

**FINANCIAL DEVELOPMENT AND AFFORDABILITY OF PUBLIC PRIVATE PARTNERSHIPS (PPPs):
IMPLICATIONS FOR UGANDA'S INFRASTRUCTURAL DEVELOPEMENT PLANS**

**Thesis submitted in partial fulfillment of the requirements for the degree of Master of Management
in Finance and Investment**

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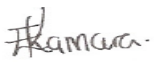
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October 2016

Declaration

I Edgar Kamara declare that, *Financial Development and Affordability of Public Private Partnerships (PPPs): Implications for Uganda's Infrastructural Development Plans*, is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Signed 

Edgar Kamara

September 2016

ACKNOWLEDGEMENTS

In an undertaking of this nature, it is not possible to acknowledge all the help one receives from individuals and institutions. Firstly, I am grateful to my supervisor, Dr.Odongo Kodongo, for his invaluable guidance, support and encouragement. My gratitude is further due to my family for their sacrifices, love and encouragement. Finally my gratitude is also owing to all those personal friends and professional colleagues, too many to name here, who gave me assistance and provided encouragement in the course of this undertaking.

DEDICATION

To the memory of my father, Vincent William Kwebiiha Nyakabwa

and

To my mother, Alex Edith Busingye Nyakabwa

ABSTRACT

This thesis addresses affordability of private financing for infrastructure in the context limited public sources of funding and a low level development of Uganda's financial sector. The thesis addresses the factors that influence the cost of private financing of public infrastructure; the influence of the level of development of domestic financial markets in the determination of private financing costs of infrastructure projects; the private sector options feasible for financing Uganda's infrastructure development and the scope for public sector interventions to reduce the cost of private finance in infrastructure.

The research project was undertaken between June 2015 and March 2016. The research methodology was mainly library based and qualitative in nature. However, the approach was dual in nature since both existing sources of information and primary data were used.

The study has established that in the face of limited public funding and a deficit in infrastructure development expenditure, private financing for public infrastructure is indispensable. However, it is relatively more costly, with good reason. However, there is scope for the public sector to affect favorably the cost of private financing for infrastructure. In particular, steps to address regulatory, political and country risk are critical. Equally important are measures to address macroeconomic instability and strengthen balance of payment positions as well as reforms to widen and deepen the financial sector. In addition, optimizing project selection and preparation as well as establishing a credible pipeline of infrastructure projects coupled with suitable financing plans can positively impact the cost of private financing for infrastructure.

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1. Introduction and Background

1.1. Introduction

According to Allianz Global Investors¹ infrastructure refers to the physical and technical structures that support the operation, development and growth of societies and economies such as roads, bridges, tunnels, water supply, energy generation and transmission and telecommunications. In addition, infrastructure encompasses social services that include schools, hospitals, social housing and public sector accommodation. For emerging economies, adequate investment in infrastructure is unavoidable if their growth prospects are to be realized. The World Economic Forum (2014) supplements Allianz Global Investors description and view on infrastructure depicting infrastructure assets as the foundation for a nation's competitiveness, prosperity and social well-being. Notwithstanding the acknowledged role of infrastructure, the World Economic Forum finds that the gap between critical infrastructure requirements and actual expenditure is widening. They estimate the shortfall in expenditure at least US\$ 1 trillion per annum. In addition, the financial constraints of governments, which impede the necessary investment in infrastructure, are acknowledged. In the context of a mismatch between infrastructure requirements and the available public funding, the World Economic Forum believes that in such an environment private financing can play a useful role and become a beacon of hope. It is against this background that the potential role and form of private financing for Uganda's infrastructural requirements is the focus of this thesis.

1.2. Uganda's Infrastructural Context

According to World Bank (2012)ⁱ, Uganda has made substantial progress in infrastructural development in the recent past. This progress has been underpinned by the early and successful reforms in the information communication and technology (ICT) arena and the restructuring of the power sector. ICT reforms have resulted in the expansion and penetration of mobile telephony while the power sector restructuring has paved the way for the doubling of generation capacity. Despite the recent progress, infrastructural limitations continue to weigh down the growth prospects of the economy.

The World Bank (2012) estimates that infrastructural improvements in the 1990s and early 2000s contributed over 1.5 percentage points to the economy's per capita growth rate, with the ICT and power sectors making the largest contribution, respectively. The Bank further contends that if Uganda improved its infrastructure to

¹ www.allianzgi.com. Accessed 20/08/2015

the level of Africa's best performing country (Mauritius), growth performance could be improved by as much as 3.8 percentage points per capita, with the most significant contributions coming from upgrades to the power and ICT infrastructure. To address the infrastructural challenges, it is estimated that the country needs to invest at least US\$1.4² billion per annum mostly in new capital expenditures. This is an enormous challenge as it represents an estimated 5.6% of the country's Gross Domestic Product (GDP), which stood at US\$24.7³ billion for the 2013 financial year.

With respect to electricity, the electricity distribution utility, Umeme Limited (2012), indicates that power demand is expected to double over the next decade, if the current economic growth rates are sustained. As of 2009, electricity penetration rate stood at 9% of the population, one of the lowest in the world. In terms of supply, the country had an installed capacity of 844 megawatts (MW) as at the end of 2011. This is forecasted to increase to 2609 MW by 2025. In the context of extremely low electricity penetration rates and strong economic growth forecasts⁴, the envisaged increase in supply capacity will fall short of demand and, therefore, the country will require accelerated investments in generation capacity not only to meet immediate demand but also address the extremely low electricity penetration rates.

The roads sector, which is the country's most dominant mode of transport, accounting for 90% of passenger and freight traffic, is equally in need of investment. The Public Private Infrastructure Advisory Facility (2014) observes that a large proportion of the road network will require improvement to meet current and forecast traffic demands if equal distribution and access to social development is to be enhanced. A breakdown of the composition of the country's road transport infrastructure provides an indication of the scale of investment that will be required. The road network is approximately 71,000⁵ km of road that includes 20,000Kms of national roads; 17,000Kms of district roads; 3,500Kms of urban roads and 30,000Km of community access roads. With regard to quality of the road network, only 16.6%⁶ is paved. Moreover, Uganda's road network provides critical transport corridors linking the land-locked countries of Rwanda, Burundi, Eastern Democratic Republic of Congo (DRC) and Southern Sudan to the Port of Mombasa in Kenya. In that regard, its upgrade

² Africa Infrastructure Country Diagnostic Report. Uganda's infrastructure: A Continental Perspective

³ www.worldbank.org/en/country/uganda

⁴ The International Monetary Fund forecasts that the economy will reach its growth potential of 7% in FY2014/15

⁵ PPIAF Supports Uganda Road Program July 2014

⁶ Uganda Bureau of Statistics Statistical Abstract 2014

will have regional-wide positive spillover effects and portends well to the ongoing regional integration efforts within the East African Community economic bloc.

To address the infrastructural challenges outlined above, the Government of Uganda is partly looking to the private sector to mobilize a portion of the requisite funding. To that end, the National Planning Authority (2010) through the National Development Plan acknowledges that increased tax revenues and efficiency gains on the part of the public sector will not be adequate to finance the increased expenditure if the envisaged flagship projects, of which five and four are in the energy and transport sectors respectively, are to be implemented. The National Development Plan (NDP) is, therefore, explicit that Public Private Partnerships (PPPs) are a key plank of its financing strategy for public infrastructure. In addition, the Ministry of Finance, Planning and Economic Development (2015) highlights two of the flagship projects expected to get underway during that period. These are:

- the Refinery Project, which is estimated to cost US\$4billion and to be financed through a joint venture where the private party will hold a 60% equity stake and the government of Uganda 40% and
- the Jinja-Kampala Expressway a 77 kilometer road envisaged as a toll-charging PPP estimated to cost US\$800 million and for which the International Finance Corporation has been engaged as a transaction advisor.

The country's debt sustainability is further justification for private sector participation in the financing of infrastructure. According to the Ministry of Finance, Planning and Economic Development (2013) Debt Sustainability Report, public and publically guaranteed debt stood at US\$6.4 billion as of June 2013, representing 30.4% of GDP. With regard to the categories of creditors, multilateral creditors accounted for 51.8%, bilateral creditors 7.8% and domestic creditors at 40.5%. However, domestic debt dominated the debt service outflows, accounting for 88.6% of total interest costs. This is attributed to the relatively high interest rates on Treasury instruments in comparison to the highly concessional interest rates on external debt. With a weighted average interest rate of 5.2% at the time of publishing the report, the government believed its debt was sustainable. However, ambitious infrastructure projects that are being fast-tracked are set to more than double the public debt.

In the assessment of debt sustainability, the proposed Mombasa-Kampala-Kigali standard gauge railway project, to which government contribution of US\$6billion is expected, and the recently concluded financing negotiations for the Karuma and Isimba Hydropower projects, which will add US\$ 2.2 billion to the country's debt stock, were excluded. If implemented, the three projects will increase the public debt stock from US\$6.4 to US\$14.6billion. The proposed Karuma HEP project serves to illustrate the terms of financing and the resulting debt service obligations. To implement the project, the government intends to borrow US\$1,435⁷ million from the China Exim bank with 55% of the proceeds attracting an annual interest rate of 2% and the balance 4% over a tenor of 15 years. This and other projects in the pipeline will obviously have an impact on the sustainability of public debt. More importantly, the proposed project's impact on the country's debt stock underlines the fact that the high capital costs of infrastructure development call for partnerships between the public and private sector, if ambitious infrastructure development programmes are to be implemented. Indeed, credit rating agency, Fitch Ratings,⁸ has already sounded a warning that the country risks a downgrade of its rating if the aggressive borrowing to finance infrastructure is not scaled back.

In preparation for the accelerated implementation of PPPs, steps have been taken to create an enabling legal and regulatory environment. According to Dentons UKMEA LLP (2014), in July 2014, Uganda passed the Public Private Partnership Bill 2012 into law. They make the following observations about the PPP law:

- It adopts a simple approach;
- It focuses on establishing the framework for a successful PPP programme in the sense that it is not over-prescriptive and allows for different (alternative) structures – a feature of the law that should provide comfort to both potential lenders and sponsors seeking a degree of certainty over process;
- It is envisaged that the PPP Law will apply to design, build and operating projects across most industrial sectors, including transport (roads, rail and air), IT, social infrastructure, oil pipelines/refineries, mining and energy (both generation and transmission / distribution) and
- That the proposed projects will fulfill the objectives of the National Development Plan.

Although the enabling law for PPPs has just come into existence, the country has experienced various forms of private sector investment in public infrastructure over the last decade. The energy sector was the first to

⁷ www.monitor.co.ug

⁸ www.businessdailyafrica.com/Fitch-concerned-over-Kenya--Uganda-aggressive-borrowing/-/539552/2754440/-/ss97q4/-/index.html

attract private investment with the award to Eskom Uganda Limited in November 2002⁹ of a 20 year concession to operate and maintain both Nalubale and Kiira Hydropower stations with a combined capacity of 250 megawatts. In March 2005¹⁰, Umeme Limited was awarded a 20 year concession for the distribution and supply of electricity in the country. The concession requires Umeme to repair, upgrade and expand the distribution system with approval of the related capital expenditures by the regulator – the Electricity Regulatory Authority. In June 2007¹¹, the Electricity Regulatory Authority (ERA) issued a 30 year license for the generation and sale of electricity to Bujagali Energy Limited.

The Bujagali Energy Project is a landmark PPP project in the country in the sense that it is the first to build from the ground up an infrastructure facility with private financing. The project entailed the development, construction and maintenance of a 250 megawatt hydroelectric power plant. The plant was commissioned in 2012 at an estimated cost of US\$875¹² million. As of June 2015, an additional seven firms are licensed by the ERA to generate and sell electricity. Outside of the energy sector, a notable PPP project but, which, unfortunately, is yet to meet expectations, is the Kenya-Uganda Railway concession to Rift Valley Railways (RVR). The Kenya-Uganda Railway is a 2,350¹³ km line connecting the Port of Mombasa in Kenya with Kampala, Uganda's capital. The concession was entered into in 2006 for a period of 25 years. The concessionaire was to upgrade, operate and maintain the network but has faced several setbacks in their attempt to mobilize the necessary financing to meet the concession performance requirements.

1.3. Statement of the Problem

Based on the foregoing synopsis on the country's infrastructural ambitions and financing constraints as highlighted by the increasingly unsustainable public debt load, PPPs are expected to assume a critical role in addressing the infrastructural financing challenge. However, it would appear that the viability of PPPs for a developing country like Uganda will, to a significant degree, depend on the cost of capital and competitiveness of capital markets and, more broadly, the state of development of the financial sector. Indeed, the Ugandan leadership has openly expressed frustration with the cost of private financing for what is its otherwise acclaimed PPP project – Bujagali Hydro Electric Power. The Ugandan President is quoted as

⁹ www.businessworld-africa.co.za

¹⁰ Umeme Listing Memorandum 2012

¹¹ www.era.or.ug

¹² www.cao-ombudsman.org

¹³ PPIAF.A PPP Against the Odds:The Kenya-Uganda Rail Fights for Survival

saying that privately funded electricity is too expensive for his country. More importantly, a policy reversal seems to be in the offing as the Government of Uganda is currently reportedly refining a proposal to buy-out the private investors in the Bujagali Project on account of the effect of the high cost of finance on end-user tariffs.¹⁴

Other sections of society have weighed in on the Bujagali debate too. The Uganda Chamber of Mines and the Uganda Manufacturers Association have called for its listing on the Uganda Securities Exchange as a means of refinancing its expensive debt. They contend that generation accounts for 70%¹⁵ of the end-user tariffs, which stand at US\$ 0.15-0.17 per Kwh, which is five-fold the South African tariffs. On the other hand, the legislature¹⁶ and the national Treasury have cautioned against moves to buy-out the private sector. The legislature would rather efforts are focused on other generation projects while the national Treasury indicates a buy-out proposal is beyond the country's debt capacity.

The views of Uganda's head of state are somewhat inconsistent with the country's stated policy on the use of PPPs as articulated in the National Development Plan as is the prospect of the buy-out of private investors in the Bujagali Project. In addition, the debate in other important segments of society points to the difficult choices the nation faces in remedying the high energy tariffs. If private financing of infrastructure is unaffordable for Uganda and yet indispensable to the country's infrastructure development aspirations, what is to be done? This study, therefore, explores the question of the cost of finance for the country's proposed infrastructure projects in the context of the state of development of its financial sector; and seeks to draw relevant lessons from the experiences of developed and emerging market economies that have successfully navigated similar challenges.

1.4. Research Objectives and Questions

In the context of Uganda's infrastructural development plans, limitations of public sources of funding and the state of development of its financial sector, the thesis will seek to address the following questions:

- 1) What factors influence the cost of private financing of public infrastructure?
- 2) What role does the level of development of domestic financial markets play in the determination of private financing costs of infrastructure projects?
- 3) Which private sector options are feasible for financing Uganda's infrastructure development?

¹⁴ <http://www.theeastafrican.co.ke/news/Uganda-quietly-plans-takeover-of-Bujagali-dam/-/2558/2645286/-/150v0y1/-/index.html>

¹⁵ <http://www.newvision.co.ug/news/669580-private-sector-proposes-listing-bujagali-on-stock-market.html>

¹⁶ <http://www.monitor.co.ug/News/National/-/688334/2744604/-/8352ex/-/index.html>

- 4) Is there scope for public sector interventions to reduce the cost of private finance in infrastructure projects?

The objectives of the research are:

- 1) Review broadly the factors that influence the cost of private financing for infrastructure projects
- 2) Assess the potential role of the domestic financial sector for contextual purposes;
- 3) Document the experiences of countries where the use of private financing in infrastructure development is more established with particular focus on the cost of funds;
- 4) Pinpoint areas that merit further investigation emerging out of the findings

1.5. Overview of the Chapters

Chapter 1 provides the background to the topic

Chapter 2 reviews literature on the role and challenges private financing of infrastructure in general and PPPs in particular in the delivery of public infrastructure

Chapter 3 details the research methodology

Chapter 4 presents case analyses that seek to on the potential role of national development banks in the financing of infrastructure projects and the potential role of domestic financial markets in PPPs and their capacity to affect the cost of financing, which entails a comparative analysis of the state of development of Uganda's financial sector vis-à-vis the UK, South Korea and Brazil with a view to establishing variations in financial sector depth between developing, emerging market and developed economy financial sectors and their significance to the cost of funds. In addition, the case analyses touch on the prospects for success of infrastructure project bonds and securitization in the Ugandan setting. Lastly, the chapter presents case studies of individual projects in the four jurisdictions and their financing structures with the objective of drawing project-specific lessons that lend support or otherwise to the findings of the financial sector reviews and the literature review.

Chapter 5 presents and discusses the findings of the survey

Chapter 6 provides a summary of the study, conclusions and recommendations.

2. Literature Review

2.1. Introduction

Public Private Partnerships (PPPs) and project finance are at the two elements that anchor privately financed infrastructure. As a result the literature review that follows below examines various facets of the two aspects. These include the roles and challenges of PPPs; the benefits and costs of private finance; the concept of bankability in project finance; the cost of capital and approaches that have the potential to enhance affordability of PPPs.

2.2. Public Private Partnership: Potential Role and Challenges in the Delivery of Public Infrastructure

According to Fitch Ratings (2014), PPPs have been used by governments for centuries to deliver public infrastructure such as canals, railways, roads and bridges in exchange for payments ranging in nature from tolls to tariffs and government financed availability-based revenue streams. However, the great economic depression of the 1930's precipitated a break from private infrastructure delivery in preference for largely public sector funding. The decade of the 1980's witnessed a resurgence of private financing and delivery of public infrastructure with the United Kingdom (UK) emerging as a pace-setter under its Private Finance Initiative (PFI), which is estimated to have completed more than 700¹⁷ transactions. Fitch Ratings (2014) further observes that an estimated 5,000 private infrastructure projects have been implemented in low- and medium-income countries since 1984. The UK's National Audit Office (2009)¹⁸ characterizes privately financed projects as:

- Contractual arrangements between the public and private sector which entail the use of funds raised by the private sector to meet public sector objectives. The private-sector raised funds are eventually repaid by the public sector on a periodic basis;
- The form of private sector-raised funds, invariably, is dominated by project finance with the aim of extracting the benefits of the non-recourse nature of this type of financing. The benefit conferred by the non-recourse nature of project finance is that in the event of the project's failure, the financing is not recovered. However, the risk of non-repayment is reflected in the cost of financing; and

¹⁷ Testimony of Cherian George, Managing Director Global Infrastructure and Project Finance-Fitch Ratings, before the Transportation and Infrastructure Committee of the US Congress

¹⁸ NAO private finance projects

- The financing structure of the projects is highly leveraged with projects typically funded by 90% debt and 10% equity, with the former senior in ranking to the latter with respect to repayment profiles.

2.3. The Value of Private Sector Participation in Infrastructure Development

A key attraction of PPP's to the public sector, in the context of the highly capital-intensive nature of infrastructure, is the financing that private entities are able to mobilize and deploy. The European Investment Bank (2005) puts down the growing use of PPPs to an ever-expanding gap between investment needs and available public resources. In stepping into the financing breach, PPPs provide a platform for the delivery of funding that the public sector would or could not have been able to raise and, in so doing, play a critical role in the improvement of public infrastructure. Besides financing, it is argued that PPPs deliver value for money (VFM). The NAO (2009) describes VFM in the context of PPPs relative to the conventional public sector delivery of projects as efficiency savings; quality improvements; innovation and superior management of risks. However, some have argued that there is a political expediency dimension to the use of private-sector mobilized funds in the delivery of infrastructure. To that end, Shaoul, Stafford and Stapleton (2012) contend that PPPs are politically attractive in the sense that they enable provision of infrastructure without the need for the public sector to finance the large and upfront capital costs since the private sector assumes this responsibility. In that sense, public sector expenditure is deferred since repayment of the private sector parties is over a long duration, but more costly because the cost of private sector financing is relatively more expensive.

In refining their argument, Shaoul et al draw a distinction between financing and funding of PPPs. They argue that financing is the private sector component that meets the upfront capital costs of infrastructure projects while funding, which covers the full costs over the life of the project including debt and equity costs, is met by the public sector or users through user charges. Because of the relatively high cost of private sector funds and the long repayment periods, the total outflow from the public sector or a combination of users and the public sector is usually four or five times the purchase price of the infrastructure asset. The NAO (2009) introduces a different perspective to the motivation for the use of private financing for infrastructure. Although it acknowledges that the use of private finance for infrastructure is partly driven by the perceived benefits, it also observes that it has, in part, been driven by the eagerness of public officials to arrange off-balance sheet solutions that are not captured in government debt statistics. More unfavorable evidence is presented by Acrete, Shaoul and Stafford (2010) who find that the toll roads in Spain have exposed the taxpayer to greater

risks on account of the high cost of private sector financing. They concluded that more than half of the toll charges represent the cost of private financing, which is double that of the public sector.

Worse still, various forms of public support sustain the already high cost of private financing to the toll roads. Engel, Fisher and Galetovic (2014) provide an even deeper assessment of the public finance dimension to PPPs. In their view, PPPs facilitate public sector accounting trickery in the sense that they enable future financial obligations to be kept off the public balance sheet without economic justification. In addition, they contest the argument that PPPs relieve governments of their budgetary constraints. They argue that the subsequent levying of capital charges on the public sector or user fees constrain the public budget or taxpayer. They, therefore, believe that the same capital charges or user fees could be used to finance the projects under conventional public sector procurement. They contend that PPPs don't achieve net gains in present value terms. If this was the case, the resources saved by the public sector in avoiding the upfront capital costs should be equal to the user fees or capacity payments earned by the private party in present value terms. Since the private party recovers their initial investment with a return leaving the residual risk of the project to the public sector and the taxpayer, they conclude that PPPs affect the public budget in the same way conventional procurement does. Clayton UTZ (2013) takes a more nuanced line to the issue of PPPs contribution to financing. In their view, PPPs only expand the available funding for infrastructure when end-users pay for the services provided. They contend that government-funded PPPs by way of availability payments are simply a substitute for government borrowing since the obligation to pay the service charges is a liability similar to sovereign debt. This is illustrated by the fact that credit rating agencies incorporate such commitments in their assessment of governments' credit rating. However, they concede that, in comparison to traditional public sector procurement, PPPs allow governments to spread their payment obligations over a longer period of time, affording governments a degree of flexibility in the financing of infrastructure.

Yescombe (2007) cautions governments to be careful so as to avoid entering into PPP arrangements whose financial implications are misunderstood or even not understood at all. It is argued that the appropriate context through which PPPs should be considered is that of the public sector reform movement known as the New Public Management (NPM). The NPM, among other things, advocates for the decentralization of government and the separation of responsibility for the purchase from that of provision of public goods as well as the privatization of public services. In this context, PPPs provide a solution for the transfer to the private sector of those aspects of infrastructure that don't lend themselves easily to conventional privatization. In addition, an attempt is made to dispute the argument that PPPs finance rather than fund public infrastructure as

articulated by Shaoul et al (2012). It is argued that any investment in infrastructure financed by sources outside of the public budget enables governments to accelerate investments that would otherwise not have been possible or would have had to be deferred. This is because the choice faced by governments constrained by limited resources is often between PPP-delivered facilities or no project at all. In that sense, private finance supplements limited public resources.

With respect to the cost of private sector financing, Yescombe (2007), while acknowledging that the cost of private finance relative to that of government borrowing is higher, contests the premises of this comparison. The variation in cost of finance between the government and private sector is attributed to the fact that the risk exposure of lenders to government is not comparable to that of private borrowers who sponsor PPPs. However, project risks are not eliminated when financed through government procured debt but are retained by the public sector thus creating a concealed project cost. As a result, a fair comparison of public sector and PPP financing costs ought to adjust the lower government borrowing rates through the addition of the retained risks that represent a concealed cost of the project. Consequently, quantification of risk and its transfer is an inevitable aspect of the debate. The broader issue, however, in the context of public sector resource limitations may not even be cost of private finance but that the PPP is procured cost-effectively rather than what the cost of a conventional public procurement would have been.

Risk transfer is at the core of the benefits cited in support of PPPs and private finance for infrastructure projects. It is central to the assessment of the value for money for this mode of infrastructure delivery. Yescombe (2007) maintains that although the value for money assessment also considers whole-life costs and the services to be delivered, risk transfer is ultimately the basis for the transfer of projects from the public sector balance sheet to the private sector. Although difficult to quantify, demonstration of risk transfer trumps other considerations. Risk transfer entails the assumption by the private sector of risks associated with construction; demand; availability; performance and operation and maintenance costs. Nonetheless, the relevance of this concept is questioned in as far as essential public services are concerned. Yescombe (2007) argues that in the event of a PPP failure, the private sponsors will be under no obligation to finance its rescue. As a result of the public service character of the projects, the public sector is more likely than not to be compelled to incur additional costs so as to avert a disruption in service, which amounts to a failure of risk transfer. Moreover, the complexities of PPP procurement may discourage contract termination and retendering in preference for additional support to the existing operator to maintain service provision. Such interventions would effectively erode the envisioned risk-transfer benefits of the PPP and have been

characterized as “privatizing profits while socializing losses”. On the whole, however, PPPs have bred a more rigorous approach to risk identification and assessment on the part of the public sector as compared to traditional public procurement.

Beyond the decisive role that risk transfer plays with respect to the removal of projects from the public sector balance sheet, it is also fundamental to the economics of PPPs. Yescombe (2007) calls for a balanced approach in its consideration with the guiding principle being that risks should be transferred to the party best-placed to manage them at the lowest cost. On the one hand, if the risks transferred to the private party are disproportionate, they prompt the inclusion of high risk premiums in the pricing of services, which erodes the desired value for money benefits. On the other hand, an appropriate level of risk ought to be transferred from the public sector for PPPs to be justified. It is also fitting that the public sector shares in the upside for its portion of retained risks.

PricewaterhouseCoopers (2008) reflects on the importance of private finance under the United Kingdom’s Private Finance Initiative (PFI) for public infrastructure by inquiring whether the benefits could not have been realized through other procurement means that do not entail the use of private finance. To assess the significance of private finance under PFI, the intended benefits of PFI are recapitulated. These include increased focus on outcomes; more rigorous risk and cost analysis; optimal allocation of risks; synergies derived from the integration of design, construction and operation and whole-life costing. Other expected benefits are comprehensive competition across all project elements; long-term performance management and whole-of-contract maintenance and hand-back of the asset in a contractually agreed condition. The assessment would also be incomplete without reiterating the envisaged role of the different types of private financing. Besides the provision of financing, the senior debt component of private finance was expected to bring to bear on the projects’ discipline in risk analysis and allocation; due diligence; early warning mechanisms for failing projects; restructuring skills to rescue distressed projects and to absorb losses in the event of project failure. As with senior debt, equity finance was expected to place capital at risk and contribute to the resolution of emerging problems. Equity finance was in particular expected to integrate the design, construction and maintenance elements of the project as well as avail private sector long-term performance management skills.

The PricewaterhouseCoopers (2008) assessment finds that private finance has largely met expectations. As a result of private finance, greater focus has been placed on the analysis and optimal allocation of risks and due diligence. This has, in turn, resulted in fewer projects exceeding construction time and cost projections

as compared to conventionally procured public projects. The lenders have particularly played a critical role in due diligence since their upside, unlike equity, is limited to full repayment of principal and interest and yet they suffer loss in the event of default. This motivation of lenders to perform strict due diligence has meant that the other expected roles-restructuring of failed projects and early warning of potential distress-have been called upon infrequently and, when projects have failed, they have suffered losses as expected. The singular contribution of equity has been the integration of design, construction and maintenance elements of projects and long-term performance management. Because the equity provider has a residual stake in the success of the project, it is in their interest to ensure that the integration of all elements of the project is a success and that performance meets the contractual standards for the entire life of the contract. In addition, the long-term nature of the equity provider's exposure is an incentive to maintain satisfactory relations with the public authorities, thus generating benefits beyond provision of financing. Where projects have experienced financial difficulties, equity providers have suffered losses too or have had to inject additional resources to rescue the projects.

As to whether the benefits of private finance described above could have been achieved through alternative means, PricewaterhouseCoopers considers the matter through the prism of the roles played by senior debt and equity. To that end, the quality of the upfront scrutiny that lenders subject projects to is partly driven by their independence from other project participants-equity providers, public authorities, project sponsors and contractors. It is argued that the independence of lenders allows them to reject misconceived projects, which is difficult to achieve in a typical public sector project appraisal setting where vested interests cause projects, once underway, to gain impetus that is difficult to arrest even when defects have been identified. Other independent parties that can potentially play the independent appraisal role such as rating agencies have their own limitations. Firstly, they don't have capital at risk to heighten their risk antennae. Secondly, their fundamental skills lie in credit default, which is only a fraction of the sources of risk in long-term capital intensive projects. It is, therefore, uncertain if the discipline brought to bear on projects by lenders can be replicated by other processes or independent parties. With respect to equity, the combination of capital at risk and the back-ended profile of their cash flows provide an incentive for them to ensure both integration of project elements and long-term performance management. As with senior debt, it is difficult to incentivize a party without a comparable exposure to discharge satisfactorily the responsibilities assumed by equity providers over the term of their contracts.

As to whether the benefits of private finance and the challenges of their replication through alternative procurement arrangements as detailed above are sufficiently large as to justify the premium paid through higher private financing costs, PricewaterhouseCoopers leans on the affirmative side. In their view, this debate has incorrectly been based on the assumption that the public sector can sustainably borrow to finance projects at a cheaper rate than the private sector. While admitting that private sector cost of finance is higher, like Yescombe (2007), they dispute the basis of comparison arguing that the role of the taxpayer is ignored. They contend that under a public sector financing structure that entails borrowing; the taxpayer assumes the function of an equity provider who bears the residual risks and must ultimately repay the debt. Governments can only continue to borrow at the risk-free rate if their debt levels are within prudent limits. In that sense, there are limits to government borrowing capacity at the risk-free rate. To reinforce their argument, the analogy of a highly geared corporate entity is used. As with over-leveraged firms whose credit quality is impaired resulting into a higher cost of equity, heavily indebted governments transfer the burden to taxpayers. It would, therefore, be an oversight to choose government borrowing over private financing merely because the headline cost is lower, if government has exceeded prudent borrowing limits. Such a choice is insensitive to the taxpayer. PricewaterhouseCoopers (2008) arguments about the inappropriate basis of comparison between the private sector and government cost of finance is supported by Clayton UTZ (2013) who asserts that the basis of government borrowing is different from that of the private sector. Government borrowing costs are lower because they borrow on full recourse basis while private sector project companies involved in infrastructure typically borrow on a non-recourse or limited recourse basis. When governments borrow to finance projects, they undertake to repay the loans in full irrespective of whether the projects generate adequate cash flows, if any, to meet the accompanying debt service obligations. On the other hand, private sector project companies borrow on limited recourse, which limits the lenders recourse to the assets of the project company, excluding the investors in the project company. They argue that if a government-owned project company attempted to raise debt on a limited recourse basis, its cost of borrowing would be no different from that of a privately-owned counterpart.

Shaoul (2002) asserts that it is not for nothing that capital-intensive public infrastructure that delivers vital public services was and mostly remains under government ownership. The reason is that they are far too risky or not sufficiently cash generative to justify private possession. However, flawed project appraisal methodologies applied in the justification and procurement of PPPs conceal this fact. Firstly, the Value for Money (VFM) assessment, which compares the whole-life costs of a project under conventional public procurement referred to as the Public Sector Comparator (PSC) against the cost of a project procured under

a PPP, relies too heavily on risk transfer and discounted cash flow techniques that have considerable shortcomings. The assumptions underlying the discounted cash flow (DCF) technique of choice-Net Present Value (NPV) are often defective. For instance, NPV as applied in the private sector is assumed to maximize shareholder wealth. Its application in the public sector would be restricted to shareholders and yet most public sector entities are not established to maximize wealth. In addition, NPV is not relevant in situations where capital is rationed as is the case in most public sector projects. Under the NPV technique, VFM is very sensitive to the discount rate used. As a result, the discount rate assumes a decisive dimension. DCF techniques also rely on forecasted cash flows, which in the case of most infrastructure projects are far into the future and uncertain, given their contract tenors. Secondly, the methodology for the quantification of risk transfer is unproven as it relies on the ability to identify and attach probabilities and values to a range of outcomes. Notwithstanding the methodology flaws, the public sector always retains the most significant risks that relate to technical obsolescence and change of regulations. Aside from VFM, Shaoul (2002) takes issue with the affordability criterion for the evaluation of PPPs arguing that even if VFM is demonstrated, the project may still be unaffordable triggering public expenditure reductions elsewhere or a reduction in the scope of services to be offered by the PPP.

It is against the background of a mixed assessment of the benefits of private financing of infrastructure that it is important to consider the factors that determine the cost of private sector finance, which emerges as the most contentious aspect.

2.4. Bankability of Projects

The concept of bankability underpins the cost of private sector finance. According to the World Bank (2006), a combination of financial viability and risk profile ultimately determine if a project will succeed in securing the necessary commercial financing. Some of the prospective lenders and equity investors assess bankability through a formal system of credit rating. Standard and Poor's (2008 p.2) defines its rating as "*opinion on the ability and willingness of an obligor to meet its debts as they fall due, or the ability and willingness of an obligor to respect the financial terms of a particular debt security or other financial obligation.*" They outline the risk factors associated with PPPs as:

- Construction risk: risk of failure on the part of the contractor to complete on time and to specification the infrastructure asset;
- Operating risk-maintenance and asset lifecycle risk over long-term concessions that extend to 20, 30 or even more years;

- For PPP projects where the revenue stream is based on usage, demand risk is a concern and
- Since the capital structure of PPPs is usually highly geared, the aggressive financial structures are a concern from a debt servicing perspective.

In the opinion of Standard and Poor's (S&P), credit rating is beneficial to all participants in the project. For prospective borrowers and issuers of debt, it determines the cost of funds in the public market, broadens the lender base and enables the optimization of the capital structure. To the investors, credit rating provides an independent assessment of the quality of the debt issue and issuing entity as well as enhances secondary market liquidity. Since investor confidence is critical to private sector participation in PPPs, the importance of a rating acceptable by the market cannot be overemphasized.

A variation between the public and private sector approaches to the assessment of viability of projects compounds the bankability of PPP projects. The World Bank (2006) observes that while the public sector approach emphasizes economic viability, private investors stress financial viability. Because of the non-commercial orientation of the public sector, their preferred projects often have strong economic and social justification but not financial. On the other hand, private investors are primarily concerned with the commercial strength of the project in the sense that its cash flows are sufficiently robust to be able to repay loans at commercial rates and provide a sufficiently high return on equity to attract private equity investors. Against this background, not all economically viable projects are also financially viable in the context of PPPs. However, if concessionary funding procured by the public sector is introduced into the funding mix, the prospects of delivering some otherwise financially unviable projects under a PPP framework can be enhanced.

An additional complicating factor is the dominance of debt in the capital structure of PPPs. Although commercial debt is relatively cheaper than private equity, lenders in comparison to equity investors are more risk averse. Unlike equity investors, lenders don't share the windfalls in the event that the project exceeds the envisaged financial performance. Their primary concern is the full repayment of debt with interest within the specified tenor. The combination of a higher risk aversion and dominance of the sources of funding ensures that the lenders prevail in determining the terms of private funding to PPP projects. Standard and Poor's (2014) frames this matter in broader terms by linking the outsize influence of banks to underdeveloped capital markets and emergent secondary debt markets.

2.5. Cost of Capital for Infrastructure Projects

2.5.1. Introduction

The use of private financing as opposed to conventional public sector financing mechanisms has additional costs that are ultimately borne by the public sector or the taxpayer. The NAO (2009) notes that, for the UK, the variation between commercial and public debt is between 60 and 150 basis points in favor of the public sector while private equity target returns for infrastructure investments have historically ranged between 10% and 15%. Further credence to the cost of funds variation is cited by Ehlers (2014) who indicates that sovereign bond yields are usually lower than private sector financing by an average of 200 to 300 basis points. This spread is believed to have doubled since the 2007/08¹⁹ financial crisis. Estimates for the target return on private equity in infrastructure for other investment jurisdictions are even higher.

The World Bank (2000) indicates that return expectations for equity holders in hydropower projects in mostly emerging market economies range from 20-25%. These variations in the cost of capital between the private and public sector are partly put down to the fact that the cost of private finance reflects the risks of the projects' while that of governments does not. Additional justifications include the fact that private financiers demand fixed price turnkey contracts which build in large contingency provisions and the unfavorable risk profile of infrastructure projects characterized by long payback periods. The World Bank (2000) further argues that the very nature of infrastructure projects characterized by the dominance of upfront capital costs relative to operating costs magnifies the cost of financing. Engel et al (2014) bring to bear an even more reflective angle to the contention that PPP financed projects cost more than their public-debt-financed counterparts, a situation referred to as the PPP premium. Two arguments are advanced. Firstly, public debt is cheaper because of implicit guarantees by way of the leeway on the part of governments to increase taxes or reduce public expenditure in the context of financial distress. As a result, many distressed public sector projects remain unaccounted for because of the implicit guarantees. PPP projects, unlike their public sector counterparts, cannot expect the same treatment from creditors as they don't have an equivalent credit enhancement feature. Consequently, they fully price the risks by way of higher required rates of return. In that sense, their higher cost of funds simply reflects the risks that they assume. Secondly, they argue that the premium is in part borne out of the contractual forms that PPPs assume. This point is illustrated by contracts that require the private party to invest in cost reduction and efficiency improvements, which entail incremental risk relative to conventional public procurement. In addition, PPPs, unlike public provision,

¹⁹ See Engel, Fisher and Galetovic (2014)

internalize lifecycle cost considerations at the construction stage and other endogenous risks that cannot be diversified. They, therefore, maintain that higher financing charges should not necessarily be held against PPPs when comparing them to public provision. In return for the higher financing costs, the public obtains value by way of asset quality and lower lifecycle costs. They conclude that assessment of the PPP premium should take into account the improved performance, which compensates for the lower premium under public provision.

At a theoretical level, the approaches to the estimation of cost of funds for the private and public sectors vary. KHSK (2010), contend that identifying the cost of funds for the private, although often, complex is relatively straight forward relative the public sector. They observe that, at its simplest, the cost of funds is the relevant interest rate. However, if the financing entails a degree of equity, the computation of the cost of funds for the private sector assumes a degree of complexity as the Weighted Average Cost of Capital (WACC), which captures the non-debt element of funds has to be computed. A formula for WACC is put forward as follows:

$$WACC = W_d R_d (1 - t) + W_p R_p + W_e R_e$$

Where

W_d is the proportion of debt that the company uses when it raises new funds

R_d is the before-tax marginal cost of debt

t is the company's marginal tax rate

W_p is the proportion of preferred stock the company uses when it raises new funds

R_p is the marginal cost of preferred stock

W_e is the proportion of equity that the company uses when it raises new funds

R_e is the marginal cost of equity

Since the cost of equity is not always easily obtained relative to debt, its estimation relies on the Capital Asset Pricing Model (CAPM). The CAPM states that the expected return on equity is the sum of the risk-free rate of interest and a premium for bearing market risk which is expressed as follows:

$$E(R_i) = R_F + b_i [E(R_M) - R_F]$$

where

b_i is the return sensitivity of stock i to changes in the market return

$E(R_M)$ is the expected return on the market

$E(R_M) - R_F$ is the expected market risk premium or equity risk premium (ERP)

On the other hand, KHSK observes that identifying the cost of funds for the public sector is a much more complex task. They contend that a simplistic approach would be to adopt the risk free interest rate as the cost of funds for the public sector. Adoption of this approach would imply that any project that entails a component of private equity, would by definition have a higher cost of funds relative to that financed by the public sector, given the CAPM formula above. But such an approach, they argue, would be misleading. They contend that public funds used in any project have alternative uses. As a result, their true cost is the returns foregone-the opportunity cost. In that regard, the opportunity cost of funds borrowed at the risk free rate is the repayment of national debt. However, governments have an alternative source of income-tax revenues, which are not without costs too such as the excess burden of taxation on the economy.

The cost of capital variations between private finance and conventional public sector funding have the potential to impede the capacity of infrastructure PPPs to overcome the affordability hurdle and, therefore, diminish their attractiveness as an alternative infrastructure delivery mode. This is especially the case in underdeveloped or uncompetitive financial markets. Schwartz, Ruiz-Nunez and Chelsky (2014) argue that, even under normal credit conditions, the costs and risks faced by private investors in infrastructure in emerging and developing economies are particularly high because their economic and financial fundamentals tend to be weaker and unstable. The weakness and instability of fundamentals is exacerbated by the quality of institutions and laws that come to bear on infrastructure projects. Taken together, these weaknesses translate into less than favorable credit ratings and higher cost of finance.

A key factor in the determination of cost of capital of infrastructure projects is renegotiation risk. To that end, the World Economic Forum (2014) contends that investors in infrastructure projects are particularly sensitive to renegotiation risk, which they believe is difficult, if not impossible, to insure against. As a result, perceptions of higher renegotiation and political risk compel investors to adjust upwards their required returns: the resultant regulatory premium can be as high as 5%. Although renegotiation risk is regarded as difficult to insure, political risk insurance is increasingly bought by investors thus increasing their cost of doing business and ultimately their expected returns. The Multilateral Investment Guarantee Agency (2013), observes that issuance of political risk insurance (PRI) exceeds the pace of foreign direct investment (FDI) into developing economies. The demand for PRI is driven by anxieties related to general market turbulence; high-profile expropriations; persistent resource nationalism; capital constraints and regulatory risk. Strong, Gausch and Benevides (2014) draw attention to the frequency of renegotiations observing that in the Latin American experience, 44% of concessions are renegotiated, of which 85% are undertaken within four years of contract

award. They further note that the long asset lives and sunk cost character of infrastructure projects create “stranded” assets that provide incentives for opportunistic government actions on the one hand but, on the other hand, the importance of infrastructure facilities is a source of enduring pressure for subsidies and guarantees. In their view, although not all renegotiations are in bad faith, many are indeed opportunistic and a drag on the performance of economies in the sense that they entail costs relating to tariffs; credibility of PPP procurement processes and the project host country’s reputation as an investment destination. This view is supported by Makovisk, Hasselgren and Perkins (2015) who argue that although it is unrealistic to expect perfection in contracts such as those under infrastructure projects that typically span decades, there is need to be mindful of the negative impact of renegotiations on the ability of infrastructure projects to attract financing from capital markets. As a result, effort should be invested in insulating contracts from opportunistic behavior of either party.

The World Bank (2000) observes that underdeveloped capital markets dominated by banks with short term funds don’t bode well for infrastructure projects primarily because of tenor mismatches. This view is supported by Ehlers (2014) who contends that the short-term liabilities of banks’ constrains their ability to lend to infrastructure projects over the long-term since holding long-term assets on their balance sheets would create a mismatch.

Standard and Poor’s (2014) introduces another dimension to underdevelopment of capital markets by arguing that the lack of a strong secondary market for debt restricts financing of projects outside bank’s balance sheets. Worse still, the new capital and liquidity rules under Basel III will result into a contraction of bank appetite for illiquid assets such as project finance, which is the dominant form of funding infrastructure PPPs. The impact of Basel III on infrastructure financing is also recognized by Grushkin and Bertfeld (2013) who lament the timing of Basel III which is compelling traditional project finance lenders to dispose of such assets at a time when the demand for infrastructure financing is growing rapidly.

As part of the solution to the Basel III-infrastructure financing dilemma, they recommend securitizing project finance loans. On the equity front, it is argued that equity markets – especially secondary ones take a while to develop so as to bring down the target equity returns. While it can be argued that in the era of liberalized capital accounts, infrastructure investment opportunities should easily attract offshore funds, the World Bank (2000) argues that domestic capital markets have an indispensable role to play especially in developing countries where international capital markets are, relative to commercial banks, wary given the recent financial turmoil in parts of the developing world. Secondly, the large local content in the form of civil works

of infrastructure projects such as roads and hydropower projects with dams/reservoirs limits the participation of an important source of funding in the form of export credit agencies.

Thirdly, participation of local capital markets would limit the foreign exchange exposure of the projects by availing domestic currency denominated financing. Fourthly, the participation of local capital markets in debt issues plays a catalytic role in major capital inflows into infrastructure bonds. With respect to equity, Standard and Poor's (2014) argues that although the magnitude of institutional investor funds targeting the infrastructure asset class is growing rapidly, the ageing and antiquated infrastructure of developed economies will attract a larger portion of the funding given their more established PPP track record and lower political and regulatory risk. This view is supported by Preqin (2014) survey findings. The survey finds that although fundraising for investment in the infrastructure asset class grew from US\$24billion in 2011 to US\$38billion in 2013, the geographic focus for the investment of proceeds is skewed against the developing countries with 78% of the capital raised targeting European and North American markets.

In addition, the survey finds that raising infrastructure capital is a long and difficult process averaging 22 months for an individual fund to reach financial close. Given the challenges of underdeveloped capital markets, Standard and Poor's (2014) alludes to the inevitability of the participation of government-owned banks as is the case in Brazil. The state of financial sector development notwithstanding, the complexities of private infrastructure finance do often call for responsiveness by the public sector, as was the case with the UK²⁰ initiative during the 2008 financial crisis, which created a credit guarantee scheme to unlock commercial financing to priority PPPs.

Setting aside concerns of cost of funds so as to assess availability of funds, Ehlers (2014) questions why infrastructure investment remains sluggish yet potential supply of long-term financing is abundant. It is argued that lack of financing is not the main hindrance to infrastructure investment given the fact that financial markets are overflowing with funds and coupled with a low long-term interest rate environment. The explanation advanced is that of failed intermediation in the sense that supply of finance from the private sector is not matched with investible projects. To that end, the low level of investment by institutional investors in infrastructure is cited as an illustration. It is affirmed that the vast financing potential of capital markets remains untapped and the challenge to unlocking this potential is through the design of contracts that ensure a distribution of risk and rewards that incentivizes the private sector. Beyond the diagnosis, Ehlers (2014)

²⁰ World Economic Forum Infrastructure Investment Blueprint 2014

proposes a framework to overcome the infrastructure financing hurdle. The framework decomposes the project cycle into three phases – planning, construction and operational.

At the planning stage, the emphasis is on appropriate structuring of the distribution of risk and rewards between the private and public entities so as to avert possible cost overruns and project failures. To that end, project financing techniques that rely on the creation of a special purpose vehicle (SPV) as the centerpiece for contracting and risk management are recommended. For the construction phase, commercial bank financing is expected to play a central role. This is because commercial bank lending, relative to other structured finance solutions, such as bonds, brings with it critical construction stage monitoring expertise. In addition, bank lending is suited to the gradual disbursement nature of infrastructure projects and their frequent need for debt restructuring in the event of unforeseen events, which banks or a club of banks can easily negotiate amongst themselves when compared to other forms of structured finance.

Besides commercial banks, credit guarantee agencies and development banks are expected to play a supportive role during this phase. Credit guarantee agencies that are publically sponsored are expected to address the default risk so as to ensure that the projects are financed at sustainable finance costs while development banks are to provide mezzanine credit layers and supplement the monitoring role of the commercial banks. At the operational phase, which is characterized by positive cash flows; diminished default risks and often pseudo monopoly status, the cash flow features of infrastructure projects are similar to those of fixed-income securities. As a result, it makes economic sense to refinance the commercial loans with bonds at this stage. However, Ehler (2014) observes that while the potential for bond financing is vast, the volume of infrastructure bonds issued relative to syndicated loans is low representing between 10-20% of infrastructure debt financing in the developed economies and even less in the emerging markets.

The question then is how are infrastructure bonds to be structured and promoted for emerging and less developed economies that are in urgent need of infrastructure financing? A partial response is found in Standard and Poors' (2013) attempt to lay out a framework for infrastructure bonds in Europe, Middle East and Africa (EMEA). Firstly, the attractiveness of infrastructure bonds to institutional investors is reiterated. In their view, institutional investors stand to benefit from the provision of long term capital to infrastructure through project bonds as yields are superior to sovereign and corporate bonds because of the illiquidity premium; maturities match their long-dated liabilities; recovery rates in the event of default are higher than corporate bonds and the asset class confers on investors diversification benefits since the infrastructure asset class has a low correlation with other investment classes. Beyond the benefits, they identify the drivers of a

healthy project bond market. These include visible project pipelines and standard transaction structures; transparency of project data with respect to areas such as costs, contracts and financing, etc; regulatory regime that draws the participation of the insurance industry; supportive credit enhancement structures for project bonds and arrangements that diminish construction risk.

Other factors cited are minimal political and regulatory risk; pricing structures that are attractive to both lenders and borrowers; collateral and security packages that ensure high rates of recovery and liquidity as well as asset diversification. The African Development Bank (2013) introduces a regional perspective to the subject. In their view, the experiences of countries such as Chile and Malaysia are instructive in as far as the quest for the creation of an enabling environment for infrastructure investment and capital markets development is concerned. Of particular importance is the creation of attractive conditions for issuers and investors through political and economic stability coupled with sufficiently low interest and inflation rates as to attract investment grade rating; broadening of the domestic investor base through reform of the pension funds and encouragement of capital market development through suitable regulation and long-dated issuance by governments and parastatals.

PricewaterhouseCoopers (2013) weighs in by outlining the conditions necessary to finance infrastructure through project bonds and, more generally, to attract non-bank financing. They observe that the reason for the slow realization of infrastructure project bonds is the lack of clarity on the part of both governments and project sponsors regarding the viability of bond finance relative to the more established financing structures that combine bank debt, multilateral finance and capital contributions. They further observe that construction risk is gradually being mitigated by targeted credit enhancements. In some cases, especially bonds issued through private placement, construction risk is increasingly assumed by sophisticated bond investors who in turn build in a premium, which they consider to be good value relative to the risk assumed. In addition, construction risk may not be entirely new to bond investors who have exposure through corporate bonds to firms undertaking large capital projects. Before outlining the necessary conditions for infrastructure project bonds, they caution against certain aspects that may exist or come into existence in individual bond markets and deter the success of the bonds. Firstly, a section of institutional investors seeks absolute returns and can only be attracted to infrastructure project bonds if their yields are higher relative to government bonds. In the event of sovereign yields reversing positions, appetite for long-dated infrastructure debt will diminish. Secondly, although bond investors are beginning to assume construction risk, bank lending for construction finance with a view to its refinancing through infrastructure project bonds remains the logical approach.

However, it gives rise to refinancing risk and it is important that a market that provides counterparties to assume this risk emerges so as to reduce the need for institutional debt to shoulder construction risk. Thirdly, the emergence or resurgence of a securitization market with banks bundling project loans for sale into the institutional markets may remove the need for institutional investors to invest directly into project bonds.

On the prerequisite conditions for the development of an infrastructure bond market, PricewaterhouseCoopers (2013) identifies four criteria that should be met if the market is to be unlocked. Firstly, capital outside of the banking sector should be available. This should be by way of a stable and well-structured retirement savings, pension funds and insurance industry managed by investment professionals. The existence of such an industry establishes a competitive pool of capital seeking investment opportunities, including infrastructure debt. A further precondition is the flexibility to invest in a broad category of highly rated securities without limitation to AAA securities and government paper. Such restrictions would eliminate infrastructure bonds as they are unlikely to meet the rating requirements. Secondly, financial infrastructure that enhances transparency, governance and reporting ought to be in place. However, there is need to balance public market information disclosure rules that require timely dissemination to all market participants and management of confidential information in situations such as pre-default cases. Therefore, the options of private placement and expanded roles for bond trustees need to be considered. The third precondition relates to balanced commercial and tax policies that provide clarity in the tax and commercial treatment of bank debt and bonds as well as a level playing field between the two sources of debt finance. For instance common withholding tax rates on interest payments to bank debt and bond coupons. The fourth precondition is the willingness and capacity to provide project-specific credit support. This is as a result, in some cases, of the absence of investors willing to buy highly rated but non-sovereign guaranteed debt. In other cases where investors are open to buying non-sovereign guaranteed debt, the underlying credit quality of a project may not meet their requirements, necessitating interventions to close the gap. Such interventions may include letters of credit, state provided credit enhancements, commercial de-risking of projects and injection of additional risk capital.

2.5.2 Lender's and Sponsors Cost of Funds

The section that follows assess the factors that influence bank lending rates; target returns on equity and pricing of bonds invested in infrastructure projects. Private financing of public infrastructure projects entails long-term contractual arrangements between the private companies and public authorities. The private companies raise the required funds mostly by way of project finance. The high gearing levels of private

infrastructure finance are confirmed by Morse (2010), who indicates that up to 90% of the financing is typically debt finance and the balance equity. The debt financing component can be either in the form of bank loans or bonds. Both banks and bondholders receive interest payments on their loans indexed to the risks they assume in lending to particular projects. Morse (2010) further explains that the interest rates charged on bank loans is a blend of a reference rate-typically the interbank rate and a loan margin. The former is a reflection of prevailing market risks while the latter represents project-specific risks.

Owing to the long-term nature of infrastructure finance projects, the buildup of their interest rates is completed by the swapping of variable for fixed interest rates, thus adding a tier to cushion the project from market risks associated with a variable interest rate. With respect to bond finance, usually issued in public capital markets or sold directly to investors through a private placement, the pricing by investors relies on the guidance of credit rating agencies. Credit rating agencies investigate the risks associated with a particular project and publish a rating to provide an indication of the risks and rewards of a project. If available and affordable, purchase of credit insurance for a bond has the potential to improve its rating thus making its risks acceptable to a larger pool of potential investors. As to the equity component of the project's financing, this is provided by the project sponsors and financial investors. National Audit Office (2012) discloses that the norm is to provide equity in the form of ordinary shares and shareholder loans. The ordinary shares represent risk capital, which forms the first loss tier in the event of project failure. Shareholders loans, which are subordinated to bank loans and bonds, provide the second loss tier. Since equity generally has a lower ranking claim in a default situation, its exposure to risk is greater. Consequently, it has the highest expected return.

2.5.2.1. Bank Cost of Funds

There are a range of factors that influence lending rates that are set by banks on their loans. The Reserve Bank of Australia (2011) cites the cost of funding as the most important consideration. A bank's cost of funding is a function of the composition of its liabilities and the transaction costs that the mobilizing of its funding entails. Other factors at play include the pricing of different types of risk such as credit risk associated with loans and the liquidity risk that they are exposed to whenever they fund long-term assets using short-term liabilities as well as the competitive landscape. In addition, the cash/bank rate set by the Reserve Bank is a primary determinant of the level of any intermediary's funding costs. This is because the bank rate is a benchmark that anchors any economy's interest rate structure. However, bank funding costs might be at variance with movements in the Reserve bank rate owing to factors which are not a result of variations in the

latter such as competitive pressures and risk premia. Nonetheless, Central Banks take into account changes to these factors in setting the benchmark rate so as to ensure that the interest rate structure is aligned to monetary policy.

To appreciate the impact of cost of funds on lending rates, a review of a commercial bank's sources of funds is necessary. According to the Reserve Bank of Australia (2011) sources of funds typically include equity; short-term and long-term deposits and short-term and long-term wholesale debt. For banks, although term deposits earn a higher interest rate, they also provide a relatively stable funding source. For similar reasons long-term wholesale debt is preferred to short-term wholesale debt largely because it entails rollover risk by way of inability to replace it upon maturity. The bank's cost of funds is, therefore, informed by the interest rates it pays for the deposits and on both short-term and long-term wholesale debt. As a result, banks are not insulated from changing market conditions. For instance, competitive pressures may compel them to raise interest rates so as to attract deposits or deteriorating market conditions may trigger a downward revision in their credit ratings thus increasing the spreads on their wholesale debt. Besides interest expenses, banks incur hedging costs when rates are converted from variable to fixed and vice versa. Moreover, the shareholders expect a return on their investment which must be generated from their lending operations, among other income streams.

The Reserve Bank of Australia (2011) observes that a bank's net interest margin, which is the difference between the lending rate and the cost of funds, is an important indicator of its health. Besides lending rates and cost of funds, the net interest margin is influenced by a number of factors. These include changes in the composition of a bank's assets; changes in a bank's use of equity funding, which is without interest expense but has a target return that influences the setting of lending rates; changes in interest income lost because of impaired loans and the use of derivatives to hedge the interest risk on their assets and liabilities.

More generally, a change in a bank's cost of funds is expected to translate into a change in its lending rates. It, therefore, follows that increased use of bank equity, which is more costly than wholesale debt and deposits should be expected to trigger higher lending rates and widen the net interest margin. In the same vein, higher expected losses are expected to translate into higher risk premia and, ultimately, lending rates. Regulatory requirements and shifting market conditions that compel the bank to hold more equity or use more costly liabilities would have a knock-on effect on its lending rates. A change in the risk perception of the bank itself by the capital markets as a result of a lower credit rating should result into accessing of public markets at a relatively high cost thus increasing its cost of funds.

As to the impact of cost of funds and associated market conditions on lending rates as well as appetite for project finance deals as a distinct category, the global financial crisis and the impending Basel III regulations serve to illustrate the play-out of the debt pricing theoretical underpinnings described above. According to Morse (2010), the collapse of the investment bank-Lehman Brothers in September 2008 sparked a freeze in loan syndication, which, in turn, impaired the ability of banks to extend new loans to infrastructure projects. This is because banks can only provide loans if they have adequate capital to allocate against them. This is partly achieved through syndication, a process that allows banks to release reserve capital for new loans through the sale of existing loans in whole or in part to other banks. The aftershocks of the 2008 financial crisis are expected to have more enduring effects on the cost of funds and lending rates for project finance in particular. To that end, Worth and Chan (2011) paint a rather grim picture for the future of project finance on account of the regulatory changes envisaged under Basel III, whose implementation is expected to be phased over the period 2013-19.

Basel III seeks to strengthen the regulation of both capital and liquidity to improve the stability and resilience of individual banks and the sector as a whole so as to avert a recurrence of the turmoil experienced in 2008/09. It is expected to impose stricter capital requirements so as to ensure that banks have enough capital to absorb losses incurred during periods of stress. As a result, banks will effectively be required to hold four times the amount of common equity under the previous regulatory regime-Basel II. The stricter capital requirements are expected to translate into cost pressures for both lenders and borrowers. The aggregate effect of the capital and liquidity requirements is that banks will have to seek longer term sources of financing to match the long-term tenors associated with project finance, which is proving to be a challenge. As a result, borrowers are increasingly being encouraged to refinance their loans within a 7-10 year range. This impetus to match the tenor of sources of bank funds and their lending terms has spawned the use of step-up interest margins and cash sweeps, which may erode the incentives of equity investors in infrastructure projects. The regulatory regime is also expected to negatively impact on important facilities associated with infrastructure projects such as letters of credit and working capital by making them more expensive because of the capital coverage that they will require. Lastly, certain provisions such as the requirement that loans are readily transferable without the borrowers consent are expected to impact negatively the cohesion of lending syndicates critical to the mobilization of large infrastructure financing requirements.

2.5.2.2. Cost of Bonds

To evaluate the factors that underline the cost of debt provided by bondholders to a project, this section focuses on project bonds issued in public markets as a proxy for all types of bonds. The evaluation relies on the credit assessment framework of rating agencies. According to Standard and Poor's (2008), rating is an assessment of an obligor's capacity and willingness to meet their debt obligations as they fall due and to respect the associated covenants. In addition, ratings are beneficial to three categories of market participants: borrowers/issuers, investors and intermediaries. To the borrowers, they facilitate optimization of the project's capital structure; broaden the lending base and determine the cost of funds. To investors, they provide an independent assessment of the credit quality of both the specific bond issue and the issuing entity as well as enhance secondary market liquidity. To market intermediaries, they facilitate transaction structuring and the pricing approach to a wider pool of potential investors. With respect to the determination of the cost of funds in public markets, Standard and Poor's (2006a) outlines the elements regarded as critical in the rating of infrastructure projects across all sectors. While acknowledging the capacity of project finance and infrastructure investment contractual structure to accommodate high levels of leverage, their overriding concern is the assurance that senior lenders interests are safeguarded by not deferring their payment far into the future through constructing amortizing features into debt repayment profiles. The critical elements that determine a project bond's rating include financing structure; revenue reliance; the interaction between the business and financial profile and the financial profile itself. These factors are briefly reviewed below.

The financing structure element is concerned with the contractual framework that protects the interests of lenders. Because project bonds are similar to project loans in comparison to unsecured corporate bonds and corporate loans, they normally enjoy superior protection by way of legal structures and covenants. Standard and Poor's (2006a) observes that the changing financial market landscape is characterized by increasing complexity of financial products, some of which could potentially undermine the lenders interests. To that end, they are particularly critical of bullet maturities that enhance refinancing risk; accreting debt; debt-financed capital returns and aggressive distributions to equity. As a result, a project's capacity to fulfill covenants relating distributions to equity and restrictions on additional debt is uppermost in the rating of infrastructure project bonds. This assessment is done through conducting stress tests on the project's financial capacity to comply with the permitted distribution test; additional indebtedness test and the distribution unlock trigger. The permitted distribution test prevents dividend distribution or repayment of shareholder loans unless prescribed debt cover ratios are met, thus entrapping cash that can be accessed

by lenders if a project experiences financial strain. The additional indebtedness covenant limits incremental borrowing by the project while the distribution unlock trigger permits the resumption of equity distributions.

The revenue reliance assessment focuses on the project's long-term revenue projections, which are supported by assumptions on demand growth, pricing and several macroeconomic factors such as inflation. Standard and Poor's (2006a) discloses that revenue projections are inclined to present optimistic forecasts especially if they entail price increases that are not merely inflationary adjustments. They are particularly cautious with projects that are exposed to volume risk. As a result, this assessment entails stress tests that investigate the resilience of projected cash flow to downside scenarios. This test is regarded as the all-important determinant of the credit quality of a project. It, therefore, follows that those projects whose projected cash flows can withstand a range of sensitivity tests will receive a superior rating as compared to those that buckle under the weight of the tests.

The relationship between business profile and financial structure is that a project with a strong market position will have scope for more aggressive financing structures in relative terms. Some of the features of such a profile include essential and high-demand services; high degree of price inelasticity; monopoly or quasi-monopoly characteristics; a favorable legal and regulatory regime and limited government policy and change-in law risk. Others include a favorable tariff-setting regime and robust counterparty arrangements. A project with an inherently stronger business profile will, therefore, receive a relatively superior rating.

The assessment of a project's financial profile focuses on the project's capital structure, leverage, operating margins and debt cover ratios. For those projects that entail the transfer of a previously public sector managed asset by way of privatization, the assessment will include a review of previous performance to determine asset optimization and cost-reduction scope. In general, more aggressive financial structures such as those that have non-amortizing debt repayment profiles or accreting debt are frowned upon and receive lower ratings. In addition, the project's reliance on swaps is assessed. This is because sponsors typically seek to swap floating interest rates for fixed ones. This arrangement is believed to provide cost savings in comparison to conventional fixed-rate debt by allowing the issuer access to the short-term debt market. However, the mechanics of the swap in the context of long-term infrastructure debt tenors may effectively confer an unacknowledged debt-provider status to the swap counterparty. In addition, swaps in themselves generate risks that include counterparty risk, roll-over risk, economic viability risk, amortization risk, termination risk and security posting risk. A review of these risks and the arrangements for their mitigation does feed into the project's bond rating.

Although ratings play a part in the determination of cost of funds under bond financing, there are other relevant factors. For instance, Infrastructure Australia (2014) in its review of bond pricing finds that the degree of competition and state of development of the bond market has an impact on bond pricing. In that regard, the Canadian experience is used to illustrate the impact of competition on bond pricing. The Canadian infrastructure finance market had established a tradition of competition between bonds and bank loans, which was disrupted by the global financial crisis that caused an almost complete freeze in the market for bank loans. Post global financial crisis, thirty year bonds for mostly A-rated projects were initially priced at 385 basis points (bps) over the benchmark rate. By 2010, the spread had reduced to about 300bps and declined further to about 200bps by 2011. More recent transactions have margins of less than 200bps. The gradual reduction in bond pricing mirrored the recovery of the financial markets and associated improved risk profile.

Elton, Gruber, Agrawal and Mann (2002) suggest that differences in rating classification by the rating agencies for a particular bond have an impact on pricing with investors leaning towards the higher rating for pricing purposes. They also find that investors hardly use the rating past record of a bond issuer. While the likelihood of a downgrade or upgrade in rating which should be partly predicted on the basis of past ratings with past changes in ratings being a predictor of future changes, Elton et al (2002) find that predictability of past rating changes are not taken into account by bond investors. Instead, they find that the after-tax value of bonds is an important consideration. They argue that even bonds with lower coupons may have a higher after-tax value because taxes are deferred until the time of sale and because the bondholder has control over when the taxes are paid. In the context of variation in rating for the same bond, Elton et al (2002) contend that default risk and recovery expectations are important pricing factors.

They argue that issuing firms and not individual bonds go bankrupt. In that regard, bonds from the same issuer with different ratings imply that the rating agencies believe that they will have different recovery rates. Since the ratings are a combination of the estimated default risk and the recovery rate, investors require a higher rate of return on the bond if its individual rating is higher than that of the issuing firm. Such bonds are believed to represent greater default risk and higher recovery rates but investors lean more towards bankruptcy than recovery rates. Kempf and Uhrig-Homburg (2000) contend that the liquidity of bonds trumps all other pricing considerations. They argue that, as with all illiquid assets, illiquid bonds entail the risk that investors might find it impossible to sell them swiftly at acceptable transaction prices. They, therefore, expect additional returns as compensation for the illiquidity risk. They find that the illiquidity premium is significant and increases with the maturity of the bond. Mayberger (2014) finds that bond and issuer specific variables

inform pricing. With respect to bond-specific variable, liquidity by way of the volume of traded and maturity are the main considerations. The greater the volume, the more liquid the bond issue and the lower its credit spread. On the other hand, the longer its maturity the larger the credit spread. In as far as issuer-specific variables are concerned; the firm's total assets; profitability or return on assets and its total outstanding debt inform the credit spreads of its issued bonds.

2.5.2.3. Equity Return

The pricing of equity in infrastructure projects and its actual return on investment is an intricate interaction of the perceived risks of the particular project; the investor's cost of capital and the magnitude as well as terms of debt financing. According to Hellowell and Vecchi (2012), equity investors naturally have a preference for a higher expected return to a lower one. They are also inclined to invest in projects with comparatively low variance in cash flows. However, they are often willing to accept greater risk as measured by higher variance in expected return only if they are compensated by a higher expected return. Since equity investors seek to maximize shareholder wealth, the expected return should be higher than their cost of capital if they are to persuade their shareholders to retain their shareholding. The cost of capital in this instance is the return offered by securities in the same risk class as the investment under consideration. The National Audit Office (2012) in its findings somewhat departs from the methodical approach suggested by Hellowell Vecchi(2012). Their review of equity investment in public infrastructure in the UK reveals that investors don't undertake detailed estimates to determine their target rate of return when bidding for infrastructure projects. Rather their Boards consider specific risk factors for higher risk projects and set minimum returns for projects perceived as less risky. These are the hurdle rates that constitute their cost of capital. One of the more important considerations in setting hurdle rates is the need to recoup the costs incurred in preparing bids that they didn't win. Ultimately, the hurdle rates alongside the cash flow requirements established by their prospective debt providers by way of debt service coverage ratios determine the minimum equity return that investors propose in their bids.

The relationship between return on equity and debt finance is multifaceted. To gain insight in this relationship, it is important to review the role of the equity investor in infrastructure projects. The National Audit Office (2012) suggests that without the risk capital provided by equity, debt financing can't be successfully mobilized. Banks or bondholders willingness to provide the required debt financing is subject to a well-prepared project by investors whose equity represents the first loss tier in the financing structure in the event of the project encountering difficulties. As a result, the price of equity should rightly reflect the amount of risk

assumed. To that end, the UK's experience indicates that expected returns on equity are in the range of 12-15%. However, Hellowell and Vecchi (2012) contend that the equity risk premium is above the actuarially fair rate for the UK market thus suggesting that returns are not commensurate to the risk assumed. This is, in part, attributed to the influence of lenders requirements. Lenders set minimum requirements for debt service coverage ratios, building into the project's cash flows a cushion of free cash flow over and above the debt service requirements. The excess cash flow, if unutilized, is distributed to equity investors, thus augmenting their returns. If lenders are conservative and, as a result, set high debt cover ratios, their actions translate into higher expected equity returns than is justified by the risk borne by equity investors. In addition, when market conditions improve and debt is refinanced on improved terms, the equity investors stand to make windfall gains. Based on the preceding, expected equity returns may well depend not on the competitiveness of the equity market but that of project finance in general.

Equity returns are also affected by the extent of gearing in the project's financing structure. Hellowell et al question the conventional view that financial leverage increases return on equity. They consider the possibility that less debt might actually translate into cheaper equity through the cash flow effect of reduced interest payments that, in turn, increase distributions to investors. They also argue that reduced financial leverage could improve a project's bond rating thus reducing its weighted cost of capital. Beyond leverage ratios and debt covenants, a project's capacity to attract debt finance is the principal concern of equity investors in their investment decisions. The IFC (2013) argues that the bankability of a project, which conveys to the equity investor capacity to attract non-recourse debt, is vital because equity investors can hardly provide 100% financing. Even if they were in a position to do so, the economics of the project would not permit the realization of their expected returns in the absence of financial leverage.

The NAO (2012), while conceding that in some instances equity returns are excessive, which they partly ascribe to limitations of a secondary market for equity investments in infrastructure, takes the view that the risk management role of equity investors is vital and deserving of compensation. For instance, while some of the risks are transferred to entities such as subcontractors, equity investors retain the risk of contractor failure and risks associated with increases in operating and lifecycle costs. It is also to be borne in mind that equity investors carry the risk of project development and contract negotiation, with the later inherently uncertain, drawn-out and costly. Moreover, bids are often cancelled without reimbursement of bid costs. The inherent cost and risks of privately financed public infrastructure is best illustrated by anecdotal evidence relayed to NAO indicating that investors have to win at least one contract in every three tenders if they are to survive in

business. Hellowell et al provide more evidence on the impact of procurement processes on the efficiency of the equity market and, by extension, on equity returns. They argue that the equity market for infrastructure projects is inefficient as a result of the fragmented and uncoordinated nature of public procurement with infrastructure demand and procurement dispersed across a range of public sector institutions. This disjointed state of affairs is a breeding ground of concentrated market power on the supply side. In addition, the complexity of procurement processes results into high transaction costs, creating barriers to entry and limited competition for public infrastructure contracts. Transaction costs can be as high as 7% of the project's capital value but shared between the private investor and public agency equally. The combination of complexity and fragmentation of public procurement process stimulates concentration of market share amongst a few potential investors who then gain incumbency advantages such as bidding and project management skills and widespread contacts in credit markets as the same band repeatedly wins contracts. These practices assume a cyclical pattern that deters would be competitors.

In situations where the proposed project is to be domiciled in a jurisdiction other than that of the equity investors, other considerations come into play. The IFC (2013) maintains that because investors have limited financial and managerial capacity, they are compelled to make tough choices in the allocation of their limited resources. While they may perform the estimation of the necessary hurdle rates for different investment destinations, it is unlikely that they will dedicate time in evaluating projects that don't meet certain preconditions-typically the necessary legal and regulatory framework as well as investment climate to support their investment. As a result, a premium is built into hurdle rates on the basis of the perceived risks for particular investment area.

2. 5.2.4. The Nature of Project Finance

Project finance, which is the dominant mode of financing infrastructure projects, has unique features that have a bearing on its cost to borrowers. Yescombe (2002) outlines its salient features. These include the provision of financing to "ring-fenced" projects in the sense that the project is legally and economically self-contained. This is typically achieved through the creation of a separate legal entity, typically referred to as a Special Purpose Vehicle (SPV) with the sole purpose of establishing and operating the project. In addition, although project finance loans may be refinanced, they are normally raised for new projects as opposed to established borrowing entities. Other distinguishing features of project finance are high ratios of debt to equity and the limited, if any, guarantees on the part of the borrowers, which confers on this type of financing its non-recourse or limited recourse quality.

The combination of absence of guarantees; reliance of lenders on projected future cash flows for debt service rather than the value of the project's assets or analysis of the project's historical financial performance and the fact that the lender's security package is comprised of the project company's contracts, licenses and ownership rights place project finance in a unique risk category from the lenders perspective. More often than not, the project's assets are worth less than the outstanding debt when project companies default on their obligations to lenders. The risk profile of project finance is exacerbated by the fact that projects often have a finite life based on factors such as the length of their contracts, licenses or reserves of natural resources, which establishes a time constraint within which to fully repay their debt and equity financing. A further comparison of project finance with corporate finance serves to illustrate the basis of its higher risk classification. Corporate loans are advanced against an existing entity's balance sheet with cash flow projections to assess its debt service capacity based on historical financial performance, a feature which provides a degree of comfort to the lenders. In addition, corporate borrowers are assumed to be going concerns that will carry on their business activities indefinitely, which implies that they have greater scope to refinance or rollover their debt if market conditions permit. Yescombe (2002) concludes that as a result of the higher risk perception of project finance relative to corporate finance, the lenders margin on their cost of funds on loans advanced to projects is typically two to three times higher than margins on corporate finance.

Contracts between various project counterparties are the bedrock of project finance. This is as a result of the financing technique's non-recourse character. Yescombe (2002) observes that project contracts provide a basis for the SPV to build and operate the project. The project agreement is regarded as the centerpiece of the contractual structure as it provides a framework under which the SPV obtains its revenues, with the exception of those projects whose product or service is to be sold in the open market. The project agreement may take the form of an off-take contract or a concession agreement. Besides the project agreement, there are a host of supplementary contracts and permits necessary to establish and operate a project. These include construction contracts; operation and maintenance contracts, input supply contracts, financing contracts; insurance contracts; investment permits; environmental permits and rights of way and easements. These contracts effectively comprise the lender's security package as at the time of providing credit, neither the assets nor revenue streams therefrom are in place. The IFC (2013) argues that because these contracts outline the obligations of key project counterparties, they form the basis of the lenders funding decision, which is reached after assessing the SPV's technical and financial capacity to perform its functions as required by

the contracts. As a result, a great deal of effort, time and cost is expended on due diligence of both the SPV and key counterparties. This cost has to be recovered and, therefore, feeds into the pricing of funds.

Setting aside the cost of due diligence itself, the process entails the collection of all the necessary information for the identification and allocation of risks. Yescombe (2002) argues that the quantification and consideration of the acceptable level of risk to be retained by the SPV and, by extension, lenders is an essential step on the critical path to financial close. This is because the SPV by its very nature has limited capacity to absorb risk. Consequently, risks have to be allocated to the parties best suited to manage them in sensible proportions since those assuming the risk expect compensation. The limited risk absorption capacity of a project company relative to an existing corporate borrower and the consequent risk transfer to third parties adds a layer to the cost of project finance.

2.5.2.5 Infrastructure as an Investment Asset Class

The price of equity by way of target returns or investor hurdle rates is in part informed by the nature of infrastructure as a distinct investment asset class. The return expectations vary by both investor type and category of infrastructure. To understand the investors return expectations and appetite for the investment class, it is important to outline the categories of infrastructure assets and investors. RBC Global Asset Management (2010) takes the view that although infrastructure sub-sectors have similarities, they are not homogenous. Because different asset types have varying risk-return profiles, it is important to unbundle the asset class for purposes of effective due diligence. To that end, four types of assets are identified.

The first type is throughput assets that include roads, tunnels, rail-links, ports, airports and bridges. The distinguishing feature of this asset type is that their revenue stream is typically based on user fees. Although this asset type may enjoy stable revenues, it is exposed to user demand risk, which may vary in line with business cycles. The second asset type is regulated infrastructure and includes electricity distribution and transmission; gas/oil distribution and transmission and water distribution. The hallmark of this asset type is that it delivers essential services. Consequently, prices and terms are set by regulatory agencies, which may prescribe what they deem to be a fair return for the investor. The regulators usually consider inflation in determining tariffs and equity returns. Therefore, this asset type confers on the investor an inflation hedge. The third type is contracted utility assets, which include cell towers, broadcast towers, satellites, power generation, district energy and renewables. These assets are privately owned and operated through long-term contracts with either the public sector or private entities. Contractual provisions pinpoint stable revenue

streams to match their long lives and monopolistic nature. The fourth type is social assets, which include hospitals, schools, prisons, court houses and waste management. This asset type normally insulates investors from demand risk as a public entity compensates the investor through an availability payment for making the facilities available, subject to the satisfaction of predefined quality standards.

Infrastructure assets may also be categorized by their stage of maturity. Marquette Associates (2011) classifies three types of infrastructure assets on the basis of stage of maturity. These are greenfield, brownfield and rehabilitated brownfield. Greenfield assets entail the construction or development of facilities that did not previously exist, with investors arranging for their financing. Greenfield assets can potentially generate higher returns relative to brownfield assets since the investors assume development risk. They may also generate significant capitals gains but have limited cash yields. On the other hand, brownfield assets are well-established and cash-generating. Investors target this type of asset seeking to improve the asset through enhancing operating efficiencies, increasing revenue and expense reduction. Given these attributes, they are regarded as less risky relative to greenfield projects. However, while they provide stable cash flow, their scope for capital gains is limited. Rehabilitated brownfield is a variant of the brownfield asset, which combines two features: the need for capital expenditure for maintenance or expansion and existing cash flow from operations.

The type of investor and investment criteria has a bearing on equity returns. With respect to investment criteria, STANLIB (2014), in setting out its infrastructure investment case, outlines the reasons why the asset class is desirable. They argue that the combination of a great demand for infrastructure and limited supply of capital has been the driver of excess returns over what other asset classes have provided. They also believe that the asset class provides unique defensive qualities in the sense that infrastructure returns are largely independent of variations in key financial indicators since its contractual nature provides long-term off-takers that guarantee a significant fraction of revenues thereby making the investment resilient to business cycles. Because it is resilient to business cycles, infrastructure provides a portfolio diversification opportunity since it has a low correlation with other asset classes. Lastly, although a large fraction of projects are underpinned by long-term off-take contracts guaranteeing revenue, a component of their income streams is variable and highly correlated with increased market activity. This combination of the ability to weather downturns in the business cycle while benefiting from the upside of upturns places the asset class in a unique position. As to the type of investors, Marquette Associates (2011) indicates that they range from open-ended to close-ended investment funds, listed and unlisted and large to small. Open-ended funds are pooled investment vehicles

that exist in perpetuity. Their perpetual term allows them to invest over longer time horizons, making infrastructure a natural choice because of tenor compatibility. Their investment preference would be those assets that generate predictable cash flows for distribution to their investors. On the other hand, close-ended funds are usually limited partnerships with a fixed term of between ten to fifteen years, subject to a negotiated extension. Because of their fixed term, close-ended funds are more inclined to investment in those assets that maximize the return potential on exit of the investment. Listed infrastructure refers to publicly traded investment vehicles, which may be open-end or closed-end funds. What sets apart listed from unlisted infrastructure is mainly liquidity. This is because of the liquid nature of the public market in which it is traded. However, increased liquidity is gained at the expense of higher performance volatility since its trading on active markets enhances correlation with other asset classes. As to size of investors, they range from individuals who are more likely to invest through listed or unlisted funds and large institutions who are less inclined to invest through funds as they not only wish to directly control their assets but also want to avoid payment of fees to fund managers.

Having reviewed asset types and investor categories for contextual purposes, it is fitting that the setting of equity returns is considered. RBC Global Asset Management (2010) observes that because infrastructure is a complex and politically sensitive asset class that entails large long-term investments in generally illiquid assets, many factors have to be considered in setting target returns, including geographic region. They further note that in general returns lie along a continuum. Those assets perceived to be lower risk such as brownfield assets and projects with guaranteed off-takers have a lower expected return. On the other hand, greenfield assets exposed to demand will naturally expect a higher to compensate for their greater risk exposure. In absolute terms, return expectations range from 8-20%, distributed across a range of project types and geographical regions. They draw attention to the fact that returns in excess of 20% that some investors in infrastructure realized in the pre global financial crisis era, which was characterized by cheap credit and highly leveraged assets are not the norm for the asset class. This conclusion suggests that the state of credit markets and a project's financial structure have considerable influence on equity returns. STANLIB (2014) suggests that the infrastructure lifecycle underpins the asset's risk-reward profile. The cycle is comprised of two distinct phases: construction and operation phases. The construction phase, which entails construction completion and ramp-up of operations, has the greatest risk exposure but also the largest potential for increase in value. Its risk-reward profile is, therefore, akin to that of private equity. The operation phase spans the stages of full operation to project maturity or the end of the off-take contract and is characterized by stable revenues and reduced investment risk. As a result, the operation phase's risk-reward profile is no different

from other yield-providing investments. The preceding assessment of lifecycle based risk-reward profile suggests that investor target returns will vary on the basis of the project's maturity. STANLIB (2014) goes further to draw attention to other aspects of infrastructure investment that are to be borne in mind when investment decisions are being made. They caution that the asset class has its unique demands. These include hands-on development expertise; attention to detail in due diligence and execution and operating and risk-management expertise. The concern about due diligence is echoed by RBC Global Asset Management (2010) who lament the absence of readily available information on unlisted infrastructure that complicates due diligence in the sense that historical performance or volatility of the asset class is difficult to evaluate. The due diligence theme is carried forward by AMP Capital Investors (2013) who argue that the quality of information to facilitate due diligence varies between greenfield and brownfield investments as in the latter's case operating history is yet to be established. Preqin(2012) blends considerations relating to credit market conditions, geography and investor type in assessment of expected returns. Their survey finds that infrastructure investors have a strong preference for Europe and North America. They argue that this preference is a reflection of investment funds risk-return profile as they favor stable and inflation-indexed cash flows from their investments. The developed markets of Europe and North America are, therefore, a natural choice since they provide a steady pipeline of investments with a low regulatory risk environment coupled with greater availability of debt financing.

2.5.2.6 Country Risk

Country risk is perhaps the most convoluted factor under consideration in pricing both equity and debt financing for infrastructure projects. Standard and Poor's (2006b) describes country risk as exposure to rapidly declining host country economies or dramatic change in the regulations that govern a project's operations. In addition, it considers abrupt changes in regulations and laws as the most frequent cause of failed infrastructure projects. This state of affairs, in their view, is paradoxical. Host governments that are, on the one hand, eager to attract investment in infrastructure are, on the other hand, rising credit risk and erecting barriers to raising capital. They further note that historically, public infrastructure projects are the most vulnerable to declining economic conditions in the host country and adverse changes in the regulations governing the operations of the project. The country risk exposure of infrastructure is compounded by foreign exchange risk where hard currency is invested in projects with revenue streams in locally currency. Although the currency mismatch in itself would not be a problem if foreign exchange rate remained stable, exchange rates are anything but stable. Foreign exchange risk can swiftly spark failure of a project. If the host country currency rapidly depreciates, for projects with a currency mismatch, the project's tariffs must increase to meet

debt service and other obligations denominated in hard currency. The resulting increase in tariffs may trigger loss of customers; financial stress and extreme political pressures that ultimately result into lower than expected revenues. Worse still, as Standard and Poor's (2006b) warns, foreign investors are hardly regarded as part of the political constituency. To that end, the aftermath of the Asian financial crisis is replete with projects that soured as a result of currency mismatches. Since few projects can eliminate all the risks associated with a host country unless they can afford the exceedingly expensive full insurance coverage, they seek compensation for the risks they assume through expected returns or lending rates. Standard and Poor's (2006b) concludes that it is mostly as a result of country risk that most projects have a credit rating at or below investment grade.

Although the regulatory risk component of country risk is important, the greater proportion of country risk premium is accounted for by the currency hedging costs over the term of a project. To that end, the Climate Policy Initiative (2014) argues that currency risk is the core of country risk premium, irrespective of the underlying economics of a particular project. Provided there is a currency mismatch, a depreciation of the project host currency, if not hedged, would imply a loss for the project company. As a result, investors have to take steps to manage their currency exposure. Unfortunately, the cost of currency hedging for long-term contracts is considerable since the uncertainty and risks become less clear over longer horizons. To illustrate the impact of currency risk on loan pricing, Climate Policy Initiative (2014) draws on its research from India to assess the buildup of pricing for foreign denominated project loan. The pricing layers for the loan include a risk free rate; project premium; term swap to convert the variable risk-free rate into a long-term fixed loan and a currency swap. In percentage terms, the currency swap accounted for 48%, the project premium's share was 29%, the term swap stood at 17% and the risk-free reference rate at 6%. If the findings of Climate Policy Initiative (2014) are representative of project host countries with underdeveloped capital markets, it would appear that the cost of currency hedging is a disproportionate driver of pricing for hard currency loans to projects with a currency mismatch.

2.5.2.6.1 Country risk in Sub-Saharan Africa

With respect to Sub-Saharan Africa as an infrastructure investment destination, the IFC (2013) indicates that infrastructure projects on the African continent have to expend more energy to successfully mobilise financing, although the gap between emerging and mature infrastructure markets is narrowing. For the continent to advance its quest to attract investment in infrastructure, it must address political risk. The IFC (2013) draws attention to creeping expropriations, which entails unfavorable renegotiation of contract terms.

In their view, this risk is more vexing than other types of political risk such as political violence. They also note that the risk profile of developing countries may not permit high leverage ratios because more risk capital is required to cushion lenders. This erodes the leverage effect on equity returns and results in higher equity hurdle rates.

With respect to the quality of projects the continent presents to international investors, the IFC (2013) view is uncomplimentary. They contend that the Africa exhibits a plain lack of understanding of what it takes to bring a good PPP project to the market. To that end, tendered projects are typically poorly prepared as the responsible public agencies prefer to use in-house resources so as to avoid or reduce transaction advisory costs. Because the projects are poorly prepared; credit ratings are mostly below investment grade and the domestic financial markets are weak, foreign capital is attracted at greater cost since more time and effort must be invested in complex financial engineering and associated activities. The procurement processes themselves are a source of additional risk. Most potential investors harbor the fear that the procurement will not reach closure and regard their investment at this stage as venture capital. After failure to reach financial close, a resumption of the procurement is associated with even higher risk, which investors' price in their bids.

2.5.2.7 Project's Financial Structure and State of Capital Markets

The interplay of individual projects financial structure and the level of development of capital markets as well as their state at the point in time when financing is sought have an effect on cost of financing for infrastructure projects. The review by Davies and Carr (2013) of the United Kingdom's M25 road project weaves the combined impact of the project's financial structure and the state of financial markets pre and post the global financial crisis (GFC) on the financing terms achieved. The project is a £6.2 billion thirty-year contract for the design, build, finance and operation of the M25, a strategic orbital route around London, which forms the hub of the UK's motorway network with up to 200,000 vehicles per day using its most heavily trafficked sections. Besides the magnitude of financing required, the project presents a unique case in the sense that it reached financial close during the turbulent market conditions that characterized the global financial crisis. Prior to tendering, a market consultation exercise had been undertaken to assess the financial markets capacity and appetite for a project of its scale, which envisaged debt financing of up to £2billion. The outcome was that financing capacity was not a matter of concern. However, the exercise was conducted before the onset of the global financial crisis and the subsequent turmoil in financial markets. Based on the feedback from the financial markets, the procurement agency proceeded to tender the contract requesting that bidders provide

financing plans accompanied by evidence of support from prospective debt finance providers. At bid submission, the financing plans submitted were based on pre financial crisis lending terms. It soon became apparent that the preferred bidder would not be able to raise the necessary financing under the dramatically altered market conditions, which had eroded the financial markets capacity to provide the required funding. The changed market conditions compelled the public sector through the Department for Transport (DfT) to intervene by offering to co-finance as a senior lender with up to 25% of the required amount. The DfT's intervention is believed to have been crucial to a successful outcome as it underscored the government's commitment to the project, which was a source of comfort to prospective lenders under unsettled market conditions. Further support was received from the European Investment Bank (EIB)-a pan-European Development Finance Institution (DFI), whose participation was an additional source of comfort to commercial lenders. In the end, the project reached financial close but with a watered-down involvement of commercial lenders whose pre-financial crisis appetite for the project had considerably been reversed. The project achieved a debt equity ratio of 85:15, with a club of 16 banks providing £700million, the EIB £215million guarantee and a £185 unguaranteed structured finance facility and the project sponsors providing the balance of £200million in equity. The project also faced challenges related to maturity of the loans and pricing. With the capital markets in retreat and the uncertain conditions, lenders were unwilling to lend sufficiently long-term for a project which at the time of financial close had 27 years outstanding on its contract. The lenders were concerned about the capital they need to allocate to long-term assets and harbored the fear that their cost of funds might increase creating a mismatch between their long-dated loans and a more expensive cost of funds. To address the lenders concerns on maturity, the pricing of the loans was structured in a way to encourage refinancing of their loans as to allow them achieve their preferred shorter tenors. This was achieved through the introduction of two aspects of pricing- a cash sweep and a margin ratchet. The margin ratchets were designed to increase the cost of debt in a phased manner by escalating the spread on the benchmark lending rate. The margins would be escalated as follows: between the first and seventh year the margin would be 250 basis points(bps);year eight to ten 300bps and year eleven to twenty seven 350 basis points. On the other hand the cash sweep was designed to accelerate debt repayment by progressively limiting distributions to equity investors. Between year eight and nineteen, 50% of any cash flow available after payment of scheduled debt service would be used to prepay outstanding debt. This proportion was to increase to 100% between year twenty and twenty seven. In summary, the project would most likely have not proceeded without the public sector intervention by way of the DfT offer and the EIB's participation. Their intervention somewhat altered the project's financing structure where previously commercial lenders had

been envisaged to be the dominant providers of debt. Moreover, the guarantee layer provided by EIB is a form of credit enhancement without which the terms of the commercial lenders might have been significantly more expensive. It's also clear that shifting market conditions can potentially impact on both availability of finance and its terms.

The influence of market conditions on cost of funds for infrastructure projects is reiterated by NAO (2010a), which, in its audit of the M25 project, finds that the price of the contract increased by £662million from a present value of £2.7billion in the first half of 2008 when the preferred bidder was appointed to £3.4billion when the contract was let. The price increase is largely attributed to the lending terms during the credit crisis with 67% of the increase attributed to increased interest costs. It is noted that interest margins to cater for project risk increased from an expected range of 0.7-0.85% at preferred bidder stage to 2.5-3.5% at contract letting stage, consistent with the margin ratcheting profile reported by Davies et al. The balance of 33% of the contract value increase, although not directly associated with interest costs, is, nonetheless, a result of the project's changed risk profile. It was as a result of the commercial lenders quest to reduce their risk exposure which triggered additional demands. These included a request that the contractor increase its price to take into account the risk of higher than previously forecasted inflation, more stringent debt service coverage ratio requirements and increased equity contribution from the project sponsors.

Morse (2010) more broadly examines the impact of the global financial crisis on infrastructure financing in the UK. The report finds that with the onset of the economic recession, bond financing and, subsequently, bank lending became severely restricted affecting the prospects of financing the country's significant pipeline of infrastructure projects. As a result of the crisis, bank interest costs increased by between one-fifth and one-third. Margins on infrastructure project loans increased to an average of 2.5% from 1%. The increase was out of sync with the wider interest structure as short term lending rates were actually falling. Moreover, the risk profile of the projects had not altered as the public sector remained a significant counterparty with respect to demand risk. The lack of responsiveness of the interest margins to movements in the short-term bank lending rate is attributed to the preference of fixed rates by project sponsors on their long-term borrowings for infrastructure projects to match their contract lives. Fixed interest rates are a reflection of the financial markets view of the risk of future changes in interest rates. Besides the impact on interest rates, the changing market conditions prompted banks to take steps to de-risk projects they were lending to. These actions included reduction in the proportion of debt in the funding mix and, as a result, increased equity contribution requirements. In addition, higher debt service coverage ratios were imposed and more stringent

and upfront equity drawdown profiles as well as inflexible conditions on the cash withdrawals by project sponsors. The report draws attention to the dangers of reliance on a single source of funding and the effects of limited competition, which promotes inefficiency. As a result, a plea for the consideration of a greater mix of funding and less reliance on commercial banks is made. The report also provides information on a number of projects that successfully navigated the headwinds to reach financial closure. To that end, the Greater Manchester waste treatment and power generation project is illustrative of the convergence between a project's financing structure, state of financial markets and cost of finance. A brief review of this project follows below.

The waste treatment and power generation project was initiated by the Greater Manchester Waste Authority-England's largest waste authority with a share of 5% of national waste. The project entailed 36 waste recycling units over 23 sites and a waste-fired thermal power station under a 25-year contract. The project's financing requirement was estimated at £584million. The project was initially able to raise £280 million from commercial lenders and £184 from the EIB, leaving a financing gap of £ 120 million. This was as a result of the onset financial crisis in September 2008. In March 2009, the Treasury through the Infrastructure Finance Unit (IFU) plugged the shortfall with a £120million loan. This was after protracted negotiations with most of the available banks had failed to bear positive results. The IFU had come into existence in January 2009 after acknowledgement on the part of government that the rapidly deteriorating credit market conditions would not allow for the raising of debt finance by way of bank loans or bonds to finance large and long-term public infrastructure projects. What is most striking about this project is that its cost of borrowing was more expensive than that of the M25 project despite of the fact that the magnitude of financing required from commercial lenders was far less; the maturity of the loans shorter and greater public sector and DFI involvement in the form the IFU and EIB loans. As with M25, the pricing of debt was based on margin ratcheting. During construction, the interest margin was set at 3.25%, increasing to 3.35% between completion and the ninth year of project operation. Between operation year nine and fifteen, the margin would be 3.7% and further stepped up to 3.95% between years fifteen and twenty one. The margin would then be capped at 4.5% from year twenty-one onwards. The variation in pricing of debt between the Greater Manchester waste treatment and the M25 projects is partly put down to the fact that the latter entailed greater risks as waste projects involve complex industrial processes and extensive contractual relationships with a large number of counterparties. In addition, the IFU's participation was on similar terms as that of other commercial lenders and, unlike the financing plan for M25, the EIB's participation did not introduce a guarantee layer to the financing structure. Taken together, the greater technical complexity and absence of

similar credit enhancements appears to have eroded the pricing advantages that the Greater Manchester waste project had over the M25. Besides the increased cost of borrowing, the financial crisis made the task of arranging financing a challenging one. For projects with large financing requirements, a club of banks had to be painstakingly assembled as compared to the pre-crisis period where such deals would entail a single negotiating bank and subsequent syndication with a larger group of banks but on pre-agreed terms at the risk of the lead bank.

There is evidence that the participation of Export Credit Agencies (ECAs) and Development Finance Institutions (DFIs) in infrastructure financing can have the effect of reducing a project's cost of funds. Baker & McKenzie (2013) in their assessment of the impact of ECAs and DFIs find that their participation alongside commercial banks is a source of invaluable comfort to the latter permitting them to provide longer tenor loans. It is important to understand the mandate of ECAs and DFIs for contextual purposes. ECAs exist to promote exports and foster the commercial success of their domestic clients in foreign markets, including bidding support for international infrastructure projects while DFIs mandate is development over and above the commercial success of individual projects and are particularly focused on markets where there is limited access to alternative forms of private finance. Baker & McKenzie (2013) observes that when the two types of institutions act in concert, they have capacity to reduce the cost of funds; lengthen loan tenors; inject a measure of transparency in the project and offer risk cover for commercial banks and investors. In the post global financial crisis era, these attributes that ECAs and DFIs in aggregate confer on a project's financing structure are vital in the context of uncertainty and balance sheet constraints that are compelling commercial banks to focus on short-term lending opportunities in more established markets.

According to Baker & McKenzie, ECAs and DFIs achieve the reduction in pricing of loans in two broad ways. Firstly, in comparison to commercial banks, their capital is cost effective because they can borrow at cheaper rates given their risk standing as either multilateral institutions or public agencies. Their lower cost of funds translates into lower lending rates. Secondly, besides the cheaper direct loans that they provide, they also make available coverage guarantees, insurance products and credit enhancements, which mitigate the risks for many of the commercial lenders and are beneficial to the market as a whole. Typically, ECAs provide 90-100% political risk cover. This intervention has the effect of reducing the amounts of capital commercial lenders have to set aside if they are to participate in the financing of a project and, as a result, reduces the pricing of their loans. In the end, the participation ECAs and DFIs not only makes available cheaper loans but also stimulates a reduction in the pricing of commercial loans, if the financing syndicate includes

commercial banks. However, the involvement of ECAs and DFIs has its challenges. It adds a layer of complexity, which is a result of their rigorous due diligence requirements, human resource limitations and transaction approval processes that are customized to individual institutions. In particular, their strict environmental and social criteria may jeopardize joint financing with commercial lenders.

2.5.2.8. Pricing of Funds: The Ugandan Experience

This section provides an account of the factors that inform pricing of funds to projects with particular reference to Uganda. It broadly depicts the interest rate setting framework of benchmark rates for both commercial bank credit and bonds. It also draws on accounts of two successful large syndicated loan and private placement bonds to paint a broad picture of the possible factors at play in the pricing.

According to Dzineku, Johnson, Ticas and Kiai (2009), interest rate setting was liberalized in 1992. As a result, key lending rates became market-determined and linked to the auction-determined Treasury Bill Rate. As a result of the reforms, minimum rate requirements on deposits were dismantled while interest rates on savings and time deposits with maturities of up to one year were linked to a reference rate, which is the annualized discount rate on 3-month treasury bills in the four preceding auctions. In addition, the monetary authorities through the Bank of Uganda set and monitor four primary rates. These are the policy margin on the rediscount rate; the reference rate; and the bank rate. The policy margin for the rediscount rate is the cost to a commercial bank if it wishes to access the Bank of Uganda rediscount window to obtain the reserves that it requires for its operations. The reference rate is the moving average of the four most recent auctions' annualized direct yields on the 91-day treasury bills. To ensure smooth function of the markets, the Financial Markets Operations Committee (FMOC) monitors the reference rate with a view to take steps to correct any infringement on the rediscount rate. The rediscount rate is the rate at which the Bank of Uganda will discount government securities offered by investors and it is computed by adding a margin to the reference rate. Lastly, the bank rate is the interest rate at which the Bank of Uganda lends funds to commercial banks against government securities and is at least 1% above the reference rate. The four rates described above are the framework of the economy's benchmark rates and inform the pricing of all financial instruments in the market.

With regard to interest rate spreads, Dzineku et al. (2009) observes that spread between lending and deposit rates is high, averaging 9% in 2008. This situation is attributed to high operational costs; absence of long-term financing; the high-risk nature of borrowers and the oligopolistic structure of the banking sector. And yet competition for customer deposits is intense following the 2005 decision by the Central Bank to withdraw all

government project funds from commercial banks. This suggests that the customer deposits are the cheapest source of funds available to commercial banks. However, the strong competition for customer deposits has not stimulated a narrowing of spreads owing to the factors described above.

With respect to the government securities and bond market, the African Development Bank (2013) observes that the sovereign market is characterized by limited tenor while there is very little issuance in the corporate market. Treasury bills are mostly traded through the primary dealer ranking system introduced in 2005 through the appointment of five commercial banks. The designated banks buy government securities at auction prices and sale to investors in the market. Treasury bonds were introduced in 2005 with the auction of bonds with maturities ranging from 3 to 10 years. These bonds provide a framework for the pricing of securities in the secondary market and are auctioned every 28 days. With regard to the pricing of corporate issued bonds, Dzineku et al (2009) show that government securities invariably provide the pricing benchmark. As an illustration, the Standard Chartered Bank bond issue of 2005 with a 10-year maturity had its coupon priced at the 182-day Treasury bill plus a margin of 1.25% while the East African Development Bank 7-year maturity bond was priced at 182-day Treasury bill plus a margin of 0.75%. The Uganda Telecom Limited 5-year maturity bond was priced at 182-day Treasury bill plus a margin of 1.65%. The variations in margin indicate that investors have different risk perceptions of issuers which feed into pricing.

In that regard, the African Development Bank (2013) suggest that credit ratings and the endorsement of rating agencies are not influential factors in the Ugandan context. Instead, investors rely on their familiarity and standing of the issuer. This position is seemingly borne out by the margins illustrated above. The East African Development Bank, which has the lowest margin, is a sub-regional development bank owned by 4 out of the 5 countries that comprise the East African Community. Perhaps the nature of its ownership, apart from its other credentials, explains its cheaper cost of funds in the Ugandan bond market. The bond market also faces liquidity constraints. In that regard, the African Development Bank (2013) provides an account of how the East African Development, which, although an issuer in its own right, is also a buyer of bonds under a strategy to provide additional liquidity for new issuer's that it believes have strong credit but are new to the market. For instance, the provided liquidity support to the DFCU bank issue through purchase of securities in the primary market and subsequently sold them once the security was established. This strategy entails extensive credit analysis and publicity of the issue to attract pension funds and other sources of liquidity.

However, the dominance of the institutional investor market by the statutory provident fund-the National Social Security Fund, is cited as a key constraint in the bond market.

To illustrate the challenges of the corporate bond market, and capital markets in general, is the case of MTN Uganda. MTN Uganda is the dominant player in the telecommunications industry having pioneered mobile telecommunication in 1998. Seeking to expand its telecommunications infrastructure, it sought bond financing but was met with challenges. The African Development Bank (2013) suggests that a lack of depth in the public markets compelled MTN Uganda to issue three 4-year privately placed bonds in 2001. The challenges encountered perhaps explain why MTN Uganda never returned to the capital markets as its capital expenditure requirements grew. Instead, it resorted to the commercial bank market, where in 2009 it concluded a landmark syndicated loan transaction, which ABSA Capital²¹ described as the largest ever Ugandan corporate syndicated loan and a world first in the syndicated loan market. According to ABSA Capital, a US\$150 million facility was arranged under an innovative structure akin to a medium-term note program used for the issuance of bond securities.

The structure allowed MTN Uganda to enter into a US\$150 million equivalent of senior secured facilities on an ongoing basis, which allowed the company to manage its funding without recourse to costly frequent refinancing. The syndicate brought together an unprecedented 11 domestic, regional and international financial institutions. It is believed that the cost of finance was in the region of 14²²% interest rate per annum. As to why MTN Uganda was able to achieve this feat, press reports pointed to several reasons. To some, the strength of its financial performance and sheer size was of such a magnitude to place it in a good negotiating position. Others cited the transaction as proof of the depth of the domestic banking sector particularly because the giant institutional investor-the National Social Security Fund did not participate. Some sections pointed to the quality of the company's corporate governance, which is described as aligned to international best practice and is believed to have contributed to a favorable credit risk assessment. Yet others interpreted the success of the transaction as a reflection of the financial sector's confidence in the Ugandan economy and the telecommunications sector in particular.

A feature of the Ugandan financial scene that perhaps points to either market failure in the form of excessively high interest rates or the unique features of project finance or both is the use of credit enhancements in the

²¹ <http://cib.absa.co.za/MediaReleases/Pages/MTNUGanda.aspx>

²² <http://www.observer.ug/business/38-business/5732-why-mtns-100m-loan-is-any-companys-dream>

form of credit guarantees. Dzineku et al (2009) reported that a loan guarantee scheme of up to US\$22 million under the patronage of government was in the pipeline with the objective of supporting the extension of credit by commercial banks to agricultural and agro-processing projects. The expectation was that the guarantee scheme would not only increase the credit extended to the target sectors but also stimulate a reduction in the cost of borrowing. Credit enhancements are not limited to high capital expenditure projects or strategic sectors such as agriculture but appear to be extended to working capital requirements of ordinary businesses such as distributors. In that regard, the International Finance Corporation ²³(IFC) risk-sharing facility in partnership with Stanbic Bank and Celtel Uganda serves as an illustration. According to IFC, the facility was a partial guarantee denominated in the domestic currency and equivalent to US\$20 million. It was approved in July 2008 with the objective of sharing risks in a portfolio of loans to the distributors of Celtel Uganda products such as airtime and handsets.

The facility was expected to assist Stanbic Bank provide cash flow-based financing to the distributors to finance their working capital requirements through covering a portion of the bank's principal losses up to an agreed limit in line with credit performance. Within the infrastructure finance field, the Uganda Energy Credit Capitalization Company (2011) outlines some of the credit support facilities available for renewable energy projects. They include a refinance facility to enable participating financial institutions extend the length of loan tenors and a partial risk guarantee for cost overruns during construction. Credit guarantees are also associated with the limited depth of the capital markets. The African Development Bank (2013) cites the Kalangala Infrastructure Services project as an illustration of the limitation of the bond market. The project was the first to include bonds in its financing structure. The project, among other features, entailed the upgrade and expansion of marine transport facilities and was structured as a PPP with government making availability payments to the project company. Through private placement, an estimated US\$12million was raised from domestic investors. The success of the bond was partly because of a guarantee of up to US\$ 5million provided by international agencies. Other features that served to derisk the project included a limited construction period and a commercial structure that capped the risk exposure of investors. The guarantee of timely payment of principal and interest was provided by GurantCo and the United States Agency for International Development (USAID), which is a donor-supported company. Because of the standing of the

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<http://ifcext.ifc.org/ifcext/spiwebsite1.nsf/DocsByUNIDForPrint/6CA59A2F4FC4490A852576BA000E2BDA?opendocument>

organizations issuing the guarantee, the bond received a rating of A+ from international rating agencies, which was above the sovereign ceiling.

2.6. Mechanisms to Enhance Affordability of PPPs

The preceding sections have assessed the value of PPPs and the related concerns regarding the cost of capital for private financing, this section explores the issue of their affordability in the context of cost of capital. Is it possible to lower the cost of private financing so as to retain the VFM benefits of PPPs at a reduced cost? In this context, affordability refers to whether the public authority granting PPP contracts can afford the resulting service charges or if the end user can afford the user fees levied on the use of infrastructure facilities. Yescombe (2007) argues that it is important to address the high cost of funding PPPs and limit financial windfalls to private investors. Besides the economic rationale, it is important for purposes of public perception since the viability of PPPs as an infrastructure procurement option partly rests on political support. To address the challenge of high cost and prevent investors from benefiting from unmerited financial windfalls, several approaches are suggested.

The first approach proposed is a funding competition. The public authority after appointment of a preferred bidder obliges them to undertake a funding competition with the expectation that the competitive process will yield better terms from lenders, which then translates into lower service charges or user fees. This process has an added advantage of limiting the risk of “deal creep”-the risk that negotiations with lenders are exploited by the preferred bidder to revisit contract terms such as pricing and risk transfer to their benefit. This is as a result of the competitive tension between lenders making them less inclined to encourage the preferred bidder’s schemes to revise contract terms lest the project is jeopardized. It is also beneficial to lenders in the sense that the procurement process will have reached the preferred bidder stage with a high possibility to reach contract award and, therefore, good prospects to reach financial close. However, a funding competition is unlikely to bear fruit if the bids are already competitive and lending terms well-established. Its relevance is limited to countries whose PPP programmes are in the early stages of development and unique PPP projects to which lenders views and financing terms are likely to be varied. The process also entails risks and costs for the public authority in the sense that additional advisory costs are incurred and that the bids may turn out to be more expensive than envisaged. In addition, competition between lenders may draw their focus away from due diligence and impair the bankability of the project.

The second method aims at preventing financial windfalls to private investors in PPPs achieved through refinancing of project debt by obliging them to share refinancing gains with the public sector. On completion

of construction within budget and on time, the risk profile of infrastructure projects is altered positively making it possible to secure improved financing terms from lenders through refinancing. Refinancing may be by way of reduced interest cost; increased debt amount; extended repayment terms and relaxation of other debt covenants such as debt service coverage ratios. Investors stand to gain from refinancing through improved returns on their equity. If this is the case, the public authorities can lay claim to a portion of the refinancing gains on several grounds such as the fact that they have met their counterparty obligations thus de-risking the project and making refinancing possible. In addition, they may cite the possibility of adverse public opinion if investors are seen to be making windfalls at a rather early stage of what are typically long-term contracts. However, Yescombe (2007) cautions that the mechanics of apportioning refinancing gains between public authorities and investors and the underlying contractual safeguards are difficult to construct. As a result, it might be easier for the public sector to capture the refinancing gains through the increased flows from tax revenues or directly participate in the projects as equity investors.

Third option is akin to a debt refinancing. As with debt refinancing, elimination of construction risks makes it feasible for investors to sale their equity stakes and achieve windfall gains. This too has potential to cause political embarrassment. The public authorities can potentially structure contracts in a way that allows them to share in such windfalls. However, this is a complex undertaking and perhaps governments are best advised to capture their share through taxes on capital gains or participating as equity investors themselves.

The fourth option is financial support to the projects from public authorities. This may take the form of contributions to capital costs; revenue guarantees; subsidies or debt guarantees. Capital expenditure contributions seek to reduce service charges or user fees through reducing the proportion of private financing to the projects. However, they run the risk of eroding risk-transfer benefits at the construction stage and should be injected at the tail end of this phase. Risk-transfer is still not optimized post construction since the risk of project failure during the operating phase remains and thus the possibility that the public sector will not recoup its investment. Subsidies on a declining basis may also be considered to reduce user fees for concessions that carry demand risk but tapered as demand and project revenues grow. Revenue guarantees operate in a similar mode as subsidies but only paid out if demand falls below the projected base case. Debt guarantees are a form of credit enhancement that should translate into lower borrowing costs and ultimately lower user fees or service charges.

Deloitte (2013) expounds on the framework provided by Yescombe (2007) above. They commend the benefits of government co-funding of infrastructure arguing that minimal investment by governments can be

leveraged into much larger investments since private sector financing is increased as multiple of public investment. Public sector co-funding may take the form of a low interest loan consistent with the lower cost of government borrowing thus reducing the project's overall cost of capital and by its involvement motivating other lenders to participate at competitive terms. In addition, governments may elect to make a capital contribution through meeting a fraction of project costs such as enabling works, reducing the private financing requirement. Credit enhancements and liquidity support are also cited as a mechanism to enhance affordability. This could be by way of government assuming a fraction of the project's debt post-construction or providing all the debt but with credit guarantees from commercial lenders undertaking to repay government in the event of default. In both cases, the cost of borrowing is reduced.

Clayton UTZ (2013) offers proposals to improve the procurement process that also hold the potential to reduce the cost of PPPs. They observe that the cost of bidding under PPPs, as compared to traditional procurement, is markedly higher. This is as a result of the need for governments to identify and formulate both their short-term and long-term requirements before embarking on procurement and the shortlisting process that is essential to narrow down the field of bidders so as to, in turn, incentivize bidders to expend time and resources on well-prepared proposals. In addition, due diligence processes undertaken by both debt and equity providers and the need to conclude contracts with a large number of counterparties are contributory factors to the high transaction costs. While the costs borne by the bidders are ordinarily not considered to be so excessive as to undermine competition, the necessity to ensure value for money can escalate bidding costs through subsequent processes aimed at firming up commercial terms of the projects such as best and final offers. It is, therefore, proposed that governments take steps to reduce the bidding costs.

These could be in the form of a more detailed tender preparation process, adoption of realistic tender timetables and putting in place well-resourced government project teams to manage the procurement process. Other means of reducing bidding costs include limiting requests for information to bidders to relevant information that will indeed be evaluated; reduction of bid phase design work required of bidders and, if more efficient, undertaking technical due diligence for all bidders. The second proposal relates to the character of project participants on the private sector side. They observe that infrastructure projects have traditionally been dominated by investment banks and contractors who are motivated by the short-term earnings as opposed to the benefits of long-term ownership of the PPP contract and its cash flows. They, therefore, propose that the procurement process should be structured in a manner that encourages the participation of parties with a long-term outlook and whose interests are more likely to be aligned with the public sector's

3. Research Methodology and Scope

The research project was undertaken between June 2015 and March 2016. The research methodology was mainly library based and qualitative in nature. However, the approach was dual in nature since both existing sources of information and primary data were used. The main elements of the research methodology are described below.

3.1. Qualitative Case Study

The qualitative case study approach was selected because it is suited to the nature of the study as it sought to explore the cost of private financing for infrastructure in the context of the state of development of the financial sector by largely drawing on the experiences of the United Kingdom and, to a limited extent, on Brazil, South Korea and Uganda itself. This was done mainly through desktop study of available literature. The study also assessed the relevance of possible interventions distilled from the case studies to the Ugandan context through undertaking a survey to elicit the opinions of parties and entities regarded as conversant with both the subject matter and the Ugandan setting. The suitability of qualitative case study approach to the objectives of the research was supported by Baxter and Jack (2008) who disclosed that the approach facilitates the explanation or description of a phenomenon within its context using multiple sources of data. Because of its rigor and flexibility, they argue that it is useful in the evaluation of programmes and formulation of interventions. Moreover, its exploratory approach permits the revelation and appreciation of multiple facets to a phenomenon. The approach is also useful when the contextual conditions are a relevant aspect of the study and the inquiry is of a why and how nature.

Besides the review of existing literature on the subject, individual project case studies were undertaken. These case studies were guided by a qualitative case study approach. Suitability of the approach was confirmed by Baxter and Jack (2008) who argue that the method is unique amongst qualitative approaches in the sense that it permits the collection and integration of quantitative survey data thus enriching the understanding of the phenomena under study.

With respect to case design, the case study used a multiple-case design. The choice of case study design was informed by Yin (1994) who argued that a case study remains a single study even when more than one case is included, which is referred to as a single study but with a multiple-case design. The multiple-case design facilitated the comparison of projects in different jurisdictions so as to draw similarities and differences. Since the context of the cases was likely to be different, the multiple-case approach allowed for the examination of individual project settings with a view to distilling context-specific lessons. The explanatory

approach was preferred because of the complexity of the subject matter and the need to extract answers to the research questions from the experiences of the three countries selected. The multiple-case design was adopted because of the multiple jurisdictions that the study covered. This facilitated analysis within each jurisdiction and across jurisdictions, where such analysis was relevant. To that end, the multiple-case design method was useful in studying the United Kingdom's PPP experiences and that of two leading developing economies – Brazil and South Korea as well as the subject country-Uganda. The choice of benchmark countries was informed by several factors. The first consideration was experience of as measured by the duration of exposure to PPPs and the diversity and scale of projects delivered under this procurement method. The second was the extent to which state-owned financial institutions had been active in the financing of PPPs. The final consideration was track record of implementation of PPPs within developing economies. Based on the preceding factors, the countries selected were the United Kingdom, Brazil and South Korea. In the case of the United Kingdom, it was regarded as the standard-bearer of private financing of public infrastructure as confirmed by the European Investment Bank (2005), which concluded that the United Kingdom is the largest and most diverse PPP market. As for Brazil, its inclusion was based on the standing and mandate of its national development bank-BNDES. As disclosed by Lazzarani, Bandeira-de-Mello and Marcon (2011), BNDES is not just one of the oldest national development bank having been formed in 1952 but it is also one of the largest and with a specific mandate to finance infrastructure. The disclosure by Lazzarani et al (2011) was partially confirmed by Boskey (1959) who intimated that the bank's charter is explicit that the highest priority is to be accorded to specific types of infrastructure. Lastly, South Korea was selected because of its strong PPP implementation credentials amongst developing countries as confirmed by the Asian Development Bank (2011), which argued that the country has rich experience in implementing PPPs, thus provides valuable lessons to other developing countries meriting dissemination.

3.2. Secondary Data Sources

Research papers, articles, publications and electronic sources were used to gain insights into the research questions. Because of the United Kingdom's vast experience with private infrastructure finance, its documented experience as contained in the Treasury reports and value for money audits of individual projects undertaken by the National Audit Office (NAO) provided a great deal of information. Supplementary information on other project variables was obtained from other relevant sources facilitating a more comprehensive appreciation of the financing options available for Uganda. The supplementary sources included the World Bank Group and related multilateral financing agencies such as the International Finance Corporation, Multilateral Investment Guarantee Agency (MIGA) and PPIAF who have a wealth of experience

and published material on a wide range of PPPs. In addition, Standard and Poor's, the International Monetary Fund (IMF) and the International Transport Forum were important sources of information. These sources were complemented by respected periodicals such as Project Finance International, Infrastructure Investor and Preqin Global Infrastructure Report. The use of multiple data sources was intended to enrich the study. Since the majority of the documents reviewed were ex-post in nature, they were subjected to a thematic analysis, which was descriptive, exploratory and contextualist in orientation with the aim of making meaning of the United Kingdom's, Brazil and South Korea's as well as Uganda's experiences within their broader financial and economic context so as to draw lessons relevant to Uganda and its PPP dilemma. On the flip side, the lessons drawn from Uganda's limited PPP experience are also documented.

With respect to infrastructure type, the study focused on transport; energy; water and sanitation, and health. This was because the National Planning Authority (2010) through Uganda's National Development Plan pinpointed projects in these infrastructure sub-sectors as priorities for the country.

Besides geography, by way of the selected jurisdictions and infrastructure type, the study was bound by time. To that end, the projects reviewed are those conceived; fully or partially implemented or abandoned between 1990 and 2015. The selected period was influenced by the evolution of the PPP markets in the benchmark countries. For instance, the European Investment Bank (2005) traces back its exposure to PPPs to 1987 when it extended loans to the Eurotunnel project. It subsequently lent to the Orlyval project in France in 1989 and to the Severn crossing project in the UK in 1992. It is observed that these and other projects offered the bank an opportunity to learn valuable lessons. At the same time, the bank was developing project finance lending techniques through its involvement with private sector project finance deals in the power industry in the UK and elsewhere at about the same time. However, PFI in the UK was launched in 1992 but only began its rapid growth in 1997. The selected period, therefore, broadly captured contemporary developments in the PPP field. This time constraint also took into account the long gestation periods for infrastructure projects as well as the fast-changing nature of the field of finance. The aim was, therefore, to capture the impact of financial innovations, if any, on infrastructure projects with a medium gestation period whilst circumventing inclusion of projects that date too far back for contemporary relevance.

3.3. Primary Data Sources

With respect to infrastructure type, the study focused on transport; energy; water and sanitation, and health. This was because the National Planning Authority (2010) through Uganda's National Development Plan

pinpointed projects in these infrastructure sub-sectors as priorities for the country. The specific/targeted respondent institutions are listed in Table 1 below:

Table 1 Target Respondent Institutions

No	Respondent Name	Nature of Respondent
1	World Bank	Lender
2	International Finance Corporation	Lender
3	European Investment Bank	Lender
4	African Development Bank	Lender
5	KFW	Lender
6	FMO	Lender
7	Proparco	Lender
8	Barclays Bank/ABSA Capital	Lender
9	Standard Bank	Lender
10	Nedbank Capital	Lender
11	Bujagali Energy Limited	Sponsor/equity investor
12	Kalangala Infrastructure Services	Sponsor/equity investor
13	Uganda Development Corporation	Sponsor/equity investor
14	Elgon Hydro Siti Limited	Sponsor/equity investor
15	Rift Valley Railways	Sponsor/equity investor
16	Umeme Limited	Sponsor/equity investor
17	Eskom Uganda Limited	Sponsor/equity investor
18	Privatization/PPP Unit	Regulator
19	Capital Markets Authority	Regulator
20	Uganda Securities Exchange	Lender/investor
21	Uganda Retirement Benefits Regulatory Authority	Regulator
22	Uganda Insurance Authority	Regulator
23	Uganda Insurance Association	Industry Association
24	Uganda Bankers Association	Industry Association
25	Kampala Associated Advocates	Lenders Legal Advisor
26	Mott Macdonald	Lenders Technical Advisor
27	Makerere University Business School	Academia
28	Daily Monitor/Business Daily	Financial press

3.3.1. Sampling

Since the study was qualitative in nature, the sampling was in turn purposive. Patton and Cochran (2002) contended that under qualitative research, while it is important that sample selection is systematic for purposes of credibility, statistical representativeness is not the overriding concern. The nature of the approach requires that sampling is purposive and respondents are selected because they are likely to generate useful input. As a result, the sample selected was based on relevant variables in the sense that their consideration was more likely than not to bring forward respondents who served the purpose:

knowledgeable about the subject matter. However, Patton et al caution that while the aim is not to statistically generalize, it is important to limit sample bias by expanding the range of respondent type. It is for this reason that sample sizes are typically small in qualitative research.

Based on the foregoing exposition, the range of relevant respondent type in the case of infrastructure finance would include: lenders; advisors and consultants, regulatory agencies; academia and financial and infrastructure media. For the study, additional considerations were its country-specific nature and the emergent character of the field of study, the sampling frame comprised of the following entities that were regarded to be knowledgeable on some or all aspects of PPPs and infrastructure finance. The overriding consideration was that the lenders and equity investors had exposure to privately financed infrastructure projects in Uganda. The other respondents who were neither lenders nor investors were to supplement through their local knowledge in terms of operating environment or should have been exposed to these projects as advisors. The survey sample by nature and number of respondents is shown in Table 2 below:

Table 2 Survey Sample

Specialty/Discipline	No.
Lenders	10
Sponsors and equity investors	7
Regulators	4
Advisors/consultants	2
Media	2
Academia	1
Industry associations	2
Total	28

As indicated above, the sampling was not random because the aim was not to draw statistical inferences from a representative sample. Nonetheless, the characteristics of respondents identified above are important because of the need to reflect diversity and breadth whilst remaining relevant. Besides the need to elicit responses from respondents knowledgeable about the subject matter, the determination of the sample size took into account the fact that the survey was by way of individual interviews, which is an exacting task given the limited resources of an individual researcher.

3.3.2. Survey Tools

For the primary data, the data collection tool was a questionnaire mostly administered to respondents in a face-to-face format. This format facilitated the capture of additional insights that such setting is likely to stimulate. In addition, electronic transmission of the survey was an alternative mode in cases where the target respondents were unable to provide their responses in a face-to-face format.

3.3.3. Data Analysis

A semi-structured questioner was used to collect data as it is well-suited to exploratory studies. In addition, since the format of administering the questionnaire was envisaged to be mostly face-to-face, a semi-structured questionnaire, which allows room for the interviewer to ask follow-up questions, was the preferred option.

Although the combination of the nature of the qualitative research method and the limitations of sample size do not allow for generalizations of the findings, for purposes of presentation of the survey findings, a degree of response ranking was considered to be necessary. In that regard, to facilitate analysis and management of responses NVivo qualitative data analysis software was used. The software permitted the recording of survey responses in either respondent or question presentation – all the answers given by each respondent in turn, or all of the responses to one question at a time. Even when the data had been grouped by question it was still possible to view the data grouped by respondent instead. The software also facilitated code development through use of word frequency tools. The same query tools can also be used to collate data relating to a theme or concept. In addition, the software was used to illustrate relationships using models wherever necessary and to report knowledge gained from the data. Because only the researcher can detect all of the nuances contained in responses, the software aided data management and interpretation but did not replace the judgment of the researcher. For instance, the query tools were run to check for questionnaire completeness for each recorded respondent.

3.4. Analysis of Research Objectives

The objectives of the research were four-fold:

1. Review broadly the factors that influence the cost of private financing for infrastructure projects
2. Assess the potential role of the domestic financial sector for contextual purposes;
3. Document the experiences of countries where the use of private financing in infrastructure development is more established with particular focus on the cost of funds;
4. Pinpoint areas that merit further investigation emerging out of the findings

The broad-brush review of the factors that influence the cost of private financing for infrastructure was mostly by way of the literature review, which set out the theoretical underpinnings of cost of finance. The analysis was refined with findings from case studies of individual projects from both the focus country and benchmark countries. Lastly, the analysis was enriched by the findings elicited from survey respondents. With respect to the objective regarding documentation of the potential role of domestic financial markets, the analysis was mostly in the form of a case analysis in Chapter 4 focusing on the role of domestic financial sectors across the project focus country and the benchmark countries. This was complemented by the lessons drawn from past infrastructure projects in Chapter 4. As for the documentation of the experiences of countries where the use of private financing in infrastructure development is more established, the analysis drew heavily from the experience of past infrastructure projects of benchmark countries under Chapter 4. These lessons were cross-referenced to the findings on the state of development of their domestic financial markets to assess the relationship between state of development of financial markets and the cost of funds achieved on already implemented projects. Lastly, the identification of areas that require further investigation drew largely on survey responses that in themselves seemed to pose secondary questions as lines of investigation as they were either at variance with the literature review or the case analyses or, in some instances both. These were intriguing responses or questions posed by respondents unanticipated in the context of the literature review and case studies.

4. Case Analyses

This chapter explores the cost of private finance in infrastructure projects through case analyses. The case analyses investigate the scope of public sector interventions that have the potential to affect the cost of finance with particular reference to the national development bank of Brazil-BNDES; investigate the potential role of domestic capital markets to affect the cost of PPP financing through a comparative analysis of the state of development of Uganda's financial sector vis-à-vis the UK, South Korea and Brazil and review past infrastructure projects with the aim of drawing relevant lessons as well as Uganda's infrastructure bond financing prospects.

4.1. Public Sector Interventions to Address the Cost of Private Finance for Infrastructure Projects: Banco Nacionalde Desenvolvimento Econômico e Social (BNDES) Case Study

4.1.1. Introduction

This section investigates the scope for public sector interventions with the potential to influence the cost of private financing for infrastructure projects. More specifically, it provides a case study Brazil's development bank – the Banco Nacionalde Desenvolvimento Econômico e Social (BNDES) and its impact on infrastructure finance. This is on account of the fact that the BNDES is not only one of the largest and oldest development banks but also one whose mandate unequivocally confers priority status on infrastructural sectors. In that regard, Lazzarani, Musacchio, Bandeira-de-Mello and Marcon (2011) affirm that BNDES was established in 1952 to provide long-term credit for infrastructure projects in the country.

Furthermore, they argue that it is one of the largest development banks with the 2010 value of its loan disbursements more than three times the total amount provided by the World Bank. In addition, its equity was twice the total equity of peer development banks such as the Korea Development Bank and Germany's KfW. Besides its longstanding position and financial strength, the Bank's mandate is extraordinary in the context of infrastructure finance. To that end, Boskey (1959) discloses that BNDES' charter directs that the highest priority be given to the financing of railway transport; then to ports and shipping; then to electric power and lastly to basic industries such as metals, oil, chemicals and cement. It is against this background that the Bank is selected as a case study to draw on its longevity, strength and unique mandate so as to shine a light on the impact of state interventions in infrastructure finance and extract relevant lessons. The remainder of the chapter outlines the rationale behind the establishment of national development banks and their performance record. It also assesses the impact of BNDES on infrastructure finance and closes by drawing conclusions from the investigation.

4.1.2. Rationale and Performance Record of National Development Banks

Several arguments are advanced to justify the establishment and operation of national development banks. In that respect, Rezende (2015) contends that national development banks are critical in the sense that they enable the financial system play an essential function, which is to provide long-term funding required for long-lived and expensive capital assets. In addition, Rezende (2015) hints on market failure and market instability as some of the justifications but swiftly discards the theory of market failure in preference for market instability.

To substantiate the abandonment of the market failure theory, the role played by development banks to stem the effects of the 2008/09 global financial crisis is cited. It is then argued that the global financial crisis demonstrated the failure of private finance to effectively allocate capital to finance real development largely on account of what is referred to as short-termism, which is an obstacle to the financing of long-term assets. Razende (2015) further contends that in the post 2008 financial crisis era, clarity in the roles of public banks has emerged. Their roles now include acting as a countercyclical policy tool; providing financing for infrastructure; innovation and productivity growth and promoting the development of organized and liquid capital markets. The clarity of roles notwithstanding, national development banks are criticized as crowding-out corporate lending by private banks since their loans are provided at subsidized rates, which generates unfair competition with private banks because the former enjoy a superior funding structure that entails loans from their governments but which weaken their nation's sovereign profile and constrain the development of the financial sector.

The United Nations (2015) provides a broader characterization of the role and objectives of national development banks, which they define as entities with public policy mandates and owned by governments whose principle objective is to provide long-term financing for the promotion of national and or international development on behalf of their shareholders. To illustrate the fact that a national development bank can have international reach in terms of its lending activities, the operations of Germany's KfW Bank are cited. In addition, unlike Razende (2015), the United Nations (2015) view on the rationale for national development banks is more nuanced. They take the view that the purposes and motivations for the creation of development banks evolve as the challenges they seek to address change in nature. Indeed, in some cases, the trigger for the creation of development banks was the need to finance reconstruction following catastrophic events. Consequently, their roles are diverse including: administration of trust funds; crowding-in private sector participation in the financing of projects through playing an anchor investor role and financial structuring that mitigates regulatory and country risks and provision of know-how as well as technical expertise.

As to the distinction between development banks and private commercial banks, the United Nations (2015) argues that what sets the two types of institutions apart is the nature of their objectives – the former seeks to promote sustainable development while the latter pursues profit maximization.

A more restrictive definition of national development banks is provided by Humphrey (2015) who describes them as specialized public finance institutions with a minimum of 30% government ownership stake and an explicit development mandate. With respect to the justification for national development banks, Humphrey

(2015) is largely in accord with both United Nations (2015) and Razende (2015). Market failure due to lack of information or risk aversion on the part of the private sector and the need to address the divergence between private and social returns that may constrain investment are some of the arguments advanced. Other reasons provided include the countercyclical financing role; the need to support strategic sectors of the economy and the provision of project appraisal and technical assistance that the private sector can't supply at a reasonable cost. However, attention is drawn to the downside of development banks, which include the risk of the banks being held hostage to political interest groups; distortion of the functioning of private markets through overly activist operations; flawed investments and the risk that the banks can become a fiscal encumbrance to the nation.

4.1.3. Assessment of BNDES Impact on Infrastructure Finance

This section of the chapter provides an assessment of the impact of BNDES on infrastructure finance. The important metrics in this assessment are whether BNDES operations have impacted the cost of funds for infrastructure projects; whether infrastructure represents a significant proportion of the bank's lending portfolio; the extent to which the bank has played a catalytic role in terms of crowding-in private credit and what role is envisaged for the bank in future infrastructure development plans. However, before assessment of the bank's impact on infrastructure finance, an evaluation of its performance as a development bank in general is important given the mixed feelings towards national development banks as described in the preceding section of this chapter. To that end, an empirical investigation by Lazzarini, Musacchio, Bandeira-de-Mello and Marcon (2011) is instructive.

The backdrop to their study is the ambivalence towards development banks which are regarded by some as a tool to alleviate capital constraints in scarce credit markets so as to unlock productive investments while others view them as conduits for cheap loans to politically influential firms that could obtain capital elsewhere. They, therefore, investigate this question using BNDES loan and equity allocations between 2002 and 2009. They find that the bank has an outsize role in the economy with its 2009 lending accounting for 21% of the total credit to the private sector and its lending rates as low as 7.5 percentage points below the market rate. Undeniably, the impact of BNDES lending is to reduce financial expenses for borrowing firms in a significant way because of the lower-than-market lending rates. They argue that this finding supports the view that BNDES, rather providing funding for companies that were capital-constrained and in need of funds to undertake large investments, actually appears to be supporting firms that could have borrowed elsewhere. As a result, the effect of the subsidized loan appears to be a simple transfer from the government to

shareholders of the borrowing company. Clearly, this outcome does not support the industrial policy view of development banks.

Besides the inquiry into the industrial policy view, Lazzarini et al (2011) investigate the political view of development banks too. This is done through testing two hypotheses. The first line of inquiry is whether BNDES chooses underperforming firms while the second explores the rent-seeking hypothesis on political connections between the borrowing firms and the government. They find that the bank actually allocates credit to firms with good past operational performance which confirms that BNDES is not systematically bailing out poorly performing firms. However, politics are at play as confirmed by the finding that firms that donated to candidates that won an election are more likely to receive funding in the form of loans from BNDES. They also find that both profitable and unprofitable firms make political donations but donations don't result in poor performing firms being systematically selected for credit allocation. They conclude that BNDES is apparently lending to firms that want to reduce their financial expenses without necessarily changing their operational performance or investment decisions with the main draw being the lower cost of funds. They also draw attention to BNDES cost of intermediation observing that the lower-than-market rates imply that society pays subsidies of between 5 and 10 cents for every dollar that the bank lends, which would be acceptable as the inevitable cost to create new productive investments if the industrial policy view was upheld by their findings. Unfortunately, this is not the case.

As to the significance of infrastructure in BNDES lending portfolio, it is apparent that the bank has remained true to its charter. BNDES (2014) indicates that on average 36% of the bank's disbursements were targeted at infrastructure between 2004 and 2013. In addition, allocations to infrastructure were expected to increase by 6.4% for the 2013-2016 period. In terms of disbursements to particular infrastructure categories, in 2013 alone a total of US\$ 389 million was disbursed to infrastructure. Of this amount, 40% was allocated to airports, 24% to highways, 17% to railways, 12% to ports, 4% to pipeline transportation, 2% to warehouses and 1% to navigation. BNDES (2014) further reveals that between 2003 and 2013, the bank extended a total of US\$37.6 billion, representing 48.5% of the total funding required for infrastructure projects. These resources contributed to the financing of 5,064km of highways; 2,237km of railway lines; 15,212 wagons and 227 locomotives and 10.7 million tons in port handling capacity.

In addition, the disbursements contributed to the establishment of 57 million airport passenger capacity and 1,331km of pipelines. Further evidence of the bank's commitment to infrastructure is found in its organizational setup. BNDES (2014) discloses that an infrastructure unit comprised of three divisions. The first is the industrial division that covers telecommunications and oil and gas. The second is the social infrastructure division concerned with urban mobility and sanitation while the third is tasked with electric power; renewable energy and transport and logistics. As to the outlook for infrastructure financing, the bank believes that the country's growth will be led mainly by infrastructure investments, which are low-risk and have attractive long-term yield opportunities. It, therefore, expects to continue to play a role in financing infrastructure. However, the bank contends that infrastructure financing is unsustainable unless new players and investors can be attracted using a combination of project financ   and capital markets. It is for this reason that the bank considers the addition of public bonds to the financing sources of individual infrastructure projects. Under this approach, the borrowing SPV or holding company that controls the SPV issues the bond and utilizes the proceeds as equity. If the holding company is not listed on the stock market; it undertakes to go public through an initial public offer. To nudge the process along, the bank can consider taking a minority equity stake in the project's SPV.

The bank has also played a pivotal role financing infrastructure associated with the hosting of the 2014 football World Cup and the 2016 Olympic Games. In that regard, Standard and Poor's Capital (2014) argues that hosting of such sporting events is an opportunity to improve the economic and social aspects of a country or region and the associated infrastructure is most efficiently delivered through PPPs, which best capture the benefits through appropriate risk allocation. It is disclosed that BNDES played a critical role in financing both stadiums and associated infrastructure that such high-traffic-volume events require including subways, train lines, bus corridors and road and airport upgrades. To facilitate the World Cup preparations, BNDES created two programmes. The first referred to as Procopa Arenas was established to construct or upgrade infrastructure in the 12 cities that hosted the event. The programme permitted the bank to finance up to 75% of the investment in infrastructure and the arenas, for which it disbursed an estimated US\$ 1.56 billion.

The second programme, known as Procopa Turismo, had the objective of refurbishing and constructing hotels. It extended credit worth an estimated US\$410 million and contributed to the bringing on stream a total of 4,727 hotel rooms. The infrastructure was built on PPP terms under a build, operate and transfer (BOT) scheme. The projects were generally completed on time and to budget. Standard and Poor's Capital (2014)

argues that the Brazil experience with World Cup infrastructure demonstrates that PPPs broadly increased the efficiency of public sector spending. The success of the programmes is in part put down to the financing structure through which BNDES extended credit. This was done through intermediary private banks and to whom credit risk was transferred.

Another area that demonstrates the important role the bank plays in the infrastructure finance sphere is that of renewable energy. To that end, BNDES (2011) demonstrates the scale of the bank's ambitions. It is disclosed that the bank is focusing on biomass and wind park projects with potential to generate 6,807 megawatts. The flagship projects include Madeira HEP estimated to cost US\$13.4billion; Angra III at US\$6 billion; Belo Monte HEP at US\$14.9 billion, Tapajos HEP at US\$14.3billion and wind energy projects worth US\$4.6 billion.

With regard to the bank's impact on the cost of funds and its future role in infrastructure finance, EMIS (2014) reaffirms the view held by Lazarrini et al (2011) that BNDES is the most important long-term credit provider for the Brazilian economy and that its interest rates are lower than the overall market rates. Such is the scale of the bank's operations as to generate concerns that it is too large and crowding out private sector credit. In response to these concerns, it had been indicated that the bank would scale back its operations in 2013 in order to increase the competitiveness of private banks. Instead, BNDES' lending increased by 20% in 2014, reaching an estimated US\$77.9 billion, more than double the World Bank's disbursements and accounting for 7% of Brazil's 2013 GDP.

The below market rates that BNDES charges and the associated concerns of the public sector subsidy are reechoed by Oliver Wyman (2014). It is disclosed that in terms of BNDES cost of funds, the treasury charges the bank at the long-term rate known as the TJLP, which stood at 5% in 2014 and was conspicuously lower than the ten-year government bond coupon rate of 12% for bonds maturing in 2024. This low cost of funds is what enables BNDES to lend at lower than market rates. For instance, its lending rates can be as low as the long-term benchmark rate-the TJLP plus a premium of 1% for priority infrastructure such as railways. The difference between the BNDES cost of funds and the government borrowing rates implies a 7% per annum in cost per unit of credit extended by the Bank and is estimated to increase government expenditure by 5%. But, it is argued that the positive impact of infrastructure investment more than justifies an average annual investment of 5% of government expenditure, which is approximately 1% of GDP. This is believed to be a

fair price to pay considering the investment required to close the infrastructure gap is actually 5% of GDP per annum.

There is evidence that BNDES is leveraging its competitive edge on the cost of funds for the greater good of the economy. In that respect, EMIS (2015) discloses that the government is undertaking fiscal adjustments that will diminish the role of BNDES as a primary source of long-term debt and equity financing. As a result, in June 2015 the bank adopted new lending rules for companies with an annual turnover of an estimated US\$410 million and loans exceeding US\$82 million with the aim of reducing its share in project financing at the expense of greater participation by the capital markets. Under the new scheme, the bank will provide loans at its subsidized long-term interest rate (TJLP) for up to 50% of total financing conditional on the issuance of bonds by the borrower. Without issuance of bonds by the borrower, BNDES will limit its financing at subsidized rates to 25% of the loan. This approach will clearly boost efforts at capital market development and crowd-in other sources of private credit.

As to the outlook for infrastructure financing and the role of BNDES, EMIS (2015) points to an intensification of efforts. It discloses that in June 2015 the government announced a new phase of the Logistics Investment Programme (PIL), which envisages the concession of infrastructure projects with the objective of modernizing transport infrastructure and boost economic activity. The programme is expected to inject an estimated US\$81.4 billion in private investment in rail, road, airport and port infrastructure. The investment is expected to be phased with an estimated 35% allocated between 2015 and 2018 while the balance from 2019 onwards. BNDES is expected to be the main source of financing, funding up to 70% of the projected investment in roads, ports and airports infrastructure and up to 90% of rail infrastructure.

However, the new programme envisages greater participation of the private sector and the capital markets through infrastructure bonds. Oliver Wyman (2014) complements EMIS (2015) in providing an exposition of the Brazil's infrastructural development ambitions and the envisaged role of BNDES. It is disclosed that the country's infrastructural investment targets are expected to increase from an average of 2% of GDP over the past two decades to just under 3% of GDP between 2015 and 2018 with BNDES expected to meet up to 80% of project costs. As a result of the enhanced scale of investment, significant pressure on the balance sheet of the bank is anticipated. This is why the government is looking to greater participation of the private sector to expand the country's capacity to invest in infrastructure and help deflate the public sector balance

sheet. Hence, efforts to tap into alternative debt investors from the private sector through new laws regulating tax incentives for infrastructure bonds.

As the country transitions to a model of infrastructure financing with greater private sector participation, a broader use of insurance and guaranty funds as well as the tranching of debt in different risk segments is expected to help decrease the cost of capital and the need for public funding in the short-run. Ultimately, an infrastructure financing model that narrows the gap between the cost of government and private long-term funding is essential. In that regard, Oliver Wyman (2014) finds that infrastructure bonds were paying 10% for AAA rate bonds and 14% for AA rate bonds. On the other hand, bank loans for infrastructure with shorter maturities had interest rates varying from 13% to 20%. In that sense, both commercial bank debt and infrastructure bonds represent a higher cost for infrastructure as compared to BNDES loans which were being provided for up to 7% and with longer maturities. At the same time, government bonds at a rate of 12% and inflation-indexed represent a comparatively better investment opportunity than higher risk infrastructure bonds.

4.1.4. Conclusions

The foregoing section of the chapter has investigated the rational and challenges of national development banks and provided an assessment of the performance of BNDES as a case study of the role of national development banks in infrastructure finance. Based on that assessment, it is clear that the bank is making a significant impact. It charges lower interest rates for infrastructure projects than both commercial bank debt and infrastructure finance bonds.

4.2. Domestic Capital Markets and the Cost of PPP Financing

4.2.1. Analytical Framework

Recognizing the fact that comparisons between countries at different levels of development are laden with challenges, it is important to set out an analytical framework before undertaking the comparative analysis of the state of development of the financial sectors in the four jurisdictions identified above. IMF (2005) has outlined a comprehensive framework for assessing financial sectors. However, for the task at hand, the more relevant aspects of the framework are efficiency; competitiveness; concentration and breadth as well as depth of the financial sector. These characteristics of a financial system and their relevance are described in more detail, next:

According to the IMF (2005), the range of financial services and products as well as the diversity of intermediaries are a manifestation of a well-functioning financial system. In addition, such a system should have a variety of financial instruments that provide a continuum of risk, return and maturity for both savers and borrowers. Consequently, the evaluation of a financial system's breadth should entail the identification of existing financial institutions; existing markets for financial instruments and the range of available products and services. The IMF (2005) also draws attention to the importance of delineating the financial intermediation roles of bank and non-bank financial institutions (NBFIs) to provide a fuller picture of the financial sector's scope. This is because bank intermediation through bank deposits and loans is the established form of savings and credit in many countries. As a result, the analysis of the financial intermediation role of NBFIs provides a useful indicator of the financial system's diversity. This, therefore, places industries such as insurance, pensions and capital markets at the center of the assessment.

Beyond the dichotomy of bank and non-bank intermediation, the scale of operations and depth of financial institutions is an important dimension of the analysis. In that regard, the aggregate assets of the financial system and their ownership distribution between the different segments of the financial system is important. Equally important is the outreach of particularly the banking system through the branch network or technology platforms. In the context of cost of finance for infrastructure projects, the depth and breadth of the financial system is relevant in the sense that depth represents the magnitude of order flows that the market can withstand without a significant change in price while breadth symbolizes the diversity of financial instruments that project sponsors and lenders can elect to use to lend or invest in projects. A deeper financial system by way of aggregate financial assets will not only have greater capacity to finance projects but might do so at more competitive terms as the large amounts of capital available have to be allocated to relatively limited investment opportunities. On the other hand, a well-diversified financial sector will not only provide a range of instruments but might also stimulate, in varying degrees, both competition and partnership between banks and NBFIs that is beneficial to end-users with regard to cost and flexibility.

The second set of relevant characteristics of the financial system that forms part of the analytical framework is that of competition, concentration and efficiency. The IMF (2005) characterizes competition in the financial sector as the extent to which financial markets are contestable and the consumer's scope for selection of a range of financial services from multiple providers. The IMF (2005) argues that competition is desirable because it stimulates increased institutional efficiency; lowers costs for clients and improves quality and range of financial services. To assess the intensity of competition, the IMF (2005) suggests a number of variables.

These include the total number of financial institutions; changes in market share; ease of entry and pricing of services. In addition, the diversity of the financial sector as measured through the strength of NBFIs indicates the extent of competition as non-bank intermediaries and capital markets are known to effectively challenge the banking system.

The extent of ownership dispersion is also a useful gauge of competition. To illustrate the ownership variable, the IMF (2005) refers to the fact that banks under different ownership often pursue dissimilar strategies with respect to target clientele and products, thus leading to market segmentation. Competition may also be affected by the mandate and nature of ownership. In that regard, the IMF (2005) points to the fact that financial systems dominated by state-owned financial institutions tend to be less competitive as the nature of their mandate and ownership moderates their quest for profit maximization. Similarly, a financial system that permits dual ownership in the sense of foreign and local participation can affect competition as foreign ownership often injects a measure of innovation and competition into the domestic financial system.

With respect to concentration, this is described as the extent to which the financial system is controlled by the largest institutions active in the market. This concept can be illustrated by variables from the banking segment of the financial sector such as an institution's share of total assets, deposits and branches. Additionally, the IMF (2005) suggests that the same notion can be extended to financial markets and instruments. For instance, the relative shares of money and capital market instruments of total financial assets may provide an indication to the financial markets positioning between short-term and long-term intermediation. Equally, diversity of instruments with respect to issuers and investors can be enlightening with regard to the degree of concentration and competition in the financial sector.

In as far as efficiency of the financial sector is concerned, the IMF (2005) underlines cost and quality as the most important variables. In that regard, an efficient financial sector is one that has the ability to provide high quality products and services at the lowest cost. It is also their contention that efficient intermediation underpins the degree to which the financial system supports the real sector and that competition and efficiency are strongly correlated, with more competitive financial systems demonstrating greater efficiency. With respect to assessment of efficiency, some of the quantitative measures include total costs of financial intermediation as a percentage of assets, and interest rate spreads. Intermediation costs include such expenses as operating costs, taxes, reserve requirements, profit margins and loan-loss provisions. Interest rate spreads are the difference between lending and deposit rates. However, efficiency gains may not translate into a reduction in interest rate spreads because of the need to build in loan-loss provisions or

incorporate risk premiums on lending to high-risk borrowers. For capital markets, efficiency is reflected in the spread between bid and ask prices for securities, with tighter spreads indicating greater efficiency.

Having set out the analytical framework, the section that follows undertakes a comparative analysis of the financial systems of the four jurisdictions. The analysis is constructed around three thematic areas introduced in the analytical framework above: breadth and depth of the financial sector; competition and concentration, and efficiency.

4.2.2. Breadth and Depth of the Financial Sectors.

This section reviews the scope, diversity and depth of the financial systems of the four selected countries in line with the variables outlined in the analytical framework in 4.2.1 above.

4.2.2.1. United Kingdom (UK)

The UK's financial sector is one of the most sophisticated globally as shown by a recent dissection of the UK's financial sector is provided by the Bank of England (2015). This takes the form of asset decomposition by type of financial intermediary as at the end of 2014 in Table 3 below:

Table 3

Intermediary	Assets(US\$²⁴ billions)	Share of Total Assets (%)
Major UK international banks	5,430	28.7
Major UK domestic banks	1,764	9.3
Rest of the world investment banks	2631	14
Rest of the world other banks	700	3.7
Other UK banks	380	2
Finance companies	410	2.2
Securitization SPVs	487	2.6
Pension funds	2,175	11.5
Life insurance	2,449	13
Private Equity	137	0.7
Unit trusts	1,065	5.6
Exchange traded funds	137	0.7
Hedge funds	1,019	5.4
Investment trusts	137	0.6
Total	18,921	100

Source: Bank of England(2015)

Banks collectively account for an estimated 58% of the total assets of the financial sector. The Bank of England classification separates banks into various categories. The first category is based on the extent of their overseas business and includes major UK international banks and major UK domestic banks. All other

²⁴ USD:GBP 0.65745

UK banks, including retail and investment banks as well as building societies, are lumped in the category of “other UK banks”. The subsidiaries and branches are split into two groups: rest of the world investment banks and rest of the world other banks. Investment banks, which operate in the capital markets to provide capital-raising or risk-management services for their clients, are referred to as designated firms in the UK setting because they are under prudential regulation although they are non-deposit-taking. For the other banks which are foreign in origin, their exposure to non-residents is excluded in the computation of assets because the focus is on the UK financial system. Their inclusion would substantially increase total assets.

The classification also includes two types of intermediaries that straddle the banking and non-banking segments. These are the categories of finance companies and securitization SPVs. Their distinguishing feature is that they are often owned by banks. The relationship between finance companies and banks, aside from frequent ownership by the latter, is that their operations entail lending although they are non-deposit-taking. In addition, both banks and finance companies regularly finance their lending operations through securitization. It is for this reason that the Bank of England (2015) regards securitization SPVs as important elements of the financial system worthy of surveillance. Securitization SPVs discharge their financing function through acquiring bundles of loans from banks and finance companies and holding them as assets against which they issue debt securities. They, therefore, assume the risks associated with the original loans and facilitate their conversion into debt securities traded on the secondary market.

The remainder of the intermediaries comprises of non-bank financial institutions with an aggregate share of about 37.2% of the financial sector’s total assets. Life insurance dominates the non-bank segment and holds the larger proportion of households’ long-term savings in the form of pension savings or annuities. It’s followed closely by pension funds, which hold other pension savings such as those accrued through private sector pension schemes. This category also includes the assets held by general insurers. The rest of the non-bank segment is comprised of varying forms of collective investment schemes. The collective investment schemes pool savings from a large number of savers which they invest in such instruments as bonds and shares. Collective investment schemes have several features that set them apart including whether they are suited to holding liquid or illiquid assets and the nature of risks they can assume. Collective Investment Schemes include unit trusts; investment trusts; exchange traded funds; hedge funds and private equity.

Further evidence of the standing of the UK’s financial sector is provided by the IMF (2011), which describes the UK as both a home and host of large domestic and international financial institutions. In addition, the sector is deeply integrated into the global financial system with subsidiaries and branches of foreign banks

holding half of UK's banking assets and the UK-owned banks holding half their assets outside of the country. The banking segment's share of GDP stood at 5%. Besides the assets held by the financial system, it plays a critical part in the global payment system through its trading and clearing functions.

To get a sense of the UK financial sector's positioning globally, statistics provided by the IMF (2011) are illustrative. As of 2011, the international banking operations were ranked first globally with respect to both lending and borrowing. The country's insurance sector with assets worth US\$470 billion was ranked third globally and first in Europe and also held a 9% share of the global pension fund assets. On the equities front, the country was ranked second in global equities trading with a 19% share. It was also dominant in Euro-bond trading with 70% of trading by book-runners in London. Similarly, the country enjoyed a strong presence in the fund management sphere controlling 9% of fund sources for fund managers; 19% of hedge fund assets and 13% of private equity investment value. Furthermore, the UK enjoyed a respectable position, in foreign exchange trading and Islamic finance, among many fields of financial services.

The City of London Corporation (2013) supplements the IMF (2011) in portraying the breadth and depth of the country's financial services industry. In that regard, it provides a snapshot of the industry's activities and infrastructure. Banking dominates the industry, catering for an estimated 4 million small business by extending credit to them worth US\$58 billion in 2013 alone. Capital markets took care of the larger businesses, injecting an additional US\$23 billion into the economy in the same year. The picture is completed with venture capital and private equity firms investing in innovative and expanding businesses US\$522 and US\$2.3 billion, respectively. Beyond domestic lending, the financial system facilitates international trade and lending. In 2013, its foreign exchange market's turnover was US\$2,918 billion. It originated 19% of overseas loans and had foreign assets under management amounting to US\$2,890 billion. In terms of outreach, the banking system had 10,800 bank branches and 66,000 automated teller machines across the country. On the insurance front, the industry had a total of US\$2,738 billion invested in shares and other assets; mobilized US\$71.5 billion in premiums and paid out US\$46 billion in net claims for the 2013 operating year.

4.2.2.2. Brazil

The International Monetary Fund (2015a) reveals that Brazil's financial sector has lately been struck by volatility sparked by the October 2014 elections and the depreciation of the Russian ruble in November 2014 which triggered a 14% depreciation of the Brazilian real and a 7% decline in the stock market index. The resultant uncertainty has contributed to lower confidence in the economy and higher financing costs. Nonetheless, the banking system's soundness indicators remain favorable. For instance, total and tier I

capital ratios remain well above the regulatory minimum of 16.5% and 11.3% of total assets as of end of 2014. The banks are also well-provisioned and the liquidity risk for the whole system low. In addition, banks continue to rely mostly on domestic funding with total foreign funding accounting for less than 10% of their total funds. The bullish view on Brazilian banks expressed by the International Monetary Fund (2015a) is reiterated in recent reports by the financial press²⁵, which indicate that the financial sector and particularly the banking industry withstood the ups and downs of global commodity prices. In that regard, the four largest banks in the country have grown by 850% between 2003 and 2015 with aggregate profits increasing from US\$ 2.1 billion to US\$ 20 billion. In addition, bank earnings accounted for more than half of the total profits of the Sao Paulo Stock Exchange between 2013 and 2014. But the banking system is characterized by growing concentration. In 2003, four of the largest banks accounted for 53% of total assets, but this share is estimated to stand at 70% as of 2015. An additional measure of the strength of Brazilian banking system is the position of the country's larger banks in the 2014 global ranking of banks. Measured by assets²⁶, two of Brazil's banks- Banco do Brasil and Itau Unibanco are ranked 53rd and 58th, respectively. The former had total assets of US\$481 billion while the latter had US\$425 billion. Further evidence of the scale of assets held by the banking system is provided by the Bank for International Settlements (2013), which indicates that the largest five deposit-taking banks, which included Banco do Brasil, Itau Unibanco, Bradesco, Caixa Economica Federal, Santander and HSBC had combined assets of an estimated US\$ 1,324 billion. Besides scale of assets, the Bank for International Settlements (2013) observes that most of the banking system's assets and liabilities are denominated mostly in local currency since foreign currency lending within domestic markets is prohibited.

Deloitte Touche Tohamtsu (2012) reckons that the surge of the financial services industry in the country can be attributed to prudent economic management by way of healthy fiscal and monetary policies, which in combination with an improved current account position have strengthened the economy's resilience to external pressures resulting in less volatile interest and exchange rates. In addition, Deloitte Touche Tohamtsu (2012) paints a picture of a financial system dominated by banks but with a growing non-bank segment. The financial system is large, accounting for 180% of Gross Domestic Product (GDP). As an

²⁵ <http://www.nytimes.com/2015/08/14/business/dealbook/in-good-times-or-bad-brazil-banks-profit.html>

²⁶ www.ft.com/bankerdatabase

illustration of the banking sector's vitality, credit extension to the private sector increased from 24% to 48% of GDP between 2004 and 2011.

As at the end of 2011, the banking sector comprised of 2,218 savings, commercial, development and investment banks. The banking system's service delivery modes include branches, advanced service posts; electronic banking service posts; cooperative service posts and correspondents. Although electronic banking service posts are the fastest growing mode, branches remain the dominant service delivery platforms. As of 2011, the banking branch network stood at 21,278 branches, up by 15% from 2007

The country's non-bank segment of the financial system is largely comprised of the insurance, pension and capital market industries. With respect to insurance, Brazil's industry is the largest in Latin America and ranks 15th globally. However, it pales in significance when compared to the banking system. In that regard, Deloitte Touche Tohmatsu (2012) indicates that the insurance sector's share of GDP measured by premiums stood at 3.1% as of 2011. As of 2011, the industry was composed of 114 insurance companies and 368 closed pension funds. Total insurance premiums stood at US\$36.5 billion while pension funds held a total of US\$207 billion in assets. The performance of the insurance sector falls below expectations given the country's large population and vibrant economy. The relatively modest growth of the insurance sector is put down to the high inflation and macroeconomic instability that characterized Brazil until the mid-1990s. These conditions eroded confidence in the industry but with the restoration of macroeconomic stability, the prospects for the industry are optimistic. In terms of composition, the insurance industry is dominated by life and health insurance representing 58% of premiums; automotive insurance at 23% and property insurance at 9%. The insurance sector is believed to have received a boost from the liberalization of the pensions sector in 2004, which stimulated life insurance products with a long-term savings orientation that have performed well on the market.

In as far as capital markets are concerned, Deloitte Touche Tohmatsu (2012) believes that the industry has been growing speedily, although from a low base. In that regard, the amount of primary market offers such as stocks, debentures and promissory notes registered with the Securities and Exchange Commission reached US\$12.7 billion in 2011, up from US\$5.7 billion in 2004. The rapid growth is explained by the easing of monetary policy that reversed investor sentiments about the economy's prospects. More recent evidence from the Brazilian Financial and Capital Markets Association (2015) points to a growing prominence of investment fund management. It is revealed that the country's investment fund management industry is the seventh largest in the world with assets under management of US\$1 trillion, exceeding 5% of GDP with 3.8

million retail fund investors. The assets under management grew 3.7 fold between 2002 and 2015 from US\$269 billion to US\$1 trillion. Fund managers too increased from 150 to 500 over the same period. However, the industry is characterized by concentration with 84% of total assets under management in the hands of the twenty largest fund managers. In terms of importance in the market place, it is estimated that fund managers held US\$890 billion of public debt, representing 42% of total federal bonds; US\$841 billion of corporate bonds accounting for 30% of the bonds outstanding and equity investments in listed companies with a market value of US\$866 billion, representing 13% of the market capitalization of all listed companies.

4.2.2.3. South Korea

South Korea is a manufacturing and exporting powerhouse that has enjoyed strong and stable growth for a considerable period of time. Unsurprisingly, it is believed to have a large and diversified financial sector. Although the service industry does not enjoy the same prominence as manufacturing, the financial services industry, according to the IMF (2014), has been on a steep ascent. In 2000, its share of GDP stood at 212%, increased to 253% by 2007 and reached 312% in 2012. As at the end of 2012, the banking sector's share of the total assets stood at 48%, indicating an almost even split of the stock of assets between the bank and non-bank segments of the financial system. Even more fascinating is the pace of growth of the non-bank segment. The IMF (2014) notes that between 2000 and 2012, the non-bank segment's share of total assets increased from 41% to 52%. Equally impressive is the diversity of the financial institutions: as of 2012, there were 57 commercial banks, of which 39 are branches of foreign banks; 7 nationwide, 6 regional and 5 specialized banks. Non-bank deposit taking institutions stood at a total of 4,772 with credit cooperatives and credit unions accounting for 69% of this category. Insurance companies complete the picture with a total of 56 companies.

While the number of commercial banks and non-bank but deposit-taking institutions is astonishing, the financial system preserves a role for the capital markets. According to the IMF (2014), South Korea's bond market is one of the largest in Asia with outstanding securities accounting for 123% of GDP as of 2012. The strength of the bond market is ascribed to the buoyancy in the corporate bond segment, which is one of the largest in the world. As a result of the appeal of bonds to the corporate sector, the intermediation of the domestic banking system is relatively less important as compared to other countries in Asia. Besides bonds, capital markets are driven by the considerable trade in derivatives including equity-linked derivatives, foreign exchange and interest rates.

With respect to the insurance industry, PricewaterhouseCoopers (2008) reckons that South Korea's insurance industry is the second largest in Asia and is comparable to France and Switzerland in size. As of 2012, total assets held by the insurance industry amounted to 59% of GDP. Life and non-life insurance premiums stood at 44% and 12% of GDP, respectively.

Asset management is another important tier of the financial system. PricewaterhouseCoopers (2008) envisaged strong growth for this segment on account of an aging population; high level of savings and pension reform which was expected to be completed by 2010. Under the reformed pension scheme, a fraction of each company's pension fund would be outsourced for management by professional asset managers. These reforms appear to have stimulated an expansion in the assets held by investment entities such as asset managers whose assets increased from 14% to 45% of GDP between 2007 and 2012.

4.2.2.4. Uganda

According to the Bank of Uganda (2015), the country's financial system is comprised of formal, semi-formal and informal institutions. The formal institutions include commercial banks; deposit-taking microfinance institutions; credit institutions; insurance companies; development banks and capital markets. The semi-formal category is occupied by savings and credit cooperative associations (SACCOs) while other types of microfinance entities such as village savings and loan associations are classified as informal. The formal institutions dominate the urban financial landscape while the informal ones mostly serve the rural areas.

The banking sector dominates the financial system. The Bank of Uganda indicates that as of the beginning of 2015, the banking sector was comprised of 26 commercial banks; 3 credit institutions; 3 deposit-taking microfinance institutions; 203 foreign exchange bureaus and 58 money remittance agencies. With regard to the outreach of the banking system, commercial banks had a total of 565 branches; credit institutions had 55 branches and deposit-taking microfinance 73 branches. In addition, the system had 830 automated teller machines, 267 forex bureau outlets and 204 money remittance outlets. In terms of assets, aggregate assets of commercial banks stood at US\$ 6,639 million; credit institutions at US\$ 105.4 million and deposit-taking microfinance institutions at US\$ 110 million.

The non-bank segment of the financial system has an insurance industry, capital markets and pension sector. With respect to insurance, the Uganda Insurers Association (2013) had a total membership of 22 insurance companies and 1 reinsurance company. In addition, the industry's share of GDP was estimated at 0.66%

while assets measured by gross insurance premiums were estimated at US\$ 115 million²⁷. Non-life insurance accounted for the greater proportion of insurance assets at US\$ 89 million. On the capital markets front, the Capital Markets Authority (2014) reported that the Uganda Securities Exchange (USE) had an estimated market capitalization US\$ 9,082 million and funds under management of US\$ 39 million. In as far as the pensions sector is concerned, World Bank (2009) observes that it only serves a small proportion of the population. For private sector employees, the main pension fund is the National Social Security Fund (NSSF), a defined contribution provident fund that collects mandatory contributions from employees. In addition to contributions to the NSSF, some private companies run occupational funds in parallel. Public sector employees are provided for under the Public Sector Pension Fund (PSPF), which is funded by the Treasury. There are supplementary schemes within the public sector for the army and local government. Despite the fragmentation of the pension sector which constrains estimation of its assets, the NSSF is the dominant player and believed to have assets under management worth US\$768 million, which was in the range of 5% of GDP as of 2009 while the occupational schemes held an additional US\$ 60 million.

In comparison to the United Kingdom, Brazil and South Korea, Uganda trails comparator economies in several respects. For instance as measured by assets; the United Kingdom's banking sector with assets estimated at US\$10,974²⁸billion is 1602% the size of combined assets of Uganda's commercial banks, credit institutions and deposit taking institutions estimated at US\$6.85 billion. In addition, Brazil's two largest commercial banks by assets as at the end of 2014, Banco do Brasil and Itau Unibanco with combined assets of US\$906²⁹ billion, which is 132 times that of the aggregate assets of Uganda's commercial banks, credit institutions and microfinance deposit-taking institutions while South Korea's banking system aggregate 2012 assets estimated at US\$ 1,667³⁰ billion is 243 times the combined assets of both Uganda's commercial banks and non-bank deposit taking institutions.

Within the non-bank financial institutions category, the gulf between Uganda and comparator economies is evident. For instance, as at the end of 2014, the combined assets of investment trusts, hedge funds, exchange traded funds and unit trusts in the United Kingdom stood at an estimated US\$2,358³¹ billion

²⁷ USD:UGX 3500

²⁸ Bank of England 2015 *Mapping the UK Financial System*

²⁹ Financial Times *Global Top Banker Ranking for 2014*

³⁰ USD:KRW 1,172 and the International Monetary Fund May 2014 *Korea Republic Financial System Stability Assessment*

³¹ Bank of England 2015 *Mapping the UK Financial System*

compared to only US\$39³²million in Uganda. This also compares unfavorably against total assets under management by investment funds in Brazil of US\$1,000³³billion and US\$343 billion in South Korea.

4.2.3. Competition and Concentration

While a financial system might be seemingly broad and deep, it may not necessarily be competitive and, as a result, adversely affect pricing of finance to projects. Conversely, a competitive financial sector with limited depth and scope may not have the wherewithal to mobilize the large and long-term financing facilities that infrastructure investments demand. This section assesses the competitiveness and concentration of the financial sectors of the four selected countries:

4.2.3.1. United Kingdom

The breadth and depth of the UK financial sector as described in 5.2.4 offers an extensive range of financial products straddling commercial and investment banking; pension funds and life insurance; unit trusts and investment trusts and hedge funds and private equity. Such is the magnitude and reach of the financial services industry in the UK that one inevitably assumes that is indeed competitive. However, if the degree of concentration and dispersion of shares within a market is a window into the competitive intensity of market participants, the state of the UK banking sector is a singular reminder of how convoluted the notion of competitiveness is. The United Kingdom (2015) traces structural shifts in the financial systems that have created concentration in the banking sector.

The beginnings of the recent wave in market concentration are traced to the “Big bang” radical liberalization policies that were initiated in 1986 targeting the London Stock Exchange (LSE) with the aim of elevating the competitiveness of the financial markets so as to counter international competitors, particularly the USA. These policies led to the reduction of regulatory restrictions thus allowing banks to diversify into new markets and stimulating competition in various markets. This period was also characterized by the retreat and eventual downfall of building societies as a dominant player in the mortgage market. The magnitude of the structural changes to the competitive landscape is best illustrated by the number and type of market participants over a long horizon.

Between 1960 and 2010, the retail banking market evolved from a marketplace of some 16 banks and 700 building societies to one with only 50 building societies. In addition, by 2010, 15 of the 16 original clearing

³² Capital Market Authority Annual Report 2014

³³ Brazilian Financial and Capital Markets Association 2015 Assessment Methodologies for Identifying Non-Bank Non-Insurer Global Systemically Important Financial Institutions

banks were now owned by only four UK banking groups: RBS, Barclays, HSBC and Lloyds. Worse still, the four banking groups, together with an additional two entities-Nationwide and Santander, accounted for 80% of the banking system's lending and deposits. The situation was exacerbated by the global financial crisis, which led to the failure of some notable players in the market place, thus reducing the number and scale of retail banking competitors. Apart from the failure of some of the market players, others were absorbed through mergers to survive the turbulent conditions, heightening the negative effects on competition induced by consolidation. The Treasury (2015) concludes its assessment of the state of competitiveness noting that by 2010 concentration had reached record levels, which bestowed on the dominant player's unfair competitive advantages and left other surviving institutions very weak and unable to effectively compete in key product segments, to the detriment of the real economy.

To balance the views of the Treasury (2015) on concentration and competition in the UK banking industry, the insights of market players deserve consideration. In that regard, the British Bankers Association (2014) counters some of the arguments made to prove concentration and lack of competition. They especially take issue with some of the remedies proposed to address concentration and, in particular, the proposal to break incumbents apart to increase competition. They express the view that the rationale underlying such proposals is flawed for several reasons. Firstly, such proposals overstate concentration and make the mistake of treating the UK banking market as homogenous, which is not the case. Secondly, the assumption that concentration automatically translates into ineffective competition is mistaken. Thirdly, the correct approach to enhance competition is not to break up incumbents but rather to create conditions that encourage the entry of new players. They argue that the UK banking system is an amalgamation of many product markets with competition coming from different areas and different competitors. As a result, the situation is more nuanced than many acknowledge. For instance, while the larger banks are significant competitors in each market segment, the market leader is different in every one of them. They contend that concentration is not necessarily a problem and cite the UK supermarket sector as a model of an industry with high levels of concentration but still competitive.

Furthermore, they argue that breaking up incumbents may not necessarily expand the range of products on the market as the spinoffs are likely to have the same business models. It is their view that effective competition will be stimulated by banks with varied business models and this more likely to be achieved by disruptive models from new entrants. This is indeed rendered more feasible by advances in technology, which are breaking down old barriers to entry and perhaps conferring on new entrants a competitive edge. They

conclude that it is simplistic to assess an industry's state of competitiveness based on changes in concentration levels and indeed small banks do represent a competitive force much more effective than their market shares suggest. It is equally naïve to expect to change a market's competitive structure through the breakup of incumbents without considering business models and risk profiles. Lastly, it may well be that a degree of market concentration is an inevitable result of competition as market participants will strive to spread their costs by achieving scale.

Based on the preceding accounts by regulators and the supply side of the market, it is apparent that the notions of competition and concentration are nuanced, even in the most advanced and competently regulated financial industries. A relevant question to ask is whether the state of competition is sufficiently heightened as to affect the pricing of term finance necessary for infrastructure projects. In the banking space, the picture is mixed. The British Bankers Association (2014) finds that some market participants believe that the larger banks have advantages relating to cost of funds because of their size. This is aggravated by the fact that the larger banks are also the recipients of large deposits from central and local governments. On the other hand, intense competition for customer deposits might escalate the cost of funds for banks. In that regard, the British Bankers Association (2014) finds that intensity of competition has led to an increase on interest rates on deposits and that previously non-interest bearing deposit accounts such as current accounts are increasingly earning rates well above the Bank of England rate. By implication, the increased cost of funding would be either passed on to borrowers in the form of higher lending rates or the banks' net interest margin will shrink. The increased competition may also have the effect of too wide a dispersion of loanable funds, thus complicating syndication of project finance deals.

4.2.3.2. Brazil

Viewed from the prism of competitiveness, Brazil's financial sector may well be a classic case of a large financial sector not necessarily being better. IMF (2012), in its review of the system's stability, concluded that it was characterized by a high degree of conglomeration; public sector presence and limited foreign participation. Although the financial sector is large, with total assets amounting to 180% of GDP, the dispersion of asset ownership is less than ideal. In that regard, the deposit-taking banking institutions control half of the assets; investment banks and pension sector manage one-third and an estimated 6% is under the insurance sector. IMF (2012) goes on to sketch a landscape that doesn't bode well for competition. It reports that financial conglomerates headed by commercial banks and typically comprised of investment banks; securities brokerages; asset management firms and insurance subsidiaries control around 75% of the

system's assets. In addition, public sector presence in the financial sector is significant with government-owned banks controlling 40% of the system's assets and directing 35% of credit to its preferred sectors: agriculture, low-income housing and infrastructure. Moreover, foreign participation at an estimated 17% of assets is low in comparison to other large Latin American countries such as Chile, Peru and Mexico that had foreign participation at 37%, 51% and 74%, respectively.

The IMF (2012) conclusions on the competitiveness and concentration of the country's financial system are corroborated by more recent research pinpointing competition-related deficiencies in the financial system. The banking sector epitomizes these shortcomings. To that end, EMIS (2014) finds that the Brazilian banking sector is highly consolidated as a result of recent merger and acquisition activities with six of the leading banks accounting for 80% of the sector's assets. Worse still, federal public banks – Banco do Brazil and Caixa Economica Federal, are among the four largest banks by assets despite the emergence of private conglomerates. Aside from looming large on the size of assets variable, state-owned banks are dominant on the market share front too. As of end of 2013, state-owned banks commanded 51.2% of market share in comparison to domestic private and foreign-owned banks that controlled 33.2% and 15.5%, respectively. The picture is completed by an important measure of concentration. Not only do the top ten banks control 87.5% of assets, they also control 87.1% of deposits. Beyond these quantitative measures of concentration, a brief profile of the top four banks is more illustrative of the state of competitiveness.

The colossus of the country's banking sector is BNDES. It is a federal public bank and the country's principal long-term credit provider with the lowest interest rates. Its market focus is infrastructure and technological projects as well as small and medium enterprises. Its lending operations have continued to grow and accounted for 7% of GDP in 2013, sparking concern that it's dominant role crowds out private lending and impairs the system's long-term competitiveness. Second in the league of main players is the Banco do Brazil. As with BNDES, the Banco do Brazil is a state-owned institution and the largest bank in Latin America in terms of assets. It also has the largest distribution network comprised of 19,143 service points and 5,450 banking agencies, accounting for 23.8% of the total number of bank agencies in the country. In addition, the Banco do Brazil has a growing international footprint with a presence in Argentina and the United States of America as well as service offerings in an additional 18 countries. As at the end of 2013, the overseas operations accounted for 10% of its revenues. The third most important bank is Itau Unibanco. It is the largest private bank in Brazil and the 13th largest commercial bank in the world by market capitalization. At the beginning of 2014, in a move to bolster its presence in the region, the bank announced a US\$ 3 billion

acquisition of a controlling stake in CorpBanca – the fourth largest bank in Chile and the fifth largest in Colombia. The deal is yet to receive a regulatory approval. The bank has operations in 20 countries in the Americas, Asia and Europe. In Brazil, the bank operates around 5,000 full-service branches. The fourth largest bank by assets Caixa Economic Federal. This, too, is a state-owned entity with a market focus on individual and SME lending. It is the largest mortgage provider mainly as a result of the low interest rates that it charges borrowers, which is on account of its lower cost of funds associated with state-owned banks. In 2012, the bank made public plans to establish an investment banking arm with ambitions to generate 20% of revenue from investment banking.

With respect to the capital markets, the range of financial instruments and quality of intermediation between short-term and long-term profiles is critical. In that regard, the state of Brazil's insurance industry illustrates the complexity of competition. On the face of it, the sector would appear competitive. But as Deloitte Touche Tohmatsu (2012) observes, the large number of insurance companies at 114 and the regional dominance has not translated into the expected economic impact. With insurance premiums amounting to only 1.3% of GDP, the sector remains proportionally small. Other pointers to competitiveness of the capital markets can be drawn from the IMF (2012). As at the end of 2011, equity markets assets amounted to 55.4% of GDP, government bonds 43%, derivatives 34%, money markets 21.3% and corporate bonds 11%. The fact that government bonds are nearly four times the value of corporate bonds does seem to indicate a crowding out of the private sector or a young bond market whose corporate sector is only emerging. It would also appear that the capital markets are not a real alternative for the corporate sector looking to borrow long-term as risk management and short-term financing products enjoy more prominence by way value of assets.

4.2.3.3. South Korea

As described in 4.2.3.2 above, South Korea's financial sector is large and diversified, characterized by an almost even split of total assets between the banking and non-banking segments of the financial system. The extent of diversification is too broad as to be a source of concern for the authorities. In that regard, IMF (2014) discloses that the government has been nurturing financial holding companies, which they believe are beneficial to the financial system in the sense that they permit local financial institutions to pursue economies of scale and scope. As at the end of 2012, there were a total of 12 financial holding companies, of which 10 are bank-holding companies and 2 non-banks. Their scope of investment is unlimited within the financial services industry but prohibited from controlling non-financial subsidiaries.

These developments point to the need for consolidation within the industry, which suggests that the sector is perhaps overextended by competitive pressures that could well undermine its stability and effectiveness. Indeed, a degree of consolidation might make for more effective competition by allowing the higher-performing institutions to merge with or acquire those entities whose performance is less than satisfactory. Consolidation may stimulate more effective competition by, for instance, removing from the scene some of the smaller banks that are associated with poor lending skills such as pricing credit cheaply to gain market share but at the risk of the stability of the financial system. Indeed, PricewaterhouseCoopers (2008) analysis of the performance of the top 10 banks depicts a picture supportive of the need for consolidation. Measured by operating revenues and total assets for the year ended 30th June 2007, the results are tabulated below:

Table 4

Rank	Name	Total Assets(US\$ Million)	Operating Revenue(US\$Million)
1	Kookmin Bank	229,852	11,314
2	Woori Bank	196,866	9,845
3	Shinhan Bank	194,765	9,486
4	Hana Bank	135,341	5,144
5	Korea Exchange Bank	81,660	4,408
6	SC First Bank	62,484	5,073
7	Citibank Korea	56,444	3,903
8	Pusan Bank	27,149	918
9	Daegu Bank	24,955	1,001
10	Kyongnam Bank	20,174	661

Source: PricewaterhouseCoopers

For a competitive banking segment with 57 banks, the performance of the top 10 banks would be expected to cluster around a narrow margin with regard to profitability and total assets. But this appears not to be the case. For instance, the top ranking bank has assets and operating revenues 11 and 17 times that of the 10th ranked bank, respectively. In addition, a closer look at their asset base suggests that the league table divides into three distinct tiers. The first tier is comprised of top 4 banks with assets in excess of US\$ 130,000 million. The second tier is comprised of the next 3 banks, which have assets in excess of US\$ 50,000 million but less than US\$ 90,000 million. The last tier is comprised of the bottom 3 banks with under US\$30,000million in assets. If the observed strata are repeated for the next 47 banks, it would not be farfetched to conclude that the sector is too diversified to have effective competition.

Moreover, the league table is a snapshot of the sector in the post-1997 financial crisis era, a period characterized by recapitalizations, mergers and stronger capital adequacy regulations. PricewaterhouseCoopers (2008) discloses that the post-1997 recapitalization entailed significant foreign investment by private equity into the banking sector. The private equity investors have since exited their

investments through sale of their stakes to long-term strategic investors such as Citibank, Standard Chartered and HSBC. These investee banks now lie in the second tier of the league table. While the performance of the investee banks prior to the entry of the foreign strategic investors is not known, domestically owned banks occupy the top rung of the ladder. This would appear to suggest that the often cited advantages of foreign investment in the sector such as infusions of capital and a range of valuable skills might be overstated in as far as competition is concerned.

On the capital markets flank, the intermediation profile appears undoubtedly long-term in nature. This is confirmed by the IMF (2014) which reports that the capitals markets are not only sizeable but also driven by the private sector as opposed to the public sector as is the case in some jurisdictions where government securities are predominant. In South Korea's case, the bond market is one of the largest in the Asian region with outstanding securities accounting for 123% of GDP as at the end of 2012. Such is the predominance of corporate bonds that bank intermediation for the corporate sector plays second fiddle to the capital markets. The capital markets dominance in intermediation for corporate debt is underpinned by the long-term savings platforms: insurance and pensions. With regard to insurance, the country has one of the highest penetration rates. With 11.6% penetration and US\$ 2,660 per person, South Korea was globally ranked fifth in penetration and twenty-third in density. For 2011 alone, total premiums stood at an estimated US\$123 billion. In addition, the insurance market concentration indicates an open and competitive position. All the large insurers are substantially domestic with over 90% of their assets and premiums attributable to their domestic business.

4.2.3.4. Uganda

In as far as the number of financial institutions as a parameter of competition is concerned, Uganda trails all the jurisdictions under review as described in section 5.2.4. With respect to ownership dispersion, Uganda's banking sector is characterized by high foreign ownership and concentration. Public sector ownership is limited to the country's sole development bank, whose influence is peripheral. This state of affairs is confirmed by the Bank of Uganda (2014) whose financial stability report underlines concerns about concentration under what is labeled as domestic systemically important banks (DSIBs). As of June 2014, DSIBs comprised of four banks, which accounted for 43.5% of total bank assets and 47.1% of total lending. With exception of South Korea whose financial system is characterized by a dispersion of assets amongst a large number of banks, Uganda appears to perform better on the concentration parameter than the United Kingdom and Brazil. In the United Kingdom's case as recently as 2010 four banking groups controlled 80% of the banking system's

lending and deposits while in Brazil the top ten banks controlled 87.5% of assets and 87.1% of deposits as at the end of 2013.

Despite the relatively high market concentration levels, Uganda's financial sector has registered significant improvements. In 2003, IMF (2003) reported that four foreign-owned banks accounted for 73% of total sector assets; 68% of loans and 75% of deposits. The bank further reported that the banking sector's balance sheet structure was skewed in favor of liquid and low-risk assets. Loans only accounted for 23% of total assets while the balance was invested in government securities and placed abroad in proportions of 33% and 30%, respectively. By 2009, World Bank (2009) was describing a significantly altered competitive landscape, characterized by intense competition in the corporate banking market, compelling banks to explore extension of lending to the hitherto ignored non-corporate entities. This competitive wave also led to a reduction in lending to government but the high returns on government securities continued to depress the loan to asset ratios through keeping base lending rates high and unaffordable to many of the would-be private sector borrowers. The improvements have been sustained in the intervening period. The Bank of Uganda (2014) reported that the total loans as a percentage of assets stood at 70.8% while liquid assets as a percentage of total assets were 30.9%. Based on the preceding description of the trend, it would seem that the banking sector is characterized by growing competition, albeit from very low levels. On this parameter, Uganda fares relatively well with comparator countries. For instance, the description of the competitive state of play in Uganda's banking sector is nearly counter to the conclusions of the United Kingdom (2015) that post the financial crisis of 2008, the concentration levels in the United Kingdom's banking system had reached record levels propagating unfair competitive practices on the part of dominant players and leaving the majority of institutions too weak to compete. Uganda also compares favorably against Brazil, whose financial system the International Monetary Fund (2012) described as under a stranglehold of conglomerates that control 75% of the system's assets and the government-owned banks that control 40% of banking assets.

The progress recorded in the banking sub-sector is not shared with the non-bank financial sub-sectors. The growth of some of the key sub-sectors is sluggish at best, which undermines competition and may create conditions that foster market concentration. For instance, the insurance sub-sector, which the Bank of Uganda (2014) reports as enjoying high growth rates in premiums, averaging an annual growth rate of 22.7% between 2009 and 2013, remains insignificant. Despite the high growth rates in premiums, insurance penetration was at 0.85% of GDP in 2013. Indeed, the Bank of Uganda (2014) poses the question – are Uganda's insurers systemically important? In framing a response to its rhetorical question, Bank of Uganda

(2014) goes further to define systemic importance as size, interconnectedness with other institutions and substitutability of the services of an institution if it were to fail. The response is concluded through a comparison of the total banking and insurance assets, with the latter's assets at 4.2% of the former's, it's plain that insurance is indeed a peripheral player within financial services.

As with the insurance sector, the capital markets are also in the doldrums. Here too reports of progress are cosmetic. For instance, while the Bank of Uganda (2014) reports that the volume of shares transacted on the Uganda Securities Exchange was up by 84.8%; turnover by 66.4% and market capitalization by 19.8% between 2013 and 2014, it also notes that only a single primary listing was recorded on the corporate bond segment during the period under review. Even more unflattering is the fact that the seemingly strong results are largely ascribed to high market activity involving a single equity listing. The shortcomings of the capital markets are exacerbated by the slow progress in the liberalization of the pensions sector, which leaves the issuers of especially bonds at the mercy of a very limited pool of potential buyers. In that regard, the World Bank (2009) concluded that an unreformed pensions sector denies liquidity to the capital markets, exposing potential bond issuers to liquidity risk. It further explains that the NSSF's monopoly over mandatory pension contributions has conferred on it the status of the largest institutional investor with scale and clout to singlehandedly determine the fate of a bond issue.

Within the non-banking segment of the financial system, Uganda lags behind comparator countries across several measures of competition. For instance, while insurance penetration was at 0.85% of GDP in Uganda as at the end of 2013, it was at 1.3% of GDP in Brazil and 11.6% of GDP in South Korea. The gulf between Uganda and its comparator economies would be even deeper once adjustments for the size of GDP are factored in. For instance, the United Kingdom's insurance sector had a total of US\$470 billion in assets and was ranked the third largest globally in 2011.

4.2.4. Efficiency

This section reviews the efficiency of the financial systems of the selected jurisdictions. It focuses on intermediation costs as the principal variable to facilitate comparison. In addition, because of large variations in the state of development of capital markets and the associated challenge of data availability in those jurisdictions with relatively underdeveloped capital markets, the analysis focuses on the banking sector. As indicated in the introduction to this chapter, efficiency and competition are closely associated. More competitive financial sectors are more likely to be efficient in their operations, translating into lower intermediation costs. A measure of an efficient banking system is the capacity to price and extend credit on

the basis of the risk profile of individual borrowers. Such skills are honed through competition. It is, therefore, likely that a banking system that is dominated by state-owned banks without the commercial orientation of private banks will be associated with higher loan loss provisions. The necessary loan pricing skills might also be imparted by strategic foreign investors into the domestic banking market. Therefore, liberalized and open financial systems are associated with lower interest rate spreads and less loan loss provisioning.

4.2.4.1. United Kingdom

Similar to South Korea, the efficiency variables for the UK banking sector are highly interconnected with macroeconomic factors. The nature of these relationships is so deep as to make it difficult to establish if ever these variables respond to competitive pressures at all. It may well be reasonable to conclude that what is widely regarded as efficiency indicators are a manifestation of the state of the economy. An alternative view might be that the nature of competition in the banking sector is such that movements in macroeconomic variables pass through directly. It is against this background that this section analyses the efficiency of the UK banking system through and pre and post global financial crisis prism. The Bank of England (2011), while commenting on the reverberations of the global financial crisis on the UK banking sector, cautioned that the then prevailing risk-averse stance could potentially further erode the profitability of banks by prolonging the period of higher cost wholesale borrowing and increasing their cost of funds.

The Bank of England further observed that the options available to the banking sector were limited as the cost of other stable sources of funding such as deposits and secured funding instruments had also risen. The commentary went further to elaborate on the relationship between net interest margin and the risk-free rate or central bank rate. In that regard, banks and building societies usually charge customers above the central bank rate on loans and pay below the same rate on sight and instant-access deposits. The sum of the two spreads represents a margin that caters for profits and the cost of providing banking services. With the onset of the global financial crisis, the central bank rate declined sharply, overturning the established loan and deposit pricing mechanism. As a result, the average rate paid on deposits exceeded the central bank rate, depressing net interest margins.

With the outlook on economic performance poor, net interest margins were expected to remain depressed for a prolonged period. Indeed, the KPMG (2015) analysis of the performance of UK banks as of mid-2014 seems to confirm the predictions of the Bank of England. It reports that margin contraction has been a consistent feature since 2007, having shrunk by an estimated 20%, which is attributed to the prolonged low interest rate environment. Since 2009, RoE had compressed from an average of 11.6% to 6.8%, which is

way below the pre-crisis high double-digit returns. With regard to non-performing loans and loan-loss provisions, the assessment presented a mixed picture. On the positive note, improving credit conditions and tighter risk management in the post financial crisis had brought down impairment charges from US\$44 billion in the first half of 2009 to US\$12.2billion in 2013 and eventually to US\$5.5billion in 2014. As for non-performing loans, the picture was rather bleak. The average impaired loans as a percentage of loans and advances to customers had shot to 4.3% in 2014, up from 1.6% in 2007, underlining the enduring effects of the financial crisis.

4.2.4.2. Brazil

As with the competition and concentration variable, the efficiency of Brazil's banking system seems to be out of sync with its breadth and depth. The IMF (2012) concludes that financial contracts in Brazil are characterized by high interest rates and short durations, impeding monetary policy transmission and establishing barriers to financial development. It asserts that the interest rates are significantly above comparable countries, with local currency denominated contracts indexed to the overnight interest rate. The IMF (2012) further argues that this state of affairs is a manifestation of enduring factors that include the legacy of past high inflation and volatility; the low levels of domestic savings and high intermediation costs. However, a reduction in interest rates has been achieved in more recent times as a result of legislation on fiscal responsibility; introduction of an inflation-targeting regime and flexible exchange rate system. Bank spreads have also narrowed, reflecting efficiency improvements occasioned by lower administrative costs and reduction in regulatory costs.

Nonetheless, IMF (2012) laments the negative impact of concentration in short-duration and highly liquid products on intermediation. The report also provides a glimpse into the non-performing loans scenarios; loan pricing and the impact of state-owned banks. It observes that state-owned banks have lower non-performing loan portfolios and credit write-offs in comparison to private banks, a reflection of their less risky credit portfolio. The state-owned bank Caixa is singled out for the quality of its housing credit, which is granted at prudent loan-to-value and debt-service coverage ratios as well as rapid amortization. BNDES is also cited as having very low default rates. However, part of its success is explained by the fact that it uses its AAA rating to price competitively. This implies that its relatively low cost of funds allows it to undercut competitors but still enjoy sufficiently high spreads and low delinquent loans. Without its state-ownership status, it's doubtful that it would retain the AAA rating that underlies the lower cost of its funds.

EMSI (2014) supplements the IMF (2012) with a degree of detail on the efficiency of the banking sector. With respect to spreads, they too find that the overall spread of the Brazilian economy is higher than the global average. They cite Argentina, Chile, South Africa, China and Russia as countries where spreads range from 3-4% per annum compared to Brazil's 11.1%. As far as delinquency rates are concerned, they found that at 1.8%, individual real estate had the lowest delinquency rate while overdrafts had the highest at 8.1%. Within corporate lending, SMEs had a higher delinquency rate than the larger entities. However, on the whole, the banking sector had registered improvements on the non-performing portfolio score. Between January 2012 and January 2014, the non-performing portfolio of corporate credit had declined from 5.9% to 4.4% while that of households contracted from 2.1% to 1.8%. At the financial institutional level, as of January 2014 public financial institutions have the lowest non-performing loans at 1.8%, followed by foreign private financial institutions at 4.2% and the domestic private financial institutions at the bottom of the league table with 4.3%.

EMSI (2014) further provides disaggregated data on expenses and profitability of public and private financial institutions. Between 2009 and 2013, gross margins for public banks contracted from 9.2% to 5.6% while net margins declined from 5.6% to 3.6%. From an absolute profitability perspective, the public banks profitability had somewhat declined from operating profit of 58.5% to 56% between April 2012 and December 2013. For the private banks, they experienced a mild contraction of gross margins from 11.9% to 10% while net interest margin tightened from 6% to 5.7%. As with the public banks, the private banks experienced a slight decline in profitability with operating profit down to 59% to 58%. The foregoing assessment of the efficiency and expenses of public and private banks appears to call into question some widely held negative perceptions on state-owned banks. What is remarkable is that their non-performing loan portfolio was far less than that of foreign private and domestic private institutions. Moreover, they are head-to-head on operating profitability and interest margins.

4.2.4.3. South Korea

The efficiency of the South Korean banking system appears to be somewhat constrained by regulation and other influences of a non-market nature. The IMF (2014) observes that since the global financial crisis a combination of regulatory pressures and poor economic conditions have buffeted the sector's profitability. The low interest rate environment has compressed interest rate margins and conservative regulatory provisioning that requires banks to set aside loan loss provisions worth 150% of expected losses have further undermined profitability. However, the overall non-performing portfolio is low at 1.2% of total loans. More importantly for the efficiency of the sector, the IMF (2014) suggests that the sector is exposed to efficiency-

sapping distortions. In that regard, it calls for banks to be given free rein to perform risk-based allocation of credit, including developing risk-pricing skills to extend non-guaranteed credit to deserving borrowers and be disencumbered from pressures to reduce interest rates and fees. The dismantling of these distortions will be beneficial not only to the banks by removing the drag on profitability but also to the economy as a whole by limiting credit availability to high-risk borrowers.

Aside from the concerns raised by the IMF, the recent state of the South Korean banking sector may well serve to illustrate that some of the common variables used to gauge efficiency may misrepresent the true situation. In the case of South Korea where 80³⁴% of the loans are on variable terms, adjusting quarterly to reflect the benchmark rate, tightening interest margins may not be a reflection of the efficiency of the banking system but rather the deteriorating macroeconomic conditions. With the economy still plagued by the aftershocks of the global financial crisis, net interest margins for lenders reached a new low of 2.28% in 2012, down from 2.5% in 2009. This downward trend was precipitated by the reduction in the central bank rate to stimulate the economy. Since the central bank rate is the benchmark for financial contracts priced on a floating basis, it passes through to lending rates on a quarterly basis. At 2.28%, South Korea's net interest margin was well below that of peers with the average of South Asian banks at 4.5% and 2.9% for banks in the top 20 economies globally. As of 2014, net interest margin had further declined to 1.8%³⁵, although the health of the banking system was not believed to be impaired in any way with non-performing loans at 0.5% of total loans and return on assets up to 0.3% from the previous year's 0.2%. The impact of benchmark rate changes on net interest margin is aggravated by the time lags between lending rates, which are adjusted quarterly, and deposit rates that are set on an annual basis. It is no wonder that that Bloomberg concludes that, in the case of South Korea, interest margin is a variable intertwined with macroeconomic conditions and outside of the control of banks.

4.2.4.4. Uganda

Uganda's banking sector has a funding base dominated by customer deposits, a feature that places spreads between lending rates and interest paid on deposits at the core when assessing intermediation costs and efficiency of the industry. According to the Bank of Uganda (2014), customer deposits accounted for 80.6% of the banking system's total liabilities as of December 2014. The Bank of Uganda's review of the sector presents a broadly maturing and increasingly competitive industry. In that regard, the non-performing loan

³⁴ www.bloomberg.com/news/articles/2013-10-10

³⁵ www.eiu.com/industry/article/117286310/koreasfinancialsector/2015-02-03

portfolio contracted from 5.6% of total loans in 2013 to 4.1% by the end of 2014. Net interest margin declined from 12.8% in June 2012 to 11.5% as of June 2014. Over the same period, the cost of deposits increased from 3.6% to 3.7%. As a result, return on equity (RoE) and return on assets (RoA) were depressed. RoE decreased from 27.3% in 2011 to 16.1% by the end of 2014 while RoA fell to 2.6% from 4%. Although the actual spread between lending rates and interest paid on deposits is not explicitly provided in the report, analysis of the amalgamated sector balance sheets provides additional pointers to the state of efficiency of the banking system. Between June 2012 and June 2014, interest income from loan advances fell from an estimated US\$413 million to US\$408 million while interest expense on deposits increased from US\$98 million to US\$122 million.

Based on the preceding, interest income from loan advances was 4.2 times the interest expense on deposits in 2012 but fell to 3.35 times by 2014. This would seem to suggest that the net interest margin, at 12.8% in 2012 and 11.5% in 2014, understates the spreads. This is perhaps explained by the net interest margin computation method³⁶. While the trend in spreads is unspecified on the basis of available information, there is more evidence to suggest improved efficiency. For instance, as net interest margin was shrinking, the banks operating expenses increased from 39.6% of total income in 2012 to 47.9% in 2014. By implication, the banks have not adjusted their interest rates to cushion increasing operating expenses, which is likely to be as a result of competitive pressures. More importantly, the review also reveals that the share of interest income from loan advances is declining as banks increase their revenues from other sources such as interest on government securities; fees and commissions and foreign exchange transactions. In that regard, interest income from loan advances declined from 60% of total revenue in 2012 to 54% in 2014. This trend seems to suggest that the industry is indeed maturing with a more diversified revenue base.

While the improvements in efficiency are apparent, there remains room for further progress. The World Bank (2009) alludes to market segmentation as a barrier to effective competition and thus failure to exert adequate downward pressure on spreads. Their findings reveal that foreign-owned banks don't compete with domestic ones. The operating costs and loan-loss provisions of domestic banks are lower than those of their foreign

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http://www.valueline.com/Tools/Educational_Articles/Stocks/The_Net_Interest_Margin_What_is_it_What_does_it_say_

Net interest margin defined as tax equivalent net interest income divided by average interest-bearing assets. Net interest income, the numerator of the equation, is the total interest income earned on a bank's loans, investment securities and short-term investments during a defined period, less the cost of funds (interest expense) used to make loans and investments.

counterparts, indicating scope for lower spreads on the part of the former. But on the contrary, domestic banks charge substantially higher interest rates than the rest of the banking sector and yet they pay only marginally higher rates on deposits. This suggests that the profit margins of the domestic banks are higher than the rest of the sector, which is an indication of inadequate competition. Foreign banks occupy and compete in a different segment from local banks characterized by higher overhead costs because the nature of the credit they extend is more costly to evaluate and maintain while their spreads are relatively low.

In comparison to comparator countries, Uganda's position on the efficiency parameter is not decidedly poorer. For instance, while Uganda's non-performing loan portfolio contracted from 5.6% of total loans to 4.1% between 2013 and 2014, Brazil's reduction was less steep with the non-performing loans declining from 5.9% to 4.4% while the United Kingdom's non-performing portfolio increased from 1.6% in 2007 to 4.3% in 2014. Only South Korea had a superior showing with a non-performing portfolio of 1.2%. With regard to interest margins, in Uganda's case they declined from 12.8% in 2012 to 11.5% in June 2014, the situation was only marginally better in Brazil with gross margins for private commercial banks declining from 11.9% to 10% between 2012 and 2013. However, for South Korea and the United Kingdom their interest margins were much lower, more a reflection of the operating environment of low benchmark interest rates in markets that lean more to a variable interest rate setting mechanisms. In South Korea's case net interest margins decreased from 2.5% in 2009 to 2.28% in 2012, while for the United Kingdom margins are believed to have contracted by 20% between 2007 and 2014.

4.2.5. Implications of the State of Development of the Financial Sectors for Infrastructure Finance

While the preceding sections have assessed the financial sectors of the four jurisdictions on three counts: breadth and depth, competition and concentration and efficiency, the review is in a stand-alone style for each country. This section makes an attempt at synthesizing the contents of the previous sections of this chapter to assess the capacity each country's financial sector to provide affordable and long-term funding required for long-lived and expensive infrastructure assets in comparative terms. In addition, it distills crucial aspects that have a bearing on the cost of funds for infrastructure projects.

4.2.5.1. Breadth and Depth of the Financial Sector

Ehlers (2014) framework to overcome infrastructure financing that envisages a prominent role for commercial banks at the construction phase, which recedes in favor of bond financing at the operation stage of infrastructure is one approach through which implications of depth and breadth of a financial sector can be assessed. Oliver Wyman (2014) complements Ehlers (2014) by linking the breadth of the financial sector with

diversity in investor risk appetites for infrastructure projects arguing that risk-taking capacity depends on a combination of balance sheet size and structure as well as access to information. In addition, infrastructure projects have different risk profiles based on phase, sector or region where they are being developed. Moreover, banks, insurance firms, private equity and large pension funds not only have the balance sheet variation but also capacity to collect and analyses risk-return information. Based on the foregoing, a financial system broad in the sense of potential investors and balance sheet structure as well as deep in the sense of balance sheet size will have greater scope for risk allocation and successful financing infrastructure projects. In that regard, the UK's financial sector with US\$18,922 billion in assets spread over 15 types of financial institutions and representing 11% of GDP is head and shoulder above the other three countries examined. Moreover, the non-bank segment of the financial institutions account for 42% of assets in an already massive industry, which is a further indicator of the diversity of the system. Equally important is the fact that diversity is not at the cost of partnership. For instance, as of 2013, the total investment of the insurance sub-sector in equity and debt securities stood at US\$2,738 billion, thus demonstrating the mutually reinforcing attributes of a marketplace with diverse instruments and investors. Based on the foregoing, the UK's financial sector would appear to have most of the ingredients suggested by both Ehlers (2014) and Oliver Wyman (2014) as essential to an ecosystem that can meet and sustain the large and long-term financing requirements of privately financed infrastructure projects.

In the case of Brazil, the financial sector is a study of a large financial system peppered with elements of underdevelopment that have the potential to weigh down the prospects of privately financed infrastructure. The financial system is large, with total assets representing 180% of GDP, with deposit-taking banks accounting for half of the assets. As a reflection of the sheer size of the country, the banking space has a total of 2,228 commercial, investment and development banks with a network of 21,278 branches. As a measure of the banking system's depth, the country had two banks listed on the league table of the top 100 global banks by assets in 2014. However; the non-bank segment trails the rest of the financial system. As of 2012, total banking assets were 2.2 times the combined assets of insurance and pension sector. Indeed, the market value of the country's largest bank- Itau Unibanco was almost at par with the asset value of the entire insurance sector. This imbalance would perhaps not allow for the optimization of Ehlers (2014) framework in the sense that assets of the banking sector which is regarded as best-suited for the construction phase far outweigh those on the non-banking segment, which is expected to take up the mantle at the operating phase through such mechanisms as refinancing or securitization.

Unlike Brazil, South Korea appears to have both a deep and diversified financial sector. With total financial assets at 312% of GDP by 2012, up from 212% of GDP in 2000, its pace of growth is swift. The sector is also well-diversified with a near-even split of total assets between the banking and non-banking segments. The singular lesson from South Korea that bodes well for infrastructure finance is how fast and balanced growth of the financial sector has been achieved. It has achieved diversity with 57 commercial banks, 4,772 non-deposit-taking institutions and 56 insurance firms. In addition, the insurance sector with assets amounting to 59% of GDP is world-class, inviting comparisons with globally respected markets such as Switzerland. Alongside insurance, South Korea has a budding asset management segment with assets under management representing 45% of GDP boosted by the liberalization of the pension sector. It is no wonder that the country enjoys such a deep bond market that, for corporate debt, banks are on the fringes of financial intermediation. South Korea also appears to have the essentials of an environment that is supportive of infrastructure finance as elaborated by Ehlers (2014) and Oliver Wyman (2014)

With respect to Uganda, the comparative assessment of the breadth and depth of its financial sector serves to illustrate the lack of wherewithal in the domestic financial system. Like Brazil, the banking system is dominant but with total assets of a mere US\$ 6,854 million as at the end of 2014 when compared to the United Kingdom's US\$18,922 billion. The non-bank segment is fragile too. For instance, insurance penetration was at 0.85% of GDP in 2013 as compared to 11.6% of GDP in South Korea. In addition, the insurance sub-sector as of 2013 had assets amounting to 0.66% of GDP while other asset managers had total assets under management of only US\$ 39 million. To put the inadequacies of the domestic financial system for infrastructure financing into perspective, the proposed Kenya-Uganda standard-gauge railway project is illustrative. With a contribution of US\$ 6,000 million expected from Uganda towards the project cost, this amount represents 87.5% of the total assets of the banking system. More holistically, it is estimated that the economy needs to invest 5.6³⁷% of GDP per annum to close the infrastructure gap. As of the 2014/15 financial year, this estimate would translate into an estimated US\$21.5³⁸ billion. This estimate is 3.1 times the total banking system's assets. With a weak non-bank financial segment and a banking system out of step with the country's infrastructure funding requirements, it would appear that the infrastructure gap can only be closed through public sector borrowing offshore or external private financing. This is partly a result of the fact that onshore public debt would also have to tap into the same narrow pool of possible institutional investors as confirmed by the World Bank (2009), which concludes that the institutional investor base is so narrow that

³⁷ Africa Infrastructure Country Diagnostic Report

³⁸ IMF 2015 Uganda Article IV Consultation and Fourth Review estimate of GDP at market prices

a single investor-the National Social Security Fund has the power to make or break a bond issue. In addition to the manifest lack of depth, the structure of Uganda's financial sector is also out of sync with the frameworks for sustainable infrastructure financing proposed by both Ehlers (2014) and Oliver Wyman (2014).

4.2.5.2. Competition and Concentration

On the competition and concentration parameter, it is difficult to draw a line on which jurisdiction is more competitive and thus better placed to provide affordable long-term financing. Firstly, with respect to concentration, with the exception of South Korea all the jurisdictions have seemingly high levels of concentration in the banking space. In the UK, four banking groups accounted for 80% of lending and deposits as of 2010. In Brazil, six of the leading banks account for 80% of assets while in Uganda four banks control 43.5% of total assets and 47.1% of total lending. However, in the case of Brazil the high degree of conglomeration with conglomerates that span commercial and investment banking, insurance and asset management owning 75% of the financial systems assets, it might be a feature that hurts competition and affects pricing.

In the case of South Korea, too widely a dispersed financial sector in terms of numbers appears not to have fostered effective competition, which is why the government is advocating for consolidation so that the surviving players can achieve economies of scale and scope. But this line of thought is somewhat faulted by market participants in the banking space in UK who argue that effective competition is not about number of participants or the size of their market shares. In their view, smaller market participants represent a source of competitive pressure understated by their market shares. Secondly, on foreign ownership, here too the results are mixed. In the case of Brazil and the UK, they are polar opposites in the sense that Brazil has limited foreign participation while the UK financial system is open to branches of international banks and other financial agents, which could partly explain their obvious variations in breadth and depth.

However, in South Korea and Uganda's cases, foreign participation has had different effects. For South Korea, the performance of foreign banks appears less than uninspiring with foreign banks occupying the middle tier of the performance leagues while the top tier is under lockdown of the domestic banks. However, this could be as a result of the fact foreign investment in the sector is mostly a post-1997 financial crisis phenomenon and, therefore, relatively too recent to overturn the performance tables. In Uganda's case foreign ownership is also associated with market concentration as argued by the World Bank (2009) that the entry of foreign banks did little to enhance competition but rather carved a large slice of the market for themselves beyond the reach of domestic competitors. Thirdly, the extent of public ownership and its impact

on competition is far from certain. In that regard, Brazil showcases the complexity of the matter. With 80% of assets under the control of 6 leading banks among which are 2 public banks that control 40% of the financial system's assets; limited foreign participation and a high degree of conglomeration, it is tempting to consider the public-sector banks as a counterweight against the excessively strong few private banks without which they would possibly assume a monopolistic dimension.

Fourthly, the transmission channels of the effects of competition on pricing are not straightforward and may vary from market to market. As argued by Chortereas, Garza-Garcia and Girardone (2009), who contend that although high spreads are associated with lack of competition that allows dominant banks the monopoly power to become price-setters, in some instances such as concentration driven by mergers and acquisitions seeking economies of scale, higher market concentration may result in efficiency improvements, making concentration rates on their own less than foolproof as a measure of competition. This somewhat borne out by the findings of the review. For instance, in the UK, intense competition pressured banks to increase not only the rates they pay on customer deposits but also to pay interest on previously non-interest bearing deposit accounts. All things being equal, such a development would be expected to increase their cost of funds and translate into higher lending rates. In addition, the larger banks are regarded as being in position to attract large deposits from central and local governments with greater ease because of their size. This capacity to mobilize large deposits may facilitate easier syndication of financing for large projects and translate into lower pricing as suggested by the United Kingdom (2015). Lastly, the only seemingly unambiguous facet of competition is the beneficial impact of non-bank financial institutions and capital markets on the intermediation profile. For instance, South Korea's high insurance penetration rates with 90% of their assets mobilized locally may be correlated with its acknowledged deep bond markets. On the other hand, the peripheral nature of insurance and pension sub-sectors ought to be associated with an intermediation profile stacked in favor of short-term and highly liquid securities, which is why money market instruments and derivatives at 55% of GDP are 5 times the value of corporate bonds in Brazil. In conclusion, the notion of competition is multifaceted and might manifest differently from market to market. What is clear though is that effective competition is what all markets should strive for.

4.2.5.3. Efficiency

With respect to efficiency, several interesting conclusions are drawn from the four jurisdictions. Firstly, in the case of Brazil, high and volatile inflation coupled with low savings rates as well as concentration in highly liquid and short duration financial contracts negatively impacts intermediation. As a result, Brazil has both

high interest rates and spreads in comparison to peer jurisdictions. Secondly, for some economies net interest margin may not be a variable under the control of banks and, therefore, not a reflection of the state of competition. This is the case with South Korea and the UK where the reference rate is revised upwards or downwards in line with macroeconomic conditions. Because the financial contracts are indexed to the benchmark rate, its revision triggers adjustment of lending rates in the same direction. For instance the aggregate net interest margin for South Korea was 2.28% in 2013, lower than the OECD average of 2.9%, more a reflection of the macroeconomic conditions than the level of competition and efficiency of the banks in the country. The findings in relation to the UK and South Korea are somewhat supported by Casu and Girardone (2010) who find that although a positive relationship between competition and efficiency is always assumed specific market characteristics may swing the pendulum. Their empirical findings suggest a negative causation between efficiency and competition and a weakly positive link between competition and efficiency.

Thirdly, efficiency, as measured by the proportion of the non-performing loan portfolio, is not the preserve of the more developed economies. While South Korea had brought down the ratio of non-performing loans to 0.5% as of end of 2014 from 1.2% in 2013, the ratio of impaired loans in the UK financial system increased from 1.6% in 2007 to 4.3% in 2014. On the other end of the scale, Brazil reduced the non-performing loans from 5.9% to 4.4% but Uganda exceeded their performance, reducing its ratio from 5.6% to 4.1% between 2012 and 2014. Fourthly, privately owned banks do not necessarily have superior credit skills in comparison to publicly owned banks that ostensibly lack a commercial mindset. In the case of Brazil, at the end of 2013, public banks had their non-performing portfolio at 1.8%; foreign-owned private banks at 4.2% and domestic private banks at 4.3%. Moreover, public banks were competing head-to-head on profitability and net interest margins with the private banks. Lastly, a positive impact on efficiency and competition by foreign ownership is not certain. In the case of Uganda, it would appear that foreign-owned banks have a different business model from that of domestic private banks. As a result, they target different market segments, without competing directly. Consequently, the envisaged downward pressure on interest margins as a result of competition infused by foreign ownership as argued by the African Development Bank (2013) may not meet with expectations.

4.3. Prospects for Infrastructure Project Bonds and Securitization for Uganda

This section assesses the prospects for success of infrastructure project bonds and securitization in the context of the current level of development of Uganda's capital markets. The conditions for success of the

two financial instruments are essentially similar: depth of capital markets in terms of number and range of institutional investor types; presence of the necessary intermediaries; market infrastructure and legal and regulatory setup. The assessment, therefore, adopts the framework for capital markets evolution for infrastructure project bonds as outlined by the African Development Bank (2013). This framework entails four pillars: macroeconomic fundamentals; capital markets development; pension sector development and infrastructure policy. Because infrastructure financing requires both domestic and hard currency denominated financing, regional and international investors are just as important as their domestic counterparts. It is, therefore, important to assess the prospects of attracting non-domestic investors to Uganda's capital markets.

4.3.1. Macroeconomic Fundamentals

Uganda's economy has lately suffered setbacks. According to the World Bank³⁹, from the late 1980's, Uganda pursued largely successful liberalization policies, which yielded macroeconomic stability and sustained high growth rates over the period 1987-2010. With an average of 7% real GDP growth, the economy was among the fastest growing on the continent. However, in the last decade, the economy has been characterized by turbulence, with GDP growth slowing to an average of 5%. The expectation is that the turbulence will persist as a result of the volatile global economy which has caused the shilling to depreciate continuously and inflation to rise. Over the medium term, hopes are pinned on the efficient implementation of a large infrastructure programme and the exploitation of oil reserves.

With respect the country's sovereign rating, in February 2015, Fitch Rating upgraded its rating from B to B⁴⁰⁺ with a stable outlook. In justifying the rating, several reasons were advanced. They include the fact that the government policies are cautious and supportive of growth, which has resulted in a strengthening fiscal position characterized by reduced dependence on aid and growing domestic revenue capacity. In that respect, reduced tax exemptions and improved tax collection are expected to increase the tax-to- GDP ratio to 13.2% by 2016, up from 11.2% in 2012. On debt sustainability, although the debt-to-GDP ratio stood at 30.4% in 2014, up from 20.8% in 2010 as a result of increased domestic and external borrowing, it remained below that of B-rated peers. In addition, 86% of the debt load is on concessional terms. Although the rating implied an improvement in debt sustainability, it nonetheless is speculative. In that regard, Fitch Ratings⁴¹

³⁹ <http://www.worldbank.org/en/country/uganda/overview>

⁴⁰ <http://www.monitor.co.ug/Business/Uganda-s-economic-rating-improves>

⁴¹ <https://www.fitchratings.com/jsp/general/RatingsDefinitions>

describes a B+ rating as indicative of a low expectation of default and adequate capacity to meet financial commitments but vulnerable to impairments as a result of adverse business or economic conditions. In contrast, a B rating is described as one under which material default risk exists but with a limited margin of safety.

Although financial commitments are being met, capacity for continued payment is vulnerable to deterioration in the business and economic environment. The vulnerabilities highlighted by the B rating are confirmed by the Bank of Uganda (2015b), which singles out the weak current account position as a persistent source of concern. It is revealed that the current account is largely funded by surpluses on the financial and capital accounts of the balance of payments. As a result, any decline in foreign direct investment exacerbates depreciation pressures on the foreign exchange market, which, in turn, triggers inflationary pressures and a slowdown in the growth of the economy. This exposure implies that the fortunes of Uganda's economy, as with all small and open economies, are intertwined with those of major trading partners. In Uganda's case, it is most exposed to the Euro zone, where slow growth and low inflation have had a negative impact on export earnings, remittances and foreign direct investment into the economy.

To fortify the macroeconomic position, Bank of Uganda (2015b) indicates that a cautious monetary policy stance is maintained with the aim of stimulating output without jeopardizing the inflation targeting objective. To that end, the Central Bank Rate has been maintained at 11% since June 2014 and inflation remains subdued with headline and core inflation at 3.9% and 2.9%, respectively for the year ended January 2015. Core inflation is expected to fluctuate around the Central Bank's target of 5% over the next 2 years while monetary policy is in the main implemented through the use of repurchase agreements and the sale of recapitalization securities to align liquidity conditions in the domestic financial markets with the desired monetary policy stance.

However, the Central Bank's efforts are not always successful. For instance, yields on government securities have maintained an upward trend despite the neutral monetary policy stance. This apparent disharmony is put down to speculative behavior in the form of expectations of increased public expenditure to finance infrastructure projects and expectations of high inflation driven by depreciation of the Ugandan Shilling (domestic currency) and increased government consumption expenditure. The Bank of Uganda claims of prudent economic management are lent credence by the International Monetary Fund (2015) whose

executive board commended Uganda's economic performance, which they believe is supported by sound economic policies that have helped the economy weather a challenging external environment. They pinpoint the critical factors in its sustained growth as improving tax revenues; low and stable inflation and preservation of a flexible foreign exchange regime.

In addition, IMF (2015) observes that the financial sector remains sound while international reserves and public debt are at comfortable levels. With respect to the outlook for the economy, International Monetary Fund (2015) contends that the outlook is broadly favorable on account of consistent macro-financial policies. They, therefore, project a real GDP growth of 5.75% for 2015 and 6.25% over the medium-term. Growth is expected to be propelled by increased public sector investment and growing private sector demand. The increase in private sector demand is expected to be sustained by an expansion of credit to the private sector of about 10% per annum, driving the credit-to-GDP ratio to an estimated 17% by 2020, which is believed to be a level of credit sufficient to assure economic stability by stemming cycles of credit booms and busts. The forecast is also underpinned by an expectation of low and stable inflation within the target range of 3.5% and 6.25%. With regard to the risks that the forecast is exposed to, it is observed that the economy has ample buffers and a flexible policy framework geared to respond to potential economic shocks by way of low inflation; healthy international reserves; low debt levels; a resilient financial system; a flexible exchange rate and an improved public finance management system. Still, the economy is exposed to certain risks. These include the possibility of public expenditure overruns, which would trigger inflationary pressures or tighter domestic credit conditions that may lead to the crowding out of the private sector. Others are slowing growth from major trading partners and the effects of lower global liquidity which could precipitate capital outflows thus constraining liquidity and generating currency mismatches for banks and the corporate sector.

4.3.2. Capital Markets Development

Although in existence for close to two decades, the capital markets industry remains underdeveloped. According to the Uganda Securities Exchange (2014), the stock exchange was established in 1997 as a company limited by guarantee and incorporated in Uganda under the Uganda Companies Act. It was licensed to operate as an approved stock exchange in June 1997 by the Capital Markets Authority (CMA) under the Capital Markets Regulations (1996). As at the end of 2014, the stock exchange had 16 listed equities, 6 corporate bonds and an undisclosed value of government treasury bonds as well as 8 brokerage firms. Between 2009 and 2014, equity turnover increased by a CAGR of 69% while transaction volumes increased by 61%.

However, these statistics belie the lack of depth of the exchange. As at the end of 2014, the equity turnover stood at an estimated US\$129.5 million while both the corporate and government bond segments of the market did not experience any secondary trading. In terms of investor type for the equities segment, institutional investors accounted for 90% of turnover, up from 80% in 2013. Statistics also indicate volatile foreign investor interest. For instance, in 2012 foreign investors accounted for 22% of the equity turnover, increasing to 56% in 2013 then declining to 19% in 2014. In the bond segment, government bonds are dominant. To that end, the Uganda Securities Exchange (2014) reports that in 2014 alone three government bonds worth an estimated US\$66.7 million were listed in comparison to a solitary corporate bond worth an estimated US\$20.9million.

Besides the dominance of government bonds, United States Agency for International Development (2009) highlights a number of challenges that stand in the way of the development of the bond market. For instance, the Central Bank's concerns regarding rollover risk compel them to cap the size of individual bond issues. As a result, there are not enough benchmark issues of sufficient size and liquidity in the market. Secondly, the Central Bank prefers to operate through a primary dealer system orchestrated through a limited number of commercial banks, an approach that draws mixed feelings about its effectiveness. According to the United States Agency for International Development (2009), some contend that the banks participating in the primary dealer system do so merely to appease the Central Bank while others argue that it is not a profitable activity but is undertaken for marketing purposes.

Additional insights into the state of development of the capital markets industry in Uganda are provided by the International Organization of Securities Commission (2011), which confirms that Uganda lacks a large and active bond market. It also cites the absence of credit rating agencies in the country as an indicator of the state of development. They go further to outline what they regard to be essential elements in an environment that fosters growth and development of corporate bond markets. These include stringent requirements for disclosure and transparency; bankruptcy protection and fair taxation. World Bank (2014) supplements the International Organization of Securities Commission by providing a more detailed and comparative assessment of aspects of Uganda's business environment that relate to bankruptcy protection, taxation and disclosure and transparency.

The features of the business environment that are of particular relevance include protection of minority investors; payment of taxes; enforcement of contracts and resolution of insolvency. With respect to protection of minority investors, it is argued that effective regulations precisely define related party transactions; promote

clear and efficient disclosure requirements; allow for shareholder participation in major decisions and set detailed accountability standards for company directors. The relevant indicators of the strength of legal protection of minority investors include review and approval requirements for related-party transactions; ability of minority shareholders to sue and hold interested directors liable for prejudicial related-party transactions; ease of shareholder suits by way of access to internal documents as evidence and legal costs; shareholders' rights and role in major corporate decisions and governance safeguards protecting shareholders from undue board control and entrenchment.

The World Bank ranks Uganda 110 out of 189 countries on this score. In as far as the payment of taxes parameter is concerned, the justification advanced is that unnecessary complexity of tax rules should be avoided and that both tax rates and tax administration should not be regarded as obstacles to investment. In that regard, the time required to pay taxes and the total tax rate are the important variables considered by investors. On this score, Uganda is ranked 104 out of 189 countries. The tax burden is considerable entailing a total of 31 tax payments per year; 209 hours expended in tax compliance-related activities and a total rate amounting to 36.5% of profit. As for enforcement of contracts, Uganda fares marginally better than on tax and protection of minority investors with a ranking of 80 out of 189 countries. Contract enforcement is believed to take 490 days on average; costs 31.3% of the value of the claim and entails 38 procedures. The foregoing description hardly portrays an efficient commercial dispute resolution system which is essential to the attraction of investment into the economy.

As to the resolution of insolvency, Uganda is ranked 98 out of 189 countries. The process runs over an average of 26 months and costs 29.5% of the debtors' estate with the most likely outcome being that the company will be sold as a going concern. For creditors, the average recovery rate is 37.9% of their investment. The drawn-out and costly process is at odds with investor expectations of a well-functioning insolvency system, which is supposed to facilitate a quick return to normalcy for a business; facilitate access to finance and save viable businesses thus improving growth and sustainability of the economy.

4.3.3. Pension Sector Development

According to the African Development Bank (2013), experience from emerging market economies shows that the pension sector is the most transparent and best-suited for infrastructure bonds. This is because of the fact that such investors are typically restricted to investment in government paper but have an appetite for long-term, stable and inflation-indexed assets. Besides macroeconomic stability, the ingredients necessary

to tap the potential of the pensions sector include independent pension regulation; competition among professional fund managers and investment guidelines.

As to the state of the pension sector in Uganda, although it's on a path to reform, much remains to be done. According to the Uganda Retirement Benefits Regulatory Authority (2014), reforms got underway in 2011 with the enactment of the Uganda Retirement Benefits Regulatory Authority Act. The reforms rest on three pillars: putting in place a regulatory framework for the establishment and operation of retirement benefit schemes in the country; opening up the sector and introducing competition and reforming the public service pension scheme. The current pension system is comprised of a mandatory contribution provident fund for the formal private sector - the National Social Security Fund (NSSF), the public sector pension scheme and occupational voluntary schemes. The coverage of the existing pension setup is estimated at only 5% of an approximately 14 million working population. The African Development Bank (2013) indicates that the NSSF accounts for 95% of the market with assets of up to UGX 2.13 trillion. As of 2011, its assets allocation had 1.2% of its portfolio in Treasury bills, 24% in government bonds, 2.5% in corporate bonds and an estimated 45% held as deposits with commercial banks.

The pension sector's performance has long been source of concern. The World Bank (2009) noted that although the NSSF was the dominant institutional investor with the clout to make or break bond issues, it had a poor investment track record and a weak governance structure, making it an unsuitable vehicle through which to allocate scarce long-term capital. It was observed that although not directly under government management, the composition, selection and accountability rules of its board effectively make it a publicly managed provident fund and that experience had shown such governance structure are ineffective. More recent press reports on its performance are just as critical. They indicate that out of the 30,000⁴² firms eligible for mandatory contribution, only 9,000 are compliant. In addition, the Fund's administrative costs are out of sync with peers, ranging between 1.7% and 1.85% of total assets as compared to the global range of 0.5% to 0.8%.

The NSSF's relatively poor performance is perhaps emblematic of deeper structural issues. Savings rate are low even by regional standards. At a savings to GDP ratio of 11%, Uganda trails Kenya at 20%. The cross-border performance of fund managers also shed light on the structural deficiencies. For instance, in 2013, Alexander Forbes had 22 funds under management in Uganda with a membership of just 9,000 and worth

⁴² www.newvision.co.ug/Decem,ber 5th 2014-Pension Liberalization, a bag of mixed nuts

US\$ 290 million. In contrast, it had 190 funds under management worth US\$23⁴³ billion for a workforce of 126,000 people. Without adjusting for exchange rates, Alexander Forbes Kenya portfolio was larger than that of NSSF, despite the latter being a mandatory provident fund. The same press reports make more troubling revelations. They indicate that 90% of the UGX 3 trillion held by 800 occupational schemes is invested outside of East Africa. These exposures are somewhat lent credence by the findings of the World Bank (2009), which provides an account of the constraints to pension sector development. Besides the then legal and regulatory constraints, which the enactment of the Retirement Benefits Act in 2011 will hopefully address, the remaining shortcomings are financial capacity related. They include the limited number of professional fund managers and the lack of capital market depth.

With respect to capital market depth, it was observed that the market was very shallow for both fixed income and equity; turnover and capitalization were insubstantial and the government securities market was thin. It was further noted that even at the prevailing low level of assets under management, the supply of investible securities was insufficient as illustrated by the near nonexistence of corporate bonds. Other asset classes where funds invested were not ideal such as unsecuritized property, which poses liquidity and valuation challenges.

The familiarity and acceptance of alternative investment asset classes by the regulators and pension fund managers is an important dimension to the debate on the role of pension funds in infrastructure financing. To that end, the findings of the Commonwealth Secretariat (2014) survey on private equity investments by pension funds are illustrative of the challenges that the infrastructure asset class is likely to face given its similarity with private equity in the sense that they are both alternative assets to fixed-income debt securities, real estate and equities that have traditionally dominated the portfolios of pension funds. Of the 8 countries covered by the survey, Uganda was one of the three that lacked clear guidelines on investment in alternative asset classes. For the remaining countries, allocations ranged from as low as 1.75% of total assets under management in Namibia to 10% in South Africa.

The allocations did not appear to follow any pattern. For instance, South Africa with US\$322,000 million in pension assets allocated 10% to private equity while Rwanda with only US\$482 million in assets also allocated the same proportion. On the other hand, Nigeria with US\$25,000 million in assets allocated 5% while Namibia with US\$9,960 million allocated 1.75%. In explaining the low allocations; the survey report

⁴³ 1KES:US\$0.00959

indicates that the reluctance by pension funds to invest in private equity assets is due more to a lack of familiarity with and experience in than a dislike of the asset class. The same is more than likely to apply to infrastructure given its similarity with private equity. The report further observes that high yields on government bonds may constrain market development in as far as pension investment in alternative asset classes is concerned. In that regard, it is observed that as of April 2014, 10-year government bonds in South Africa, Nigeria, Kenya and Uganda were yielding 8.4%, 11.4%, 14.1% and 14%, respectively. The high yields on government bonds are partly attributed to what is referred to as the twin-deficit⁴⁴ phenomena. On the one hand, excessive public spending has opened huge budget deficits, which increases public debt while on the other hand rising incomes have precipitated a thirst for high-value imports and, consequently, a large trade deficit, thus the dual deficit situation characterized by both fiscal and current account deficits. With such attractive yields on risk-free assets, it may well be that investment in alternative assets classes will be made for diversification purposes only. In Uganda's case, the survey finds that only US\$75 million was available for investment in alternative assets out of a total of US\$1,500 assets under management by pension funds.

4.3.4. Infrastructure Policy

Infrastructure development is the medium-term focus of the government of Uganda. According to the International Monetary Fund (2015), the country through its National Development Plan (NDP II) the country has embarked on an ambitious infrastructure investment programme to be implemented over the next 10 years. The expectation is that the infrastructure investments will be financed through contracting of non-concessional borrowing, PPPs and government savings built up through the establishment of oil, energy and infrastructure funds. A key plank of the infrastructure development strategy is capacity building of relevant public sector agencies in project preparation, appraisal and execution. This intervention is expected to improve value for money of infrastructure investment and contribute to the development of a project pipeline.

With regard to the nature of infrastructure projects expected to be implemented, they include electricity, oil-related infrastructure and transport. For electricity, besides the Karuma and Isimba Hydropower projects whose construction is underway financed by the China Export Import Bank and the government of Uganda, an additional US\$4.6 billion is expected to be invested in smaller hydropower projects and transmission lines for rural electrification over the forecasted 10-year period. The investment in oil-related infrastructure

⁴⁴ <http://blogs.wsj.com/moneybeat/2013/07/25/ghana-overseas-bond-sale-receives-modest-response>

excluding a pipeline to be financed by private investors is estimated at a total of US\$1.8 billion. This outlay is expected to finance a refinery, airport and roads in the oil-rich Albertine region. Within the transport infrastructure category, an estimated US\$4.7 billion is expected to fund major expressways, partly through PPPs; expand an international airport and contribute a fraction of the cost of the standard gauge railway from the Port of Mombasa through the city of Kampala.

As expected, the economic impact of the envisaged infrastructure investments is considerable. The International Monetary Fund (2015) estimates that an additional 1.5% of GDP growth will be realized during the first 5 years of construction but with the potential to increase once the projects come on stream. The projects will increase capital expenditure to 4.25% of GDP. However, external debt will also increase to about 14% of GDP. As with external debt, the ambitious infrastructure investment programme will not leave the current account untouched. The current account deficit is expected to expand as a result of the increase in imports, which will rise to 3.5% of GDP. The domestic component of the financing is estimated at US\$515 million, which represents only 4.6% of the total funding requirement.

Although infrastructure investment is clearly enjoying fresh impetus, the country has a checkered record for infrastructure development through PPPs. According to Privatization Unit (2010), the country's experience of PPPs is limited and mainly in the form of concessions arising out of privatization of public companies and sector-driven concessions. In the past, the policy was *ad hoc* and, therefore, generated mixed results. However, steps have since been taken to establish the requisite PPP framework with the cabinet approval of a PPP policy and bill. From the experience of the projects implemented so far, several lessons have been drawn. They include the challenge of limited financing sources; the need for transparent and competitive procurement processes and the need to manage the very high public expectations and related perception problems about private investment in public infrastructure.

4.4. Conclusions on State of Development of Domestic Capital Markets

In the final analysis, the critical ingredients for a financial sector to provide long-term and affordable financing for capital projects include: breadth and depth of the financial sector including the associated impact of non-bank financial institutions and capital markets on the intermediation profile; high domestic savings rate and macroeconomic stability; a balanced financial sector and effective competition.

With regard to the prospects for success of infrastructure project bonds and securitization in the Ugandan context, several aspects are encouraging. With respect to economic fundamentals, although Uganda's

economy is exposed to the vagaries of a globalized economy, especially manifesting in weaknesses in the current account, the policy stance and management would appear to be sound given the endorsement by the International Monetary Fund and Fitch Ratings described above. In as far as capital markets development is concerned, the basic infrastructure such as a regulator and stock exchange have been in place for close to two decades. Lastly, a clear pipeline of infrastructure projects to be implemented over the next 10 years is articulated in government plans. In addition, investments in technical capacity to improve the quality of the projects in the pipeline are also planned. Moreover, the country has experience in infrastructure projects under PPP regimes, albeit with mixed results. The less promising aspects of the Ugandan context relate mainly to the state of development of the capital markets industry; pension sector and the business environment in so far as investor protections are concerned. The capital markets industry is underdeveloped with only 6 corporate bonds and 16 listed equities. In addition, government bonds are dominant while equities turnover for 2014 was as low as US\$129.5 million. In addition, credit rating agencies are absent from the scene while the investor protection aspects of the business environment leave a lot to be desired. Although reform of the pensions sector is underway, fund management and asset mobilization are manifestly weak. On balance, given the weaknesses in the capital markets industry; pensions sector and the business environment, it would appear that it will be a considerable challenge to mobilize both onshore and offshore investment in infrastructure bonds and securitized assets of a significant magnitude over the short to medium-term. However, over the medium to long-term the prospects might be positive.

4.5 Lessons from Past Infrastructure Projects

4.5.1. Introduction

This section reviews case studies of already implemented projects in Brazil, South Korea, Uganda and the United Kingdom with a view to identifying from their financing structures and outcomes project-specific lessons that validate or otherwise the findings and conclusions on the state of development of the domestic financial sectors of the project host countries from the preceding chapter. With exception of the United Kingdom, from which 3 of the 6 project case studies are drawn, public availability of the final transaction documents containing the commercial terms, including the cost of debt and equity is limited. This is because many of the transactions are subject to non-disclosure agreements. However, scraps of information can be obtained enabling the piecing together of the main elements of the transaction.

In some instances where supranational financial institutions, such as the World Bank, are involved in the financing of the project, after a sufficiently long period of time has passed, public disclosure of financing

documents is authorized. This limitation has been borne in mind in the selection of the case study projects. Besides availability of information, other considerations have been complexity of projects, high capital requirements and variations in financial market conditions. In addition, more case studies have been drawn from the United Kingdom because it has a relatively longer track record of implementing privately financed infrastructure projects. The selected projects are the Phase I of Sao Paulo Metro Line 4 in Brazil, the Busan New Port Phase 2-3 in South Korea and Bujagali Hydro Electric Project in Uganda. The reminder of the case studies are from the United Kingdom and include the Channel Link high-speed rail, the M25 road and the Norfolk and Norwich PFI hospital.

4.5.2. Sao Paulo Metro Line 4-Phase I

4.5.2.1. Background

According to the World Bank (2012), the main objective of the Sao Paulo Metro Line 4 project was to improve the quality and long-term sustainability of urban transport in the Sao Paulo Metropolitan Region (SPMR). These improvements were expected to be brought about through the interconnection of existing subway, commuter rail and bus networks through the construction and addition of Line 4 to the Sao Paulo Metro. Auxiliary objectives of the project included improved access of the low-income population to education and health facilities and employment centres as well as involvement of the private sector in the development of Line 4.

The project is a landmark undertaking among the first to have a component of private participation. It was originally conceived to comprise of a total of 11 train stations. However, the limited debt capacity of the Metropolitan Authority compelled them to rethink the concept. As a result, a phased approach was adopted, unbundling the project into Phases I and II. Phase I entailed the construction of 12.8 kilometers of underground double track; 5 stations; 4 shell stations; acquisition and installation of system-wide facilities such as fixed electrical installations and acquisition and operation of 16 train sets.

The project was envisaged to get underway in 2003 and reach completion 5 years later. However, the project scope was revised by restructurings in 2007 and 2008. As a result, the number of stations to be constructed increased from 5 to 6; the envisaged construction method was rejigged and the number of train sets to be operated reduced from 16 to 14, among other changes. Completion of the project was subsequently delayed by 3 years as a result of both the revisions to the scope of the project and other implementation hurdles, including procurement-related litigation; delays in the acquisition of way leaves and associated properties and a major construction accident.

4.5.2.2. Financing Aspects

The financing structure was an interaction between the Metropolitan Authority, international development banks and a consortium of private companies. According to the World Bank (2012), the project's financing plan envisaged an 80% contribution to project costs from the public sector and a 20% contribution from the private sector. The former was to meet the costs relating to design and civil works while the latter would finance rolling stock, signs, track connections and data transmission with the train networks. In return for their investment, the consortium of private companies would be granted a thirty-year operating concession. To deliver the civil works component of the project, the Metropolitan Authority contracted directly with a separate contractor through a turnkey contract. This effectively insulated the private investors from construction risk relating to civil works and somewhat unbundled the project into two components: a conventional procurement underpinned by a turnkey contract and an operating concession on PPP terms.

With respect to the project cost, the project was initially estimated at US\$ 993.9 million. The World Bank and the Japan Bank for International Cooperation were each to provide US\$ 209 million; the State of Sao Paulo US\$ 308.4 million and the private consortium US\$ 207.5 million. In this instance, the development banks were lending directly to the public agency and not to a private sector project company. The project was affected by a number of problems with a bearing on its financing. Firstly, the project was exposed to currency mismatches. Both the turnkey contract for civil works and the operating concession were designated in the Brazilian currency while the borrowing was US\$ denominated. Indeed, the currency exposure materialized and created a financing gap. According to the World Bank (2012), the turnkey contract, which represented an estimated 80% of total project cost, was signed in August 2003 when the exchange rate between the Brazilian real (R\$) and the US\$ was R\$ 2.993 per US\$. By March 2007, the US\$ had depreciated against the Brazilian currency such that the exchange rate was R\$2 per US\$. This sustained depreciation of the US\$ exerted pressure on the sources of financing for the project. The situation was exacerbated by annual price adjustment provisions in the turnkey contract demanding even more foreign currency funding to offset the increase in the contract value.

As a result, both the World Bank and the Japan Bank for International Cooperation (JBIC) had to supplement their lending by an additional US\$ 95 million and US\$ 95.13 million, respectively. Secondly, changes in scope and schedule of the project, including construction methods occasioned a further 47% increase in the project costs. In aggregate, the variation in project costs when they were firmed-up and at construction completion 2012 was a total of US\$ 639.5 million, representing a cost overrun of 72%. The adverse movement in

exchange rates accounted for 28% of the cost overrun, while the escalation provisions in the turnkey contract accounted for 25%. The balance was on account of changes in scope of works.

With respect to the cost of funds, the financing strategy would appear to have been well-thought through. Firstly, the State of Sao Paulo contributed a significant amount, representing 52% of the realized project cost. Given the fact that the State of Sao Paulo was the counterparty to the turnkey construction contract denominated in the Brazilian currency, their contribution was an important source of domestic currency denominated funding, without which the effects of the adverse movements in the exchange rates might have been even worse, perhaps entirely derailing the project. Secondly, all the debt financing to the project was provided by international development banks. The State borrowed from the World Bank and JBIC while the consortium of private companies secured credit from private financing facilities of the Inter-American Development Bank. While the credit terms offered by JBIC and the Inter-American Development Bank are not public information, the World Bank's financing terms for this particular project are.

The World Bank (2002) Loan Agreement with the State of Sao Paulo outlines the pricing structure of its credit, indicating a maturity of 15 years, including a grace period of 5 years. Section 2.06 of the Loan Agreement states that the borrower shall pay interest on the principal amount of the loan withdrawn and outstanding at specified interest payment dates equal to LIBOR base rate plus LIBOR total spread. The borrower would also pay a front-end fee of 1% of the loan amount and a commitment charge of 0.75% per annum on the loan amount not withdrawn. The section further defines the LIBOR base rate as the London inter-bank offered rate for six-month deposits in US dollars and the LIBOR total spread as three-fourth (3/4) of 1%, minus or plus the weighted average margin for such interest period above or below the LIBOR offered rate.

Since the LIBOR offered rate is the rate of interest offered on loans between first class banks, it is reasonable to assume that a margin of 0.75% on LIBOR is indeed competitive pricing, at least for bank supplied debt. It is also reasonable to assume that the terms of the JBIC component of the financing would not have been substantially different. However, the same cannot be expected for the Inter-American Development Bank credit to the private consortium. This is because in lending to the state of Sao Paulo, the World Bank and JBIC were extending credit to a sub-sovereign and not a private entity. Nonetheless, the private consortium secured credit from an international development bank, whose terms are expected to be more attractive than those offered by domestic or foreign commercial banks.

4.5.2.3. Lessons Learned

The challenges faced and successes enjoyed by the Sao Paulo Metro Line 4-Phase I project present opportunities to draw lessons useful in the structuring of future projects. Of particular importance is the role of the domestic financial sector. In this instance, the key challenges were cost overruns occasioned by changes in scope and schedule of the project, escalation provisions and adverse foreign exchange movements in the context of a mismatch in currencies between the turnkey contract and debt financing. What is conspicuous in this project is that there was hardly any involvement of the domestic financial markets. If the domestic financial sector had been involved in a significant manner, their participation would most likely have stemmed a portion of the cost overruns associated with foreign exchange movements since their lending would have been in the same currency as the turnkey contract. The delays, cost overruns and subsequent restructuring by way of infusion of additional debt from the World Bank, JBIC and public funding from the State of Sao Paulo illustrate the advantages conferred on projects by the flexibility of bank lending, whatever its cost. In hindsight, bond financing would have been catastrophic in the face of a 72% cost overrun and a three-year delay since the project's sources of revenue would have been deferred for three years while its debt service obligations would have most likely remained inflexible. In this case, the banks not only endured the construction delays but also provided supplementary funding required for the completion of the project. In short, a strong domestic banking sector is critical to the implementation of complex infrastructure projects. More generally, this points to the flexibility of private debt markets but which may inevitably come at a relatively higher cost.

Since the debt financing for both the public and private sector parties to the project was mobilized exclusively from international development banks, it goes without saying that cost of finance and the ability to raise the large amounts of debt must have been a factor under consideration. Indeed, if the terms offered by the World Bank are an indication for the financing package in its entirety, the terms must have been competitive. But the role of the State of Sao Paulo is perhaps understated. The State of Sao Paulo shouldered 52% of the eventual total project cost of US\$1,776 million both as an investor and borrower. Moreover, its contribution shot from an envisaged US\$308.4 million to US\$922.03, as a result of the delays and changes in scope of the project. The lesson from this episode is that projects require anchors to help them navigate turbulent times by assuming indeterminate responsibilities, which private parties are unlikely to be willing to bear without a proportionate increase in their expected rates of return. Therefore, the public sector, irrespective of a particular project's contractual structure, should stand ready to come to the rescue of especially projects of strategic national importance.

Whatever the cost and source of financing, the contractual structure of project is of critical importance to its success. The State of Paulo elected to unbundle construction from operation. It, therefore, only awarded the operating concession on PPP terms while construction was awarded to a separate turnkey contractor. As has been described in detail, changes in scope and schedule as well as contract price escalation provisions accounted for 72% of the cost overrun. Aside from the risks arising from interface of separate construction and operation contractors, it may well be that a single build and operate contract would have delivered value for money. The incentives regime would have been altered if responsibility for construction and operation had been placed under the same entity. This also points to efficient risk-allocation and the associated PPP contract drafting where risks are allocated to parties best-placed to manage them.

4.5.3. Busan New Port Phase 2-3

4.5.3.1. Background

According to the Macquarie Korea Infrastructure Fund (2009), the Busan New Port Phase 2-3 is a container terminal comprised of four 50,000 ton berths with a design capacity of 2.7 million ton-equivalent units (TEUs). It is a national priority project which aims at contributing towards the meeting of future demand on account of the Busan area's positioning as a regional shipping and logistics hub. The project has as its background the rapid economic development of South Korea from the 1960's and through the 1970's. The pace of economic development was so brisk that infrastructure development lagged behind. In that regard, the Asian Development Bank (2011a) discloses that at the beginning of the 1990's, it dawned on the government of South Korea that the shortfall of infrastructure was of such a magnitude that the public sector couldn't afford to finance it on its own. Hence, PPPs began to be considered as part of the solution.

Efforts towards the application of PPPs to the infrastructure challenge got underway with the enactment of an Act for the Promotion of Private Capital Investment in Social Overhead Capital in 1994. Unfortunately, progress was derailed by the Asian Financial Crisis of 1997, whose wrath South Korea did not escape. In the post-1997 era, the government's belief in private investment in infrastructure was even more resolute. It was now also regarded as important for the stimulation of the then weakened economy and as a means of attracting foreign direct investment, which was critical to the boosting of the country's then damaged sovereign credit rating. As a result, the 1998 Act on Private Participation in Infrastructure was enacted. The 1998 Act provided for wide-ranging government support to private investment, including minimum revenue guarantees (MRG). It also broadened the scope of potential investments to include not only economic infrastructure but also social and environmental facilities.

Additional legal reforms were ushered in by the 2005 Act on private investment in infrastructure, which introduced the build-transfer-lease (BTL) procurement method, alongside the then existing build-transfer-operate (BTO). According to the Asian Development Bank (2011a), the distinction between BTO and BTL lies in their payment mechanism. Under the BTO method, ownership of the infrastructure facility is transferred to the government upon completion of construction with the concessionaire granted a right to operate the facility so as to earn a return on their investment by levying user fees. For the BTL it is similar to the BTO in all respects apart from the fact that the revenue streams are drawn from government in the form of lease payments and operating cost refunds for the duration of the concession, subject to meeting pre-agreed performance standards.

With regard to the financial framework for PPPs, the Asian Development Bank (2011a) observes that the South Korean PPP market has matured into a stable and profitable financial market as a result of the government's efforts and reforms. As with most jurisdictions, private investment in infrastructure is channeled through SPVs, whose capital structure is required to have a minimum of 25% equity during construction but relaxed to 10% during the operation phase. Prior to 2009, the government guaranteed a portion of the expected revenues for PPPs delivered through the BTO procurement method under a facility referred to as the minimum revenue guarantee (MRG). The MRG was scrapped on the back of criticism that it transferred disproportionate risks to government while providing unjustifiably high returns to private investors. A new risk-sharing mechanism has taken the place of the MRG.

Under the revamped risk-sharing mechanism, government assumes a fraction of investment risk limited to what government costs would have been if the project had been a public-financed one. The share of government investment risk is the amount of operating revenue that guarantees to the private investor an internal rate of return comparable to the government bond rate. Besides risk-sharing, the PPP act established an infrastructure fund, which is a mutual fund with free reign to invest in infrastructure projects. In addition, the government has put in place an infrastructure credit guarantee fund that provides guarantees to concessionaires wishing to obtain loans from financial institutions at a maximum fee of 1.5% per annum for facilities of up to KRW 200 billion. Effort has also been made to incentivize infrastructure bonds through a reduced tax rate on interest income accruing to investors. Regrettably, the uptake of infrastructure bonds has been slow. Out of a total of 230 BTO projects implemented as of 2009, only 7 had partly been financed through the issue of bonds. The Asian Development Bank (2011a) ascribes the slow progress to the unique characteristics of infrastructure projects where drawdown of funds has to be aligned to construction progress.

As a result, large one-time issuances would render funds idle while issuance through tranches requires complex and costly underwriting. In addition, public issuances of bonds are avoided because private investors invariably expect to refinance the projects, yet refinancing requires consent of all lenders, who would be too numerous under a public bond scenario.

In as far as port developments and PPPs go, South Korea is fairly advanced. According to the Asian Development Bank (2011b), port development in the country dates as far back as 1876. As of 2007, South Korea had wharf facilities totaling 175 kilometers in combined length, along which 744 berths were in operation. Total handling capacity stood at 728 million tons. Traditionally, port development and administration was a partnership between the public and private sector. Government or public agencies built the ports while private entities run the operations. In some respects, joint investments were also made. Government would build base facilities such as water area facilities; peripheral facilities and harbor traffic facilities. Functional facilities such as moorings; loading and unloading facilities and cargo storage and handling facilities were jointly developed. With regard to management and operation, government, public corporations and industrial complexes operate water area facilities such as nautical marks; anchorage; moorings; vessel circling areas and breakwaters. Other facilities such as quays are leased to the private sector while government retains the rights to the collection of port facility user fees. With respect to PPPs, all port projects have been developed through the BTO method. By 2009, a total of 19 projects had been implemented with aggregate investment value of KRW 7,358.9 billion.

4.5.3.2. Financing Aspects

According to the Macquarie Korea Infrastructure Fund (2008), the project's location, Busan, is the world's 6th largest container port in terms of traffic volume, which stood at 13 million TEUs in 2007. Busan is the country's second largest city and ports in this locality enjoy certain advantages. These include a larger local market; minimal vessel deviation requirements; world-class facilities that drive high productivity, short stays and capacity growth; moderate costs and absence of China cabotage restrictions. However, before the project got underway, the existing Busan Port was afflicted by major traffic congestion caused by the need for trucks to travel through urban areas before accessing expressways; clustered terminals with dense traffic and limited land area for expansion. As a result, a port in a new area to ease connections and congestion was necessary thus the Busan New Port Phase 2-3.

The project reached financial close in late January 2008 following the award of a 29-year concession to the project SPV – the Busan New Port Container Terminal (BNCT). The concession was for a term of 29 years

up to 2041, excluding a four-year construction period. The concession was procured under the BTO method but without minimum revenue guarantees, which were being phased out at the time of contract award. The facility was to be constructed on a site area of 840,000 sq. meters and comprised of four 50,000 ton berths laid out on a 1.4 km stretch of land with an annual capacity of 2.7 million TEUs. The envisaged operating system of the terminal was semi-automated, including automated shuttle carriers and rail-mounted gantry.

The project SPV had a total of eight members, with the Macquarie Korea Infrastructure Fund as the dominant shareholder with a 30% stake. The consortium was carefully put together with a view to bringing in-house critical expertise to deliver the project on schedule and operate it optimally. In that regard, the construction partner had to have port construction experience while the partner tasked with equipment procurement and port operation had to be local with an established presence in the project area. Macquarie Korea Infrastructure Fund, the lead investor was associated with Macquarie Capital Funds, which had an investment portfolio of 10 marine terminals worldwide, aside from its other infrastructural investments. The remaining 7 members of the consortium had equally strong credentials. The Hyundai Development Company had a market capitalization of KRW 6.9 trillion and had recently concluded construction of 3 port terminals and 3 were under construction. Bouygues Travaux Publicis SA, a major subsidiary of an internationally well-known construction giant-Bouygues Construction, with a workforce of 43,000 people and had completed major port projects in Monaco and Beirut, among other areas.

Kukje Transportation Company and KCTC were well-respected South Korea port operation and logistics companies while the reminder of the partners-CMA CGM and Korea Marine Transport Company were established shipping lines internationally and regionally. Besides a strong consortium of private companies, indications were that traffic volume would grow strongly. Macquarie Korea Infrastructure Fund (2008) reveals that Maersk Line, the world's largest ocean carrier had at the end of 2007 announced that it would transfer 700,000 TEU worth of its traffic volume to the project area and other carriers were expected to follow suit. In addition, the carriers with equity investment in the project had significant traffic volume of their own. Moreover, ongoing infrastructural improvements creating arterial links to two major expressways were also expected to impact the project's economics positively.

With respect to project cost and financing plan, the total project cost was estimated at KRW 948 billion, which was to be funded through a combination of equity, subordinated debt and senior debt. The Macquarie Korea Infrastructure Fund contributed 30% of the equity and 100% of the subordinated debt. The project's financing plan is presented in Table 5 below:

Table 5

No	Funding Type	Amount(KRW Billion)	Share of Total Cost	Macquarie Investment	
				Amount	% of total
1	Senior debt	533.9	56%	-	-
2	Subordinated debt	193	20%	193	100%
3	Equity	221.4	24%	66.4	30%
4	Total	948.3	100%	259.4	27%

Source: Macquarie Korea Infrastructure Fund (2008)

With exception of the Macquarie Korea Infrastructure Fund, the lending and investment terms of other participants are not disclosed publically. However, it is public knowledge that the senior debt was arranged by two of the top domestically-owned private commercial banks in the league table in section 5.3.2. These are Kookmin and Shinhan Banks. The banks also provided a standby facility not shown in the financing plan of KRW 55 billion to be called upon by the SPV to finance additional capital items during the operation phase, if found necessary. In addition, the Macquarie Korea Infrastructure Fund's term sheet for this particular investment and its annual report for the year subsequent to the investment provide useful insights into the project's cost of funds. For contextual purposes, an understanding of the Fund's investment criteria before examining the details of the term sheet is helpful. The Fund's Annual Report (2014) details its investment criteria as primarily country-focused on South Korea; investments that are likely to offer returns consistent with the associated risk of the underlying infrastructure assets; opportunity to increase leverage or refinance debt to optimize their return on equity; scope to exercise significant influence or control over key strategic, commercial and financial functions and prospects for government support, among other things. The details of the Fund's investment terms in the project under review are shown in the table 6 below:

Table 6

Investment Terms	Subordinated Debt	Equity
Interest during construction	10% p.a fixed interest rate	N/A
Interest during operation	12% p.a fixed interest	N/A
Tenor	25 years, amortising in the last 5 years	N/A
Other terms	1) Option to transfer or sell subordinated debt if the SPV performs well	1) Super pre-emptive rights over all sale of equity until the Fund's holding reaches 39% 2) Exclusive negative control of special resolutions at the shareholder and board of directors levels

Source: Macquarie Korea Infrastructure Fund (2008)

From the terms of investment above, the cost of senior debt can be inferred. Firstly, since subordinated debt in this case is a mezzanine layer representing quasi-equity, which is junior to senior debt, the expectation is that it would seek a higher required return than senior debt because of its greater risk exposure. Therefore,

senior debt should charge less than 12% at the very least, perhaps even less than 10%. The Fund's own borrowing rates provide further indication that the senior debt could have been much less than 10%. In that regard, the Fund's Annual Report (2009), which was the first reporting period after the commencement of the project, indicated that interest rates on its long-term debt ranged from 6.79% to 7.2%. Secondly, the term of senior debt may not exceed 20 years. This is perhaps the reason why amortization of subordinated debt is scheduled in the last 5 years of its 25-year tenor. The idea would have been to utilize the cash flow released by the redemption of senior debt to accelerate repayment of subordinated debt. This mechanism that allows for an overlapping payment schedule would also have had affordability of user-fees or capacity payments under consideration.

While it does not reduce the debt service burden, the scheduling by spreading debt service more evenly over the concession period somewhat eases debt service pressures and has a pass through effect on tariffs. With respect to equity, the interest rate on subordinated debt gives an indication of the target return, which should have a reasonable spread over the 12% since equity is junior to subordinated debt and exposed to greater risks. Moreover, consistent with its investment criteria, the Fund reserves the option to refinance the subordinated debt, which would augment its equity return. Indeed, the ratcheting of interest rates between construction and operation periods is also intended to encourage refinancing. The expectation would have been a markdown of interest rates following construction completion, which is the most high-risk sector of the concession.

The implementation of the project appears to have been a success. The Macquarie Korea Infrastructure Fund (2014) reports that the facility opened on schedule in 2012. Since then its performance has exceeded expectations as the only project in their portfolio without minimum guarantees, posting double-digit growth in each of the three years since it opened.

4.5.3.3. Lessons Learned

Several lessons can be distilled from both the specifics of the project's financing structure and the country context. With respect to the financing structure, it is noteworthy that the project's debt financing was entirely raised from the domestic financial sector. This would appear to confirm the findings on the depth of the country's domestic financial sector. In addition, the sources of financing are indicative of a degree of competitive tension between the banking and non-banking segments of the financial sector as only 56% of the cost was met by bank finance. Perhaps more importantly the risks associated with currency mismatches were avoided through 100% domestic currency funding. Equally important is the standing of the private sector

consortium, which combined domestic and international firms with vast experience and depth. It's perhaps not surprising that the project was delivered on schedule and is exceeding expectations. This perhaps suggests that the quality of equity investors is as important as the cost of their funds.

Lessons drawn from the project host country's context are also numerous. Firstly, the evolving nature of risk-sharing mechanisms between the government and private sector is observed. Governments must not shy away from reforms, whenever they are necessary to implement important national projects. The upshot of this approach is that governments must ensure they have a proven mechanism to identify truly important projects and, when they do so, set aside the necessary resources to bear their portion of risk. In that regard South Korea's domestic innovations such as the infrastructure guarantee fund, the infrastructure investment fund and tax incentives offered to investors in infrastructure bonds as well as the direct subsidies to the projects are illustrative. Secondly, the nature of infrastructure projects is perhaps not well-suited for bond financing, as the slow uptake despite tax incentives suggests. Perhaps measures to encourage institutional investors to take direct equity stakes or extend subordinated debt to infrastructure projects should be explored.

4.5.4. Bujagali Hydroelectric Power Project

4.5.4.1. Background

According to the World Bank (2007) prior to the construction of the Bujagali Hydroelectric Power (HEP) plant, Uganda's power source was mainly the Nalubale and Kiira HEP plants, a complex with a combined installed capacity of 380 megawatts (MW). However, the output of the power complex had contracted from 270MW to 120 MW between 2002 and 2006. The contraction in output was a result of the need to meet water discharge requirements agreed to by all the River Nile tributary countries. While output was shrinking, demand was on the rise. Between 2006 and 2007, peak demand was estimated to be in the range of 350-380MW while base load was at 290MW. This mismatch between demand and output resulted in prolonged power shortage, negatively impacting economic activities. As a short-term measure to stem the shortage, the government procured 150MW of thermal power capacity.

The medium-term solution to the power crunch was believed to lie in the development of the Bujagali HEP, whose procurement had stalled in the late 1990's. The World Bank (2007) discloses that the eventual successful implementation of the project benefited from reforms implemented since the collapse of the first attempt at the project. The power sector reforms were wide-ranging. Firstly, structural changes had created an independent power regulator while generation and distribution functions had been unbundled from

transmission and concessioned to the private sector. Secondly, as a result of the structural changes, improved governance standards had been realized within the key functional entities. Alongside the reforms, the project benefitted from the cost pressures stimulated by the relatively expensive thermal power stopgap measures that created a groundswell of support.

4.5.4.2. Financing Aspects

The project reached financial close in December 2007, two years after the sponsors-Bujagali Energy Limited (BEL) had concluded a Power Purchase Agreement (PPA) with the statutory body responsible for transmission, the Uganda Electricity Transmission Company (UETCL). The World Bank (2007) touted it as a model of innovative financing solutions that will resolve Africa's energy crisis. Ringing endorsement was also received from the finance industry with the project receiving the power deal of the year for 2007⁴⁵ from the Project Finance Magazine.

With respect to the project company, BEL is a special purpose company⁴⁶ co-owned by Industrial Promotion Services (IPS), an affiliate of the Aga Khan Fund for Economic Development (AKFED) and Sithe Global Power LLC. The Government of Uganda has an equity stake in the company too. Sithe Global Power, LLC is 99% owned by funds managed by Blackstone, a private equity firm. Blackstone purchased an 80% ownership interest in Sithe Global in 2005 and subsequently increased it to 99% in 2011 with the objective of facilitating Sithe Global Power's plans to develop, finance, construct and operate electric power generation facilities in the U.S. and certain international markets. Sithe Global has a portfolio of power projects in various stages of development and construction in the Philippines, India, Africa, the Middle East and other regions totaling approximately 5,000 MW of generating capacity.

IPS is the infrastructure and industrial development of the Aga Khan Fund for Economic Development (AKFED). IPS has operations in Kenya, Uganda, Tanzania and DR Congo and is also actively pursuing investment opportunities in Rwanda, Mozambique and Madagascar. Outside the East and Central Africa regions, IPS also operates in Cote d'Ivoire, Burkina Faso, Mali and Senegal, Tajikistan, Afghanistan, Kyrgyzstan, Pakistan and Canada. AKFED is an international development agency dedicated to promoting entrepreneurship and building economically sound enterprises in the developing world. AKFED focuses on building enterprises in parts of the world that lack sufficient foreign direct investment. It also makes bold but calculated investments in situations that are fragile and complex. IPS's involvement in power comprises 288

⁴⁵ www.sitheglobal.com/pressrelease/11_March_2008

⁴⁶ www.blackstone.com/pressrelease/19_March_2012

MW Azito gas power plant in Cote D'Ivoire; concessionaire for Energie du Mali (power & water utility); Kenya's 75 MW diesel plant; and a vertically integrated off-grid utility involved in generation, distribution and sale of electricity in the West Nile region of Uganda. IPS companies in East Africa have a total workforce of about 8,500 employees.

The project had an elaborate contractual framework. Its bedrock was the Implementation Agreement between the project company and the government of Uganda, which set out the terms of the concession for the design, finance build, operate and transfer the plant. The second agreement was the PPA between BEL and UETCL, which set out the terms for the sale of the electricity for the project's contracted capacity. The government of Uganda guaranteed UETCL's obligations under the PPA. The other stream of contracts was between BEL and the EPC contractor and another with the operating and maintenance entity. Lastly, the lenders entered into a direct agreement with BEL's counterparties in the PPA and Implementation Agreement to facilitate their step-in rights.

The World Bank (2007) puts the total project cost at US\$ 857million. The project's capital structure is roughly 80% debt and 20% equity. A breakdown of the sources of funding is detailed in table 7 below:

Table 7

Financing Type	Amount(US\$ million)	% of total
Commercial debt:		
Standard Chartered and Barclays/Absa banks	115	13.4
Development Finance Institutions:		
International Finance Corporation(IFC)	130	15.2
European Investment Bank (EIB)	140	16.3
African Development Bank(AfDB)	110	13
Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V.(FMO)	73	8.5
Societe de Promotion et de Participation pour la Cooperation Economique (Proparco)	73	8.5
Deutsche Investitions-und Entwicklungsgesellschaft MBH ("DEG") and KfW	45	5.3
Equity:		
Sponsors equity	151	17.6
Government of Uganda	20	2.2
Total	857	100

Source: World Bank 2007

All the senior loans had a 16-year maturity. In addition, a guarantee was provided by the International Development Agency (IDA) to the commercial lenders – Standard Chartered and Barclays/Absa. The Multilateral Investment Guarantee Agency (MIGA) provided an equity guarantee of up to 20 years of US\$ 115million. The IDA guarantee was to the tune of US\$ 115million. The World Bank (2007) believes that the

IDA guarantee reduced the project's perceived risk to a level that not only allowed the mobilization of commercial debt but on improved terms too.

With respect to the cost of funds, the details are not publically available. However, the levelized cost of electricity is one approach through which the competitiveness of cost of funds can be assessed. To that end, the World Energy Council (2013) defines the levelized cost of electricity as (LCOE) as the price that must be received per unit of output as payment for producing power in order to reach a specified financial return or breakeven. LCOE captures the cost of funds, equipment, installation, operating and maintenance and fuel costs, where applicable. But it excludes transmission and distribution costs as well as subsidies and support mechanisms. For large hydropower projects, which the World Energy Council classifies as at least 10MW with a capacity factor ranging from 20-75%, LCOE ranges from US\$ 0.024 to US\$0.302 per kilowatt-hour (KW).

However, hydropower projects are site-specific in nature. It is for this reason that the International Renewable Energy Agency (2015) calls for caution in the comparison of LCOE. It is further observed that besides project-specific factors, the nature and experience of developers have a significant impact on financing costs and return on equity expectations. But generally, a reasonable weighted average cost of capital (WACC) for African projects would lie in the range of 15-20%, unless strong guarantees are in place. For the developed economies, WACC would typically lie between 6% and 12%. They conclude that for Asia, Africa and South America, the LCOE for large hydropower project lies between US\$0.04 and US\$0.05 per KWH.

Van Ginneken (2015) provides more project specific information using the 147 MW Adjarala HEP on the Mono River that straddles Togo and Benin. The argument is then made that with a concessional financial package, the levelized generation cost would be below US\$ 0.07 per KWH. However; purely commercial financing would nearly triple this estimate. For the Bujagali HEP, the majority shareholder in the project company – Sithe Global LLC is on record stating that the project would yield a levelized generation tariff of US\$ 0.065⁴⁷ per KWH. But, press reports indicate that the generation tariff will be US\$ 0.12 per KWH for the first 13 years of operation⁴⁸. In responding to these press reports, the project company went on record stating that the tariff is a profile that will peak at US\$ 0.16 per KWH in 2022 when the concession terminates. However, over the life of the concession, the average tariff will be US\$ 0.10 per KWH.

⁴⁷ ⁴⁷ www.sitheglobal.com/pressrelease/11_March_2008

⁴⁸ <http://www.independent.co.ug/cover-story/5390-why-is-bujagali-power-expensive>

What is clear is that the tariff by any account is much higher than had been envisaged by the sponsors themselves and by benchmarks. What is peculiar about this project is that 66% of the financing was provided by development finance institutions, which are associated with concessional lending. In addition, the senior commercial debt and equity was supported by guarantees from international agencies. This suggests that the debt financing will have been competitively priced but equity was not. The international financial press reports seem to suggest that the latter is the case. In reference to Blackstone, the private equity majority owner of Sithe Global LLC, which is a co-owner of the project company, the Wall Street Journal⁴⁹ observed that private equity firms are accustomed to returns in excess of 20%. The storyline is picked up by the Financial Times⁵⁰ which intimate that Sithe Global LLC was attracted to participate in the project by the prospect of a high Internal Rate of Return, which was capped at 19%. With tariffs higher than earlier envisaged the return might even be higher.

4.5.4.3. Lessons Learned

While the mobilization of large scale international financing is flaunted as a major success, it speaks volumes about the state of the domestic financial sector. With exception of the token equity contribution of the government of Uganda, no domestic financial institution participated in this landmark project. Without a doubt, the underlying currency mismatch, which would have been superficially addressed through a PPA provision providing for payment for the project's electricity output in hard currency, is ultimately borne by the end-user in domestic currency denominated tariffs. They, therefore, bear the brunt of adverse movements in exchange rates. This would suggest that indeed country risk still looms large for projects in less developed countries. This is lent further credence by the scale of guarantees that underpinned the financing structure.

A pertinent question to ask is, wasn't the government of Uganda guarantee of the PPA adequate? A PPA guaranteed by the sovereign should not only eliminate demand risk but also give comfort to lenders and equity investors that the designated counterparty would fulfill its obligations, failing which the government would assume their obligations. As it is, both senior debt and foreign equity had to be provided separate guarantees by international agencies, which added a layer of cost to the financing structure. Secondly, the dominant role of development financing institutions, whose financing catered for 67% of the total project cost is confirmation of the important role they play.

⁴⁹ <http://www.wsj.com/articles/SB10001424127887323628004578461223864870026-Private> Equity Firms Build Instead of Buy

⁵⁰ www.ft.com/cms/s/0/97cd1a2c-9671-11dc-b2da-0000779fd2ac.html-Infrastructure:Big Investors keen but careful

Perhaps without their participation, the project would have been a stillbirth. Still, their participation, which is expected to be on concessional terms, appears not to have brought the generation tariffs within the expected range. This might be as a result of the high target returns demanded by the equity investors. Given the grim energy supply situation that the country was faced with, it is not farfetched to speculate that the government of Uganda had to acquiesce to the demands of the investors. Perhaps the outcome would have been altered by a more significant equity contribution by the government of Uganda in an investment decision-making environment free of duress imposed by the acute electricity shortage.

4.5.5. The Channel Tunnel Rail Link

4.5.5.1. Background

The Channel Tunnel Rail Link project is one of the most complex projects undertaken. It combined features of a PPP and privatization. It also faced unprecedented financial and operational headwinds that nearly derailed it. According to the United Kingdom's National Audit Office (2001), in February 1996, the UK Department for Transport awarded a contract to the London and Continental Railways Limited (LCR) for the development of the Channel Tunnel Rail Link. The Link was envisioned as a 68-mile high-speed railway connecting St Pancras in London to the Channel Tunnel. In addition to construction and operation of the Link, LCR was awarded a contract to own and operate the Eurostar UK, the British arm of the Eurostar International train service. The Eurostar train service straddles the UK, France and Belgium. The French and Belgian legs of the system are operated by state-owned companies. Construction of the Link was the PPP component of the deal while operation of Eurostar UK was essentially privatization of a state entity. The privatization deal entailed the transfer of assets held by two state companies: Union Railways Limited (URL) and Eurostar UK. URL was charged with the planning and design of the link while Eurostar UK operated the assets of the UK leg of the Eurostar system, including train stations and train sets. The deal also entailed the transfer of land and real estate to LCR.

With respect to the procurement of LCR, the National Audit Office (2001) details the considerations that guided the government in reaching its decision. The government wished to reduce the level of public sector financial support to the Eurostar UK, believing that it held high revenue prospects for a private operator, if transferred free of long-term debt. As a result, an overriding consideration in the evaluation of bids was the level of grants expected by the bidders. However, government was mindful that the level of grant support be aligned with the extent of risk transfer. The grants to be paid to the bidder over the life of the contract were

of three types: capital grant; deferred grant and domestic capacity. The 1997 present value of total grants expected to be paid to LCR was £2,014million. The concession term was initially for a total of 999 years.

4.5.5.2. Financing Aspects

In structuring the transaction, the responsible government agency envisaged a phased approach to the mobilization of the necessary private financing. This was an acknowledgement of the large scale of funding required to implement the project. The first phase of financing would cover costs over the first two years while the second phase would mobilize the bulk of the funding required to implement the project. Consequently, bidders were requested to outline their financing plans. The winning bidder, LCR elected to pursue the phased approach proposed by the Department of Transport.

4.5.5.2.1. First-Phase Financing

The first-phase financing was mobilized from commercial banks and the sponsors own equity. The details are provided in table 8 below:

Table 8

Facility Type	Amount (£ millions)	% of Total
Commercial banks:		
United Bank of Switzerland	66 2/3	14
Dai-Icho Kangyo Bank	66 2/3	14
Dresdner Bank (Luxembourg)	66 2/3	14
Citibank	55	11
Credit Foncier	45	9
Development Banks:		
European Investment Bank (EIB)	100	20
Kreditanstalt für Wiederaufbau (KfW)	30	6
Equity:		
Sponsors equity	60	12
Total	490	100

Source: National Audit Office 2001

The credit terms of the commercial facilities were different from those of the development banks in some respects. With regard to the loan term, the commercial facilities were extended for a period of 90 months while the development finance institutions were for 120 months. The equity contribution was £30million worth of cash and £30million in kind, the latter representing capitalized bid costs. The proceeds of the commercial facilities would be used to fund Eurostar UK operations; design and development of the Link and purchase of the land necessary for construction. The development banks restricted the use of their funds to the design and development of the link as well as land acquisition. The debt was supported by a direct agreement between the lenders and the government. The direct agreement affirmed that in the event of cancellation of LCR's contract, the Eurostar UK would revert to the government as a going concern, with all its liabilities,

including the credit extended by the club of banks to LCR. In addition, the banks undertook to restructure the term of the loans in the event of Eurostar UK's revenues falling short of forecasts. In short, the direct agreement was in many respects a guarantee by the government of LCR's debt. The direct agreement was entered into by the responsible government agency with reservations. The National Audit Office (2001) discloses that the government was aware of the risk posed by the award of the contract in advance of LCR's successfully mobilizing the substantive portion of the required funding, envisaged under the second phase through a public floatation. However, the government was swayed by several factors. Firstly, it was of the view that the financial performance of Eurostar UK would be in line with LCR's forecasts. Secondly, LCR's financial advisors were convinced that Eurostar UK's forecasts were robust to the extent that the second phase financing would be successfully mobilized even with a 15% shortfall in forecast revenues. Thirdly, of all the bidders for the Channel Rail Link contracts, LCR had, in the view of government, presented the most aggressive marketing strategy for the Eurostar UK. Finally, LCR's shareholders had at risk a total of £60 million in equity, which they were not expected to lose without giving their best efforts to the second stage funding. As it turned out, traffic on the Eurostar UK fell far short of forecasts, fully demonstrating the venture in its then format was unviable and not in position to mobilize the critical second tranche of financing. As a result, the options were either to abandon the project or restructure it. The National Audit Office (2001) elaborates the reasons why the project found itself in financial difficulties. Firstly, it believes that the procurement process, in making public the fact that the government would look favorably on those bidders whose financial proposals entailed the least public financial support, naturally created an incentive for optimism in the projection of passenger traffic on the Eurostar UK. Secondly, the direct agreement with lenders under the first phase of financing removed the incentive for the banks to undertake detailed due diligence as it represented a guarantee of their repayment. In that sense, it watered-down the expected benefits of private finance discipline and rigor in investment appraisal. Thirdly, the equity contribution may not have been sufficiently high to align the interests of shareholders with other counterparties. For instance, the private sector consortium was dominated by contractors, who were expected to receive payments from the first round of financing amounting to £90million, which was 1.5 times their equity contribution. Other factors that undermined the success of the project include the management structure of the entire Eurostar system, which had public companies in control in 2 of the 3 partner countries, adversely affecting the coordination and vigor of marketing efforts. In addition, the coming onto the scene of route-flexible and low-cost airlines presented a stiff challenge to the Eurostar's business model. The pileup was crowned with a fire on the Tunnel Channel in November 1996, hurting traffic and generating unwanted negative publicity.

4.5.5.2.2. Restructuring of the Project

While the underlying economics of the project had not met forecasts, the convergence of internal and external factors left the project sponsors with two options: either to restructure the project or abandon it. The latter option would in effect have meant that the Eurostar UK reverts to public ownership with the attendant liabilities, including the £430 million of debt raised in the first stage of financing. According to the National Audit Office (2001), the immediate trigger was the November 1996 fire that gutted the Channel Tunnel. The resulting adverse publicity and disruption of the Eurostar UK's operations meant that the timing of the public floatation was rescheduled from October 1997 to March 1998, in the hope that the intervening period would allow the market sentiments to shift favorably. As a consequence of the altered schedule for the second-stage financing, LCR's financial situation deteriorated as the proceeds of the stage-one financing were on the verge of depletion. To plug this financing hole, LCR proposed to government a sale and lease-back of 11 Eurostar UK train sets. The proposal was rejected on several grounds. Firstly, the existing contract would not permit such a transaction until the second-stage financing had been successfully mobilized. Secondly, the transaction would have increased the government's exposure by an additional £230 million in lease payments in the event of a reversion to public ownership of Eurostar UK, which, in the circumstances, was increasingly likely. Thirdly, LCR did not present alternative capital-raising proposals such as injection of additional equity or private commercial debt. LCR shareholders were not prepared to put more equity capital at risk while commercial banks would only do so contingent on additional government grants. As part of the broader efforts to rescue the project, a review of traffic forecasts for the Eurostar UK was undertaken. Its outcome was disheartening. It revealed that the projected loss over the medium-term was some £750 million higher than initially forecasted. This naturally dampened the appetite for the project and made second-stage financing all but impossible without government intervention. In January 1998, LCR, on the brink of insolvency, formally requested the government for £1,200million in addition to the £2,014million already committed.

According to the House of Commons (2011), the request for additional grants caused the government to seriously consider taking the Channel Link back into public ownership so as to regain control. Retendering the contract would take an estimated three years before reaching contractual close while reversion to public ownership would be viewed as a failure of a flagship project within the government's private finance initiative, which might affect other projects in the pipeline. Besides the time lag, under a new tender, it was more than likely that bidders would seek a significant premium to insulate themselves against financial difficulties that the first attempt had laid bare. As a result, the consensus was that the best approach was to restructure the existing deal with LCR. In June 1998, the outlines of a restructuring proposal were concluded. The National

Audit Office (2001) sets out the proposal's essence as agreement not to materially increase the amount of direct grants to the project and the split of the Link's construction into two sections. In addition, the restructuring proposal called for the decoupling of the Eurostar UK business from the Link through reallocation of the latter's construction and revenue risk and the provision of additional support in the form of guarantees and direct loans. Construction risk was to be retained by the private sector but under a shorter concession period, reduced to 99 years from the initial 999 years.

4.5.5.2.3. Second-Phase Financing

The National Audit Office (2001) indicates that the second-phase financing had initially targeted to raise £1,000 million in equity and £3,000-4,000 in debt. The proceeds of the second-phase financing would be dedicated to the construction of the entire 68 miles of the Link; retire the then existing £430million in bank loans and make good on any continuing losses from Eurostar UK operations. However, with the decision to phase the construction of the Link into two sections as part of the restructuring of the project, the immediate financing requirements excluded the construction of the second section, whose capital-raising was deferred to a future third-phase of financing. With respect to the financing options available to the project for the second-phase, LCR remained in a most precarious situation. The continuing uncertainty about the financial performance of Eurostar UK constrained efforts to mobilize fresh equity while commercial bank debt financing was unlikely for several reasons. The bank loan market had suffered two back-to-back shocks: the Asian financial crisis in late 1997 and the Russian financial crisis of 1998. This led the European loan market to shrink from US\$459 billion 1997 equivalent to US\$397 billion 1998 equivalent. As a result, interest rates were on the rise while maturities were on the decline. The turmoil in the loan market notwithstanding, a syndicated loan of a £4,000million was unprecedented in the debt markets and, therefore, unlikely to succeed. In addition, the inability to raise new equity would have meant that the project's debt-equity ratio would be unacceptably high for prospective lenders, unless compensated with higher interest rates and yet the cost of debt had assumed an even more critical dimension created by the capping of government grants to their original level following the project's restructuring. Against this background, LCR reached the conclusion that the second-phase financing could only succeed through government-guaranteed bonds since such a guarantee would ensure that the required funding is raised at a much lower interest rate than would otherwise be the case. Luckily, the government assented to LCR's request by providing a guarantee for the payment of principal and interest of up to £3,750million of LCR issued bonds to finance the construction of the entire Link. However, the bonds were to be issued in tranches for several reasons, including the phased construction of the two sections of the Link.

In February 2009, the second-phase reached financial close with the issue of a £2,650million corporate bond tranche. Before approving LCR's request for a government guarantee of its bond issue, the government had to weigh several considerations. In that regard, the House of Commons (2011a) suggests that besides the unique features of the project, the government's commitment to strengthen international rail links was one of the major concerns. The National Audit Office (2001) contends that once the request for a government guarantee of LCR-issued bonds was made, direct financing through a government-voted loan became a natural alternative. Since government financing is partly raised through debt securities referred to as Gilts⁵¹, a comparison of their cost vis-à-vis that of corporate-issued bonds backed by a government guarantee was necessary. All concerned were aware that a government-voted loan would be cheaper but assented to the LCR request for several reasons. Firstly, the government wished to have the concept of the Link as a flagship PPP maintained by preserving the participation of private capital and disciplines in the project. Secondly, there was concern that the use of Gilts would introduce some form of moral hazard through signaling to other bidders on PPP projects government's inclination to assume financing risk. Lastly, the use of the guarantee, unlike Gilts, would keep the project off the public sector balance sheet since the possibility that the guarantee would ever be called was remote. The National Audit Office (2011) estimates that the decision to pursue government guaranteed corporate bonds came at a cost of £80million. The bond issuance was in three tranches: £1,000million with a 2010 maturity; £1,275million with a 2028 maturity and £375million maturing in 2038. The interest rates ranged from 4.5% to 4.75%. These rates were at margins ranging from 0.28 to 0.37 of a percentage point above the government cost of borrowing in the Gilt market for similar maturities. The premium on government guaranteed corporate bonds over Gilts is explained by their relative illiquidity given that the issue was in comparison to Gilts in the market much smaller constraining their trading activities in the secondary market. On the other hand, although the issue was small in relation to Gilts, the issue was large in its own right in the context of the corporate bond market, which necessitated a premium to ensure that the offer is cleared.

The second-phase of financing did not leave the original equity structure untouched. Management control was wrested from existing shareholders but they retained an economic interest. This was achieved through the conversion of 95% of their equity stake into preferred shares, which would accrue at an interest rate of 7% beginning February 1999. In addition, their interests in the project would be bought out in a phased

⁵¹ The National Audit Office 2005 review of the progress on the Channel Tunnel Rail Link indicates that Gilts are securities traded on the London Stock Exchange. They are referred to as gilt-edged since the payment of interest and their redemption on maturity is certain.

approach, with 50% on completion the construction of the first section of the Link and the balance after the second section of the Link.

4.5.5.2.4. Third-stage Financing

According to the National Audit Office (2005a), construction of the first section of the Link was completed on time in September 2003 and slightly under cost. In addition, its operations were exceeding expectations. The completion of the first section paved way for the construction of the second section of the Link, thus setting the scene for the third-stage financing. The third-stage financing combined a portion of the government guaranteed bonds, which had not been issued at the second-stage financing and commercial bank debt. The financing structure also included conventional bonds issued under a structure that securitized track access charges on the completed first section of the Link due from the patronage of Eurostar UK and other domestic operators. These access charges were to be met by government through its payment to LCR of a domestic capacity charge. The third-stage financing also entailed a refinancing of outstanding commercial bank debt from the two development banks: European Investment Bank and KFW. A breakdown of the third-stage financing and the pricing terms is provided table 9 below:

Table 9

Debt Facility	Amount (£ Millions)	Term	Pricing
Government-guaranteed bonds 5.1% priced 25 th June 2002	1,100	2051	Gilts + 0.32%
Bank Facilities:			
European Investment Bank Loan priced 30 th June 2003	400	2008	LIBOR+0.13%
KFW bank loan priced 30 th June 2003	150	2008	LIBOR+0.275%
Securitization of track access charges:			
Conventional bonds 5.234% priced 4 th November 2003	748	2035	Gilts+ 0.24%
Index-linked bonds 2.334% priced 4 th November 2003	500	2051	Gilts +0.21%
European Investment Bank loan priced 4 th November 2003	200	2028	LIBOR-0.15%
KFW bank loan priced 4 th November 2003	100	2022	LIBOR+0.15%
Total	2,208	-	-

Source: National Audit Office (2005a)

The pricing above reflects the interest on each facility on the basis of an appropriate benchmark. The bond prices are benchmarked against the Gilt, which is the government borrowing rate and regarded as the risk-free rate. Bank facilities are benchmarked against the LIBOR-the rate at which banks lend to each other.

The structure for the third-stage financing took into account several considerations. The National Audit Office (2005a) indicates that one such consideration was the nature of the track access charges to be paid to the project sponsors by Eurostar UK and other domestic train operators for the completed section of the Link. The track access charges were believed to be sufficiently long-term, predictable and back-ended. It was,

therefore, considered most efficient to finance the second section of the Link through long-term debt backed by the track access charges, hence their securitization. The other variable at play was the spread of maturities, which was designed to ensure that future financial pressures are avoided. As a result, the maturities of the debt facilities were staggered. The final consideration was the inflexible nature of bond financing with respect to construction drawdowns, refinancing negotiations and short-term financing requirements arising out of business fluctuations. To address these shortcomings, the financing structure provided for medium-term commercial bank facilities with a revolving dimension. The inflexibility of bond financing notwithstanding, it was acknowledged that term length of up to 50 years that the project required was not available in the loan market in material amounts, hence the dominance of bonds in the financing structure.

With respect to pricing, the National Audit Office (2005a) believes that the terms achieved were competitive. The justification for this assessment is that when placing the government-guaranteed bonds in the market, LCR had envisaged a margin of between 0.4% and 0.45% above the benchmark, which was at the time the 30-year Gilt maturing in 2032. In the event, the offer was oversubscribed, compressing the margin to 0.32%. As a result, the price achieved was 5.1%, which is 0.32% over the benchmark Gilt that was trading at 4.78%. The play out was similar with the indexed and conventional bonds whose market reception was overwhelming resulting into an increase in the size of the offer and competitive margins over the benchmark Gilt of 0.21% and 0.24%. On the commercial bank facilities, the terms, particularly of the European Investment Bank are judged to have been so competitive that it would have been impossible to receive a better from the market. However, the same is not true of the KFW facilities, particularly the short-dated one. The National Audit Office (2005a) believes that more competitive terms could have been secured from the loan markets than what KFW offered. However, it acknowledges that the standing of KFW could have been a source of comfort for other lenders thus justifying the premium on its rates.

4.5.5.3. Lessons Learned

The Channel Link Rail project case lays bare the financing challenges of large and complex projects. Firstly, the economics of proposed projects ought to be carefully reviewed and care taken to avoid overly optimistic forecasts. As has been established, the genesis of the financing difficulties that the project faced lay in the poor performance of the Eurostar UK. And yet the project's ability to raise substantive private financing hinged on this component of the project. Secondly, transfer of government assets in advance of raising private financing is fraught with risks. In this instance, the project reached a point of no return leaving government with no option but to bail it out through guaranteeing the corporate bonds issued by the private consortium.

By extension, government has to be prepared to stand behind the financing of its flagship projects, which is why their selection needs to be full proof because government guarantees are not without costs. Thirdly, the equity provided by private consortiums should reflect the risks inherent in a particular project. Unless proportionate equity capital is at risk, the private sponsors will not have adequate incentives to ensure that problems that emerge during implementation are resolved. Indeed, unwillingness to provide satisfactory equity should be an early warning signal of the prospects for the complete implementation of the project. While a capital structure with relatively more equity implies a higher weighted average cost of capital with an undesirable impact on a PPP's affordability, it might be the inevitable price paid for satisfactory project outcomes. Fourthly, the significance of a robust non-bank segment in the financial sector cannot be overemphasized. In this case, the bond market provided huge sums of capital with maturities of up to 50 years at competitive pricing. Besides depth, the bond market was sufficiently sophisticated to facilitate complex financing structures such as securitization. Fourthly, the financing of larger projects is perhaps best arranged through tranches, if their technical nature permits. This is not only because their large capital requirements may test the depth of the financial markets but also on account of the fact that if the initial phase meets performance expectations, both market appetite to lend and risk perception are nudged in a favorable direction. Lastly, the case study reaffirms the critical role played by development finance institutions. For the UK, with a well-established and deep banking system, to have had to rely almost entirely on the pan-continental European Investment Bank and the German-Owned KfW is close to an indictment of commercial banks in as far as pricing is concerned.

4.5.6. M25 Motorway Project

4.5.6.1. Background

The M25 motorway project's unique aspects arise from the fact that a fairly large project reached financial close in very challenging financial market conditions during the global financial crisis. Its success amidst the turbulence offers an opportunity to distill lessons that might be relevant to the jurisdictions with less developed financial markets, which are prone to frequent instability, besides depth limitations.

House of Commons (2011b) reveals that the UK Highways Agency in May 2009 entered into a private finance contract for the widening of two sections with a scope of 38 miles and the maintenance of the entire 125 mile length of the M25 motorway. The arterial importance of the motorway is underscored by Davies and Carr (2013) who suggest that the motorway is one of the busiest in Europe with up to 200,000 vehicles per day using its most trafficked sections. Moreover, some 20 miles of the motorway traverse through the center of

London and it combines domestic with international travel. The motorway, therefore, suffered from high levels of congestion and poor journey time. The project also posed some engineering challenges in the sense that the widening of the two sections would also cover two tunnels and a major bridge. The decision to use the private finance initiative (PFI) procurement method was, therefore, not arrived at easily but rather through a drawn-out process that entailed consideration of various alternatives.

Davies and Carr (2013) disclose that the project was one among many under consideration for PFI procurement with value for money uppermost in the minds of those undertaking the appraisal. The Highways Agency concluded that the best candidates were three motorway widening projects: M25; M6 from Birmingham to Manchester and M1 north of Birmingham. The M6 and M1 were subsequently eliminated since their widening would entail land acquisition, introducing a degree of uncertainty believed not to bode well with PFI procurement. Even after its selection for implementation, further options analysis was undertaken. The National Audit Office (2010) shows that three procurement options were considered: multiple conventional contracts; multiple private finance contracts and a single private finance contract.

A single private finance contract was ultimately chosen for several reasons. Firstly, the Highways Agency believed there was no appetite in the market for a single conventional contract exceeding the range of £250-£350million in capital cost and yet the project under review had an estimated capital cost of £1,073million. Secondly, the Highways Agency was, to a certain extent, already committed to PFI procurement in the sense that it had a target to deliver 25% of the national road programme through this method of procurement. In addition, it had acquired significant experience from the implementation of 11 contracts, covering an estimated 450 miles of road network. Thirdly, the Highways Agency was convinced that only PFI projects with large capital requirements, spread over an extended period of time and entailing relatively large procurement costs in proportion to the contract value had adequate scope for savings. In that regard, a single PFI contract allows contractors to generate efficiency gains through the use of common arrangements such as appointment of subcontractors for all sections and facilitate the transfer of knowledge gained from work on the initial sections to later sections. In addition, single PFI contracts reduce the scope for interface risk, which is the risk of delays on later contracts. Other advantages are in the form of easier interaction with relevant third parties such as emergency services broadening the scope for operational efficiencies.

Besides the drawn-out internal appraisal process on the procurement method, a parallel review of the technical solution was ongoing. According to the National Audit Office (2010), consensus on widening of sections of the motorway was not unanimous. There were those who wished to have an alternative approach

referred to as hard shoulder running piloted. In the end, the hard shoulder running option was discarded in favor of widening. This cost the project and the country significantly. As a result, the Highways Agency spent excessively on consultants, with fees in the range of £80 million. But even more costly was the slippage in the project schedule. The project had been first announced in 2003 with a target construction start date of April 2007, which was rescheduled to May 2008 but the contract was not concluded until May 2009. In total, the procurement process covered a period of 42 months, 45% higher than the targeted 29 months. The delays in procurement caused the project to get trapped in the headwinds of the 2008 financial crisis, nearly derailing it and adding significantly to its costs.

4.5.6.2. Financing Aspects

According to the National Audit Office (2010) the global financial crisis dealt a big blow to the financing of the M25 motorway project. The collapse of Lehman Brothers – a large investment bank – in September 2008 precipitated a halt in bank loan syndication, which was prolonged through 2009, thus limiting the ability of commercial banks to extend credit by way of new PFI loans. The shattered market confidence that characterized that period also led to the collapse of the credit insurance market that had hitherto been central to bond financing of infrastructure projects.

As a result, bond financing as an alternative effectively seized. Consequently, the financial market was a lenders market within which price increases were difficult to resist and the arranging of financing was not only costly but also time consuming. This is why the M25 project had an unprecedented 16 banks participating in the lending syndicate with offers of between £25 and £65 million each. The National Audit Office (2010) provides a snapshot of the effect of the financial crisis on project cost by comparing the scenario at preferred bidder stage and at financial closing as shown in table 10 below:

Table 10

	Present Value Cost (£ millions)	Cost of Change (£ millions)	Percentage of total change (%)
Contract price at preferred bidder stage	2,699 ⁵²		
<i>Changes:</i>			
Bank margins, term lengths and financing fees		444	67
Other financing related costs		216	32
Cost inputs and construction dates		84	13
Other adjustments		(82)	(12)
Total change	662		
Contract price at Financial Close	3,361		

⁵² 2007 prices using a discount rate of 3.5%

Source: National Audit Office (2010)

In non-discounted terms the project's whole life contract price increased from £7,400 million to £9,600 million. In the post Lehman Brothers collapse period, lending margins increased from an average of 1% on the benchmark rate to between 1.5% and 2.2%. In addition, debt covenants by way of debt service coverage ratios and maturity became more onerous as explained below.

With respect to the funding mobilization process, as expected in the then prevailing market conditions, it was filled with challenges. Davies and Carr (2013) outline both the process and terms of financing in great detail. They suggest that the market consultation exercise undertaken by the Highways Agency ahead of the award of the contract was well worth the effort. It is disclosed that the Highways Agency was of the firm view that they would not undertake the procurement of a PFI contract without being satisfied that the market had sufficient resources to deliver the benefits as assessed by the appraisal process, which is why an extensive market consultation exercise was undertaken.

From a funding point of view, the outcome of the market consultation was unambiguous. While the market did not regard capacity as a matter of concern, the consensus was that to attract the participation of a sufficiently large number of banks, the project had to be insulated from demand risk. In addition, the banks would require assurances that they would be compensated in the event of termination of the project on account of contractor default. They also indicated that forward pricing of their lending was difficult in the prevailing circumstances and, therefore, recommended a staggered approach to both construction and financing. Another important feature of the funding mobilization process was the senior debt funding competition. Davies and Carr (2013) suggest that the Highways Agency correctly interpreted the feedback from the market consultation exercise to shape the subsequent senior debt funding competition. While the market response had signaled availability of adequate financing capacity, the Highways Agency took the view that it would be unrealistic to expect the three bidders in contention for the contract to each furnish committed funding, which would have required the financial markets to find an estimated £6,000 million in aggregate terms. As a result, this requirement was relaxed. Instead, bidders were required to provide a funding plan complete with evidence of its deliverability so as to avert the possibility that a winning bidder may not be in position to execute a contract that they have won.

The senior debt funding competition was, therefore, restricted to only the preferred bidder. In the event, the senior debt funding competition became a book-building process as a result of the tightening credit market

conditions, with the preferred bidder and the Highways Agency working in concert. Unlike previous funding competitions, bond financing was not part of the menu. Instead, the government through the Department for Transport stepped up with an offer to participate as a co-funder to the tune of £500 million. In addition, the government appealed to the European Investment Bank to come to the rescue of the project. This request was met by a positive response by way of their willingness to make available significant amounts in direct lending and guarantees. In the end, the transaction was oversubscribed but it was never certain what the pricing would be until the last minute. As a result of the oversubscription, the government's co-financing offer was not taken up. However, it was crucial in the sense that it demonstrated that the government had a contingency plan, which boosted market sentiment and allowed the transaction to close.

On 20th May 2009, the project reached financial close with a debt to equity ratio of 85:15. The financing facilities included £700 million of commercial bank debt; a European Investment Bank guarantee of up to £215 million and £200 million unguaranteed structured facility and shareholder equity contribution of £200 million. The other participating banks were Lloyds, Barclays, BBVA, SMBC, KfW, WestLB, HSBC, Bayerische, Dexia, RBS, Calyon, Helaba, Mitsubishi, NAB, Natixis and Société Générale. The syndicate was truly international in outlook as only four of the participating banks were of UK origin. This perhaps suggests the extent to which the domestic market was frozen.

As to the terms of the lending, the facilities had a maturity of up to 27 years but refinancing was encouraged through the use of step-up margins. The lenders wished to have the facilities refinanced as soon as possible as they were concerned about the long maturity creating a mismatch between their cost of funds and the lending rates. Besides stepped up margins, cash sweeps were an additional provision introduced to incentivize early refinancing. The margins are: years one to seven 250 bp; years eight to ten, 300 bp; years 11 to 27, 350 bp. The cash sweep profile is: years eight to 19, 50% of cash flow available post-scheduled debt service will be used to prepay outstanding debt and; years 20 to 27, 100% of cash flow is dedicated to debt repayment. The cash sweeps were rather contentious and not unanimously supported by the banks. This is because they exposed the shareholders to the risk of not meeting their target returns. Moreover, the difficult financial market situation had compelled the shareholders to increase their equity contribution from £106 million to £200, resulting into a corresponding decline in their equity return from 17.8% to 15%. The banks were, therefore, concerned that the 100% cash sweep could diminish the incentives for shareholders to fully commit to the project and its efficient management. Besides the foregoing, other restrictive covenants were introduced.

The National Audit Office (2010) reveals that the lending term contracted by 3 years between the preferred bidder stage and eventual financial close. Over the same interval, the minimum debt service coverage ratio increased from 1.25 to 1.4. This created new challenges of its own. According to Davies and Carr (2013), the revised debt service coverage ratios resulted in equity returns higher than required by the private consortium and unacceptable to the Highways Agency. The solution to this challenge was the introduction of a rebate mechanism, which allowed for some of the cash not needed for debt service to be rebated back to the government.

In concluding their review of the Project, Davies and Carr (2013) observe that the overall cost of finance was somewhat less affected by the financial crisis than the case study portrays. This is because the increase in margins was to an extent offset by the decline in the underlying or benchmark rates as a result of the deteriorating economic conditions that characterized the financial crisis. Indeed, value for money might have been preserved. If this is the case, it would suggest that the cost of finance envisaged at the preferred bidder stage was more than marginally out of sync with the reality in the financial markets and, therefore, the National Audit Office (2010) estimates of the increase in the present value of the whole life contract is somewhat overstated.

4.5.6.3. Lessons Learned

As with all case studies reviewed up to this point, the pivotal role played by development financing institutions, in this case the European Investment Bank is indispensable to large infrastructure projects. Equally important is the government's willingness and ability to stand behind the financing of its projects. In this case, the offer by government to co-finance demonstrated the existence of a contingency plan and lifted market confidence in the project. The case study demonstrates the beneficial impact of market consultations in the sense that they provide an indication of market appetite and the limits of risk transfer. Lastly, the case study introduced two mechanisms that bode well for affordability of PPP projects: stepped up margins to encourage early refinancing for projects that reach financial close during tight credit conditions and rebates that forestall unacceptably high equity returns arising out of sometimes unavoidable debt covenants.

4.5.7. The Norfolk and Norwich Hospital Project

4.5.7.1. Background

The Norfolk and Norwich Hospital is a 989-bed hospital owned by the National Health Service (NHS) Trust. National Audit Office (2005b) alludes to the fact that it was the first hospital built under a PFI procurement method. In January 1998, a contract to build the new hospital, maintain it and provide facilities management

services for a minimum of 30 years was awarded to a private consortium – Octagon. The project had a capital value of £229 million. Given its pioneer status, it presents an opportunity to draw lessons for projects in emerging PPP markets.

4.5.7.2. Financing Aspects

As a ground breaking project in the PFI hospital market, the financial markets were conservative in their appraisal of the project. As a result, the lending terms were rather stringent. However, on its successful completion, a combination of the improved risk perception on the part of lenders and improving market conditions by way of declining interest rates presented an opportunity to refinance the project. The projects initial capital structure and lending terms for the senior loan are shown in table 11:

Table 11

Source of Funding	Amount(£millions)	% of Total	Cost of Finance(%)
Senior debt	200	86	1) Construction: LIBOR+1.35% 2) Operation: LIBOR+1.25%
Subordinated debt	32	13.996	
Equity	1	0.004	
Total	233		

Source: National Audit Office (2005b)

The senior debt was provided by a club of banks including ABN Amro, HSBC, Bank of Scotland, Barclays and Societe Generale, with a maturity of 20 years. As shown in the column on cost of finance, the lenders introduced a step-down mechanism, which provided for a reduction in the interest margin by a full percentage point upon completion of construction. This was a reflection of the perceived risks that the construction of the hospital entailed. The hedging arrangements of the private consortium provide an indication of the absolute interest rate paid initially. In that regard, the National Audit Office (2005b) reveals that the private consortium hedged the short-term variable interest rate for 75% of their borrowings to insulate themselves against interest fluctuations through an interest rate swap that fixed their cost of finance at 6.33% until the end of 2003. The balance of 25% was hedged against movements in the retail prices index (RPI) at RPI plus 3.71% until the end of 2007. Given a loan maturity of 20 years, these hedging arrangements left the greater proportion of the loan term unprotected, exposing the project sponsors to unfavorable movements in the benchmark rate. In doing so, the private consortium took the view that movements in the benchmark rates would indeed be favorable. In the event, their risk-taking was rewarded as the general interest rates declined, setting the stage for a refinancing transaction.

According to the National Audit Office (2005b) the consortium neither undertook a funding competition nor considered bond financing for the original financial closing of the transaction. With respect to the funding

competition, several reasons are advanced for its avoidance. Firstly, the NHS Trust considered the project a groundbreaking deal already beset by considerable delays in procurements and was, therefore, anxious to conclude the transaction so as to build confidence in the PFI procurement method. Secondly, the trailblazing nature of the project limited financing alternatives available to the project. In any case, the major banks were already funding the deal, leaving less than a handful of banks to invite to the competition. Moreover, at the time, the concept of a funding competition was not an established practice within PFI procurement. Lastly, there was concern that the benefits of the funding competition could be offset by construction inflation on account of the delay in concluding the contract to accommodate the competition. As to why bond financing was not explored, besides concerns about unnecessarily delaying implementation of the project, the view was that the bond market for PFI projects was immature and unlikely to deliver improved financing terms.

With the general decline in interest rates and the exclusion of bonds in the original financing structure, the outlines of the transaction structure for subsequent refinancing of the project were in place. According to the National Audit Office (2005b), in December 2003, close to 6 years since the award of the contract and 2 years after the opening of the hospital, the project was refinanced. The refinancing transaction entailed a reduction in the cost of finance; an extension of the contract term to enhance the benefits of the transaction and an increase in the total debt. With respect to cost of finance, the bonds issued had a pricing structure of the benchmark Gilt rate plus a margin of 0.81%. This was equivalent to LIBOR plus 0.51%, representing a reduction in interest rates for the operating phase of 0.74% per annum. The contract term was extended from 30 to 35 years with an expiration date of 2037 to maximize the refinancing gains arising from the longer maturity made possible through refinancing by the use of bonds.

Because refinancing took place after the successful completion of construction and after demonstration that the operations of the hospital were satisfactory as well as under a declining interest rate environment, it offered an opportunity to relax some of the restrictive covenants that commercial bank debt entailed. This created a window to increase the project's leverage and accelerate the return to equity investors. In particular, debt service coverage ratios were less onerous and the bond maturity allowed for the spreading of principal repayments over a longer period. As a result, annual debt service amount was reduced and thereby increasing the project's debt capacity. The post-refinancing capital structure is shown in table 12 below:

Table 12

Source of Funding	Pre-refinancing (£ millions)	Post-refinancing (£ millions)	Post-refinancing (%)	increase
Senior debt	200	306	53	

Source of Funding	Pre-refinancing (£ millions)	Post-refinancing (£ millions)	Post-refinancing increase (%)
Subordinated debt	32	32	-
Equity	1	1	-
Total	233	339	45

Source: National Audit Office (2005)

As a result of the refinancing, distributions to shareholders were accelerated resulting into an increase in their return on equity from 18% to 60.4%. However, the agreement between the private consortium and the NHS Trust provided for the sharing of refinancing gains with at least 10% accruing to the Trust. This requirement was exceeded since the Trust's share was increased to 30%. This took the form of reduced annual payments to the private consortium. After refinancing, annual contractual payments reduced by £3.6 million from £42.7 million to £39.1 million, representing a reduction of 8%.

4.5.7.3. Lessons Learned

As the use of the PPP procurement method develops, the nature of deals and their pricing will evolve too, owing to variations in a range of factors, such as the development of financial markets; increased awareness and appreciation of PPP contracts and relevant macroeconomic variables such as inflation. It is, therefore, important for the concerned authorities to maintain a watching brief on awarded projects and collect the necessary information to identify the effects that different factors are having on the pricing of deals. In addition, it is important to have contractual provisions that ensure governments share in the beneficial effects on procured projects by favorable changes in relevant factors such as commercial lending terms. More generally, contractual flexibility is essential and may well facilitate enhancement of affordability of procured contracts and increase value for money.

4.6. Conclusions on Lessons from past Infrastructure Projects

The case studies of completed projects have brought to the fore important lessons that relate to their financing. The more salient ones are summarized in this section. With respect to the potential role of the domestic financial sector, its depth is important if currency mismatches and, more broadly, country risk are to be hedged through significant participation of the domestic financial institutions. As to the nature of financial institutions, participation of development finance institutions is beneficial both from the cost of financing and magnitude of funding perspectives. Additionally, they provide comfort to commercial lenders, which positively impacts the cost of finance. Furthermore, the flexibility of bank- relative to bond-finance from both a construction and refinancing perspective has been highlighted. This suggests the need to explore the attraction of institutional investors to projects by means such as subordinated debt or equity, in addition to bonds. But the potential role of the non-bank segment of the financial sector can't be underestimated as it is

a proven source of enormous and long-term capital. However, bond financing is best-suited to the post-construction stage for refinancing.

The depth of the financial sector notwithstanding, project's that entail large capital requirements should be financed in tranches, if their technical features permit a phased approach. This has the potential to positively affect the cost of finance by not only keeping the financial outlays for each phase within manageable limits but also through the positive effect on risk perception of the successful implementation of earlier phases. By extension, market consultation exercises are important to gauge appetite for individual projects and test the limits of risk-transfer before committing to a PPP procurement process.

On the role of the public sector, governments should stand ready to provide support even to privately financed projects. The use of PPPs to procure infrastructure projects does not entirely relieve governments of financial responsibilities especially when projects encounter difficulties. This not only calls for contingency planning but also careful selection of the projects to be implemented through the PPP method since the likelihood of drawing on public funds is not always remote. Because market conditions have a bearing on the cost of funds, whenever possible, the procurement of PPP projects should endeavor to take advantage of favorable market conditions. Relatedly, procuring agencies should maintain a watching brief on market conditions with a view to taking advantage of improvements in the financial markets through the refinancing of already contracted projects and for which the contractual provisions should be provided for upfront. In addition, the contractual framework should ensure that such gains are fairly shared between the public and private partners. In that regard, features that encourage refinancing such as stepped-up margins and cash sweeps should be provided for, whenever relevant.

With respect to equity financing, the quality of equity investors might be just as important as the cost of their funds in the context of successful implementation of projects. Nonetheless, the procuring entities should ensure that the return to equity reflects the risks assumed for purposes of value for money monitoring. In that regard, mechanisms such as rebate of equity distributions should be provided for to make it possible to claw-back excessive distributions to investors thus enhance the affordability and value for money of PPP projects. In addition, contractual arrangements should be framed in a manner that permits restructuring of project companies, if need be. By extension, governments must not shy away from restructuring of projects and reigning in equity investors but with clear justification for such a course of action.

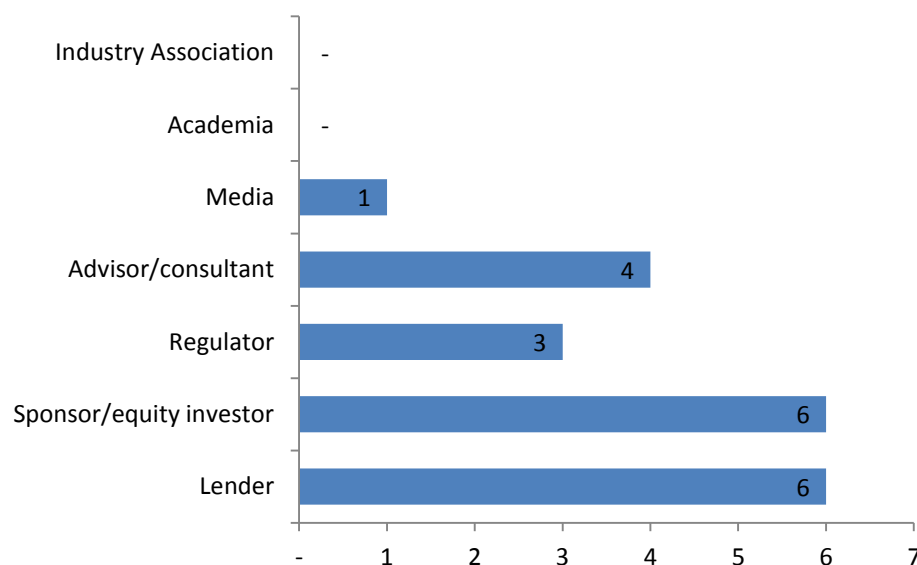
5. Survey Findings and Recommendations

As indicated in section 1.4 of this report, this study, in part, seeks to document the experiences of countries where the use of private financing in infrastructure development is more established with particular focus on the cost of funds and to assess the relevance of their approaches to the Ugandan context. The latter investigation was by way of a survey.

5.1. Respondent Profile

The survey was undertaken between December 2015 and January 2016 and sought to elicit responses on the significance of private finance for infrastructure; the underpinnings of cost of finance to infrastructure projects and possible interventions that the government of Uganda can undertake to address the high cost of capital for privately financed infrastructure projects. The survey was based on a semi-structured questionnaire, which is at Annex A of this report. Out of the targeted 28 respondents, responses were received from 20 of them; representing a response rate of 71.4%. The non-response was mostly on the part of lenders and equity investors without a physical presence in the country. The majority of respondents were lenders and equity investors with exposure to existing infrastructure projects as shown in the diagram 1 below:

Diagram 1: Respondent Profile



Other respondent types included relevant regulatory bodies such as the Capital Markets Authority, The Uganda Retirement Benefits Authority and the Privatization Unit of the Ministry of Finance, Planning and

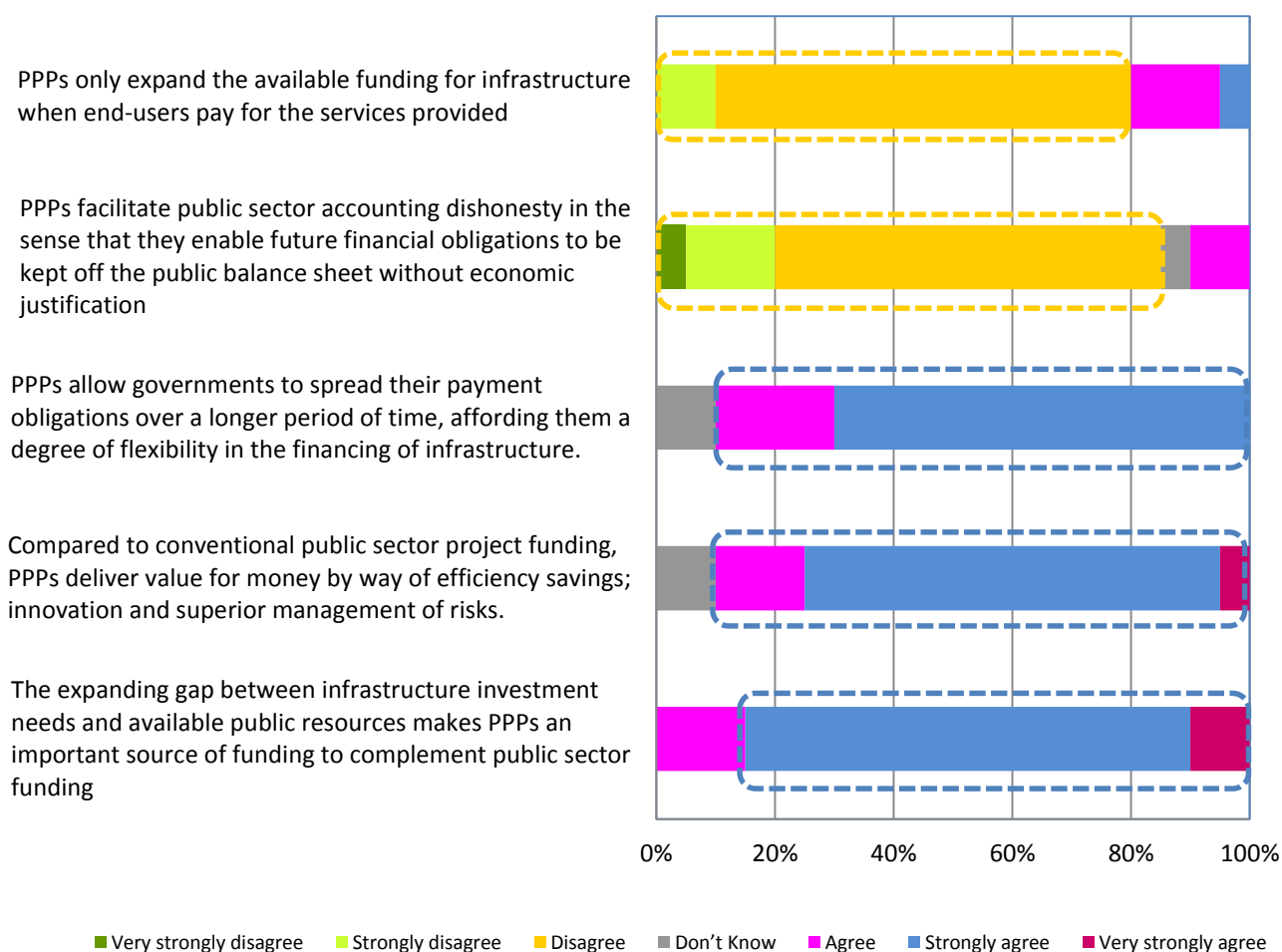
Economic Development as well as consultants and advisors to infrastructure projects and the media. The list of respondents in their entirety is at Annex B.

5.2. Perceptions of Private Financing for Infrastructure Projects

5.2.1. Value of PPPs

Respondents were widely supportive of private financing of infrastructure in the form of PPPs, which they believe represent value for the project host economy. Their responses are illustrated in diagram 2 below:

Diagram 2



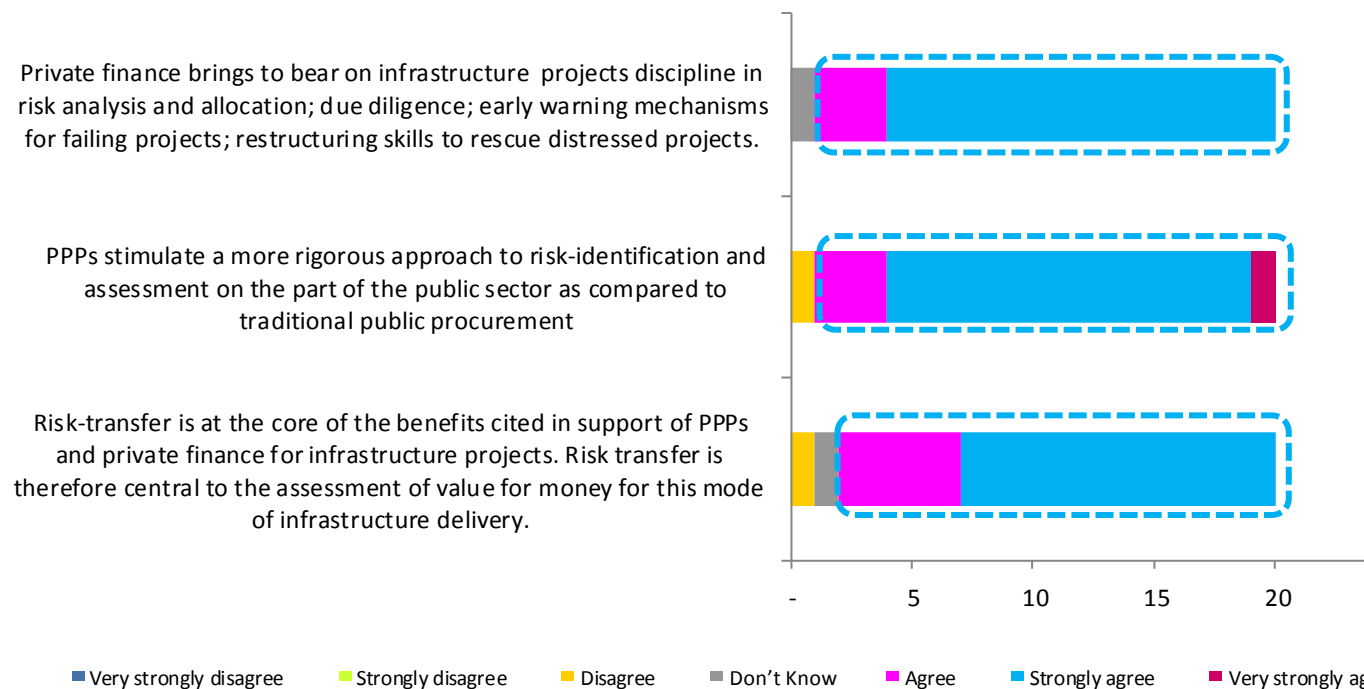
Respondents were almost unanimous that private finance represents a complementary source of funding to public resources, which is critical in the context of the ever-expanding financing gap for infrastructure. The

majority of respondents were also positive that private financing creates room for flexibility in the financing of infrastructure and represents value for money through efficiency savings, innovation and superior risk-management. Their responses also appear to deflate some of the more well-known criticisms of private financing for infrastructure such as the argument that PPPs facilitate accounting gimmickry on the part of the public sector through a superficial transfer of liabilities off the public balance sheet.

5.2.2. Source of Value in PPPs

The source of value in private financing for infrastructure was also investigated. Based on the responses, superior risk-management on the part of private investors in infrastructure emerged as the most important driver of value in private financing for infrastructure. The responses are illustrated in diagram 3 below:

Diagram 3



5.3. Perception on the Cost of Private Finance for Infrastructure

5.3.1. Are Privately Financed more Expensive than their Public Counterparts?

Respondents were invited to share their opinion on the widely held belief that private finance for infrastructure is more costly for the taxpayer when compared to projects financed through publically procured debt. As shown in diagram 4 below, respondents largely confirmed this view.

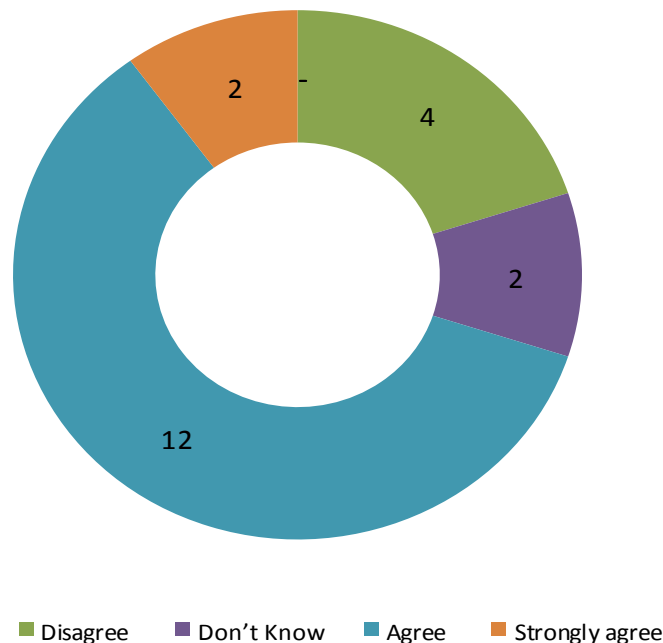
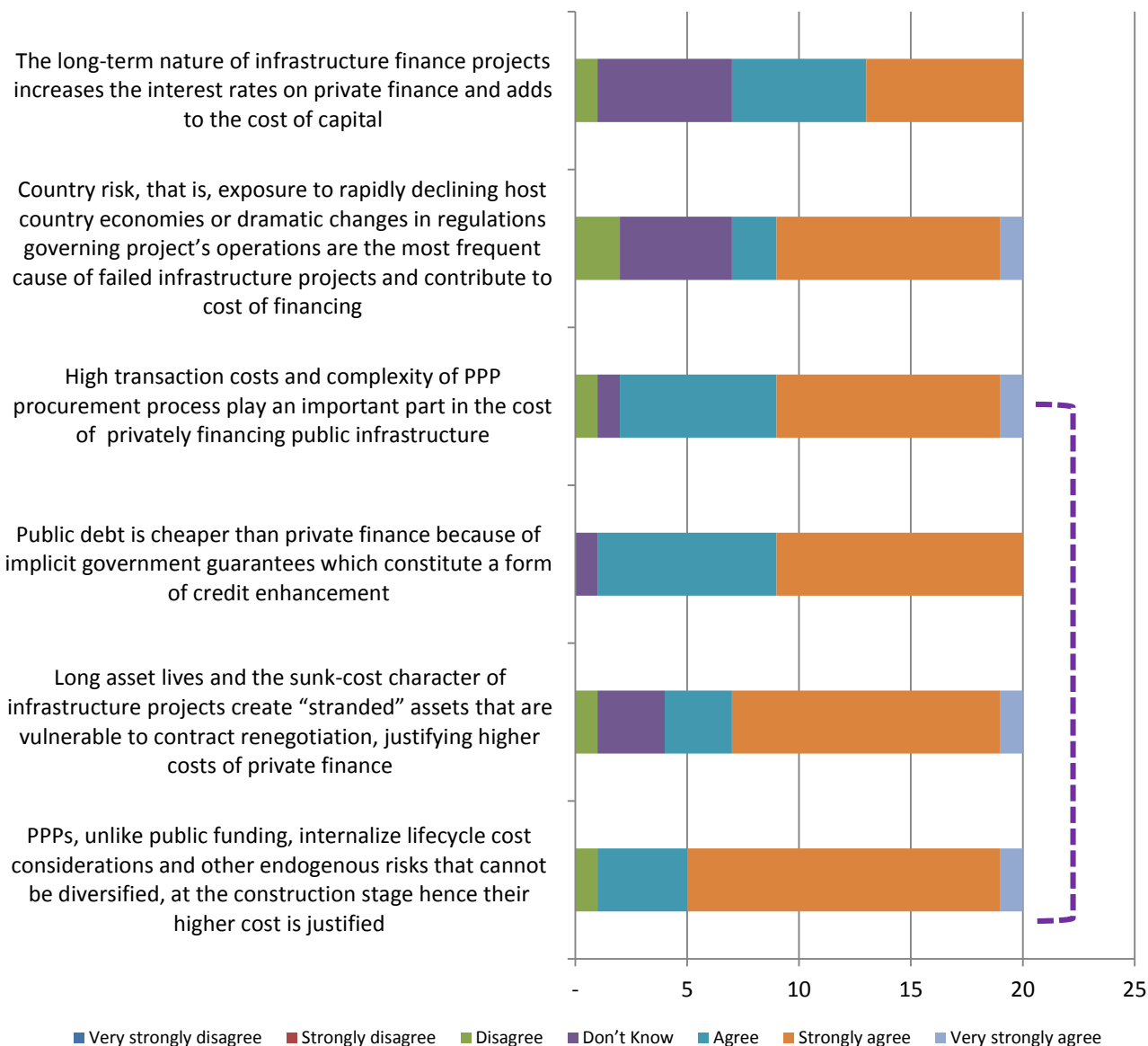


Diagram 4

5.3.2. Why Do Privately Financed Projects Cost More?

Beyond expressing an opinion on the comparison between the cost of private financing and publically procured debt, respondents were invited to make an opinion on some of the reasons advanced for the disparity in cost between private and public sources of financing for infrastructure. The explanations that received the widest support include the fact that PPPs entail high transaction costs given the complex procurement processes; the long-term nature of infrastructure investments and their vulnerability to contract renegotiations and the fact that PPPs internalize lifecycle costs and endogenous risks. In addition, the view that implicit guarantees associated with publicly procured debt explains its edge over private financing received wide support from respondents. Their responses to this query are illustrated in diagram 5 below:

Diagram 5



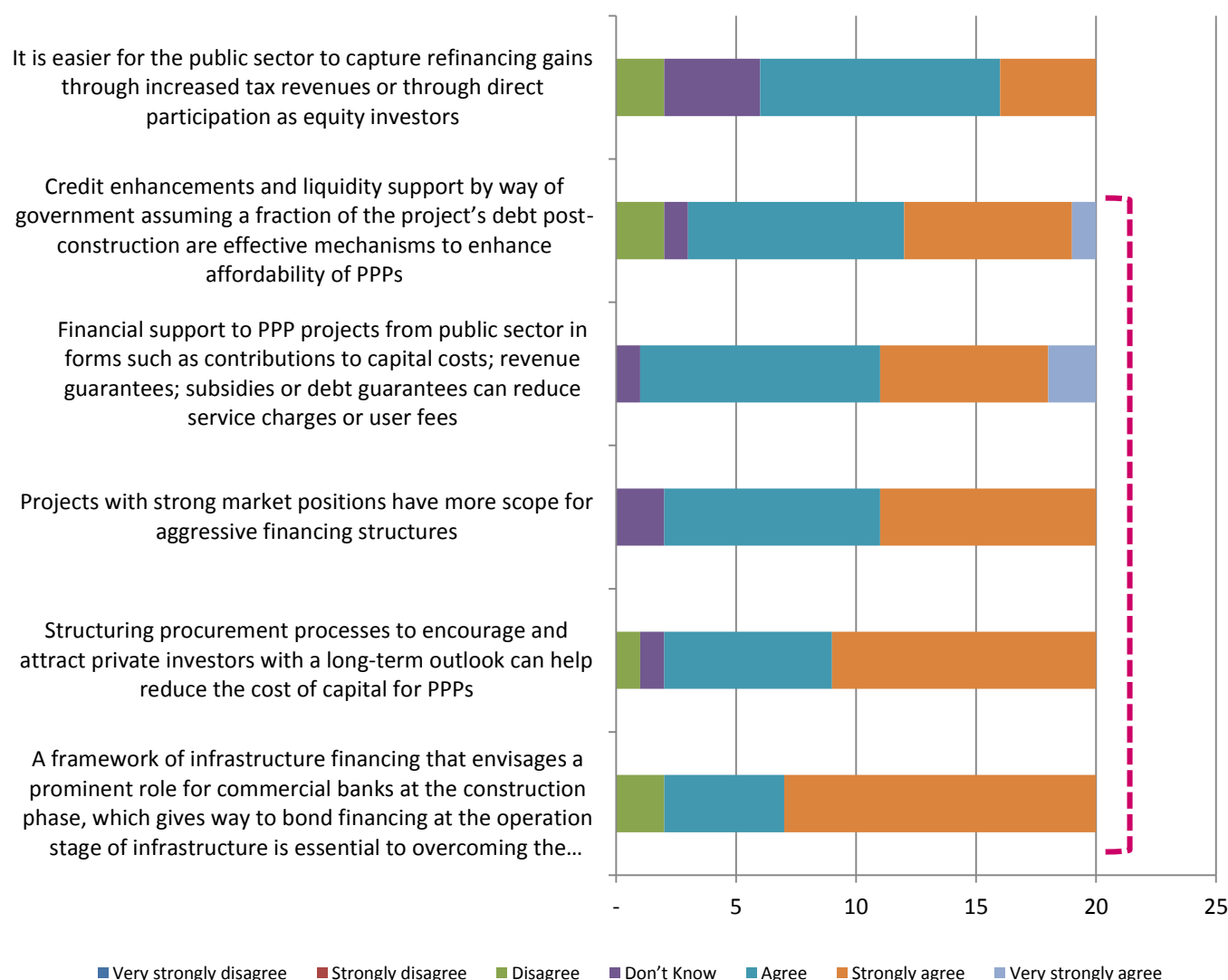
Other issues raised by respondents about infrastructure financing but not initially part of the semi-structured survey tool and directly related to the cost of finance include concerns about the excessive cost of compensation for way leaves, which is regarded as a serious challenge to the financing of infrastructure

projects that ought to be addressed. In addition, excessive cost overruns and poor estimation of project costs is another challenge identified by respondents.

5.3.3. What can be done to address the High Cost of Private Finance?

In as far as the solutions to the high cost of financing are concerned, proposals relating to the structuring of procurement processes; market positioning of individual projects and a more activist role of government in the financing of projects found favor with respondents. Their responses to this line of inquiry are illustrated in diagram 6 below:

Diagram 6



Other proposals suggested by respondents include the urgent need for the country to address its deteriorating trade balance so as to increase its capacity to service foreign currency denominated debt. In addition, it was suggested that promotion of south-to-south infrastructural investment bodes well for the efforts to address the high cost of capital. For instance, the upsurge of Srilankan investment in Uganda's energy sector is believed to entail a more favorable country risk rating relative to that of European or American investors given the former's exposure to more adverse investment environments. It was, therefore, recommended that the government of Uganda actively promotes infrastructure investment opportunities to countries that fit the suggested investor profile.

5.4. Assessment of Intervention Options for Uganda

5.4.1. Interventions to Address the High Cost of Private Finance for Infrastructure

Respondents were invited to take a view on possible interventions by the government of Uganda to address the high cost of capital for privately financed infrastructure. Their responses were largely consistent with their views on what can be done to bring down the cost of finance for infrastructure in general. To that end, they support a more activist state role in the financing of projects as either a co-funder or investor. They are also favorable to the view that pension funds be encouraged to take direct equity or quasi-equity stakes in infrastructure projects. They are also supportive of measures to de-risk projects from the outset such as avoiding procuring projects with high degrees of uncertainty through the PPP mode. In addition, respondents are well-disposed towards a stricter project selection and award regime as well as advance testing of project risk limits through market consultation. Other options believed to be appropriate for Uganda include a preponderant use of concessional lending from development finance institutions and addressing of currency risk through avoidance of currency mismatches between project revenue and debt as well as equity financing. Lastly, the prospect of refinancing when credit market conditions shift favorably is also positively regarded by respondents. Their responses in their entirety are illustrated in diagram 6:

Diagram 7

Suggested interventions to address the high cost of private finance for infrastructure



Respondents also made several proposals outside of those presented by the survey tool. These included a suggestion that PPP contracts should be awarded to entities looking to do business on a sustainable basis that typically have a sufficiently long-term perspective as opposed to those seeking windfall gains. For instance, some entities in the infrastructure space out of their own volition make effort to benchmark costs so as to lower tariffs and enhance affordability. In addition, enclave financing through the application of project financing techniques on sub-sovereign borrowers represents a possible solution and its piloting in Uganda is underway championed by some international development financing agencies. Under enclave financing, the public agencies or sub-sovereigns assume the SPV/sponsor role in the project structure. Thus the absence of a private sponsor with associated return expectations is removed from the equation thus addressing affordability concerns without the loss of the other benefits associated with project financing techniques.

It was also suggested that the government needs to arrest and reverse the deteriorating balance of payments position urgently. Such a reversal will result in greater comfort on the part of lenders and sponsors about its capacity to meet its contractual obligations translating into lower cost of funds. Additionally, the government should take steps to hasten the pace of industrialization which will address the challenge of excess capacity at off-peak periods translating into lower tariffs with regard to energy.

With respect to procurement processes and project preparation, some of the respondents felt strongly that PPP projects should always be competitively tendered so as to take advantage of competitive tension between bidders. In addition, care should be taken to avoid changing the scope of the project mid-stream, which often creates conditions for deal creep and scope to increase expected returns by investors. Relatedly, the estimation of project costs ought to be improved and affordability assessments undertaken well ahead of their tendering.

As to the depth of the financial markets, it was suggested that the East African community is effectively a single domestic investment area. And so, floating regional-wide infrastructure bonds can potentially overcome the limitations of individual country financial sector depth. In as far as infrastructure bonds are concerned, a section of respondents took the view that for those PPP projects wishing to issue infrastructure bonds, government subsidies or co-investment should be avoided unless structured in an arm's length fashion as this could potentially harm the rating of infrastructure bonds issued by project SPVs. In as far as country risk is concerned, respondents urged the government to ensure that it continues to meet its obligations under contracted PPPs to demonstrate that it has both the will and capacity to fulfill its obligations

so as to diminish concerns about political, country and regulatory risk, which will translate into a more favorable perception by both lenders and sponsors.

5.4.2. Specific Interventions for Uganda's Financial Sector

Respondents were also invited to validate possible interventions specific to Uganda's financial sector. To that end, their responses are illustrated in diagram 7 and 8 below.

Diagram 8

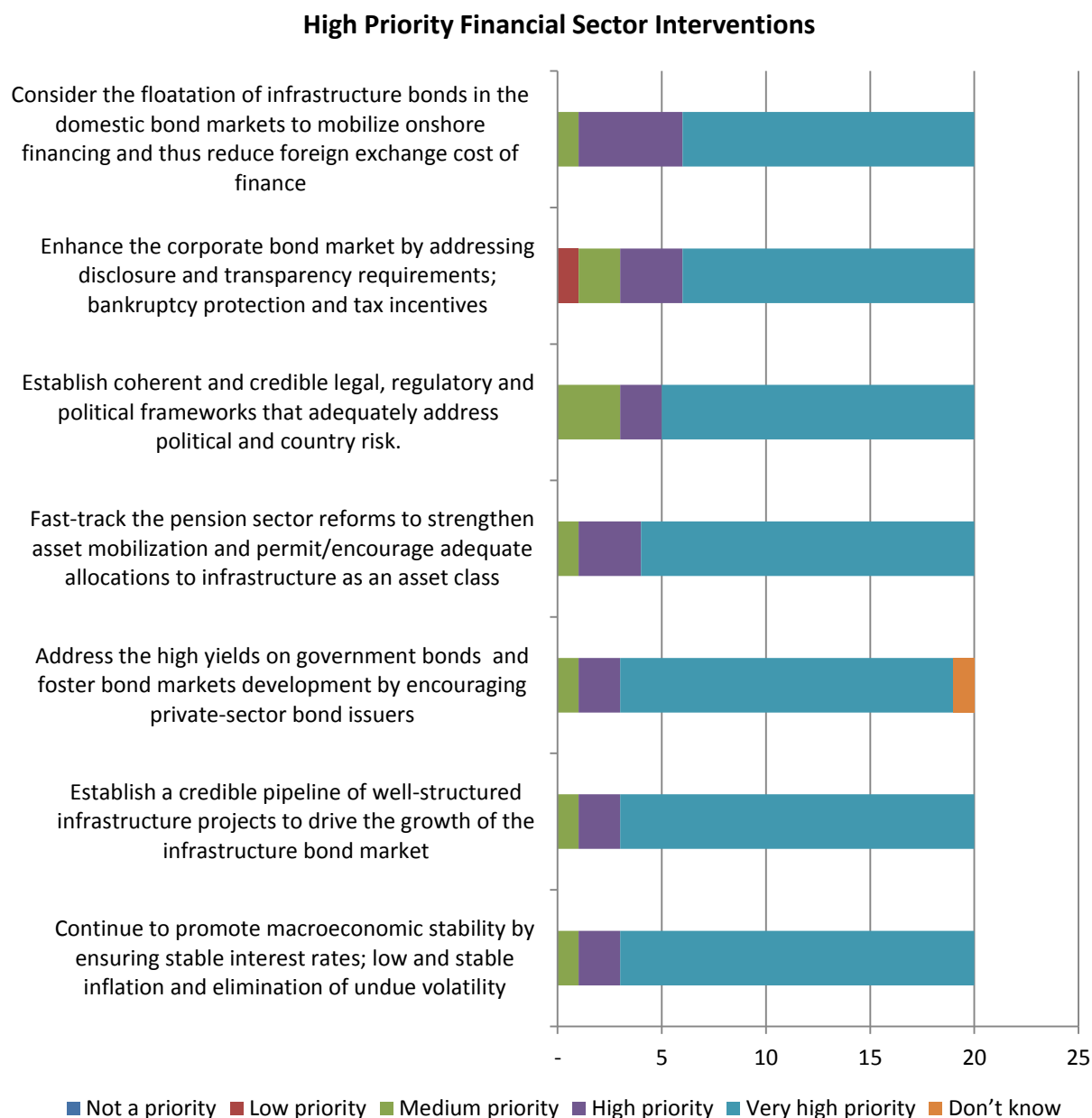
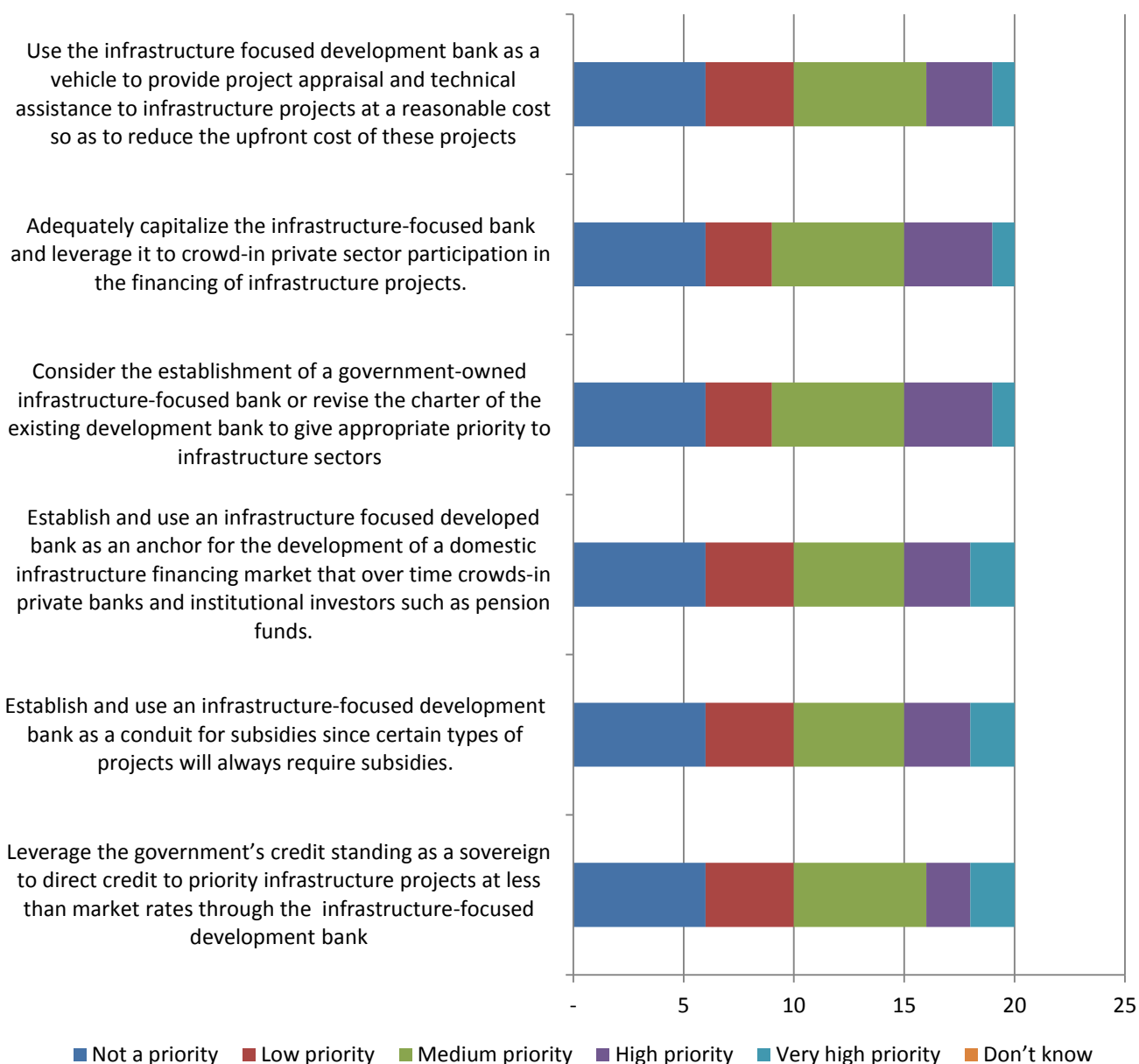


Diagram 9

Low-to-Medium Priority Financial Sector Interventions



Based on the highlights above, respondents clearly favor interventions relating to the development of the bond market for infrastructure projects; establishment of a credible pipeline for infrastructure projects; reform of the pension sector and a stable regulatory and political environment. Proposals relating to the establishment and operation of an infrastructure focused development bank received a lukewarm reaction from respondents.

6. Summary, Conclusions and Recommendations

6.1. Introduction

This chapter presents a summary of findings and conclusions of the study as well as the recommendations. In addition, it recapitulates the research problem.

6.2. Summary of Findings

This thesis was stimulated by the need to resolve the conundrum of unaffordable yet indispensable private financing for infrastructure in the specific context of Uganda characterized by an underdeveloped financial sector and a large and growing infrastructure expenditure shortfall. In shining a light on this puzzle, the study sought to draw lessons from the experiences of more developed economies that have successfully navigated similar challenges.

The literature review under Chapter 2 established that private financing of infrastructure is interwoven with PPPs and project finance. In addition, the literature review presented a mixed assessment of the benefits of private financing of infrastructure. On the one hand, private financing of infrastructure is regarded as beneficial in the sense that it expands the available resources for infrastructure development; engenders enhanced risk-management and assumes a whole-life approach to project development through integration of design, construction and operation, which delivers higher quality assets and lower lifecycle costs. These inherent benefits justify a premium by way of higher cost of finance, which is also partly explained by the non-recourse nature of project finance as compared to the full-recourse nature of public borrowing. On the other hand, private financing is criticized as merely politically expedient as it superficially addresses the challenge of limited public resources and facilitates the off-balance sheet treatment of what is effectively public debt and, therefore, not deserving of the premium it enjoys. The literature review also established that the concept of bankability of individual projects underpins the cost of private finance and that there are variations in approach to the assessment of bankability between public and private sectors, which partly explains the perception of higher cost of private financing. With regard to economic fundamentals and the role of domestic financial markets, the literature review suggested that weak and unstable economic fundamentals heighten the costs and risks faced by private investors in infrastructure while domestic financial markets have an indispensable role given the large local content of infrastructure projects. Lastly, the literature review suggested that the high cost of private finance can be addressed through limiting unmerited financial windfalls

to private investors; providing public financial support to projects in forms such as contribution to capital costs; revenue guarantees and debt guarantees and the streamlining of procurement processes.

In Chapter 4, the factors that underpin the pricing of private finance for infrastructure were examined and the scope for the public sector to intervene and affect the pricing investigated by way of a case study of the Brazilian development bank-BNDES. The findings of this line of inquiry were that the cost of funds of both lenders and equity investors are determined by both project-specific and general market risks. With particular regard to bank lending, their own cost of funds, which is, in turn, dependent on their capital structure, transaction costs and the regulatory regime, determine the cost of their lending to infrastructure projects. As for equity investors, the perceived risks of a project; their cost of capital and the availability as well as terms of debt financing influence their expected return. The expected return on equity is also influenced by the need to recoup the costs associated with unsuccessful bids; complexity and fragmentation of procurement processes and the investment climate with respect to the legal and regulatory environment. In addition, the review of pricing indicated that the nature of project finance itself characterized by the absence of guarantees; reliance on cash flow projections as opposed to analysis of past performance; a limited security package comprised of project contracts and the extensive due diligence requirements had a bearing on its pricing. Furthermore, the unique attributes of infrastructure as a distinct investment asset class do influence return expectations of investors in the asset class. For instance, the asset class is regarded as complex and politically sensitive and particularly prone to renegotiation risk given its sunk-cost character. It is for this reason and the associated country risk factor that most infrastructure projects have a credit rating at or below investment grade. Also, infrastructure projects have a lifecycle that spans the stages of construction and operation with variations in risk profile. The review also found that the participation of export credit agencies and development finance institutions in the financing of infrastructure has the potential to reduce the cost of funds. Finally, the BNDES case study revealed that there was indeed scope for public sector interventions to reduce the cost of funds to infrastructure projects as the bank was actually charging lower interest rates than both commercial banks and infrastructure finance bonds. This was largely put down to its lower cost of funds.

The study went on to assess the potential role of domestic capital markets in the private financing of infrastructure and examined the prospects of infrastructure bonds and securitization in the Ugandan context under Chapter 5. The outcome of this inquiry was that for the domestic financial markets to provide affordable and sufficiently long-term financing to infrastructure projects, the sector must be sufficiently deep and broad as to contain both banks and non-bank financial institutions with the requisite wherewithal. In addition, a high

savings rate; macroeconomic stability and effective competition within the domestic financial markets are essential building blocks. As to the prospects for infrastructure bonds and securitization, the findings present a mixed picture. The positive aspects include sound macroeconomic policies and management; a well-articulated infrastructure development policy and pipeline as well as a degree of experience in the actual implementation of privately financed projects and the existence of basic capital markets infrastructure. The weaker elements include a low level of capital market development; weak legal and regulatory framework for investor protection and a small and uncompetitive pensions sector. On balance, the study concluded that in the short-to-medium term, the outlook for infrastructure bonds and securitization is fragile.

Having completed the assessment of theoretical and policy aspects of infrastructure finance, the study delved into examination of completed projects through case studies drawn from Brazil, South Korea, United Kingdom and Uganda under chapter 6. The findings confirmed the preeminent role of the domestic financial sector in as far as stemming currency mismatches and country risk and the crowding-in of international investors are concerned. The flexibility of bank financing and the depth of public debt markets were also underscored as essential to infrastructure finance. Other lessons distilled from the case studies include the need to phase projects with large capital requirements; the importance of undertaking market consultations to assess investor appetite and test the limits of risk transfer and the importance of a rigorous approach to project selection as well as the need for contingency planning on the part of the public sector. In addition, the case studies indicated that the timing of project implementation has potential to affect the cost of funds and should, therefore, be orchestrated in such a manner as to take advantage of favorable market conditions. Similarly, favorable market conditions should be exploited to refinance already procured projects. Lastly, particular attention should be paid to the quality of equity investors as this has a bearing on the cost of funds and steps should be taken to minimize windfall financial gains at any point during project operation. Lastly, the dominance of development financing institutions as a source of funds for infrastructure projects emerged as an aspect that had a significant impact on cost of funds and, ultimately, affordability of projects.

To assess the relevance to the Ugandan context of approaches to the reduction of the cost of finance for privately financed infrastructure suggested by the case studies of completed projects and the desktop research, a survey was undertaken. The respondents to the survey were largely supportive of private financing of infrastructure, which they regard as a complementary and valuable source of funds. As to the interventions that are deemed more feasible, the development of the bond market for infrastructure projects; establishment of a credible pipeline for infrastructure projects; reform of the pension sector and a stable

regulatory and political environment emerged top. Proposals relating to the establishment and operation of an infrastructure focused development bank received a lukewarm reaction from respondents.

6.3. Recommendations and Conclusions.

The study has established that in the face of limited public funding and a deficit in infrastructure development expenditure, private financing for public infrastructure is indispensable. However, it is relatively more costly, with good reason. However, there is scope for the public sector to affect favorably the cost of private financing for infrastructure. In particular, steps to address regulatory, political and country risk are critical. Equally important are measures to address macroeconomic instability and strengthen balance of payment positions as well as reforms to widen and deepen the financial sector. In addition, optimizing project selection and preparation as well as establishing a credible pipeline of infrastructure projects coupled with suitable financing plans can positively impact the cost of private financing for infrastructure. The recommendations arising out of the findings are:

6.3.1. Rigorous Project Selection Regime

As indicated by the case study of completed projects across several jurisdictions in chapter 6, it is clear that not all projects are inherently suited for implementation through private financing. To that end, projects with strong market positions such as natural monopolies have a more scope for aggressive financing plans that can potentially secure private financing on more competitive terms. In addition, as shown by the analysis in chapters 2, 4, 5 and 6, private financing is inherently more expensive than publically procured debt. That being the case, its use should be judicious and applied to truly important national projects to whose financing the public sector must stand ready to contribute. Based on the foregoing concerns, a rigorous project selection regime is essential to the realization of the benefits of private financing without being deprived of value for money.

6.3.2. Streamline Procurement Processes, Project Management and Financing Plans

The study has revealed that the cost of financing is often determined by market conditions at different points in time and that it is possible to secure more competitive terms by orchestrating the procurement of infrastructure projects to coincide with more favorable market conditions. It has also come to the fore that, the expected return on equity is, in part, reflective of the complexity and drawn-out nature of procurement processes of privately financed infrastructure projects. In addition, the findings indicate that procurement processes that entail market consultation exercises are beneficial through the assessment of investor

appetite and the limits to risk transfer and ultimately improve the structuring of projects. It is, therefore, evident that streamlining of procurement processes has the potential to impact on cost of funds. The study has also shown that it is possible for project sponsors at any point during the operation period to refinance the project and enjoy unmerited financial windfalls. It is important that the public sector is not rigged out of such schemes through maintaining a watching brief on already procured projects. This necessitates the putting in place of the requisite project management structures and contracting regime. In addition, the case studies of completed projects clearly pointed to the beneficial role that development financing institutions play both in terms of magnitude of resources but also with regard to more competitive lending terms. As a result, whenever possible, the financing plans of infrastructure projects should have development financing institutions as a dominant source of funds.

6.3.3. Fortify Macroeconomic Stability

Under chapter 4, it was shown that country risk and in particular exposure to rapidly declining economic fundamentals is a major factor in the pricing of both debt and equity in what is referred to as the country risk premium. It is, therefore, important to take steps to improve the project host economy's balance of payment position and maintain stable economic fundamentals such as interest rates, exchange rates and inflation rates.

6.3.4. Deepen the Financial Sector

Under chapter 4 and 5, it was shown that while the banking segment of the financial sector plays a particularly crucial role during the construction stage, bond financing is indispensable if a sufficiently long-term intermediation profile necessary to finance infrastructure is to be realized. For this reason, it is important to stimulate the development of capital markets through steps such as the liberalization of the pension sector and strengthening of the legal and regulatory framework so as to assure an adequate investor protection regime. Effective competition within the banking segment and between the banking and non-bank sectors is important if financing on competitive terms is to be secured. It is for this reason that strengthened regulation is essential to the deepening of the financial sector.

6.3.5. Further Academic Research

Under chapter 7, survey respondents flagged enclave financing and south-to-south infrastructure investments as emerging approaches to competitive infrastructure financing. Given the emergent nature of

the two approaches and the fact that they were highlighted by respondents with exposure to infrastructure projects, they merit further academic investigation to shine a light on their benefits and drawbacks.

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ANNEX A: SEMI-STRUCTURED SURVEY QUESTIONNAIRE

Thank you for agreeing to complete this survey. The survey forms a part of the interviewer's thesis for a Master of Finance and Investment degree at the Wits Business School, University of Witwatersrand, South Africa.. Please note that your responses will be kept confidential and your company will not be mentioned anywhere: results will only be reported in the aggregate. If you have any questions about this survey, please contact Edgar Kamara on +256772567262, edgar.kamara@conref.se and edgar.kamara@gmail.com.

You may also directly contact the Wits Business School as per the address indicated in the attached introductory letter.

1. Respondent Type:

Please tick yes or no against the relevant respondent type

Respondent	Yes	No
Lender		
Sponsor/equity investor		
Regulator		
Advisor/consultant		
Media		
Academia		
Industry association		

2. Value of PPPs and Private Finance of infrastructure

A) Please indicate the extent to which you agree or disagree with the following statements by ticking the relevant box on the right:

	Very strongly disagree	Strongly disagree	Disagree	Don't Know	Agree	Strongly agree	Very strongly agree
The expanding gap between infrastructure investment needs and available public resources makes PPPs an important source of funding to complement public sector funding.							
Compared to conventional public sector project funding, PPPs deliver value for money by way of efficiency savings; innovation and superior management of risks.							

	Very strongly disagree	Strongly disagree	Disagree	Don't Know	Agree	Strongly agree	Very strongly agree
PPPs allow governments to spread their payment obligations over a longer period of time, affording them a degree of flexibility in the financing of infrastructure.							
PPPs facilitate public sector accounting dishonesty in the sense that they enable future financial obligations to be kept off the public balance sheet without economic justification							
PPPs only expand the available funding for infrastructure when end-users pay for the services provided.							
PPP-delivered infrastructure is more costly because the cost of private sector financing is expensive relative to public sector funding.							
Risk-transfer is at the core of the benefits cited in support of PPPs and private finance for infrastructure projects. Risk transfer is therefore central to the assessment of value for money for this mode of infrastructure delivery and ultimately the basis for the transfer of projects from the public sector balance sheet to the private sector.							
PPPs stimulate a more rigorous approach to risk-identification and assessment on the part of the public sector as compared to traditional public procurement.							
Private finance brings to bear on infrastructure projects discipline in risk analysis and allocation; due diligence; early warning mechanisms for failing projects; restructuring skills to rescue distressed projects and capacity to integrate the design, construction and maintenance elements of the project as well as avail private sector long-term performance management skills.							
The benefits of private finance and the challenges of their replication through alternative procurement arrangements are sufficiently large as to justify the premium paid through higher private financing costs							
Government borrowing costs are lower because they borrow on full recourse basis while private sector project companies involved in infrastructure typically borrow on a non-recourse or limited recourse basis							
Capital-intensive public infrastructure that delivers vital public services should remain under government ownership because it's far too risky or not sufficiently cash generative to justify private possession							

B).Please share additional views or insights on the value (or lack of it) of PPPs and private investment in infrastructure not captured in section A above

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3. Cost of Finance

Please rate to what degree you agree or disagree with the following statements by ticking the relevant box on the right:

	Very Strongly disagree	Strongly disagree	Disagree	Don't Know	Agree	Strongly agree	Very strongly Agree
Privately-financed projects cost taxpayers more than their public-debt-financed counterparts							
Public debt is cheaper than private finance because of implicit government guarantees which constitute a form of credit enhancement							
PPPs, unlike public funding, internalize lifecycle cost considerations and other endogenous risks that cannot be diversified, at the construction stage hence their higher cost is justified							
Long asset lives and the sunk-cost character of infrastructure projects create "stranded" assets that are vulnerable to contract renegotiation, justifying higher costs of private finance							
Domestic/on-shore sources of funding are indispensable to affordability of privately financed infrastructure partly because the large local content in the form of civil works of infrastructure makes imposes limits on concessionary funding from export credit agencies							
Limiting unmerited financial windfalls to private investors can help address the high cost of finance under PPPs							
Preventing financial windfalls to private investors in PPPs achieved through refinancing of project debt by obliging them to share refinancing gains with the public sector can help address the high cost of funding							

	Very Strongly disagree	Strongly disagree	Disagree	Don't Know	Agree	Strongly agree	Very strongly Agree
The public sector to capture the refinancing gains through the increased flows from tax revenues or through direct participation in the projects as equity investors.							
Financial support to PPP projects from public sector in forms such as contributions to capital costs; revenue guarantees; subsidies or debt guarantees can reduce service charges or user fees							
Credit enhancements and liquidity support by way of government assuming a fraction of the project's debt post-construction are effective mechanisms to enhance affordability of PPPs.							
Structuring procurement processes to encourage and attract private investors with a long-term outlook can help reduce the cost of capital for PPPs							
The long-term nature of infrastructure finance projects increases the interest rates on private finance and adds to the cost of capital							
Capital and liquidity requirements that compel banks to match the tenor of sources of funds and their lending terms has spawned the use of step-up interest margins and cash sweeps, which may erode the incentives of equity investors in infrastructure projects							
Projects with strong market positions have more scope for aggressive financing structures							
One of the more important considerations in determining the cost of capital by way of hurdle rates is the need to recoup the costs incurred in preparing bids that were unsuccessful							
The actions of conservative lenders who set high debt cover ratios translate into higher expected equity returns than is justified by the risk borne by equity investors							
Transaction costs and complexity of PPP procurement process play an important part in the cost of privately financing public infrastructure							
Country risk, that is, exposure to rapidly declining host country economies or dramatic changes in regulations governing project's operations are the most frequent cause of failed infrastructure projects and contribute to cost of financing							
A framework of infrastructure financing that envisages a prominent role for commercial banks at the construction phase, which gives way to bond financing at the operation stage of infrastructure is essential to overcoming the challenge of cost of finance							
A financial system broad in the sense of potential investors and balance sheet structure as well as deep in the sense of balance sheet size will have greater scope for risk allocation and successful financing infrastructure projects.							
Off-take agreements such as Power Purchase Agreements superficially address underlying currency mismatches since the cost is ultimately borne by the end-user in domestic currency denominated tariffs.							

B) Please share other considerations that could be at play in the determination of the cost of financing for privately funded infrastructure projects that you regard as important.

[illegible]

4. What Should the Government of Uganda do to address the high cost of capital of privately financed infrastructure projects?

A) Please rate to what extent the proposals below are a priority by ticking the relevant box on the right:

	Not a priority	Low priority	Medium priority	High priority	Very high priority	Don't know
Effectively insulate the public sector from construction and operation risk through by transferring them to the private investors						
Avoid currency mismatches between PPP or Engineering and Construction contracts and the debt financing contracts						
Negotiate flexibility in contracts for privately provided debt to enable refinancing when it becomes a feasible option along the long contract durations that characterize infrastructure projects						
Negotiate overlapping payment schedules to address affordability of user-fees or capacity payments to optimize cash flows to senior and subordinated debt						
Negotiate step-down mechanisms to reduce the required rates of return on equity post-construction so as to enhance affordability						
Award PPP contracts to private sector consortia with vast experience as their experience positively impact financing costs						
Have a proven mechanism to identify truly important projects and set aside the necessary resources to bear the public sector portion of risk						
Avoid procuring projects that entail a high degree of uncertainty such as acquisition of land and way leaves through PPPs						

	Not a priority	Low priority	Medium priority	High priority	Very high priority	Don't know
Intervene to bring down the cost of funds through infrastructure guarantees, infrastructure funds and tax incentives						
Ensure that the sources of financing for privately financed projects are dominated by development financing institutions whose lending is on concessional terms						
In the context of an underdeveloped capital market, government should encourage institutional investors such as pension funds to take direct equity stakes or extend subordinated debt to infrastructure projects.						
Avoid entering into direct agreements with lenders to private consortium so as to incentivize them to undertake adequate due diligence of projects since direct agreements are quasi-guarantees to lenders						
Avoid the transfer of government assets to the private consortium ahead of the private sector raising the required financing at an acceptable cost to circumvent being locked into expensively financed PPPs						
Arrange the financing of larger projects through tranches, if their technical nature permits to align their capital requirements with the depth of the financial markets and risk perceptions.						
Optimize onshore financing capacity through phasing projects in tranches that mirror the domestic financial sector's capacity						
Participate in important national projects as a co-funder/investor to bring down the weighted average cost of capital						
Undertake market consultation to get an indication of the appetite for individual projects and assess the limits of risk transfer before committing to procurement through the PPP mode						
Oversee procured projects to ensure that they are refinanced when market conditions improve and ensure that the contracts have relevant provisions to facilitate this						

B).Kindly share any additional proposals you may have for the reduction of the cost of private finance for infrastructure projects in the Ugandan context that you might have

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5. Potential interventions in Uganda's Financial Sector to Address the Cost of Finance for Infrastructure Projects

A) Which of the following interventions do you think offer the highest potential to address the high cost of cost of finance for privately financed infrastructure projects in Uganda? Indicate your opinion by ticking the appropriate priority rating below:

	Not a priority	Low priority	Medium priority	High priority	Very high priority	Don't know
Continue to promote macroeconomic stability by ensuring stable interest rates; low and stable inflation and elimination of undue volatility						
Enhance the corporate bond market by addressing disclosure and transparency requirements; bankruptcy protection and tax incentives.						
Establish coherent and credible legal, regulatory and political frameworks that adequately address political and country risk.						
Consider the floatation of infrastructure bonds in the domestic bond markets to mobilize onshore financing and thus reduce foreign exchange cost of finance						
Address the high yields on government bonds and foster bond markets development by encouraging private-sector bond issuers						
Establish a credible pipeline of well-structured infrastructure projects to drive the growth of the infrastructure bond market						
Fast-track the pension sector reforms to strengthen asset mobilization and permit/encourage adequate allocations to infrastructure as an asset class						
Consider the establishment of a government-owned infrastructure-focused bank or revise the charter of the existing development bank to give appropriate priority to infrastructure sectors						
Adequately capitalize the infrastructure-focused bank and leverage it to crowd-in private sector participation in the financing of infrastructure projects.						
Use the infrastructure focused development bank as a vehicle to provide project appraisal and technical assistance to infrastructure projects at a reasonable cost so as to reduce the upfront cost of these projects						
Leverage the government's credit standing as a sovereign to direct credit to priority infrastructure projects at less than market rates through the infrastructure-focused development bank						
Establish and use an infrastructure-focused development bank as a conduit for subsidies since certain types of projects will always require subsidies.						

	Not a priority	Low priority	Medium priority	High priority	Very high priority	Don't know
Establish and use an infrastructure focused developed bank as an anchor for the development of a domestic infrastructure financing market that over time crowds-in private banks and institutional investors such as pension funds.						

B) Please indicate additional interventions within the financial sector that hold the potential to address the high cost of private finance for infrastructure projects in Uganda

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Thank you for your time and responses.

ANNEX B: LIST OF SURVEY RESPONDENTS

Name	Institution
Anja Kramer	KFW
Benjamin Darche	PPIAF/World Bank
Christopher Olobo	International Finance Corporation
Daniel Isooba	African Development Bank
David Alderton	Umeme/ACTIS
Gordon Mwebesa	Eskom (U) Ltd
John Opiro	Kalangala Infrastructure Services
Joseph Lutwama	Capital Markets Authority
Lisa Betty Oyella	Uganda Retirements Benefits Regulatory Authority
Mwima.W.Andrew	Uganda Securities Exchange
Namara Peace	Uganda Securities Exchange
Niazali.J.Hirani	Industrial Promotion Services
Nicholas Ecimu	Sebalu & Lule Advocates and Legal Consultants
Orono Otweyo	Privatization Unit/MFPED
Paul Busharizi	New Vision
Paul Muganwa	Standard Bank
Pauline Among	Uganda Development Corporation
Pearl Nyakabwa	Kampala Associated Advocates
Ronald Athiyo	Mott Macdonald
Samuel Edem Maitum	Barclays Bank/ABSA