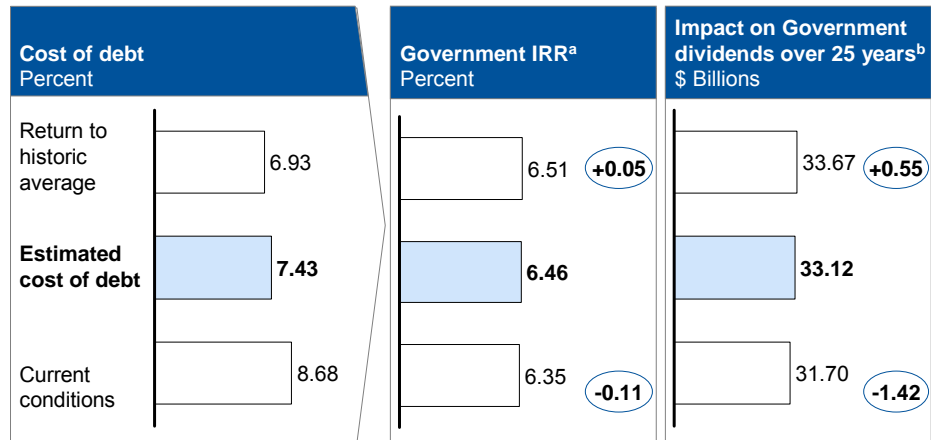
- Market capacity has dropped but is likely to return
 - The global economic downturn put pressure on banks to strengthen their balance sheets resulting in a tendency to avoid financing new projects
 - Banks initially withdrew from, or reduced exposure to, non-core markets which limited the availability of international bank finance. However international banks' interest in Australia has renewed and capacity is likely to increase
- Risk appetite has dampened
 - Following the crisis, banks have refused to take on significant market risks in project finance. Failures in the Australian infrastructure market due to overestimated demand such as the Sydney Cross City and Lane Cove tunnels, BrisConnections, and Babcock & Brown Power have increased the perception of market risk
 - Debt multiples have dropped, tenors have reduced, and covenant packages have tightened. Although competitive pressure may lead to a relaxation of these standards over the medium term, it is likely that concerns about market risk will remain for some time.
- Pricing (margins and fees) has undergone a structural change
 - Before the crisis, Australian banks could raise medium term funding relatively cheaply (10–15 basis points premium over short-term rates) and didn't appear to worry about matching funding tenors to lending tenors (borrowing short-term and lending long-term, termed maturity transformation)
 - However, bank regulators see maturity transformation as one of the causes of the crisis, and are seeking to restrict it, and Australian banks are now limiting the term of their loans to 5–7 years
 - From mid-2007, banks' medium-term funding premiums rose to over 200 basis points (although they have fallen back under 150 basis points), and banks are passing on these costs to customers. Banks' term funding premiums may reduce as market sentiment towards banks improves, but loan pricing is likely to remain high and uncertainty of funding risks will be passed to borrowers through market disruption provisions for some years.

Source: Implementation Study; CBASpectrum

The Funding Reference Scenario assumes the interest rates of private sector debt would be 175 basis points over the base rate if NBN Co is rated BBB and 125 basis points over the base rate for an A rated company. Given the recent uncertainties around the cost of debt financing, two alternative scenarios have been considered: the 'return to historic average' scenario assumes that prices return to their long term average levels while 'current conditions' provides a higher estimate based on recent market levels:

- The 'return to historic average' scenario assumes typical spreads for BBB rated debt around 125 basis points over the risk-free benchmark rate and 75 basis points for A rated debt

Exhibit 8–17. Impact of cost of debt on Government returns



Note: Based on funding reference scenario assumptions, maximised debt up to funding requirement. WACC held constant for each scenario at 9%

a. Note, project terminal value assumed to be the same for all scenarios at \$61 billion in year 25

b. Dividends does not include terminal value – i.e. assumes no privatisation event

SOURCE: Implementation Study

- The ‘current conditions’ scenario assumes typical spreads for BBB rated debt of around 300 basis points and 125 basis points for A rated debt.

These scenarios have a relatively minor impact on Government’s IRR.

The higher cost of debt of the ‘current conditions’ scenario results in a slightly lower IRR for Government. Assuming the Funding Reference Scenario and the maximised use of commercial debt to meet the funding requirement, Government equity returns would improve by 0.05 percent if the costs of debt returned to ‘historic average’ levels. Conversely, if debt costs continue at ‘current conditions’, Government’s equity return would decrease by 0.11 percent. These small changes translate into a more significant impact on Government equity dividends over 25 years as shown in Exhibit 8–17.

8.2.2 AVOIDING PROJECT FINANCE UNDER CURRENT CONDITIONS

Project finance is debt that can be raised against projected cash flows, allowing a company to borrow before it is able to service the debt from current cash flows. Raising project finance from the private sector is unlikely to reduce Government funding requirements if used during roll-out. For project finance to have a beneficial effect on Government’s funding requirement, the following elements need to be in place:

- Project finance must be available—lenders need to be willing to provide the sufficient quantum of debt, at a tenor that would enable a refinancing once NBN Co has the capacity to support corporate finance.

- Refinancing must be possible—NBN Co must have enough corporate debt capacity to refinance the project debt into corporate debt. This debt must be available at reasonable cost and lenders must be comfortable with the timeline for amortisation.
- NBN Co must have enough corporate debt capacity to cover roll-out costs after refinancing.

If these elements are not in place, project finance will not decrease Government's funding requirement and could increase the overall cost of the project. If the debt is not available for a tenor sufficient to reach the point at which corporate debt is available for refinancing, or if the capacity of this corporate debt is not large enough to refinance and pay for roll-out costs, Government funding will need to be used.

Assuming that NBN Co could raise project finance of \$4 billion in year 4 at a cost of an additional 75 basis points, refinancing in years 6, 7 and 8, (as corporate debt capacity becomes available), the requirement for Government funding actually increases by \$0.7 billion.

Changes in the market, or in NBN Co's performance, will affect the availability of project finance and the ability to use this debt to reduce the Government funding requirement. A return to pre-economic downturn debt markets would increase the amount of debt that investors would be willing to lend NBN Co and improve the terms under which this debt capacity could be used as project finance. An improvement in NBN Co's expected performance above the Funding Reference Scenario would increase, or bring forward, positive EBITDA, thus increasing debt capacity.

For project finance to reduce Government's funding requirement, private lenders would need to:

- Allow a long tenor to allow refinancing into corporate debt
- Allow NBN Co to take on corporate debt underneath project finance debt

Assuming that NBN Co could raise project finance of \$4 billion in year 4, at a cost of an additional 75 basis points, refinancing in years 9 and 10, and that this facility did not preclude the company from raising additional corporate debt in the intervening years, the requirement for Government funding could be reduced by \$3.5 billion. Notwithstanding this analysis, the Implementation Study does not expect project finance to be available or attractive relative to waiting for investment grade debt in year 6.

8.2.3 DE-RISKING NBN CO FOR PRIVATE LENDERS

The appetite of the market will define the amount of debt available to NBN Co. Government can take steps to increase the availability of debt and potentially reduce the costs of that debt, by giving some form of guarantee to reduce the risks faced by lenders.

Lenders will be concerned that the occurrence of any of the risks that NBN Co faces (Chapter 7) will lead to it being unable to meet its debt obligations (likely to be primarily due to insufficient cash flow). This default risk can be addressed by means of an explicit Government financial guarantee or by guaranteeing revenue. These forms of Government support are discussed below.

If used improperly, Government guarantees could breach Government policy guidelines such as competitive neutrality and could affect NBN Co's classification as a Public Non-financial Corporation. However, steps can be taken to reduce the risk.

Highlight. The decision to give a Government guarantee is an important choice that will materially affect the cost and availability of private sector debt.

Providing an explicit Government financial guarantee

A relationship with Government can significantly impact a company's credit rating. In determining the effect of Government support on a 'Government Related Issuer' a credit rating agency will take into account both the seriousness of the relationship between Government and the issuer and the co-variance of credit risk between the two parties. To ascertain the first factor, the agency will examine a number of areas including the ownership stake Government has in the issuer, the existence of an explicit policy mandate to support the issuer, and any special legal status afforded to the issuer. The second factor will be determined by examining questions such as whether Government and the issuer are exposed to common credit risks, and have the same revenue base.

The impact of a Government guarantee depends on whether it is explicit or implicit. In assessing any implicit guarantee and its impact on credit risk, credit rating agencies will examine the nature of the relationship between Government and the issuer and the underlying risks. Subject to the underlying risk profile of the business, an implicit guarantee could upgrade an issuer's credit rating by up to two notches.¹⁹⁴ The Implementation Study has assumed an implicit guarantee in assessing the price and credit rating of debt.

¹⁹⁴ One 'notch' is the difference between two consecutive credit ratings. For example, a two notches upgrade means a company rated BBB could be upgraded to A-, and a company rated A- could be upgraded to A+

An explicit guarantee could confer NBN Co the benefit of Government's AAA credit rating or one notch below. For example, if NBN Co were to have a credit rating of BBB with no form of Government support, an implicit guarantee could result in a credit rating of A- while an explicit guarantee could result in a rating of AA+.

Although it is likely that NBN Co will benefit from the implicit guarantee as the Government is its main investor, many market participants have mentioned an explicit guarantee would considerably ease the task of raising private sector debt in early roll-out. The Australian Government Guarantee Scheme¹⁹⁵ for Large Deposits and Wholesale Funding is a successful example of a guarantee arrangement that has allowed authorised deposit taking institutions to raise debt despite difficult market conditions.

From a budgetary and financial management accountability perspective, an explicit guarantee would need to be approved by the Minister for Finance¹⁹⁶ and would require disclosure as a Budget Risk. Current Government policy is that a Commonwealth guarantee should not be issued until it has been determined that all other options available have been exhausted.¹⁹⁷

Guaranteeing revenue

Guaranteeing a minimum level of revenue would reduce a major source of NBN Co's business risk. Lenders are likely to take a conservative view of NBN Co's initial revenue projections, particularly in the light of their recent experiences with revenue projections for Sydney's Cross City and Lane Cove tolled tunnels, both of which went into receivership because actual revenues fell substantially short of projections. This guarantee would give substantial comfort to private sector lenders and investors, enabling them to reduce their return requirements and to increase their level of funding.

Guarantees are seen as a form of financial support under Government Finance Statistics. NBN Co's PNFC status would be inconsistent with long term reliance on a revenue guarantee or a financial guarantee that transferred market risks to the Commonwealth. However, it is unlikely that NBN Co will require a level guarantee large enough to trigger a review of its PNFC status.

Under competitive neutrality guidelines, NBN Co should not gain an advantage over the market by virtue of its Government ownership and as such would need to compensate Government on a commercial basis for the use of any guarantee.

¹⁹⁵ For details, viewed 19 February 2009, <www.guaranteescheme.gov.au>

¹⁹⁶ Under *Financial Management and Accountability Amendment Regulations 2009*, Regulation 14

¹⁹⁷ Department of Finance and Deregulation 2003, *Guidelines for Issuing and Managing Indemnities, Guarantees, Warranties and Letters of Comfort*, Canberra

8.3 Creating funding certainty for NBN Co

Government will need to play a significant role in providing funding for NBN Co. Under a range of conservative business case scenarios, this funding requirement is projected to be in the range of \$21–28 billion.¹⁹⁸ This will require increasing allocated funding substantially above the \$2.4 billion currently available in the Building Australia Fund.¹⁹⁹

NBN Co and the market need certainty that the required funding will be made available. Suppliers and partners need to know that NBN Co is able to meet its contractual obligations on time. The management need such certainty as a basis for decisions and planning.

A formal agreement such as a share subscription agreement between Government and NBN Co would provide this certainty. As an additional indication of funding certainty, Government could consider using or replicating the funding mechanisms in the Building Australia Fund. This would provide additional transparency and would reduce the administrative complexity of going through a legislative process for each year's appropriation.

Recommendation 62. That Government and NBN Co enter into formal agreements for security of funding.

Two subsections follow:

- 8.3.1 Highlighting the benefits of funding certainty
- 8.3.2 Putting in place funding certainty for NBN Co.

8.3.1 HIGHLIGHTING THE BENEFITS OF FUNDING CERTAINTY

Creating certainty in the market and within NBN Co has positive effects for the NBN initiative:

- Long term contracts with suppliers and customers become possible. Funding certainty decreases counterparty risk and thus enables NBN Co to enter more favourable contracts with suppliers and partners;
- Funding certainty increases the availability of private sector debt. As stated in the previous sections, it is expected that private debt lenders will require that NBN Co has a high credit rating before they agree to lend. Funding certainty substantially lessens the financial risk of the company and thus enables the company to sustain a higher rating than would otherwise be possible. Ratings agencies view liquidity risk

¹⁹⁸ Assuming debt markets allow NBN Co to raise the maximum amount of private sector debt

¹⁹⁹ Discussions with Government departments

as one of the main risks during roll-out. They will take into account both actions and statements made by Government, in making a credit rating assessment for NBN Co;

- Government's intentions are clearly communicated to other network operators. Secure funding sends a signal to the market that the NBN will be built as planned and that any contractual negotiations should be conducted on that basis. Similarly, correct signalling will encourage competitors to develop a long term competitive response to NBN Co's entrance rather than a short term strategy that could harm the overall industry;
- NBN Co's directors are able to act commercially and fulfil the policy aims of Government. Under a funding agreement, continued funding would be contingent upon the completion of agreed milestones that would further policy goals. Thus the directors of NBN Co would be commercially justified in ensuring that these policy goals were met.

8.3.2 PUTTING IN PLACE FUNDING CERTAINTY FOR NBN CO

Government can create funding certainty by entering into a formal agreement with NBN Co. Government should also consider the optimal way to ensure the necessary funding is appropriated.

Putting in place a formal agreement between Government and NBN Co

One way to create funding certainty for NBN Co is to commit Government to a funding agreement. This could be a share subscription agreement, under which Government agrees to the provision of a fixed amount of funding as consideration for shares in NBN Co. The market would recognise a funding agreement as providing certainty for NBN Co as it would be an enforceable contract between the company and Government.

The key advantage of such an agreement is that it would enable Government to use funding as a discipline linked to progress towards objectives. Funding would be made available by Government up to pre-agreed limits in accordance with NBN Co's corporate plan. Government could structure this agreement to ensure the flexibility to alter its funding commitment as NBN Co's funding requirements develop.

A funding agreement requires either written approval from the Minister for Finance or a sufficient appropriation of funds by Parliament.²⁰⁰ While Government may own 100 percent of the equity in NBN Co, debt providers and major contractors and suppliers will

²⁰⁰ Under Regulation 10 of the *Financial Management and Accountability Regulations* 2009, any Government commitment not authorised by the provisions of an existing or proposed law requires written authorisation from the Minister of Finance

place reliance on the funding agreement in entering into contracts. As such, an agreement would be useful early in the life of NBN Co before an Appropriation Bill is passed.

Creating an appropriation structure that increases funding certainty

Government can use an annual or standing appropriation to fulfil its obligations under a funding agreement. If NBN Co is meeting its obligations under such a contract, Government will be bound to provide the agreed funding whether it has been appropriated or not. As such, Government should consider options to ensure that the necessary appropriations have been made.

Under an annual appropriations mechanism, the estimated funding requirement for the following year is included in an Appropriation Bill and passed at Budget or Additional Estimates each year. Under this mechanism, Government requires Regulation 10 approvals for any multi-year commitments to NBN Co as they are not covered by that year's appropriation legislation. Significant administrative complexity can arise due to an ongoing need to estimate and justify the expected funding requirement for the following year. Government would also need to seek appropriations on numerous occasions.

By contrast, a standing appropriation provides appropriation authority outside the annual process. Standing appropriations are a class of special appropriations that enable the appropriation of funds for indefinite periods. Commitments made under a standing appropriation are not subject to Regulation 10 approval. The majority of standing appropriations deal with outflows of funding for purposes such as unemployment benefits and pensions.

This mechanism has been used in the past to fund major projects by appropriating the necessary funds into a special account created by legislation. Examples of this type of appropriation include the Federation Fund Account, which funded substantial capital projects throughout Australia to mark the centenary of Federation, and the National Heritage Trust of Australia Account which gave grants for the Murray Darling Project. More recently, the Building Australia Fund, the Education Investment Fund and the Health and Hospitals Fund, have been created as special accounts under the management of the Future Fund Board.

The use of a special account has a number of benefits for the NBN initiative:

- It enables Government to match funding to NBN Co's needs more easily. The level of uncertainty surrounding the roll-out could create a situation in which funding requirements could change from those estimated year to year. The non-lapsing nature of appropriations in a special account enables the Commonwealth to contribute funding to NBN Co as and when required;
- It enables Government to match funding to NBN Co's performance more easily. Linking funding to specific milestones is easier with a special account because the

necessary funding is ready to be deployed even if NBN Co achieves the milestones earlier or later than expected;

- It improves the transparency of funding. Private sector investors and suppliers take confidence from the public demonstration of commitment from Government. While the presence of a special account does not affect the legal position of Government towards NBN Co, having the funds committed may increase confidence within the market.

8.4 Funding methodologies and assumptions

This section contains a technical explanation of methodologies used to calculate the cost of capital for the NBN and an outline of companies deemed comparable in relevant respects thereby allowing the Implementation Study to apply certain funding estimates.

Two subsections follow:

8.4.1 Cost of capital

8.4.2 Comparable companies to NBN Co.

8.4.1 COST OF CAPITAL

Methodology

The Capital Asset Pricing Model (CAPM) provides a means for estimating the cost of equity. The CAPM provides a theoretical basis for determining a discount rate that reflects the equity risk of a particular investment or business operation. In simple terms, the CAPM states that the returns expected by an equity investor reflect the risk of the underlying investment. The value of this risk is the risk-free rate of return plus a risk premium that reflects the risk the investor bears relative to the general market risk. The required rate of return for equity holders (K_e) is determined using the formula below:

$$K_e = R_f + \beta \times R_M$$

where:

R_f is the risk-free rate of return;

R_M is the equity market risk premium;

β is the risk factor of the investment or business operation, reflecting the unique risk of the investment (beta).

Assumptions

Estimating the inputs to the CAPM formula involves a large degree of subjectivity. Therefore, the basis of each assumption is set out below:

- Risk-free rate;
- Market risk premium;
- Beta.

Risk-free rate

The risk-free rate reflects the return an investor can achieve on a financial instrument with no default risk. In selecting a risk-free rate, the Implementation Study uses a blended risk-free rate that reflects the return on the current 10 year Government bond and the expected long term return on the 10 year Government bond at valuation date.

A risk-free rate of 5.5 percent is applied, reflective of the three-month average²⁰¹ of the 10 year Government bond rate as reported by the Reserve Bank of Australia.

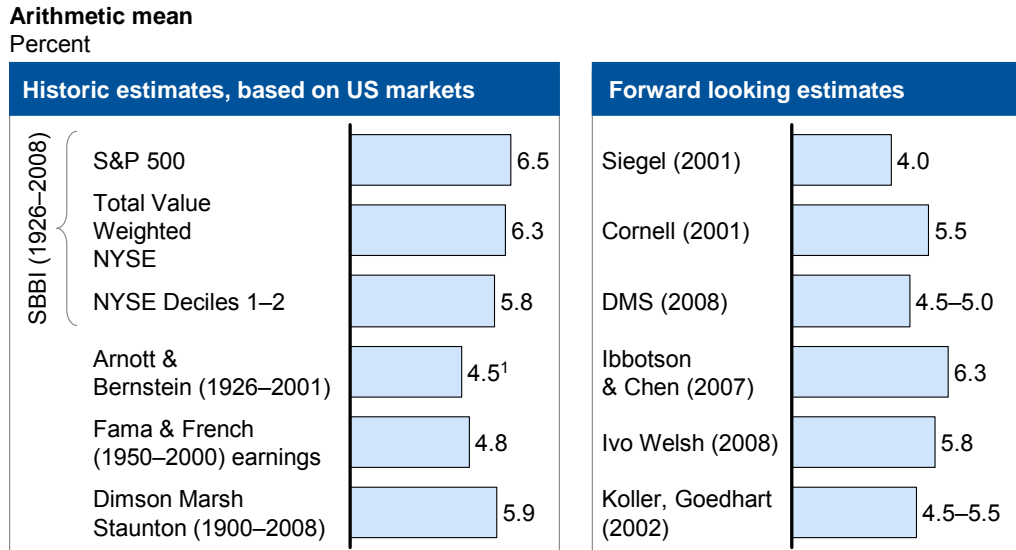
Market risk premium

The market risk premium reflects the excess return that a market portfolio of assets generates over the risk-free rate. Two alternative approaches exist for computing the equity risk premium:

- Historic: the equity risk premium is computed based on historic equity returns less historic risk-free rates;
- Forward looking: the equity risk premium is estimated based on forward looking models, surveys, etc.

Exhibit 8–18 gives an overview of several available estimates, using both methods.

Exhibit 8–18. Market risk premium estimates



SOURCE: Ibbotson 2009, *Stocks Bonds Bills Inflation Valuation Yearbook 2008*; Pratt, S and Grabowski, R 2008, *Cost of capital*; Welch, I 2008, *The consensus estimate for the equity premium by academic financial economists in December 2007*; Credit Suisse 2009, *Global investment returns yearbook 2009*

²⁰¹ November 2009 to January 2010

The Implementation Study uses a range from 5 to 6 percent consistent with the research above.

Beta

The beta factor is a measure of the risk of an investment or business operation, relative to a well-diversified portfolio of investments. In theory, the only risks captured by the beta factor are those risks that the investor cannot eliminate through diversification, referred to as systematic, non-diversifiable or uninsurable risk. The concept of the beta factor is central to the CAPM, given that beta risk is the only risk that investors price into their required rates of return.

The beta for equity securities is measured statistically by regressing the returns on an equity market index, such as the All Ordinaries (Accumulation) Index, against the share price returns of the relevant stock. The market portfolio has an equity beta of 1.0. A beta greater than 1.0 implies that the returns on a stock are, on average, more volatile, and hence the stock is riskier than the market. A beta of less than 1.0 implies the reverse.

Betas derived from share market observations represent equity betas, which reflect the degree of financial gearing of the company. Consequently, it is not possible to compare the equity betas of various companies without taking into account their gearing levels. To strip out the impact of financial gearing from the equity beta, the following formula is applied:

$$\beta_u = \frac{\beta_L + \left[\beta_D \times \left(\frac{D}{E} \right) \times (1 - t) \right]}{1 + \left(\frac{D}{E} \right) \times (1 - t)}$$

where:

β_u is the unlevered (asset) beta;

β_L is the levered (equity) beta;

β_D is the beta of debt;²⁰²

t is the corporate tax rate;

D/E is the debt-to-equity ratio of the relevant equity security.

²⁰² In our calculations, we assume debt Betas of 0.27 for investment grade companies and 0.37 for speculative grade companies. See Chapter 10 in Koller, T, Goedhart, M & Wessels, D 2005, *Valuation: Measuring and Managing the Value of Companies 4th edition*, John Wiley & Sons, New Jersey

Exhibit 8–19. Asset betas

Companies	Country	Equity Beta	Asset Beta	Debt / (Debt + Equity)	Credit rating
Telecommunication companies, median			0.66	34%	
AT&T	US	0.79	0.68	32%	A/A2
Belgacom	BE	0.49	0.46	23%	A+/Aa3
BT Group	GB	1.13	0.75	55%	BBB
Cable & Wireless	GB	1.00	0.96	20%	BB-/Baa3
Deutsche Telekom	DE	0.55	0.44	52%	BBB+/Baa1
France Telecom	FR	0.55	0.46	47%	A-/A3
Singapore Telecommunications	SG	0.88	0.82	14%	A+/Aa2
Telecom Corp. of New Zealand	NZ	1.08	0.86	37%	A/A3
Telefonica	ES	0.71	0.59	37%	A-/Baa1
Telenor	NO	1.00	0.85	30%	A-/A3
Telstra	AU	0.52	0.47	29%	A/A2
Verizon Communications	US	0.73	0.65	37%	A/A3
Domestic infrastructure, median			0.77	52%	
Australian Infrastructure Fund	AU	1.05	0.99	14%	N/A
MAp Group	AU	1.10	0.76	61%	BBB-
Transurban Group	AU	0.60	0.54	37%	N/A
Connecteast Group	AU	1.08	0.80	57%	N/A
Transfield Services	AU	1.04	0.72	74%	N/A
Macquarie Infrastructure Group	AU	0.98	0.82	46%	N/A
Challenger Infrastructure	AU	0.99	0.58	79%	N/A
Toll Holdings	AU	0.80	0.78	18%	N/A
Domestic utilities, median			0.49	59%	
AGL Energy	AU	0.62	0.60	15%	BBB
Origin Energy	AU	0.71	0.71	21%	BBB+/Baa1
Infigen Energy	AU	1.09	0.76	61%	N/A
Envestra	AU	0.96	0.50	74%	BBB-/Baa2
Spark Infrastructure	AU	0.66	0.48	57%	Baa1
SP Ausnet	AU	0.50	0.40	67%	A- / A1
DUET Group	AU	0.84	0.47	78%	BBB-
Hastings Diversified Utilities	AU	0.52	0.47	46%	N/A
International utilities, median			0.60	44%	
Snam Rete Gas	IT	0.39	0.38	34%	N/A
Enagas	ES	0.84	0.65	44%	AA-/A2
Fluxys	BE	0.63	0.58	32%	N/A
Terna	IT	0.53	0.46	43%	A+ / A2
National Grid	GB	0.62	0.44	62%	A-/Baa1
Elia	BE	0.44	0.33	73%	A-
Oest Elektrizitätswirts	AT	0.86	0.76	24%	A- / A2
Red Electrica	ES	0.74	0.60	37%	AA- / A2
Aguas De Barcelona	ES	1.03	0.97	37%	A- / A2
Hera	IT	0.80	0.60	51%	A- / A2
United Utilities	GB	0.69	0.46	63%	A-
EVN	AT	0.78	0.64	42%	A- / A2

Source: Bloomberg; company reports

To determine the applicable equity beta for NBN Co, firstly a range of asset betas from market sources and an analysis of potential comparables is derived. The range of asset betas used is between 0.50 (consistent with the ACCC's asset beta assumptions for the telecommunications sector²⁰³) and 0.65 (based on our analysis of comparables detailed in Exhibit 8–19). The equity beta is estimated based on a typical capital structure for the industry. The Implementation Study assumes Debt/(Debt+Equity) ratios between 50 and 60 percent.

Cost of equity calculation

Exhibit 8–20 shows the details of our calculation of NBN Co's cost of equity in its operations phase.

Exhibit 8–20. Cost of equity

	Low	High	Comments
Asset beta	0.50	0.65	
Debt/(Debt+Equity)	50%	65%	Target capital structure
Gearing (D/E)	100%	186%	
Corporate tax rate	30%	30%	
Debt Beta	0.27	0.27	Investment grade
Equity Beta	0.66	1.14	[1]
Market risk premium	5.0%	6.0%	[2]
Risk-free rate	5.5%	5.5%	[3]
Cost of equity	8.8%	12.4%	[1] * [2] + [3]
Source: Implementation Study			

²⁰³ See page 76 of ACCC 2009, *Assessment of proposals National Broadband Network Process: Report to Expert Panel Appendices*, Canberra

8.4.2 COMPARABLE COMPANIES TO NBN CO

Exhibit 8–21. Comparables valuation multiples and Debt/EBITDA ratios

Company	Country	Net Debt/ Forecast EBITDA	EV/EBITDA		
			Historic	+ 1 year	+ 2 years
Telecommunication companies, median		1.5	5.4	5.1	5.0
AT&T	US	1.9	5.4	5.6	5.4
Belgacom	BE	1.7	5.2	5.5	5.5
BT Group	GB	4.1	6.3	4.3	4.3
Cable & Wireless	GB	0.7	5.3	4.6	4.3
Deutsche Telekom	DE	3.4	4.9	4.3	4.3
France Telecom	FR	3.3	4.4	4.9	4.9
Singapore	SG	0.9	12.0	9.8	9.4
Telecom Corp. of New Zealand	NZ	1.1	4.1	3.9	3.8
Telefonica	ES	3.5	6.1	6.3	6.2
Telenor	NO	0.3	6.1	6.1	6.6
Telstra	AU	1.4	5.4	5.1	5.0
Verizon Communications	US	1.4	5.4	5.0	4.8
Domestic infrastructure, median		6.8	13.9	12.8	12.6
Australian Infrastructure Fund	AU	1.0	n/a	8.5	7.8
MAp Group	AU	7.6	2.7	15.2	14.1
Transurban Group	AU	7.3	22.2	21.1	20.9
Connecteast Group	AU	14.1	59.3	29.6	22.4
Transfield Services	AU	6.3	13.4	11.3	11.4
Macquarie Infrastructure Group	AU	4.2	n/a	12.5	7.4
Challenger Infrastructure	AU	9.6	14.3	13.2	13.8
Toll Holdings	AU	0.5	10.2	8.9	7.8
Domestic utilities, median		5.4	12.5	9.4	9.0
AGL Energy	AU	0.6	27.3	8.4	7.7
Origin Energy	AU	-0.2	12.5	10.0	7.8
Infigen Energy	AU	4.9	9.4	9.1	8.9
Envestra	AU	7.0	9.6	9.4	9.0
Spark Infrastructure	AU	8.2	n/a	14.5	15.2
SP Ausnet	AU	6.0	12.8	11.3	10.7
DUET Group	AU	6.8	11.8	9.3	8.5
Hastings Diversified Utilities	AU	4.0	20.2	9.4	9.7
International utilities, median		5.6	9.2	9.0	8.4
Snam Rete Gas	IT	5.5	12.0	9.6	7.6
Enagas	ES	5.7	9.3	8.3	7.3
Fluxys	BE	3.4	8.0	7.9	7.6
Terna	IT	5.6	9.2	9.1	8.4
National Grid	GB	9.7	9.9	9.0	8.7
Elia	BE	11.6	7.8	15.7	14.9
Oest Elektrizitätswirts	AT	3.6	9.7	9.7	10.2
Red Electrica	ES	5.7	10.2	9.4	8.5
Aguas De Barcelona	ES	1.2	6.6	6.5	6.2
Hera	IT	4.6	7.0	5.9	5.4
United Utilities	GB	9.5	8.7	8.4	9.3
EVN	AT	5.5	9.9	9.6	8.5

Source: Bloomberg; company reports

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