

**THE ROLE OF PRIVATE INSTITUTIONAL INVESTORS FOR
THE DEVELOPMENT OF URBAN INFRASTRUCTURE ASSETS**

Rajiv Sharma

**School of Geography and the Environment
University of Oxford
Mansfield College**

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ABSTRACT

The topic of infrastructure investment has emerged as a critical public policy issue over the last thirty years as governments grapple with an infrastructure deficit that has become one of the great global challenges of our time. Through the simultaneous processes of neo-liberalisation and globalisation, the urban infrastructure landscape has emerged as an attractive investment area for large financial institutions. With the recent Global Financial Crisis further exacerbating both the funding and growth lifting needs of nations, the urgency of linking institutional investors with urban infrastructure assets is more apparent than ever.

This thesis looks at the evolving dynamics associated with the growing involvement of the financial industry in the provision of urban infrastructure assets. This is achieved by using a relational perspective, studying the interactions of financial actors, while simultaneously being aware that these decisions are made within a larger political economic context. It is argued that the complex, heterogeneous and long-term nature of institutional infrastructure investing requires a multi-disciplinary relational economic geography framework. Specifically, relational theory is used to explore the informational content and geographical structure of the infrastructure financial product, the influence of government decision-making, the corporate governance of infrastructure investments and the investment relationship between investors and financial intermediaries.

Despite exponential growth in the field over the last decade, the infrastructure financial product has a level of sophistication and obscurity that prohibits it from being classed a transparent investment area, highlighting the importance of a relational approach to investments. From the case study on Auckland International Airport Ltd., it is shown that through a relational form of light-handed regulatory contract, the government plays a central role in affecting the favourable performance of an economically significant asset. The explication of the Spanish-led ADI consortium acquisition of UK airport operating company BAA illustrates the need for ‘glocal’ infrastructure governance to incorporate a wider stakeholder perspective as well as an appropriate shareholder wealth maximisation strategy. And finally, through analysing the relationships between investment partners for the infrastructure investment process, investment consultants are playing a crucial role to help align interests and promote the long-term relational approach to investing for the infrastructure asset class.

In an age where infrastructure investment has been recognised by many nations around the world as the most important growth lifting strategy, this thesis provides a deeper understanding of how a relational approach can facilitate successful private institutional infrastructure investment.

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Rajiv Sharma

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CHAPTER ONE: INTRODUCTION

1.1 Introduction

“When it comes to the question of financing infrastructure, we need to use the power of the state to unlock the dynamism of the market. Government has a duty to provide a framework in which demand can be met and which attracts investors - pensions funds and sovereign wealth funds - because they can rely upon fair returns.”

David Cameron (2012)

It is this sentiment of the United Kingdom’s Prime Minister, calling upon private institutional investors to help solve many of the past failures of infrastructure financing that drives the motivation behind the research in this thesis. The emergence of private institutional investors in this latest financing round for infrastructure has been in response to the deterioration of infrastructure facilities worldwide and a need to maintain and upgrade the essential physical systems of local, regional and national economies. One of the key lessons to come out of the recent Global Financial Crisis (GFC) has been the lack of transparency associated with financial markets and the failure of investors to understand the true nature of the products that they have invested into. On top of these information asymmetries that have been exposed by the GFC, infrastructure as a new investment area, exhibits a number of unique idiosyncrasies that have yet to be developed leading to much uncertainty for potential investors into the asset class. In wake of the GFC, with governments facing the dual problem of unprecedented levels of debt on their balance sheets, and the desperate need to stimulate their economies to avoid a lost decade of stagnant growth, the importance of researching the field of private institutional infrastructure investment is more apparent than ever.

The term, infrastructure has been used since the early twentieth century to describe the “basic physical and organisational structures and facilities (e.g. water, roads, power supplies) needed for the operation of a society or enterprise” (OUP 2005). In a military context, infrastructure refers to all buildings and permanent installations that are necessary to defend a country (Houghton et al 2011). Because of the technical sound of the word, infrastructure has also now been referred to as any substructure or underlying system such as the technical (information technologies) infrastructure or financial infrastructure of large corporations (Houghton et al 2011). It is the former definition of the term representing the basic facilities, services, and installations needed for the functioning of a community or society that is used in this thesis. Furthermore, this thesis is interested in networked urban infrastructures, which connect inhabitants of cities with distant power stations, sewage networks, reservoirs, gas fields, transport grids and global communication systems.

The development of urban infrastructure networks has resulted from the simultaneous advancement of cities and urbanisation. The idea that the city was a single objective entity became a dominant basis of engineering, planning and urban reform debates in the late 19th century (Boyer 1994). Engineers began to understand the growing industrial city as a systemic ‘machine’ that needed to be rationally organised using the latest scientific and technological practices (Boyer 1994). The modern urban planning ideal thus aimed to integrate networks of transport, energy, water and communications grids with the public spaces, and industrial zones, of the functionally planned physical city (Thrift 1996). This was important as a transition in urban planning was made from the older compact commercial city to the new industrial metropolis surrounded by residential suburbs. Subsequently, integrated water, waste, road, energy and communications grids covering local and national regions were

developed in response to the notions of modernisation and societal progress (Graham and Marvin 2001).

The provision of these networked urban infrastructure systems has fluctuated between the domains of the public and private sectors. Motivated by entrepreneurialism, the majority of city infrastructure services were initially provided by private operators, however by the end of the 19th century it was widely viewed that infrastructure networks needed to be delivered by social institutions based on public monopoly control (O'Neill 2009). Infrastructure networks became an essential focus of power and legitimacy for the emerging nation state with policies providing the central way in shaping capitalist territorial organisation (Brenner 1998). The Keynesian models of state policy and demand management that accompanied the nation state, was predicated upon providing universal access to publically regulated or controlled infrastructure networks (Sawhney 1992). The Keynesian nation state could be seen as acting as a geographical container linking together urban development, planning and systems of economic subsidies, grants, loans and public ownership (Graham and Marvin 2001).

However since the 1970s, through the processes of privatisation, liberalisation and globalisation, the way urban infrastructure networks are provided has changed dramatically. As Graham and Marvin (2001:91) state, 'profound economic, political and cultural shifts have surrounded the emergence of an intensively, but unevenly, interconnected global capitalist economy, society and culture'. These changes relate to the political neoliberal critiques of inefficient, centralised public control and ownership of infrastructure. 'Market forces' and liberalised models of infrastructure distribution have replaced the previously considered 'public' goods and services

(Graham and Marvin 2001). The physical collapse and deterioration of infrastructure networks since the 1960s, and the implications for the economic and environmental development of cities, has further highlighted the need for a renewed geopolitical and economic discourse around infrastructure provision (Graham and Marvin 2001). Central to this research agenda is how the retreat of the nation state has affected the funding of much needed infrastructure investment and development around the world.

This thesis looks at the role of private institutional investors for the financing of networked urban infrastructure systems. These types of investors are defined as large organisations such as finance companies, insurance companies, labour union funds, mutual funds, unit trusts, pension funds, sovereign wealth funds, which have large reserves of capital to invest into securities and other investment assets. The thesis specifically focuses on the role of pension funds and sovereign wealth funds, who have been attracted by infrastructure assets because of the associated favourable investment characteristics such as low competition, predictable and stable cash flows over the long-term (10, 20, 30 years and beyond) enabling liability matching and inflation hedging.

This thesis thus examines the involvement of the financial industry, with a specific focus on institutional investors, by investigating those factors that influence the infrastructure investment decision-making process. This is achieved by using a relational approach, studying the interactions of financial actors, while simultaneously being aware that these decisions are made within a larger political economic framework. The fields of pension fund research and urban development research have been crucial subjects of study within contemporary economic geography. This thesis

is at the intersection of these two research themes and by tying the findings together, contributes to research on relational economic geographies.

The thesis is structured across four core chapters with each analysing a specific aspect of the relational infrastructure investment process. The overarching relational framework for the thesis is firstly introduced in Chapter Two. The informational content and geographical structure of infrastructure financial products are then analysed in Chapter Three, which provides the basis for the relational approach in analysing private institutional infrastructure investment in this thesis. Chapter Four and Five take detailed views of specific asset case studies, highlighting the political economics and global/local governance tensions of infrastructure investing respectively. Chapter Six examines the decision-making process of institutional investors looking to invest into infrastructure assets with a particular focus on the role of investment consultants as gatekeepers for the relational investment process. Through a detailed relational perspective of these issues, this thesis seeks to contribute to a more sophisticated understanding of how private institutional capital can be pooled and channelled into the urban infrastructure landscape.

1.2 Background and Significance

1.2.1 The Infrastructure Need

A global infrastructure deficit is currently being faced as nations around the world have struggled to come to grips with the growing demand placed on their infrastructure assets. The drivers for new investment into infrastructure can be related to a number of factors. Rising populations into urban areas, increasing economic growth and the internationalisation of economies have all placed an increasing strain

on infrastructure facilities. The total world population is expected to increase from a current estimate of 6.8 billion to 8.9 billion by 2030 (United Nations 2009). The world's urban population is expected to grow nearly 50% between 2005 and 2030. In 2005, the percentage of the world population living in urban centres exceeded 50% for the first time (World Bank Data 2011). By 2030, urban population is expected to make up 61% of the global population (United Nations 2009).

On top of this, the rate of ageing, particularly in the developed world, is increasing (OECD 2007). An ageing population is more likely to use infrastructure services such as transport and health, increasing demand but also reducing the amount of tax revenue generated by governments as the total wage-earning population decreases.

Most observers acknowledge that the requirements are global. Many developed countries, through decades of consistent economic growth, neglected the need to upgrade facets of core infrastructure leaving the facilities substandard and in desperate need of repair. With the recent surge in economic growth of developing nations, infrastructure investment is required in order for these countries to avoid encountering significant bottlenecks for continued growth.

While demand continues to rise, the ability for governments to spend on infrastructure has decreased, creating a widening investment gap (Macquarie 2009). It has been estimated by the OECD that the needs of worldwide infrastructure investments between 2005 and 2030 could be as high as USD 70 trillion (OECD 2007).

1.2.2 The New Normal

Stemming from the United States sub prime mortgage meltdown in 2007, the financial world spiralled into crisis during 2008 and 2009. Global stock markets crashed, with most indices around the world losing over half of their value, and a large number of financial institutions falling into a distressed state or in the case of Lehman Brothers failed outright. Although certain indicators have shown that the worst of the effects of the crisis were felt in 2009¹, the backlash continues to be felt around the world. In many developed economies, industrial production hovers below pre-crisis levels, unemployment has remained at alarmingly high levels, and the balance sheets of certain public and private institutions continue to be stretched (Lin and Doemeland 2012). The emerging market economies have also felt the effects of the crisis with tightened credit markets, withdrawal of foreign capital and reduced economic activity from major trading partner economies affecting growth. The global growth outlook is expected to slow down from 4 percent in 2010 to approximately 2.5 percent through 2012 (Lin and Doemeland 2012).

In response to the GFC, governments around the world have been forced to increase their borrowing levels to bail out failing financial institutions and provide stimulus packages, leading to a blow out in sovereign debt levels. As can be seen from the graph in Figure 1 below, the overall debt burdens as a percentage of Gross Domestic Product (GDP) for many OECD countries have reached unparalleled levels (OECD 2011a). In order to reduce public debt, many governments have employed a variety of austerity measures and structural reforms, the policies for which, have been

¹ See Business Cycle Dating Committee of the National Bureau of Economic Research at <http://www.nber.org/cycles/cyclesmain.html>

scrutinised due to the danger of further weakening growth and worsening unemployment (Lin and Doemeland 2012).

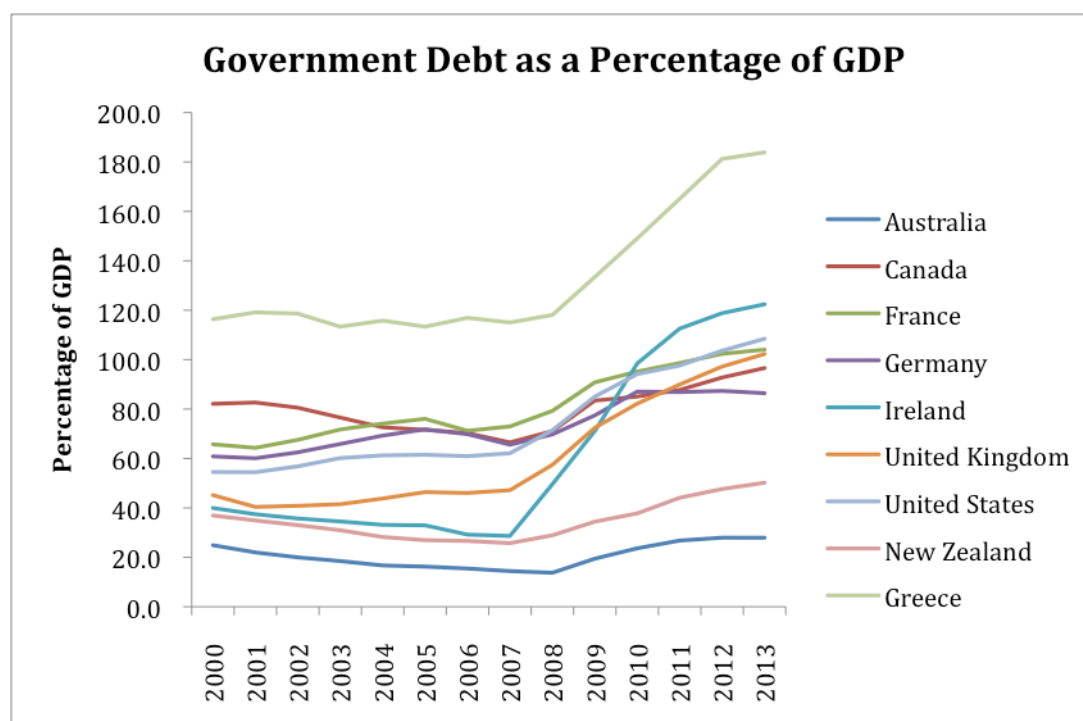


Figure 1: Government Debt of OECD countries as Percentage of GDP
Source: (OECD 2011a)

These detrimental aftermath effects of the GFC have led to a situation in many advanced economies described as the ‘new normal’ (Davis 2009). The concern here is that if the ‘new normal’ becomes ingrained, the developed world may face a lost decade of growth, with negative repercussions for the entire world (Lagarde 2011). The challenge faced by governments is to find a way to support demand and employment without contributing further to debt levels.

The current global economic predicament has provided further attestation for the compelling need of urban infrastructure investment. Governments around the world must stimulate their economies in order to avoid a prolonged period of stagnant economic growth. Infrastructure investment can be seen to provide benefits for an

economy in a variety of ways including improving the employment rate, i.e. by enabling a greater proportion of the population to participate in the economy, enabling businesses to sell products to customers more efficiently and increasing aggregate demand during the construction phase of projects by providing a source of employment, skills and innovation (HM Treasury 2011). With a public debt crisis faced by many nations around the globe, the need for private investment into urban infrastructure is urgent. Governments have already employed the use of the private sector to fund new and existing infrastructure assets. A growth lifting strategy requires governments to use existing financial resources, technical assistance, “improvements in policies and the institutional environment to make infrastructure projects more attractive for private investors” (Lin and Doemeland 2012). By analysing certain factors that contribute to the performance of private institutional infrastructure investments, the work from this thesis contributes to how this can be achieved.

1.2.3 Pension Fund Capitalism

The Great Depression of the 1930s and the second world war can be seen as having a significant impact on both the development of the welfare state and influence of pension funds in the Anglo-American world. While it is evident that a number of small pension funds were created by local government authorities in the 19th Century, it was not until after the Great Depression that widespread development of pension funds occurred (Clark 2000). The Depression swept away the life savings of many and created a feeling of insecurity that shook the very foundations that economies had been built upon. The spread of pension plans can be attributed to a shift in the social and political atmosphere that has prevailed since the 1930s where people have become conscious of the pressing need to provide for their future economic security.

As financial positions strengthened and the ability to influence worker conditions improved, a pattern from public sector development of pension funds to private companies also providing retirement services eventuated (Israkson 2008).

Since the end of the second World war and through the turn of the last century, pension benefits have become an integral component of employees' wages. There has been a net flow of assets into pension funds of immense proportions due to those of the baby boom generation moving into their peak earning years and the requirement of private plans to be fully funded.

The latest cycle of private financing of infrastructure and subsequent financial product offering has been attractive to pension funds due to the associated 'real' physical assets that represent a value proposition over the long-term as opposed to a growth prospect in the short-term. The long-term, inflation linked cash flows associated with infrastructure assets provide a more than worthwhile diversification investment opportunity for pension funds looking to match their long-term liabilities.

While the growth of private pension plan funds has predominantly taken place in the Anglo American world, globally pension fund assets in equity markets around the world have accumulated in value to over US\$23 trillion (Towers Watson 2011). In spite of the GFC, pension assets are the largest forms of savings and will continue to provide a crucial source of funding for infrastructure investments. This thesis is concerned with linking the governance and investment strategies of pension funds with a newly developed asset class, desperately in need of investment funding.

1.2.4 Political and Economic Ideological Shifts

Over the last three decades, as public sector investment into infrastructure has declined in OECD countries, there has been a shift in the political economic views of urban infrastructure provision. Private actors are being allowed access into previously monopolistic public infrastructure entities largely due to the idea that privately run enterprises, subject to the discipline of the market, will be more efficient. Leading from the extensive infrastructure privatisation program initiated by the United Kingdom in the 1980s, a colonisation of public infrastructure by global finance capital has occurred since, leading to many transnational corporations and financial institutions reshaping the provision of infrastructure networks around the world (Graham and Marvin 2001).

As mentioned earlier, the private provision of urban infrastructure is not new as railways, bridges and canals were not only built but owned and operated privately during the 19th Century. This early era of private infrastructure provision was motivated by entrepreneurialism and the growth of market ideals, a core tenet of classical liberal economists of the time. The virtues of ‘free-market’, ‘laissez-faire’ economics and idea of an individual’s rational pursuit of wealth were preached by pioneering liberals, Adam Smith and David Ricardo (O’Neill 2009a, Harvey 2005). Through their theories of *homo-economicus* and comparative advantage of free trade², it was claimed that economic and political matters could be separated and that economic activities operated best without government interference (Heilbroner 1983).

² *Homo-economicus* is the view that people are isolated individuals whose actions reflect mostly their material self interests. Ricardo’s theory argued that free trade would lead to a win-win situation for trading partners because it enabled countries who had a comparative advantage to specialise in the production of those commodities. See Heilbroner (1983) for more discussion.

The theorists claimed that by their nature, markets were incapable of failing if properly prevented from government intervention.

However, in the post Great Depression and World War era of the 20th Century, the Keynesian model of policy based upon universal access to publically controlled infrastructure seemed to dominate the provision of urban infrastructure networks (O'Neill 2009a). Leading economist John Maynard Keynes proposed that the role of government was much more than a 'passive overseer', as assumed by classical liberals. Regarded as a controlled form of capitalism, Keynesianism advocated large government spending to create new jobs and increase consumer spending (Peter 1989). The political implementation of Keynesian theory in many industrial countries led to a period following the second world war of high economic growth rates, high wages and low inflation. However, as a result of the oil shocks in the 1970s and subsequent effects of 'stagflation³' and falling corporate profits, a novel way forward was sought to revive the doctrine of liberalism under new conditions of globalisation.

Neoliberalism was thus subscribed as a common set of ideological and political principles dedicated to the worldwide spread of an economic model emphasising free markets and free trade (Harvey 2005). Neoliberalisation over the last three decades has transformed the role of government from the domineering Keynesian model back to a facilitator of the market, acting as an arbitrator and enforcer of the rules of the new game (Clark 2000, Harvey 2003, Peck and Tickell, 2002). The accompanying public policy agenda has consisted of deregulating the economy, liberalising trade and industry and privatising state owned enterprises. It has been this simultaneous

³ Stagflation refers to the situation of simultaneous rising unemployment and inflation rates.

movement of globalisation and neo-liberalisation that has led to the ‘splintering’ of urban infrastructure networks and placed the ownership and financing responsibilities of these assets into the hands of global private financial institutions. Built upon the classical liberal ideal of the self-regulating market, and based on the writings of economists, Frederick Hayek and Milton Friedman, the belief has been that government interference to compensate market failures would create more problems than solutions (O’Neill 2009a). Economic theorists have recently argued that in cases of market failure, the allocation of responsibilities to the private or public sector will depend on whichever sector will add the greatest value to the community, based on the principle of comparative advantage (Officer 2008). Using the idea of property rights, governments are likely to have a comparative advantage when it is difficult to establish a clear property right to the activity, whereas the private sector may be more effective and efficient in producing/delivering the good/service when a clear property right can be established (Officer 2008). Through the neoliberalisation process and engagement of private actors, the property rights of urban infrastructures have been defined by Governments using the tools of privatisation and regulation⁴.

While the decision to privatise or delegate urban infrastructures can be highly politically motivated, many nations are now forced to privatise out of fiscal necessity. In the wake of the GFC, the infrastructure investment challenge here is different to that faced by governments following previous economic downturns in that never in history have so many nations around the world had such a high level of debt on their

⁴ There is a vast and complex literature involved with both the categorisation of the public and private sectors, their relative merits and what the public and private spheres of life contribute to the overall public good. This is the subject of a lot of ongoing work and is not the main focus of this thesis. This thesis makes observations based upon the viability of infrastructure transactions to produce useful investments for the private sector. Accordingly, the privatisation process and regulation of infrastructure are discussed in more detail in Chapter Four.

national balance sheets. As Clark (2000:xi) posits: “if the urban fabric of the Anglo-American countries is to be sustained and enhanced, pension funds are the obvious and only likely source of new investment over the coming years of the 21st century”. Given the urgent demand for investment, this thesis analyses how the recent globalisation and neo-liberal policies of governments are affecting the investment decisions of potential private actors.

1.2.5 Emergence of the Infrastructure Financial Product

The political economic transition illustrated above has led to the opening up of public urban infrastructure assets to private, market-based forms of finance and governance. The increasing involvement of global finance capital into infrastructure has led to an elaborate process of alliance formation, mergers and acquisitions across the globe with infrastructure companies acquiring networks in different countries (Graham and Marvin 2001). The neo-liberal policies of governments have led to the offering of infrastructure investment opportunities to private actors in the form of trade sales or various public private partnership leasing arrangements. The leasing contracts offered by governments have moved from DBM (design, build and maintain) contracts to DBFM (design, build, finance, manage) contracts and are offered over the long-term stretching from 10, 15 to 50 years and beyond (Torrance 2006). Urban Infrastructure assets are increasingly being packaged into financial product offerings for large global institutional investors to pool their capital into.

Investors are interested in purchasing infrastructure assets to diversify their portfolios due to the low correlation of infrastructure with traditional asset classes. The investment characteristics of infrastructure are associated with predictable and stable cash flows over the long-term, and are inflation hedged. Infrastructure investments

thus provide liability matching for investors like pension funds, who have become more aligned to investments with long-term results and defined outcomes as opposed to speculative short-term results prone to high volatility (OECD 2011b). The heterogeneous nature of infrastructure has provided investors with a range of risk and return profiles within the asset class. Investments in new greenfield developments usually have high risk and higher returns compared with mature brownfield assets that are associated with low risk and return⁵. Infrastructure assets should generally have low return volatility due to the monopolistic nature, high barriers to entry and relatively inelastic demand for the services. Other risks of infrastructure investments can include government regulation, construction, liquidity, demographic, currency and management risks (Beeferman 2008).

Despite the attractive features of infrastructure investments, institutional investment has been quite limited overall. It has been estimated that less than 1% of pension funds worldwide are invested in infrastructure projects, excluding investment in listed utility companies (OECD 2011b). Traditional allocations of pension funds to infrastructure have ranged from 1% to 15% while return expectations of funds varied from 6% - 18% (Torrance 2006). In early experiences, the asset class has been mispriced and figures show that returns have been much higher than they should be, given the low risk characteristics (Torrance 2006). There have also been a number of failures, which have been worsened by the GFC, leading to much uncertainty for investors looking to approach the asset class. Tensions have surfaced over the arrangement of fund terms and conditions specifically time horizons and fee structure

⁵ Brownfield assets are the predominant focus in this thesis (i.e. investments/acquisitions made into existing assets with established cash flows).

with fund managers exploiting their power in the investment relationship at the expense of investors.

This thesis looks at developments in the investment characteristics of infrastructure assets that have occurred through the experience of early investments and in the wake of the turbulent economic conditions over the last five years. The thesis examines the factors of consideration for institutional investors and highlights the aspects that might lead to the success and failure of investments. Because of the detailed, complex, local information associated with the underlying assets, requiring an understanding of the political economic framework, the legal regulatory framework, and long-term economic forecasting, this thesis illustrates that investors must form strong relationships with local financial, legal and engineering specialists in order to obtain the information and make successful investments. Specifically, the informational content and geographical structure of the infrastructure financial product, the influence of government decision-making, the corporate governance of infrastructure investments and investment relationship between investors and intermediaries are explored throughout the thesis.

1.3 Overview of Thesis

The dynamic influences outlined above have illustrated the importance of the financialisation process of the urban infrastructure landscape currently taking place. This financialisation process has been defined as the “expansion of the nature and scope of financial markets and institutions to include the provision of urban infrastructures” (Torrance 2006:5).

This thesis looks at the evolving dynamics associated with the growing participation of private actors in the provision of infrastructure assets. In an age where infrastructure investment has been recognised by many nations around the world as the most important growth lifting strategy, the thesis attempts to uncover the crucial considerations for an important source of funding for this much needed investment area.

Within the field of economic and urban geography, the role of financial markets and institutions for the provision of urban infrastructure has been under researched (Clark and Wojcik 2007). With the undergoing financialisation of the urban city landscape, more research is required to understand how institutional capital is channelled in space and time, to ultimately provide an enhanced appreciation of the characteristics of urban investment financial products (Clark and Wojcik 2007). This is especially important given the wide reaching implications and complex nature of urban infrastructure investments, with investors needing to take into account the geographical, political, economic and environmental influences of such investments.

In the context of the GFC, I investigate how the global infrastructure market has evolved and aim to uncover how the factors affecting financial flows into urban geographies have changed. The research from this thesis contributes to the generally under researched field of institutional investment into infrastructure assets but specifically within geographical research, the role of financial markets in the development of the urban landscape. It follows the work of Babcock-Lumish and Clark (2005), Hagerman et al (2005, 2006, 2007) and Hebb (2005) who have investigated how pension funds are playing a part in the development of urban centres. It primarily builds on the work of Graham and Marvin (2001) and Torrance

(2006) whose theses signalled the rise of a global infrastructure investing market and analysed the shifts occurring in the financing and governance of infrastructure assets at an early stage of development. Their work also describes how various infrastructure networks are unbundled locally by state governments but demonstrates the interlinking of relationships between private parties and assets at the global scale.

I contribute to this growing field of urban infrastructure research by deepening our understanding of the relationship between finance, politics and the urban infrastructure landscape. In particular my research aims to uncover and illustrate the possible factors of success and failure for private institutional investors looking to invest into urban infrastructure assets. It is argued in this thesis that relationships are crucial in affecting the performance of infrastructure investments. As such, the complex, heterogeneous nature of the urban infrastructure financialisation process has induced an overarching relational framework for the analysis in this thesis.

The empirical work laid out in this thesis draws upon a number of specific disciplines for the geographical analysis and discourse on the subject. This includes introducing corporate finance, economic pricing regulation and management theory into the economic geography research areas of urban investment, pension fund research and relational investing. By examining the key factors that institutional investors must consider when making urban infrastructure investments, this thesis contributes to the development of multi-disciplinary relational economic geography as a general framework for the analysis of contemporary complex economic activities.

Having initially evaluated the development of the urban infrastructure financial product in Chapter Three of the thesis, I use three main cases to investigate the factors of consideration for private institutional infrastructure investment (see Figure 2 below): two asset geographical cases⁶ and one institutional based sectoral case.

Given the increasing involvement of private actors in the provision of urban infrastructure services, the first asset case study on Auckland International Airport Ltd. (AIAL), identifies how the State's concern in these assets has changed. Of particular interest is how the government's actions following the privatisation of infrastructure affects the investment performance for private investors.

The second asset case study on the Spanish based, Ferrovial-led ADI consortium acquisition of British airport operating company, BAA examines the new structure of governance in place for private infrastructure companies. The growing influence of financial market dynamics on the strategies employed by infrastructure owners are

⁶ The two geographic asset based case studies in the thesis are intended to provide contrasting examples of success and failure for infrastructure investing. Success for the purpose of this thesis is defined as investment performance from the perspective of investors and is used to contrast the two asset case studies looked at. As illustrated in Chapter Three, the perception of success for one investor may differ completely from another investor. This thesis does not focus on quantitatively analysing a level of success for infrastructure investments, instead a general level of success that can be used to select and contrast the case study examples of the thesis is deduced based on the general sentiment in industry between practitioners and researchers. i.e. success is taken as a given. For the case study on Auckland Airport (Chapter Four), the success of its investment performance was confirmed by calculating the investment return (using the publically listed share price) achieved by investing into the asset since becoming privatised. In contrast, the BAA case study was used as an example of an infrastructure investment, which has not performed as successfully. This was confirmed by analysing the decrease in value of equity investment (as the company was delisted) from the time of the acquisition in 2006 until the end of the period of interest in April 2011. The categorisation of each case study as a success and failure was also confirmed through general industry sentiment by asking all independent interviewees their perceptions of the case studies selected. A detailed explanation of the selection of cases for the thesis is provided in Chapter Two.

looked at in this chapter as well as the cultural impacts on infrastructure governance associated with cross-border acquisitions.

Through a survey of pension fund investors, the final institutional based case study examines the decision-making process of institutional investors to identify the key characteristics of funds in the investor universe and the role that financial intermediaries play in the investment process. The relational aspect of infrastructure investing is highlighted in this chapter by investigating the function of investment consultants for pension funds. The case here set out to track how the power, expertise and trust dynamics involved in the relational infrastructure investment process have changed as the market has evolved.

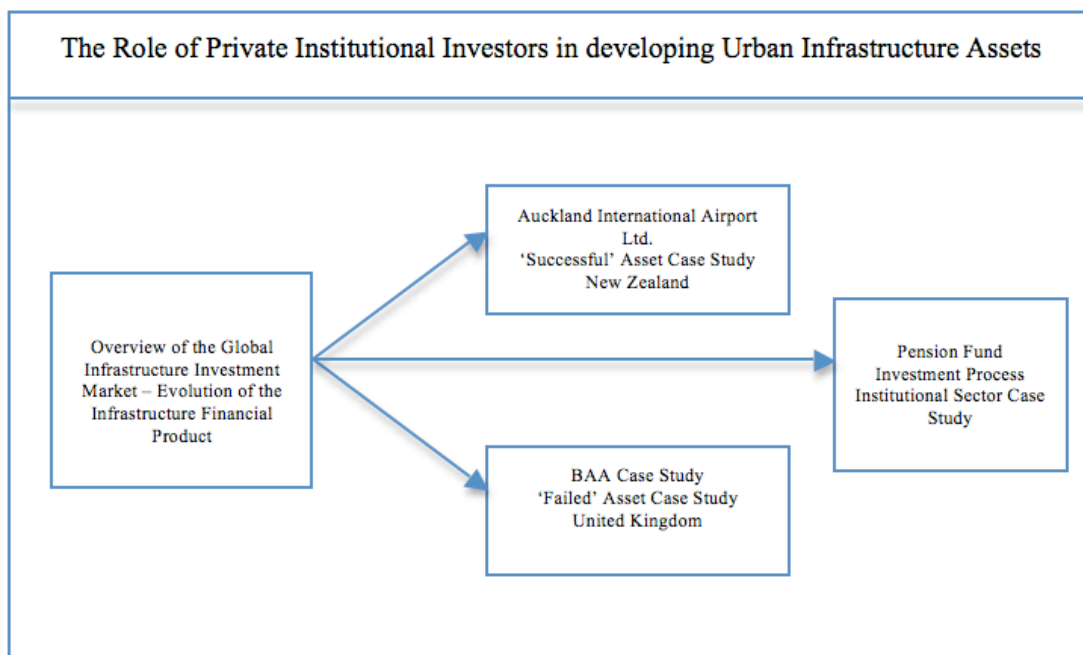


Figure 2: Schematic Overview of Selected Cases

1.4 Aims and Significance of Research

This research thesis has situated itself in the field of economic geography to provide a multi-disciplinary dissection of the private provision and investment of urban

infrastructure services. The thesis is not intended to provide an in depth financial analysis of the infrastructure investment industry. Instead, the thesis is motivated by the need to further our understanding in geographical research of the actors and networks responsible for the flow of capital into the urban infrastructure landscape. The thesis introduces corporate finance, economic pricing regulation and management theories into the geographical discourse on the subject. The overarching objective of the thesis is to identify and illustrate the factors that might contribute to the success or failure of private institutional infrastructure investments. Because of the heterogeneous nature of the field, it is postulated that relationships are crucial in affecting the performance of infrastructure investments and subsequently an overriding relational framework is utilised for the analysis in the thesis. In line with these aspirations, the thesis looks specifically at developments in the informational characteristics of the infrastructure financial product, the political economic dynamics of infrastructure investing, the governance challenges associated with infrastructure equity ownership as well as the role of financial intermediaries for the relational infrastructure investment process. The research thesis has four aims with each aim focussing on a particular aspect of the financialisation process. The specific literatures that each objective contributes towards are detailed below.

AIM 1: Examine how infrastructure as a financial product has evolved through a period of exponential market growth followed by a significant contraction due to the Global Financial Crisis (GFC).

The first aim of this thesis research is to understand how the infrastructure financial product has evolved over the last decade and how institutional investors have approached the field of infrastructure investing, including how infrastructure assets

can be selected and appraised on the investment spectrum. In response to the claim by economist Richard O'Brien, that geography does not matter when sourcing financial products, Clark and O'Connor (1998) have argued that the extent to which geography does not matter depends on the geographical structure and informational content of the financial product in question. A classification of financial products has been attached to this argument with infrastructure being classed as translucent, shifting from the previously assumed opaque category (Torrance 2006). I build on the work of Torrance (2006) and utilise the same classification framework to determine whether infrastructure, with the growth in the market it has experienced, has progressed along the financial product life cycle from translucency to transparency. Such a transition would signal the reduced effect of geography in the sourcing of infrastructure products. The investigation is carried out by examining the market size of infrastructure investment, the profiles of investors and the performance characteristics of investments achieved thus far. The research aims to further our knowledge of the urban infrastructure financial product and contribute to the field of geography of finance.

AIM 2: To uncover the underlying factors that might contribute to the success of a private institutional investment into infrastructure.

The second aim of this thesis is to examine how the successful performance of infrastructure investments might be achieved. Despite the shift in control of infrastructure assets from the public to private sector, the significance of the assets for regional and national economic development continues to draw influence from public sector authorities. While the process of privatisation was accompanied by a significant retreat of the State from the role of producing infrastructure assets, this however has

not meant that governments have ceased to exercise certain elements of control. The actions of government can have wide-reaching implications for the performance of an infrastructure investment by influencing the ownership, governance, capital structure and regulatory framework of the company. By focusing on the role of government, the second aim of the thesis is to identify and illustrate the factors that might contribute to the successful performance of an infrastructure investment. The second objective of the thesis draws upon theories of privatisation, corporate governance and regulation to address the political economy of infrastructure investing.

AIM 3: To determine possible causes of investment failure for urban infrastructure investments that have been accentuated by the 2008 Global Financial Crisis.

In the wake of the GFC, many investments made into infrastructure assets were exposed for the poor governance strategies put in place. I aim to analyse in depth the strategies of infrastructure investors that have proven to be less successful. With the corporate Anglo-American entity structure becoming the predominant organisational structure for the provision of urban infrastructure services, I intend to investigate the corporate governance strategies employed by infrastructure owners and in particular highlight the influence and effect of financial markets on how infrastructure services are governed and provided. I look at addressing the apparent conflict between satisfying the financial aspects of an infrastructure investment with the wider stakeholder interest of the assets. The academic debate within management and business ethics literature on the merits of stakeholder and shareholder theory is central to this objective. I also look to extend the early work carried out on the global-local tensions associated with the day-to-day management of infrastructure services to further our understanding of glocal infrastructure governance (Graham and Marvin

2001, Torrance 2007). In this way, I look at the infrastructure governance challenge facing cities and nations by analysing the interactions between investors, central and local government officials, and importantly customer stakeholders.

AIM 4: To examine the decision-making process of institutional investors looking to invest into infrastructure and investigate the role of the investment consultant.

It has been noted that investment decisions into certain asset classes are based not only upon sophisticated financial modelling but also rely on forming personal relationships with trusted partners (Torrance 2009). For an emerging, complex investment area like infrastructure, a recognition of the trust, power and expertise dynamics in these relationships is especially important. The fourth specific aim of the thesis is to further analyse the relational investment process of institutional investors looking to invest into infrastructure assets. With the attractiveness of infrastructure investing for pension funds increasing, I aim to investigate how the role of financial intermediaries has evolved and how the decision-making process of investors affects the types of relationships formed for the investment process. The role of investment consultants has been scrutinised by certain pension funds and fund managers who question the actual added value consultants bring to the investment management process. This thesis investigates whether investment consultants are acting as thought leaders for the pension fund infrastructure investment process. It will look in detail at the investor universe in the global infrastructure market and determine whether investment consultants are driving innovation for pension fund infrastructure investing or simply adapting to the market and following a trend. By investigating the role of the investment consultant, the research here extends the literature on the relational geography of pension fund governance.

1.5 Scope and Structure of Thesis

This thesis consists of four core chapters, which form the heart of the content and are used to address the four research objectives outlined above. Before this, I set out the relational theoretical context and overall methodology for the thesis. Each of the four core chapters have their own internal frameworks and literatures drawn upon, empirical research construction, results and implications. As part of the guidelines set forth by the University of Oxford, this thesis adopts the book approach. By firstly conducting an overview of the market, followed by case studies at the asset and institutional level, a thorough examination of the evolving dynamic, heterogeneous and relational financialisation process taking place for the urban infrastructure landscape is provided. Figure 3 below illustrates a schematic overview of the thesis.

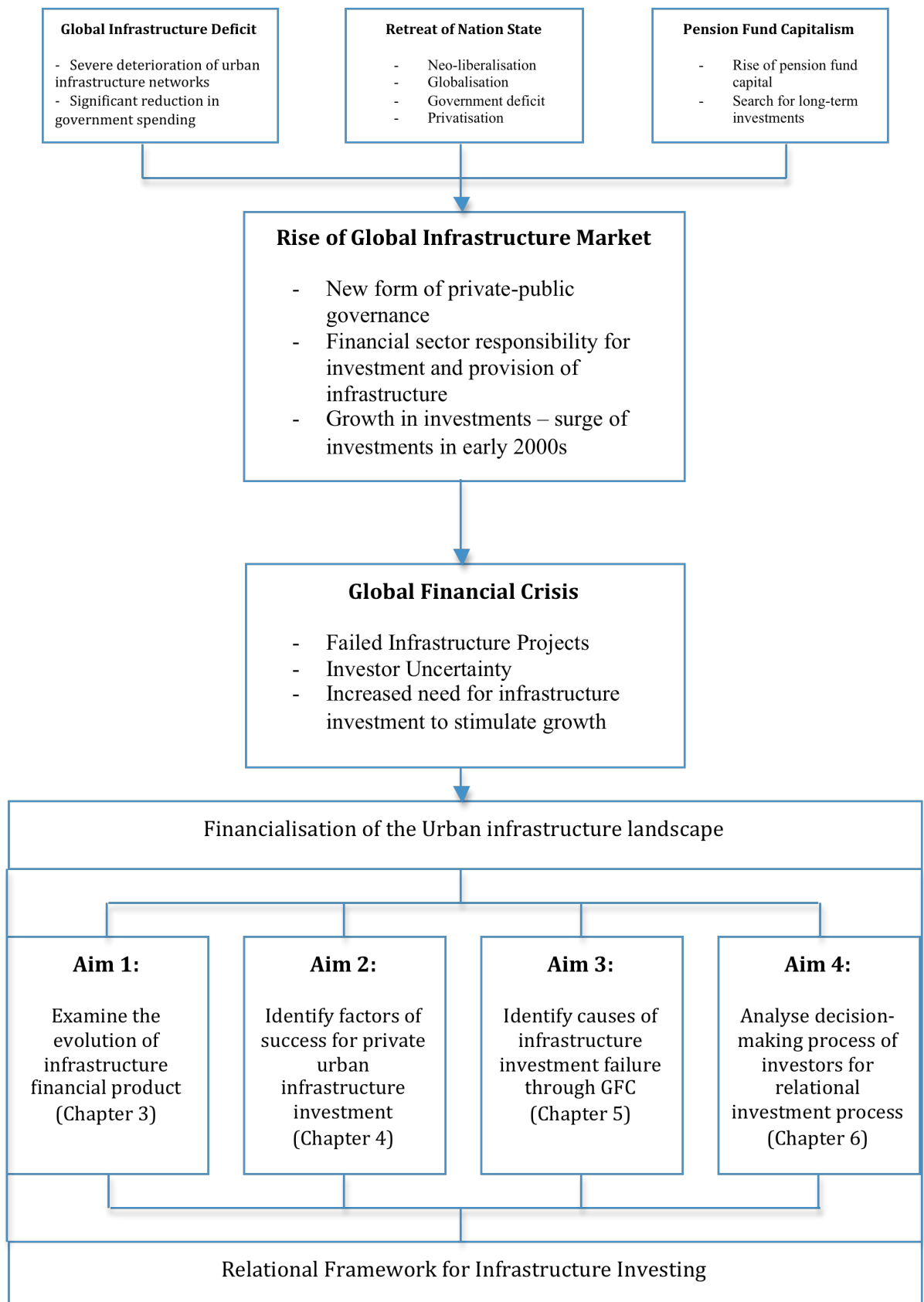


Figure 3: Schematic Overview of Thesis

The first core chapter of the thesis uses a geography of finance framework to track the evolution of the global infrastructure market and determine how the informational content and geographical structure of infrastructure financial products has changed. It looks at how the characteristics of infrastructure financial products have developed and are perceived by investors and fund managers. It is argued in this chapter that while developments have occurred in the infrastructure market signalling its growth and expansion, the unique, complex nature of the infrastructure asset class will inhibit a full progression to transparency, as otherwise predicted by the financial product life cycle. This has implications for the investors looking to invest into the infrastructure asset class as well as the urban landscapes affected by the investment decisions. In presenting an overview of the investment market, the need for a relational perspective to further investigate the complexities and intricacies of private institutional infrastructure investing is illustrated.

Chapter Four focuses on the political economy of infrastructure investing to investigate how the role of the state affects the investment decisions of private institutional investors. I present a case study on AIAL, a privatised infrastructure company that has performed well since being privatised and endured the recent GFC. The various factors that might contribute to the successful performance of an infrastructure investment are investigated particularly highlighting the wide reaching implications of government decision-making. This first case study chapter argues that the state plays a central role in the private provision of infrastructure and can significantly influence the company's performance.

In contrast to the previous chapter, Chapter Five looks at a poor performing infrastructure investment by examining the governance implications of the Spanish-

based Ferrovial-led ADI consortium acquisition of British airport operating company, BAA. In what has been regarded as one of the largest infrastructure investment transactions (by investment size) to date, the chapter analyses the governance strategies employed by the new owners of BAA, which have resulted in the poor performance of the company following the transaction. The case study provides evidence of the challenges associated with large cross border acquisitions and highlights the corporate governance strategies that have been exposed due to the GFC.

Having looked at specific asset examples to identify the key factors that might affect investment performance, Chapter Six of the thesis focuses on the institutions themselves that have been providing the capital to invest into infrastructure assets. I conduct a case study on a range of pension fund investors to analyse the decision-making process of institutional investors looking to invest into infrastructure and investigate the relational aspect of infrastructure investing. The chapter looks at how the role of financial intermediaries has developed for the infrastructure investment process, uncovering the function of the investment consultant as an increasingly important actor for the process.

Chapter Seven ties the findings of the thesis together by discussing how the informational characteristics, political economy, governance and relationships associated with the financialisation of the urban infrastructure landscape have developed. The concluding chapter assesses the broader implications of the research, as well as how this work has contributed to the literature. A final discussion points out the future challenges for infrastructure provision and how the research agenda for this field of work might develop.

1.6 Thesis Limitations and Considerations

This research thesis seeks to show how the private institutional infrastructure investment market has developed since the mid 2000s and attempts to illustrate the key factors of consideration for investors looking to invest into urban infrastructure assets. It not only provides further evidence of the financialisation process taking place for the urban infrastructure landscape, but deepens our understanding of the complex relational political and financial context under which pivotal decisions that affect the performance of investments are made. It is acknowledged however that there are certain limitations to the analysis carried out including the extent to which generalisations can be made from the findings. These are considered below.

Firstly, the predominant form of research in the thesis is qualitative. Qualitative research in this thesis was utilised in order to gain expert opinion and greater depth by interacting with key subjects in the field. This type of research is more exploratory and inductive in nature and helps to develop understandings of why and how. The use of interviews was seen as an opportunity to deeply explore the perceptions and thoughts of respondents. However a limitation of this method of analysis is the limited ability to generalise or develop general propositions from the research findings. While certain quoted financial data was examined in this thesis, more elaborate quantitative methods such as statistical techniques may have provided more breadth to the study. Due to the infant stage of development of the field, limited availability of quantitative data prevented such analyses being carried out. Instead, I concentrated my efforts on the key players in the infrastructure investing field to qualitatively appraise the wide reaching considerations of investors.

The geographical focus of this research must be taken into account when looking to generalise about its findings to other communities and urban infrastructure projects. The work has mainly focused on in depth research in the United Kingdom (UK) and New Zealand (NZ). Similarly, despite the thesis taking the perspective of private investors looking to invest into the broad category of economic urban infrastructure assets, the case studies of the thesis have focused on airport infrastructure assets. The detailed nature of the analysis examining the social, political and financial relations within each case, arguably makes the thesis unique to a certain time, space, sector and culture. The empirical work presented here is designed to provide illustrative examples of infrastructure investing and useful insights into the processes of each case. When considering implications elsewhere, it is important to consider the degree to which generalisations can be made before drawing concrete conclusions.

This introductory chapter has outlined a number of assumptions that provide the premise for private institutional investment into urban infrastructures, which are taken as given in this thesis. Firstly, the case for increasing participation of the private sector for financing infrastructure investments is assumed to result from the global economic effects in recent times concerning increasing public debt, deteriorating infrastructure facilities and stagnant economic growth in the wake of the GFC. This thesis has provided an outlay of the basic evidence from these constituent dynamics but does not concentrate on analysing these issues in depth. The thesis also assumes that infrastructure investment has a positive influence on economic growth as well as the fact that private sector ownership has benefits over the public sector for infrastructure provision. While the empirical work confirms certain aspects of the case for private institutional investment, and provides a background to the privatisation and regulation process for infrastructure, it is not the focus of the research to add to the

extensive theoretical debate of private vs public provision. Rather, this thesis research focuses on the factors that influence how institutional investors are continuing to be involved in the urban infrastructure landscape.

In outlining these limitations, it must be noted that the considerations are not large enough to devalue the overall effort of the thesis. Rather, this thesis should be taken as contributing to an ongoing research agenda providing points of reference to develop a broader study and productive dialogue on infrastructure investing within economic geography research, but also help to advise those making decisions about urban infrastructure provisions in cities around the world. In the concluding chapter of the thesis (Chapter Seven), these considerations will be addressed more fully including where this area of research can be elaborated upon in the future.

CHAPTER TWO: THEORETICAL CONTEXT

2.1 Introduction

Infrastructure assets are increasingly being offered as financial products to financial institutions that are capturing the value of investing in urban space while simultaneously allocating ownership risks globally (Babcock-Lumish and Clark 2005). In order to invest into infrastructure assets, investors require detailed local information on the legal regulatory framework, the political economic framework, and associated long-term economic data, which are often only locally available. The value of infrastructure assets is highly influenced by the “social, physical, and political development of the larger urban landscape, with most of this information needed to be forecast 30 to 40 years into the future” (Torrance 2009:76). The work from this thesis centres around an investigation of the evolving relationships between pension funds, fund managers, general public, government officials, regulators, financial advisers and their relation to urban infrastructures, using a framework that takes into account of the social, physical and political environment in which the assets reside.

It has been noted that the very concept of infrastructure is relational, enabling the intimate connection of distant geographies (Star 1999). By linking multiple spaces and times together, infrastructure networks have become central to the reproduction and development of capitalism (Harvey 1985). “Just as cities are socially constructed through socially constructed global flows, infrastructures also are relational and embody the changing dynamics of global political economies and societies” (Torrance 2006). Graham and Marvin (2001) have looked at the predominantly technological nature of relationships and networks that have resulted from the splintering urbanism

of networked infrastructures with brief statements about the increased use of private capital. Torrance (2006) builds on this work by investigating the ownership relations of infrastructure examining the interaction between institutional investors, fund managers and other technical specialists. This thesis extends this research area by analysing how the dynamics involved with these relations have evolved through the GFC and argues that relationships are central for affecting the performance of private institutional infrastructure investments. This thesis takes the view that infrastructure investing is highly contextual in nature, and situated within material, social relations as well as institutional contexts.

The purpose of this chapter is to outline the overarching theoretical context and methodological approach adopted for the research analysis in this thesis. It is argued that the complex, heterogeneous and long-term nature of institutional infrastructure investing requires a multi-disciplinary relational economic geography framework. While each of the core chapters of this thesis draw upon specific literatures including corporate governance, pricing regulation, management theory and corporate finance, it is the relational conception that underpins the overarching framework for the work in this research thesis.

The relational approach has been perceived differently by different scholars and as a result, a debate has surfaced as to what the true purpose of the relational framework fulfils (Sunley 2008). Part of this confusion stems from the highly thematic and over substantive nature of the term to describe any exchange, agreement, or interaction between two or more people. This thesis uses the relational conception in two ways. Firstly, within economic geography, and stemming from economic sociology, it is argued that economic activities are embedded in social relationships, that relationality

is constituted and dependent on how actors understand the world, and how they do their work (Bathelt and Glückler 2011). In this way, the term is used to describe the complex nature of infrastructure investing and that studying the field requires an appreciation of the wider social, political and institutional context in which economic action takes place. Secondly, the thesis also draws upon relational contract theory within the field of law and economics. With similar sociological origins, relational contracts are defined as long-term, self-enforcing agreements in repeated transactions, based upon trust, co-operation and commitment (Baker et al 2002). Such a perspective is pertinent for analysing the various governance aspects of long-term institutional infrastructure investments.

The importance of these relational dimensions for this thesis is premised upon the large number of information asymmetries and idiosyncrasies associated with infrastructure investing. Accordingly, this chapter outlines how the geography of finance subfield of economic geography is used to analyse the informational opaqueness of infrastructure investment opportunities, which provides the basis for employing the relational framework in this thesis.

By situating this research within the field of economic geography, a multi-method qualitative approach drawing upon case studies, interviews, database and document reviews is employed. An explanation of how and why the various methods were selected and executed for the research analysis in this project is also provided in this chapter.

The overall theoretical context explained in this chapter is summarised in Figure 4 below:

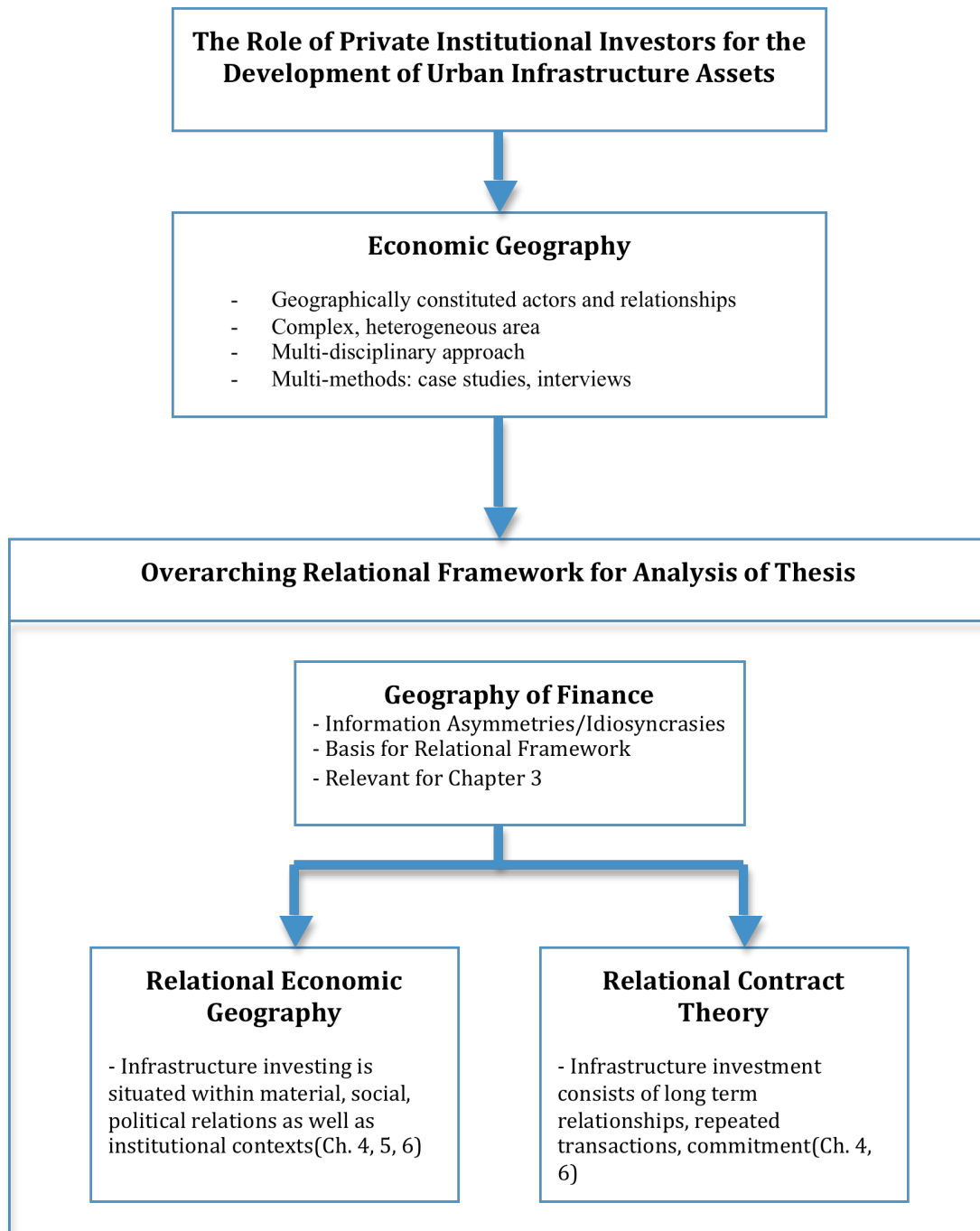


Figure 4: Summary of Theoretical Framework in Thesis

The chapter begins by outlining why the field of institutional infrastructure investing requires an economic geography approach. The importance of the relational framework for infrastructure investing is then provided by firstly highlighting the use of the geography of finance to illustrate the inherent heterogeneity of the field followed by an explication of the geographical, economic and law understandings of

the relational form of research. Having situated the theoretical foundations of the thesis in a broad relational economic geography configuration, the final part of this chapter details the methodological approach employed in this thesis.

2.2 Economic Geography

It can be seen that the very topic of institutional urban infrastructure investment is inherently geographical. Institutional investors such as pension funds are made up of members from a community who are usually nationally or regionally constituted. Institutional investors are engaged in investment activities in order to secure the long-term future of its members and look to diversify investments geographically to reduce risk. There is a localised source of funding being pressured to diversify by asset class (e.g. infrastructure) but also geographically (globally or regionally). Urban infrastructure assets operate at the local level (are locally constituted) but can have impacts on regional or national economies. In essence, regionally constituted investors are inserting themselves into the global spreading and through a need to diversify, are investing in infrastructure assets that are constitutive of specific urban space.

On top of the clear geographical implications, the research area of private institutional infrastructure investment is new and complex drawing upon theories from finance, economics, public policy and management. An infrastructure investment project can be influenced by a large number of factors including politics, social factors and environmental issues to name a few. Such a heterogeneous research area requires an appreciation of the diverse range of dynamical influences affecting this growing area of interest. For these reasons, this thesis situates itself in the multi-disciplinary research field of economic geography.

In the presence of globalisation, the uneven economic and social development of regions and the advancement of infrastructure technologies, economic geography has grown into an important interdisciplinary research area that is concerned with studying economic activities in a geographical context. The *Oxford Handbook of Economic Geography* (2000) provides the fundamental reasoning for driving the economic geography research agenda forward. Clark et al (2000) in particular identify three building blocks that form the intellectual pillars for the field. Firstly, there is a commitment to the *diversity of economic life*, which recognises the need to take into account heterogeneity of people and places when searching for universal principles. It is the treatment of heterogeneity and diversity that has differentiated the methods utilised by economists and geographers in addressing economic geography problems. Economists have utilised an approach based on stylised facts and macro-economic modelling incorporating generalised equilibrium positions for economic systems. While these methods have proven to be invaluable over time, in cases where human interactions cannot be modelled mathematically, such an approach may be limited. It is argued that the limitations arise because of a decoupling between macro-economic modelling and micro-variability, or between global and local dynamics (Clark 2000). The alternative approach, in an attempt to overcome this tension, (and used in this thesis) has been to conduct close, detailed analyses of particular firms, regions, industries or institutions. The economic geography close dialogue and case study methodology utilised in this thesis is detailed later in this chapter.

The second building block identified is the commitment to *understand the processes of change in and across the economic landscape*. Here, a call is made for studies to appreciate that economic systems are subject to change and activities are not carried

out in an environment of stable, predictable economic forces. A central theme of this thesis is to track how the global infrastructure market has evolved over the last decade due to a period of exponential market growth and increased competition. The thesis also incorporates the effects of the recent GFC on the performance of investments and how the perceptions of investors or suppliers of capital to the market have been affected. Having an appreciation of time as a spatial dimension in analysing economic activities is particularly important for evaluating the new research area of institutional infrastructure investment.

The final building block detailed by Clark et al (2000), is a commitment of economic geographers to understand the *geographical and institutional organisation of economic activity* given the cultural, institutional and regulatory differences that exist between regions and nations. Instead of treating economic agents as ‘undifferentiated black boxes’, there is a call to analyse activities by taking the cultural, social, geographical and institutional contexts into account. This is important when looking at private institutional urban infrastructure investment where political, regulatory, social and geographical effects can have an influence on the outcomes and performance of investments.

This thesis draws on the insights of these three building blocks of economic geography to examine the crucial issues facing private institutional investors looking to invest into the urban infrastructure space. By using an economic geography approach to the thesis, a more holistic analysis of the institutional infrastructure market is presented that takes account of the informational asymmetries present, the associated institutional arrangements and social considerations. This is achieved by recognising the importance of relationality for private institutional urban

infrastructure investment. The significance of the relational framework for infrastructure investing and how it is utilised in this thesis is explored in the next section.

2.3 The Relational element of Infrastructure Investing

This thesis contributes to relational research in economic geography by illustrating in detail the complex interactions associated with investing into infrastructure assets and highlights the importance of adopting a relational perspective in order to achieve successful outcomes. The relational theme running through this thesis is made up of three distinct arguments:

The first argument is related to the information asymmetries associated with the field of infrastructure investing. Because of the inherent heterogeneity of infrastructure assets, the information asymmetries for investing are profound, making it very hard to know the information unless you are in the relationship. i.e. looking at the relationship is not the same as being in the relationship. The relationship embodies information richness, which is crucially important to recognise when approaching the asset class. Chapter Three of the thesis examines the informational characteristics of infrastructure assets to highlight the level of opacity attached and need for a relational form of investing. The geography of finance framework utilised in Chapter Three is introduced in this section below.

The second point argued in this thesis is that the relationships associated with infrastructure investing are complex, with an assembly of different parts including shareholders, stakeholders, and many other agents. The notional institutional investor owners are distant, and so the relationships are a governance mechanism for the

diverse and complex array of parties involved. This second argument draws upon the relational conception developed by Bathelt and Glückler (2011) to illustrate how a relational framework allows the wider institutional, political and social influences to be considered for the governance of infrastructure investments. Such a framework is relevant in Chapter Four, Five and Six of the thesis where the role of government decision-making, dynamics associated with a cross border acquisition and role of financial intermediaries respectively have affected the governance of private institutional infrastructure investments.

The final argument is related to the fact that infrastructure investing requires a long-term commitment and when the word relationship is used, it is actually a metaphor for commitment. Infrastructure investing consists of repeated transactions and self-enforcing agreements, which requires holding in place, the relationships that form in the investments. The infrastructure investment process is made up of a chain of client, intermediaries and objectives that need to be held in place over time and the nature of the transaction requires continuity, reciprocity and commitment. The importance of the relationship in this type of transaction has been looked at in the field of economics and through the theory of contract law. This thesis contributes to this view of economic exchange through analysing the pricing regulation of private infrastructure investments in Chapter Four as well as for the investment relationship between investors and intermediaries in Chapter Six.

Table 1 below summarises the relevance of the relational framework for each of the core chapters of this thesis. The table also highlights the individual specific theories that each chapter of the thesis draws upon as well as the methodologies employed for each chapter.

	Chapter 3	Chapter 4	Chapter 5	Chapter 6
Title:	The Evolution of the Infrastructure Financial Product	The Political Economy of Infrastructure Investing: Auckland International Airport	Effects of the Global Financial Crisis: Infrastructure Governance Revised	The Relational Geography of the Pension Fund Infrastructure Investment Process: The Role of the Investment Consultant
Relational Framework Relevance:	Information Asymmetries (Basis for Relational)	Relational Economic Geography/Contract Theory (Regulation – Long term, incomplete)	Relational Economic Geography (Global/Local Governance)	Relational Economic Geography/Contract Theory (Trust, Expertise, Power – Long Term Commitment)
Theoretical Framework: (Specific)	Geography of Finance	Public Policy, Economic Pricing Regulation	Corporate Governance Corporate Finance Management Theory	Pension Fund Governance Relational Economic Geography
Methodology:	Database Review Document Review Interviews	Case Study Interviews Document Review	Case Study Interviews Document Review	Case Study Interviews Questionnaire Document Review

Table 1: Theoretical Framework and Methodology Summary for Thesis

2.3.1 Geography of Finance

The geography of finance has emerged as a subfield of economic geography in recognition of the limitations of the efficient market hypothesis contained within academic finance theory (Tickell 2001, Clark 2000, Graves 1998). Such theory assumes that capital and information flow frictionlessly in financial markets making it impossible to consistently achieve a better than market return (Brearley et al 2001). In reality, the shortcomings of such assumptions have been made evident through the presence of information asymmetries and market imperfections resulting in uneven development (Akerlof, 1970; Spence, 1973; Stiglitz, 2000). Geographers have been called upon to develop their understanding of the geography of finance because of the significant role that finance plays in regional economic development, corporate location and urban form (Clark et al 2000).

Research into the informational content and geographical structure of financial products emerged out of the ‘end of geography’ claim by economist, Richard O’Brien, and provides a useful framework for analysing the unique characteristics of the infrastructure financial product. O’Brien claimed that the location of institutional

investors in sourcing financial products is not important due to the advancement of technology and the decrease in transaction and information costs (O'Brien 1992). Clark and O'Connor argue that location is important because it directly affects how information is conveyed between interested parties in the design of financial products. In this way, a spectrum of products has been developed with the spatially and functionally homogeneous transparent product at one end and the heterogeneous, asymmetrically distributed information characteristics of opaque products at the other end. The financial product life-cycle suggests that products may start off in the opaque category but progress over time to translucency and transparency, as the design of products becomes increasingly understood in the market (Clark and O'Connor 1998).

Early studies have noted that previously opaque infrastructure assets have shifted to translucent ones due to the dispersal of transaction-specific information (Torrance 2006, Thrift 1994). It was observed that the specialist local information required to invest into infrastructure had become more readily available due to the opening up of global investors' networks and the internationalisation of legal services (Torrance 2006).

With further growth in the global infrastructure market but constricting implications of the financial crisis also being experienced, more work is required to analyse the evolution of the infrastructure financial product. It is argued that while developments have occurred in the infrastructure market signalling its growth and expansion, the unique, complex nature of the infrastructure asset class will inhibit a full progression to transparency. The lack of progression of the infrastructure financial product from translucency or opaqueness highlights the need for a relational approach for investing

into the asset class. This has implications for investors looking to invest into the infrastructure asset class as well as the urban landscapes affected by the investment decisions.

2.3.2 Relational (Economic Geography)

Within the field of economic geography, a relational turn has emerged in recent years as a way of analysing complex economic activities. This relational conception has its origins placed within the work of economic sociologists who developed a socio-organisational approach to explore the spatial and temporal contexts of economic activities (Granovetter 1985). Such an approach stressed the importance of recognising economic processes are grounded in social relations, proposing that economic institutions are social constructions and that economic action is a form of social action (Swedberg and Granovetter 1992). “Economic behaviour is embedded in networks of interpersonal relations, continuously constructed and reconstructed during interaction” (Granovetter 1985). These sociological influences initiated the ‘cultural turn’ in economic geography research of the mid 1990s, which looked at understanding the role of social and cultural forms in the way economic and financial spaces are produced (Thrift and Olds 1996; Olds and Yeung 1999). Relational economic geography has recently emerged from this shifting agenda to examine the relations and networks associated with geographic dynamics. The initial conceptualisation, was based on the proposition that economic actors are embedded in structures of social relations and is concerned with how these factors influence their actions and interactions (Yeung 2005, Boggs and Rantisi 2003, Dicken et al 2001).

This thesis draws upon the relational framework developed by Bathelt and Glückler (2011), which has aimed at uniting the different relational conceptualisations in

economic geography. This relational framework takes the view that economic action is highly contextual in nature, and situated within material, social and political relations as well as institutional contexts. In a sense, the framework is more than just defining relationships and believing two or more things are connected, instead relationality here is constituted, inquiring into how actors understand the world, the different parts in it and the opportunity set around the way they do their work. This is important for approaching the complex field of infrastructure investing, where the actors are geographically constituted and the relationships formed are place specific, geographically constituted and constitutive of place.

Specifically, the framework introduced by Bathelt and Glückler (2011) focuses on a micro-level perspective to understand the reasons and strategies of economic decisions within macro-level contexts. Similarly, this research thesis is concerned with micro-level decision-making in the financial industry, to deepen our understanding of institutional investors' influence on the urban infrastructure landscape. Torrance (2009) has utilised the concept of relational geometries for the infrastructure investment process by recognising the contextual relationships that develop among institutional investors, who provide equity; investment managers of infrastructure funds, who have financial expertise and contacts in the industry; and specialists, such as contractors, operators, and lawyers, who have vital local knowledge and influence. "All of these actors: institutional investors, managers of infrastructure funds, and specialists like contractors, operators, and lawyers, develop a certain amount of relational complementarity to fulfill their institutional goals" (Torrance 2009:80). The detailed empirical work in this thesis looks at, in a similar vein, how the tensions and contradictions that have emerged in these relationships are being reworked to provide an ongoing development of analysis in this area. This work

is extended here by looking at the relational geography of investment consultants, an increasingly important actor for the infrastructure investment process.

Bathelt and Glückler (2011) have also stated that studies should not solely focus on a specific scale of analysis such as the local or regional level, but instead view the local level in relation to regional, national and global relationships. Such a perspective would allow the effects of globalisation and global-local tensions to be taken into account. This is pertinent for infrastructure investing where it has been observed that public-sector development authorities and contractors are now not the only developers and owners of infrastructure assets. Instead, private investors around the world are influencing the development of local, urban infrastructure. “Global relational geometries are becoming all the more important because of the need of institutional investors to partner with other actors within the evolving global infrastructure market” (Torrance 2009:80). The global-local scale of analysis has been crucial for exploring the governance tensions associated with infrastructure investments. This is particularly apparent when looking at the BAA case study in Chapter Five of the thesis where poor governance in the cross border acquisition by a global investment consortium of a nationally significant infrastructure asset seemed to result in adverse effects transpiring.

A modern political economy approach has also been an important part of the development of the relational conception with theorists believing that economic activities are grounded in social relations, the relationships between different groups of people involved in the economy such as employers, workers, consumers, government regulators (Yeung 2011, Jones and Murphy 2011). From the 1960s and 1970s, a political economic approach was utilised in economic geography involving a

Marxist framework for critiquing capitalism, looking at issues of poverty, job loss, deindustrialisation, regional decline and uneven development (Mackinnon and Cumbers 2007). It has been suggested that a more open political economy approach that incorporates broader perspectives providing a stronger sense of agency and sensitivity towards the cultural construction of the economy may be more useful for understanding the complexities associated with the modern global economy (Mackinnon and Cumbers 2007). There is an emphasis on the “role of power and politics in structuring economic adaptation” and that place consists of “social constructions with various degrees of political and economic integrity” (Allen, Massey and Cochrane 1998, MacKinnon et al 2009). It is also argued that places may be made up of a historically constructed assemblage of actors, and that the respective interests may diverge and come into conflict. This raises questions around how adaptation is taking place and for whose benefit (MacKinnon et al 2009). There are also questions of governance at the city or regional scale for “understanding the ability of key actors to shape sustainable forms of economic development enabling adaptation for change and equitable outcomes to be achieved” (Mackinnon et al 2009, Essletzbichler 2007). These questions are asked in this thesis with respect to how politics and government decision-making can influence the performance of urban infrastructure investments for institutional investors. Much of the uncertainty for investors approaching the asset class has stemmed from a lack of confidence in the public-private relationship being set up for the investment arrangement. Chapter Four of the thesis investigates the political economy of infrastructure investing through a case study of AIAL and specifically examines the role of government following the privatisation of the asset. The case study also highlights the need to view local or regional adaptation in the context of national political economies, which has been identified as a ‘missing link’ in economic geography research (Macleod 2001;

MacKinnon et al 2002). As stated by MacKinnon et al (2009): “national states represent more than a set of background institutions, exerting a potentially decisive influence over economic development at lower scales”.

2.3.3 Relational (Law and Economics)

Relational Contract Theory in Law and Economics

Within the field of law and economics, the relational concept has been developed along a slightly different strand specifically focusing on the transactional or contractual element of market life. Contracts are central to the organisation of economic activities as an agreement under which two parties make reciprocal commitments in terms of their behaviour (Masten 1999). Contracts are found in business alliances, strategic partnerships and various other collaborations. With the infrastructure investment process consisting of a large number of exchange relationships, an appreciation of contract theory assists in the analysis of governance issues and how contractual decisions are reached and expressed (Williamson 1979).

Contract theory, which looks at the decision-making process of individuals and businesses under uncertain conditions or when there is asymmetric information, has been central to the development of the relational concept in law and economics (Stone 2003). The work has revolved around theorising economic exchanges and transactions. In legal scholarship and subsequently through transaction cost theory in economics, a continuum of contracts has been developed to facilitate an understanding of human exchange (Gudel 1998). The three way discussion of contracts shows that contracts are varied and the governance structures within which transactions are executed must be adapted for the particular nature of the transaction.

Firstly, the classical law of contract stems from the nineteenth century and is used to model ‘one-off’, discrete and self-contained transactions. In classical contracts, the identity of parties to the transaction are considered irrelevant, the terms and limits of the agreement are carefully outlined, and the remedies are narrowly prescribed, predictable and not open-ended. Such a situation corresponds to the ‘ideal’ market transaction in economics i.e. “of short duration, involving limited personal interactions, and with precise party measurements of easily measured objects of exchange” (Campbell 2001).

In recognition that a completely discrete transaction is an impossibility, Oliver Williamson formulated a second (hybrid) form of contract, which is based on the existence of transaction costs and provide an alternative contracting relation or governance structure in situations where the discrete or classical model of contract breaks down (Williamson 1979). These ‘transaction cost’ contracts are based on the realisation that the world is complex, that agreements are incomplete, and that some contracts will never be reached unless the settlement machinery provides confidence to both parties (Williamson 1979).

Relational contracts, conversely, are characterised by long duration, personal involvement by the parties and are viewed as relations rather than as discrete transactions (Campbell 2001, Macauley 1963). In contrast to classical and ‘transaction cost’ contracts, relational contracts have as a reference point for effecting adaptations in the agreement, the actual relation as it has developed over time (Williamson 1979). The planning for relational contracts is more often tentative rather than binding and focuses on planning the structures and processes to govern the relation in the future

(Gudel 1998). Macneil uses the concept of relational in two ways when describing these forms of exchange. The first use of 'relational' is consistent with that adopted in the economic geography field and refers to the fact that "all contracts occur in the context of a social matrix" and consideration must be given to societal and political influences on the exchange (Stone 2003). The second use of 'relational' for contract theory refers to the fact that "many contracts involve a continuing relationship between the parties, which will affect the way in which their contract operates" (Stone 2003). Relational contracts have been described as self-enforcing agreements in repeated interactions with co-operation in the present, contingent on the expectations of future exchanges. They are informal agreements sustained by the value of future relationships, connecting actors over time and space where there is reciprocity and repeated linkages, capturing the process of transacting as opposed to a discrete transaction. Trust in these relational contracts is dependent on the trustworthy status over time through repeated exchange (Poppo and Zenger 2001).

Just as a purely discrete transaction is practically impossible, it is unlikely that a purely relational contract also exists, however there have been a number of applications that can be categorised towards the relational end of the spectrum including franchise arrangements, regulation policy, long-term employment, long-term investment and labour/management relations (Clark 1983, Baker et al 2002, Baker et al 2001, Brown et al 2004, Hart 2003). Two key areas of institutional infrastructure investing that are addressed in this thesis and draw upon the discussion of relational contracts above include the private governance of the investment relationship between institutional investors and financial intermediaries as well as the franchising, regulatory relationship between regulating bodies and the institutional

investor owners of infrastructure assets. The relevance of relational contract theory for infrastructure investing in these applications is discussed in the following sections⁷.

The Infrastructure Investment Process and Relational Contracts

The long-term, complex nature of infrastructure investing and need for commitment between the relevant parties highlights the relevance of this relational form of economic exchange, for analysing the governance issues and decision-making process of institutional investors. As Torrance (2009) has noted, “contracts serve as the formal mechanism to allocate risk among investment partners, they define time horizons and the rewards and penalties surrounding quality of performance, and they set partners’ performance standards in relation to accepted benchmarks”. Contracts thus define and inform the governing process for infrastructure investments (Babcock-Lumish and Clark 2005). Infrastructure projects require significant management expertise forcing investors to understand the various agency relationships and delegation of powers through long-term investment contracts (Clark and Evans 1998). “These relationships are intensive social relationships that depend on interaction and cover an extended sequence of transactions” (Torrance 2006). The interactions and governance that occur over the course of an infrastructure project in fact turn out to be more important than the initial agreement binding the contracting parties (Clark 2000). For these reasons, infrastructure investment contracts “should be viewed through a lens that takes account of the relationships between parties, rather than being viewed in the classical manner as a compilation of ultra-rational mutually agreed upon benchmarks

⁷ This thesis does not analyse infrastructure contracts in detail. The application of contract theory in law and economics for infrastructure investment contracts has been looked at e.g refer Clark and Evans (1998), Clark (2000), Torrance (2007). Instead this thesis draws upon the early analysis of infrastructure investment contracts and shows that a relational perspective to infrastructure exchanges for private actors is central for achieving successful outcomes.

and mechanisms that serve as a formalist mechanism dealing with all possible future contingencies” (Torrance 2007:681).

This thesis looks at the significance of the long-term governance and decision-making process of infrastructure investors by investigating the role of financial intermediaries for the investment process. Earlier research has indicated that the employment of expert financial service providers should be managed not only through contractual obligations but by developing a long-term relationship with investors that is based on trust and reciprocity (Torrance 2007). The issue of trust in financial relationships has gained importance as actors have become more specialised. “With more interdependence in society, there is a greater need to trust in either one or another or in governing structures” (Torrance 2007:680). While the role of fund managers has been previously examined, the role of investment consultants is looked at in this thesis, to investigate issues of trust, expertise and power and determine how these intermediaries are affecting the decisions of investors looking to invest into urban infrastructure.

Privatisation and Regulation Contracts of Infrastructure

With privatisation and deregulation occurring since the 1980s, private market institutions are increasingly governed by the setting of guarantee contracts. The privatisation contracts offered by governments for infrastructure investment, can take one of many forms, including divestiture, greenfield projects, operations and maintenance contracts or concession contracts⁸ lasting for five to ten years, 20-30 years or beyond. Once the process of privatisation has been completed, the “government's role becomes one of monitoring compliance with and enforcement of

⁸ The various privatisation contracts are detailed further in Chapter Four of the thesis.

the contractual commitments made by the private operators” (Estache 2001). Infrastructure services are being controlled by regulated service contracts, which define the rights of investors for investments.

The process of developing infrastructure regulatory contracts has proven to be a challenging task. It has been argued that government regulators have not put enough emphasis on designing the contracts to anticipate conflicts and address unpredictable situations, which increases the regulatory and political risk raising the required expected rate of return for potential investors (Estache 2001). Because regulatory contracts are often incomplete, there have been difficulties in settling issues and disputes that the legal instruments do not cover in detail (Estache 2001). A key question in this regard has been to decide how much discretion to give the regulators in interpreting the contract (Estache 2001, Gomez-Ibanez 1999)⁹.

In the United States, rate-of-return regulation was developed as an “incomplete long-term contractual relationship that offered infrastructure companies a fair rate of return in exchange for the ability to renegotiate the terms of the contract without excessive bargaining costs” (Williamson 1985:347). Price regulation originated in the UK to provide a system of regulation that would enable publically owned infrastructure services to be efficiently transferred to private ownership (Newbery 2002). Both methods have been criticised for their inefficiency and inequitable means of distributing rents between consumers, shareholders, and managers (Newbery 2002).

⁹ See Estache (1999, 100-104) who elaborates on the challenges associated with infrastructure regulatory contracts in more detail.

In light of the challenges associated with designing regulatory contracts and the implications for infrastructure investors, Chapter Four of this thesis looks in detail at the regulatory issues around infrastructure investing particularly focusing on the role of government decision-making during the privatisation and regulation process. Of particular interest, is the light-handed regulatory framework that AIAL operates under. The framework and governance mechanism examined in the case study is situated in light of the relational theory introduced in this section.

Having outlined the theoretical context for this thesis, the rest of this chapter discusses the rationale for the methodological approach utilised in this thesis.

2.4 Methodology

In line with the theoretical framework outlined above, a multi-method approach is utilised for the analysis of the empirical work in this thesis primarily consisting of qualitative case studies and in depth interviews. Multi-method approaches have been common in social science research as well as for examining phenomena related to the cultural and relational perspectives in new economic geography research (Yeung 2003). Traditional economic geography had been underpinned by quantitative methodologies to explain the logic behind spatial patterns of economic activities (Barnes et al 2007). Mainstream economists have favoured the use of stylized facts in their approach to economic geography (Clark 1998). It is argued however, that methodology must go beyond that of traditional research techniques in economic geography to incorporate other context-specific, idiosyncratic and subjective methods (Yeung 2003).

In this thesis I aim to further unravel the complex relations associated with the institutional infrastructure investment process and deepen our understanding of investors looking to invest into this area. Given the exclusive and confidential nature of the financial industry, access to information is at a premium, and methods utilised by traditional economic geography where the researcher is an external observer are insufficient. In order to develop a deeper and more contextual understanding of the intentions and decisions of important financial actors in the infrastructure investing space, it was necessary to seek conversation, and empathise with the investors, managers, directors and regulators under investigation. Understanding the motivations, rationalities and strategies behind economic action and interaction requires a similar methodological approach (Clark 1998). In this way, the close dialogue mode of case study research, using structured and unstructured interviews was utilised as part of the multi-method approach of this thesis. Close dialogue contrasts the conventional idea of scientific disassociation and objectivity, and provides a form of empirical research that relies upon the intimacy or closeness of researchers to industry respondents to unveil the true logic of decision-making (Clark 1998). Such qualitative type of research complements the relational perspective of this thesis by being sensitive to the contextuality of economic interaction, and to the perceptions and interpretations of the agents involved (Bathelt and Glückler 2011).

Because of the complex, heterogeneous nature of infrastructure investing, a multi-disciplinary approach is used in this thesis drawing upon theories from corporate finance, governance, management, economics pricing regulation and public policy. Inter-disciplinary research is important in the multi-method approach as Yeung (2003:26) states: “actor networks have multi-faceted dimensions manifested in the realms of history, geography, psychology, politics, business, economy, and society”.

The case study approach used in this thesis combines various data collection methods such as interviews, archives, questionnaires and database reviews. This qualitative methodology provides a triangulated approach, enabling stronger substantiation of hypotheses (Meyer 2001). The rest of this chapter details the various research methods that make up the multi-method approach utilised in this thesis. Reflections on the field work for the research are recorded as well as an account of how the case studies of the thesis were selected.

2.4.1 Research methods

Interviews

In order to move beyond traditional static structural analysis and provide a deeper understanding of social and economic processes, qualitative methods such as interviews have emerged as a prominent technique (Bathelt and Glückler 2011). The primary methodology for the acquisition of knowledge for this research project was through in-depth, semi-structured interviews. The aim of the interview process in this thesis was to try to understand the factors that affect the investment decisions of institutional investors looking to invest into urban infrastructure assets. Both the corporate interview and close dialogue techniques were utilised throughout the thesis. As Schoenberger (1991:181) explains, the corporate interview technique has been used in recognition that “firms are institutional agents embedded in a complex network of internal and external relationships”. It has been used to understand a firm’s behaviour in light of its own history, circumstances, strategies and interdependencies. In this thesis, the technique was used when approaching large institutional investors, fund managers and company directors in order to gain access to the strategic logic

behind financial decision-making (Schoenberger 1991). Similarly, close dialogue provides a means of better understanding the actual practice of decision-making in the financial world (Clark 1998).

In line with the exploratory nature of this research thesis, the interviews aimed to analyse the themes of infrastructure investing from the perspective of the interviewee, and understand why the respondent came to have their particular perspective. To meet this objective, interviews were carried out with open-ended questions in a semi-structured way to focus on specific situations in the interviewer's world rather than abstractions and general opinions (King 1994).

A total of 53 semi-structured interviews were carried out for the research in this project. Many other close-dialogue encounters with practitioners were also made. Of the official interviews, 15 were used for the case study on Auckland International Airport, 5 for the case study on ADI's acquisition of BAA and 10 for the institutional case study of the pension fund infrastructure investment process. Twenty three of the total number of interviews were general in nature and conducted to track the changing dynamics of the global infrastructure market. A list of interviewees and locations of interviews is provided in Appendix 2. All references to interviews in each of the chapters of the thesis are provided in Appendix 2 also.

With the focus of research in this thesis primarily being in OECD countries¹⁰, the interviews were conducted with key personnel in the infrastructure investment market in London, Sydney, Melbourne, New York, Wellington and Auckland between

¹⁰ Australia/NZ, UK, Western Europe and Canada have been regarded as the pioneering jurisdictions for this type of investment.

August 2009 and April 2011. The respondents included managers, advisors and investors of infrastructure equity portfolios, senior partners, managing directors and chief executive officers. Key stakeholders including government regulators and local government shareholders were also interviewed. The interviews averaged between 45 minutes and 1.5 hours in duration and travel was made to where the interviewee was located to meet in person. In five cases, the interviews were conducted over the phone due to availability.

Gaining access to interviewees in the financial industry can be difficult because of the confidential nature of issues and reluctance of professionals to talk about their strategies. Many of the respondents for the formal interviews were approached through a network developed by attending industry based conferences including the PEI Infrastructure Investor seminar in London (June 2009), PEI Infrastructure Investor conference held in New York (September 2009), Allianz Pensions Conference in Oxford (September 2009, 2010, 2011) and Terrapin Infrastructure Investment World Europe in London (November 2010, 2011), which collated leading managers, investors and advisors in the field. The organizing bodies were happy to include me as a delegate to these conferences and because of my student status, I was able to get free entry or a significantly reduced entrance fee. I also benefitted from personal introductions of the industry collaborator, Capital Partners CP2¹¹, as well as through contacts of my supervisor. Once a number of initial contacts had been made, snowballing helped me to reach out to further colleagues and overcome issues of trust (Valentine 1997). Snowballing allowed me to move through ‘the network’ and

¹¹ A studentship arrangement was set up with investment management firm, CP2 at the start of this project to help provide assistance with data acquisition and financial analysis. Throughout the duration of the project, time was spent in the offices of CP2 for these purposes and regular meetings set up to report on the work carried out.

enabled doors to open through mentioning the names of competitors, colleagues and acquaintances with which I had spoken (Gilbert 2001).

In order to further build trust with the respondents, I established a procedure for approaching interviewees. This usually consisted of an email introducing myself, summarizing the features of the research project and outlining the key issues to be spoken about in the interview. I also endeavored to carry out background research on the organisation as well as the interviewee themselves to approach the interviews with confidence. This was especially important given the power asymmetries and social status disparity between the financial elites that made up my interviewee base and my own position as a junior researcher. All of my interviews were tape recorded, which meant that I was able to concentrate fully on the task of asking questions and responding to the interviewees' answers. Soon after conducting the interviews, I transcribed the responses in full, which gave me "closeness and a good grasp of the data" (Meyer 2001). In all interviews, the confidentiality of responses was reinforced, allowing interviewees to speak 'uninhibitedly' (Meyer 2001). The anonymity of the respondents was secured through asking interviewees the same questions i.e. a statement could not be automatically associated with a person in a certain context¹².

Database Review

The Preqin infrastructure database was used primarily for the purpose of the first core chapter, to analyse the evolution of the infrastructure financial product and determine how the characteristics of the asset class have changed. The Preqin database has been growing since its launch in 2008 and now consists of information on over 300

¹² References are not made to specific names throughout the thesis in order to guarantee anonymity as this was agreed when conducting the interviews.

companies, 500 funds, and 170 investors in the sector (Preqin 2011). The database focuses on the unlisted fund market and provides a comprehensive source of information pertaining to investors, funds, fund managers, performance, fund terms, placement agents and lawyers. The data has been collated through monitoring news sources, regulatory filings and regularly maintaining contact with fund managers and investors directly. Full access to the online database and review publications was granted for one year from February 2009 to February 2010. The majority of findings in the thesis are thus based on the statistics in the database obtained during this time frame. However, Preqin also release regular publications based on the database, the information and data from which were used to update the findings in the thesis. By analysing the crucial statistics of the market from this database, the extent of the growth in the market could be deduced. An understanding in to how the informational content and geographical dynamics of the asset class have developed could also be determined.

A related methodological implication of the new economic geography research agenda in order to track down actor networks has been to conduct research *in situ*. This *in situ* research has sometimes meant that research can be done on the researcher's behalf by other interested parties (Yeung 2003). These parties are not contract researchers or research assistants but instead people from research arms of stock broking firms, investment banks, credit agencies and other institutions (Yeung 2003). The use of an industry based database like Preqin contributes to the *in situ* methodology used in this thesis.

Pension Fund Questionnaire

For the institutional case study Chapter Six of the thesis, data was obtained from the pension fund client base of three of the largest global investment consultants by size of assets under advisement and international reputation, with global institutional tax-exempt assets under advisement of USD 7 trillion collectively. This represented approximately 30% of global pension fund assets as at February 2010 (Towers Watson 2011). Contacts at each of the three consultancies were obtained through my supervisor who had carried out work with the firms in the past. These contacts then facilitated the extraction of data from the respective client bases. Close dialogue interviews were conducted with the consultants prior to passing on the questionnaire.

The purpose behind the questions was to identify the characteristics of pension funds that utilise the services of investment consultants for investing into infrastructure assets. The questionnaire for this data acquisition involved collating information on the structure, size and type of pension funds (see Appendix 10). The questionnaire was given to each investment consultant who then collated the necessary data from the clients within their database who invested into infrastructure assets. The information from the pension fund client questionnaire was unique and useful as limited research has been conducted on the role of investment consultants in the investment management chain (Knight 2010).

Document Review

While not much research has been carried out in academic literature on this new cycle of private institutional infrastructure investment, a number of private organisations have released various publications on the emergence of the asset class. The database analysis and interview process were complimented by an extensive document review

of information pertaining to infrastructure investing from private firm publications. Just as the use of the Preqin database could be seen as a form of indirect *in situ* research, the ‘expert’ reports on infrastructure investing contain a vast amount of data obtained through the organisation’s own *in situ* research. In this way, the extensive review of the industry publications can be seen as a valuable part of the methodology for this thesis. As Yeung (2003:21) notes: “This highly important source of oral and written data can be profitably exploited by economic geographers”. The use of industry publications was particularly helpful in Chapter Three and Six of the thesis.

To understand the history and development of AIAL and BAA, extensive document analyses were also essential. These included literature sources examining the history of the respective companies and a copy of each of the annual reports of the company for the period of interest. In both cases, the annual reports provided most of the necessary data to highlight the financial performance of the companies. For the BAA case, a number of regulatory and government reports including the House of Commons Transport Committee inquiries into BAA helped provide updated commentaries between MPs and various stakeholders of the company.

Both assets have a significant standing in national political discourse, and as such have been sensitive to public opinions drawing significant media interest from various periodicals and publications. These publications, reports and books all helped to find essential contextual information for the preparation of interviews and in validating the qualitative findings from the interviews, making them more reliable.

2.4.2 Case Studies

The various objectives of this thesis led to three case studies being carried out. The case study is a research method that investigates a contemporary phenomenon within its real life context, understanding the dynamics within a single setting and combines data collection methods such as archives, questionnaires and interviews (Eisenhardt 1989, Yin 1994). Case studies have been useful in social science research to inquire about the *how* and *why* of events taking place. They are particularly advantageous for exploring new processes or behaviours that are not well understood (Hartley 1994). Having recognised that institutional investors are playing a significant role in the provision of urban infrastructure assets, my objectives were to deepen our understanding of why and how this financialisation process is taking place. Due to significant market growth occurring but constricting implications of the GFC, certain elements of the infrastructure investment landscape have been reworked. This thesis uses the case study method to uncover some of the lessons that have been observed and identify the factors that have contributed to the performance of private investments through these developments.

A key advantage of case study research is the ability to view issues in a holistic manner. For example as Meyer (2001) notes quoting from Gummesson (1988:76): “The detailed observations entailed in the case study method enable us to study many different aspects, examine them in relation to each other, view the process within its total environment and also use the researchers’ capacity for understanding human behaviour”. Consequently, the case study technique was highly appropriate for studying the complex relations associated with the institutional infrastructure investment process.

After analysing the development of the urban infrastructure financial product in Chapter Three, I use three main cases to investigate various issues pertaining to private institutional infrastructure investment: two asset geographical cases and one institutional based sectoral case. The various considerations in carrying out these case studies are discussed in the next section.

Geographical Asset Case Studies

The two asset based case studies were chosen to provide contrasting examples of investment performance and set out to examine the factors that might have contributed to the respective performances. The selection of cases was carried out in consultation with the industry collaborator for the project, where I was able to draw upon greater knowledge and experience for distinguishing asset investments that have performed well compared with those that haven't. With the availability of data on infrastructure performance being largely inaccessible in the public domain, the ability to draw upon the advice and resources of an actual investment analysis firm, was invaluable. As Flyvberg (2011) has noted, the selection of a critical case is largely dependent on experience. The same author also states that "it is a good idea to look for either "most likely" or "least likely" cases, that is, cases that are likely to either clearly confirm or irrefutably falsify propositions and hypotheses" (Flyvberg 2011:307).

Airport infrastructure were selected as case study examples as they fall under the economic infrastructure category, attractive for institutional investors because of their favourable investment characteristics i.e. are asset backed, produce high margins and have monopoly characteristics (Beeferman 2008). The task was then to select

contrasting assets that would highlight the factors that contributed to the respective performance.

The AIAL case was selected as an example of a successfully performing asset¹³, which was evident from the publically listed share price appreciation that the company has been able to enjoy since becoming privatised. The fact that the airport had also been subjected to significant takeover bids illustrated the favourable investor appetite for the asset. With the asset located in my home-town, I was able to approach the case study with a familiar sense of the background, legal and political framework that the company operated under, enabling me to focus directly on the core issues of the case. For the AIAL case, travel was made to Auckland to conduct interviews with senior management, investors, past employees and community/customer stakeholders of the airport. Prior to travelling to Auckland, a one month placement in the Sydney office of the industry collaborator, CP2 was used to familiarise myself with the financial aspects of infrastructure investments as well as provide access to financial analysis carried out by the firm on the asset itself. A site visit to Sydney Airport with financial analysts, provided an insight into the investment appraisal process prior to arriving in Auckland. Having access to the CP2 network also helped establish contacts for interviews in Auckland.

In order to contrast the successfully performing Auckland Airport case study, a number of assets were considered, again in consultation with the industry collaborator, to provide an example of an asset that has not performed well from an investor's perspective. The BAA case was selected in light of the immense size of the

¹³ While it was hypothesised and relatively well known that AIAL was a successfully performing infrastructure company, the extent of the successful performance was only realised after conducting the analysis in the chapter.

investment that took place, which was a landmark transaction, and magnified the causes of investment failure and subsequent effects. The highly publicised nature of the investment meant that significant amounts of information both from media and official sources was readily available in the public domain enabling ‘information richness’ to be achieved for the case (Crabtree and Miller 1992). The choice of cases in this thesis was guided by Eisenhardt’s (1989) recommendations where “the goal is to choose cases that are likely to replicate or extend the emergent theory or to fill categories and provide examples for polar types”. A key focus for the BAA case study was to look at the governance challenges associated with the international ownership of locally and nationally significant infrastructure assets whereas the AIAL case investigated the role of government following the privatisation of infrastructure assets. Both cases represented emerging issues for the field of institutional infrastructure investment research (Clark 2000, Graham and Marvin 2001, Torrance 2006).

A drawback of the qualitative case study method is the bias or source of contamination of results that could surface through the choice of interviewees. This was recognised in the sampling process and addressed by ensuring a wide selection of interviewees were used. Both cases involved getting the perspectives of not only those from within the firm but also customers, investors and independent advisors. On top of the attempt to gain a representative sample of interviewees, the sensitive nature of the assets meant that a large amount of information could be sourced in the public domain as well. Thus a process of triangulation was used by comparing and contrasting different sources of findings for addressing the same problems in order to achieve ‘convergence validity’ (Yeung 2003).

Despite the fact that both assets used in the thesis fell under the category of airport infrastructure, there were a number of asset specific characteristics that differed between the case studies. In terms of size, AIAL was a much smaller company comprising of a single asset whereas BAA is considered one of the largest airport operating companies in the world, which at the time of the transaction of interest in this study, owned seven major airports in the United Kingdom. The passenger volumes experienced by the airports and level of complexity of both assets thus differed. The geographical locations of the assets also provided points of difference with AIAL acting as the major gateway airport for travel into New Zealand whereas BAA's airports provided the dual purpose as a gateway into the UK but also as hub airports for foreign travellers looking to access the European continent. BAA's airports therefore faced stiffer competition than AIAL from other airports in the UK as well as from other major European destinations. The analysis of the case studies was conducted at a different stage for each of the assets. The AIAL case was examined in the period immediately after privatisation whereas the BAA case was looked at after a major acquisition by a foreign investment consortium at a time when BAA had already been privatised nearly twenty years earlier. As such, the analyses in the two cases have different focuses. In the AIAL case, while the capital structure and governance are touched upon, it is the privatisation and regulation that are the main focus in order to illustrate the role of government for private infrastructure investments. Similarly, while the regulation is acknowledged in the BAA case, the focus in this case is on the corporate governance and financial strategies of the owners.

Both companies fall under the brownfield infrastructure category with capital expenditure projects and new investments being made to improve the existing asset,

as opposed to building from scratch in greenfield assets¹⁴. The investment programs of both companies however differed greatly. The stark differences of the two airports despite falling under the same asset category, illustrates the complex, heterogeneous nature of the infrastructure asset class making comparisons and generalisations across the board difficult.

The thesis takes the perspective of private investors looking to invest into the broad category of economic urban infrastructure assets. The asset case study chapters are designed to provide illustrative examples and highlight investment considerations that may be apparent for assets included under the economic urban infrastructure banner located in different jurisdictions. They are not however aimed at comparing similarities or differences on the ground. Instead, they illustrate that nature of this financialisation process and highlight the developments occurring for this growing investment area.

Sector-Based Institutional Case Study

In contrast to the geographical asset case studies, the third case study of the thesis analysed the investment procedure of institutional investors to uncover the decision-making process that goes in to deploying their capital into infrastructure assets. Of particular interest was the role of financial intermediaries for the investment process and the significance of investment consultants in the process. As Yeung (2003:17) notes: “the role of intermediaries or gatekeepers can be critical in our understanding of the material and spatial constitution of actor networks. They provide the social and institutional foundation upon which spaces of actor networks are negotiated”. This

¹⁴ Improvements can be made to brownfield assets in the form of new constructions but these are essentially improvements to the overall existing asset. e.g. Heathrow Terminal Five

case study looked at determining how investment consultants are impacting the infrastructure investment decisions of investors.

The analysis of this case study was split into two parts. Firstly a review of the global infrastructure investor universe was carried out. This involved identifying the types of pension funds that utilise investment consultants for infrastructure investing as well as an analysis of the governance of pension funds in the market using the best practice governance framework developed by Clark and Urwin (2008a). Secondly, the best practice governance framework was used to investigate in detail, the functional role of investment consultants for the infrastructure investment process.

A semi-structured interview process carried out with investors and consultants during the period July 2010-October 2010 provided the basis for the findings in this case study. Each interview focused questions around each party's role in the investment process for infrastructure assets. Interviews with pension funds involved speaking to the member of the investment committee responsible for the infrastructure portfolio, although in some cases, board members were also interviewed. Seven pension funds of varying size and characteristics were interviewed specifically for the purpose of this case study. On top of this, data was obtained from the pension fund client base of three of the largest global investment consultants by size of assets under advisement and international reputation. Close-dialogue interviews, each lasting for one and a half hours were conducted with a member of the infrastructure team and a senior consultant at each firm. The aim of this close dialogue interview process was to try to understand the rationale for investment decisions and determine how investors are approaching the evolving infrastructure financial product.

2.5 Conclusions

This chapter has outlined the relational economic geography theoretical framework adopted for this research analysis of private institutional infrastructure investment. The academic research area of institutional infrastructure investment is a new and growing field. The varied and heterogeneous nature of infrastructure assets has made researching the topic as a whole problematic with most research focussing narrowly on specific aspects of infrastructure projects such as risk analysis, region specifics or financing models. This research thesis looks specifically at the role of institutional investors and attempts to holistically analyse infrastructure investment from the perspective of institutional investors.

The importance of a relational framework for achieving the research objectives of the thesis is threefold; infrastructure investing is a very idiosyncratic field with significant information asymmetries; the many, assorted infrastructure investment relationships are complex and situated within various institutional contexts; infrastructure investing consists of long-term, repeated transactions, and commitment between trusted partners.

This thesis utilises a relational framework that firstly draws upon the geography of finance to highlight the heterogeneous nature and informational opaqueness of infrastructure financial products. Relational economic geography that places infrastructure investing within its social and political context is then drawn upon to analyse the complex relationships and moving parts between actors in the field. Finally, relational contract theory provides the final pillar of the relational framework to analyse the long-term investment relationship between investors and financial intermediaries as well as that between regulators and investors of infrastructure assets.

It is from this overarching relational framework that specific theories such as economic pricing policy, management theory, corporate governance and finance are drawn upon to analyse in detail specific issues within each of the core chapters. As outlined, this type of multi-disciplinary technique is a feature of new economic geography research for explaining complex economic activities in the contemporary world.

The qualitative methodological approach that uses a mixture of semi-structured interviews, database and document reviews and three case studies at both the asset and institutional level, is consistent with the framework outlined above in order to achieve the objectives of the thesis.

Having provided an overview of the research structure and methodologies, the thesis now moves into the empirical part of the thesis, beginning with an economic geography analysis of the evolution of the infrastructure financial product. This is followed by the case study chapters of the thesis before the conclusions are drawn and future research directions are explored in the final chapter.

CHAPTER THREE: THE EVOLUTION OF THE INFRASTRUCTURE FINANCIAL PRODUCT

3.1 Introduction

As a result of the GFC, investors have had to reconsider the make up of assets in their portfolios with traditional allocations and investment perceptions changing dramatically. Infrastructure has emerged as an investment prospect with many investors now accepting the advantages of an asset allocation to infrastructure within a portfolio. The infrastructure financial product has materialised out of an increase in demand for infrastructure investment and shrinking government budgets over the last two decades leading to the rise of a global infrastructure market.

The market for infrastructure is vast and the range of potential infrastructure investments is extremely broad. Over the last ten years in particular, the global market for infrastructure investing experienced a period of exponential growth. Institutional investors are now the owners of roads, airports, water and gas networks, railway tracks, electricity grids and ports in various locations around the world. Institutional infrastructure investments however can be affected by a number of complex issues from political and environmental to social influences. An investor who does not have a sufficient overview and insight into how an infrastructure product is structured or an awareness of the risks involved, will find it difficult to achieve the desired outcomes from an investment in this area. More work is required to investigate the complex and heterogeneous issues highlighted by the early development of this asset class.

This chapter is motivated by the need to better understand the nature of financial products and in particular the level of transparency associated with investing into infrastructure assets. It is indeed a lack of transparency that has been attributed as one of the main causes of the 2008 GFC. A number of government regulatory reform proposals have acknowledged the importance of increasing transparency in an economy's financial sector. With the increasing role of financial markets in the provision of urban infrastructure, a greater understanding of the informational content and level of transparency in the newly developed infrastructure financial product is required.

The combination of information asymmetries and market imperfections apparent in modern day complex financial activities highlighted by the GFC have emphasised the limitations of the Efficient Markets Hypothesis contained in academic finance theory. Subsequently the geography of finance has emerged as a subfield of economic geography, to analyse the spatial and temporal heterogeneity of information in financial markets. By focusing on the channelling of information, an understanding of investment practices and market institutions in the context of global finance can be achieved (Clark and Wojick 2007). The geography of finance thus provides a suitable framework to approach the heterogeneous research area of global institutional infrastructure investing.

While the more established asset classes of real estate, private equity and venture capital investing have been researched in the fields of economics, finance and geography, infrastructure investing is a new, under researched field (Torrance 2006). There have been few publications released in academic journals which can be explained by unawareness, lack of data and confidentiality problems (Torrance 2006).

The aim of this chapter is to provide an overview of the global market for infrastructure by tracking the market growth during the first decade of the new millennium. This is done by analysing how the informational content, geographical structure and level of transparency in the asset class has evolved during this period of growth.

The chapter is set out in the following manner. Section 3.2 situates the analysis for this chapter in the academic field of the geography of finance. The methods for analysis are also presented in this section. A detailed quantitative and qualitative overview of the global infrastructure market is provided in the following three sections. A discussion on the extent to which the infrastructure financial product has progressed to transparency is given in section 3.6. The conclusions and implications for the asset class are then provided in section 3.7.

3.2 Theoretical Framework

3.2.1 Informational Content and Geographical Structure of Financial Products

The chapter draws upon the research area of the geography of finance and builds on the analysis of the global infrastructure market presented by Torrance (2006). Based on an analysis of 40 interviews carried out in 2005 with key players involved in the infrastructure equity field, Torrance (2006) argues that infrastructure assets are translucent financial products. By definition these are long-term assets with unique spatial information characteristics dependent on the geographic content of the infrastructure, even though the locations of buyers and sellers are arbitrary.

The study by Torrance (2006) addressed a gap in the literature within the field of economic and urban geography by looking into the role of financial markets and institutions in the supply of urban public goods (Clark and Wojcik 2007). However, the work was carried out at an infant stage of the rise in the global infrastructure market. With the global infrastructure market growing exponentially since 2005, and then contracting since the 2008 GFC, more research is required to understand the dynamics involved between the private institutional investor and the complex nature of urban infrastructure provision.

The geography of finance, which involves research into the flows of money and finance emerged as a subfield of economic geography in the late 1990s due to the opening up of foreign investment markets and technological change (Tickell 2001). Research in this area has primarily focused on the broader financial system through studies of financial centres, spatial patterns of the banking system and interactions of employees in the financial sector (e.g. Thrift 1994, Leyshon 1995, Sassen 1996). There has been some work done on examining the relationship between finance and the built environment but this has focused on real estate and urban development projects (Pryke 1991, 1994, Olds 2001, Hagerman 2007). It has been argued that economic geographers have inadequately looked at how finance is being geographically arranged with questions around sources, structuring and allocation still to be considered (Clark and Wojcik 2007).

Research into the geographical structure and informational content of a financial product grew out of the claim by economist, Richard O'Brien, that a decrease in transaction and information costs would lead to an 'end of geography' and that the location of institutional investors was not important (O'Brien 1992). O'Brien (1992)

argues that an investor cannot profit purely because of where it is located since an “efficient spatially integrated system of markets would be one in which location does not matter” (Torrance 2007). This has been debated and challenged by economic geographers who inform that the extent to which geography does not matter depends on the unique characteristics of the financial product in question (Clark and O’Connor 1998; Tickell 2000). There have been a number of studies that have shown the significance of geography in financial markets. Coval and Moskowitz (1999) look at the domestic equity positions of a set of US mutual fund managers over a 20-year period and show that a positive relationship exists between average returns and the degree of informed investment in a firm. Coval and Moskowitz prove that investors have better information about nearby firms than distant ones ensuing that geographic proximity and information are related. Pagano et al (2002) illustrate the acceleration of European firms cross-listing from Europe to US exchanges to access investors with an otherwise strong home bias. Here the effect of geography is made apparent as cross-listing would make little sense if global financial markets were functionally integrated and efficient (Clark and Wojcik 2007). Peterson and Rajan (2002) show that lending practices of US Bank and non-bank institutions depend on the distance and informational transparency of firms. Small, opaque firms are located a lot closer to lending institutions whereas small, transparent firms seem to have more distant and formal relationships with lending institutions.

It is the paper by Clark and O’Connor (1998) that provides a conceptual framework to analyse the changing dynamics of the infrastructure asset class by responding to the claims of an ‘end of geography’ (Torrance 2006). Clark and O’Connor argue that location is important because it directly affects how information is conveyed between interested parties in the design of financial products. There is usually a clear spatial

element to the way information is imbedded in certain financial products. To illustrate this concept, Clark and O'Connor propose the idea of classifying financial products into three categories; i.e. transparent, translucent and opaque products. *Transparent* financial products are those with qualities and dynamics that are well known or very easily obtainable and which institutions can trade based on observed past and current prices. Transparent products are spatially and functionally homogenous and as such deliver a relatively low risk-adjusted return. In contrast, *translucent* products are described as products commonly produced and traded but whose key characteristics are designed to be different from the standard industry product i.e. the standard properties of such products are well known in the industry, but the specific qualities are only known in the local market. An investment into a translucent product requires an investment firstly in information to judge the risk and return of the investment. Local markets are the best source of information to judge the risk and return of an investment into a translucent product. Thirdly, *opaque* products are distinguished by the fact that their design is based upon asymmetrically distributed or private information (transaction specific information), in comparison to the publically available information in transparent and to a lesser extent translucent products. Opaque assets require a significant amount of specialist expertise and are therefore produced by firms with access to local markets. Confidentiality of private information or special knowledge for financial institutions provides an advantage over competitors offering comparable financial products. The distinction between opaque and translucent products can be affected by the amount of information product designers are willing to disclose (Clark and O'Connor 1998). Opaque products are heterogeneous and are often associated with high risk-adjusted returns.

Table 2 below summarises the characteristics of financial products for the different categories using the above framework.

Financial Product Type	Probable Market Scope	Information Intensity	Specialist Expertise Required	Perceived Risk-Adjusted Return
Transparent	Global	Ubiquitous	Low	Low
Translucent	National	Third party market specific	Significant	Medium
Opaque	Local	Transaction Specific	Vital	High

Table 2: Typology of Financial Products
(Source: Clark and O'Connor 1998)

Gold is an example of a transparent product as it is effectively a global store of value, is used as a speculative product and is homogenous in character. A pooled investment product like a balanced equity product can be seen as a translucent product because its particular characteristics reflect both the sectoral and size composition of the target industry sector. A balanced equity product over time, however can be thought of as a transparent product as the basic principles involved in their design and functioning become well known in the market to a generalised and standardised level. For opaque products, where financial institutions are unable to directly observe the associated internal logic or elements, a relational form of investing is required. In this way, property or real estate investment trusts have been placed in the opaque product category (Clark & O'Connor 1998).

O'Brien claims that those who believe geography is important confuse the production of financial products with their marketing and delivery. However, the above framework illustrates that financial products often have a distinct spatial configuration of information embedded in their design (Torrance 2006). The nature of information varies in systematic ways according to the characteristics of products.

Torrance (2006) notes that the previously opaque infrastructure assets have shifted to translucent ones due to the dispersal of transaction-specific information (Thrift 1994). Infrastructure assets are translucent products as the specialist local information required to invest into infrastructure has become more readily available due to the opening up of global investors' networks and the internationalisation of legal services (Torrance 2006). From the interviews conducted in her study, Torrance (2006) observed that institutional investors are investing in local assets with the help of local experts that have transaction-specific information. "While the production of infrastructure assets has a local element, global investors have been able to invest in these unlisted type assets from a distance" (Torrance 2009:94).

With exponential growth in the global infrastructure market being witnessed since the study conducted by Torrance (2006), it may be expected that the infrastructure financial product has evolved to more of a transparent fit. The extreme growth in the infrastructure investing industry has increased the competition for information, and, along with further growth in information technology, may have significantly reduced the gains from accessing local information. This is consistent with Clark and O'Connor's financial product life cycle idea whereby, products may begin in the opaque category but end up in the transparent category. The argument for such a progression is that the design of financial products becomes increasingly understood in the market and other firms begin to offer similar products in a more generalised form. Essentially, transaction-specific information becomes diffused through market networks, allowing other firms to design competing products using third-party market information (Thrift 1994).

However, because of the unique heterogeneous nature of the infrastructure asset class, I argue that the progression to transparency has not yet been achieved, in spite of the evident rapid growth in the market. The initial shift to translucency from opaqueness, deduced by Torrance (2006) is validated as investing in infrastructure has become a lot more readily accessible, however, I argue that due to the distinct nature of infrastructure (with so much variation within the sector), it will never be able to become a completely transparent asset class.

Furthermore, the 2008 GFC may have further affected the informational and geographical content of infrastructure products. The GFC has exposed highly opaque or translucent assets with high leveraging levels, causing them to become distressed and fail. With fewer firms having the ability to raise finance for infrastructure projects, a competitive advantage may have been created for those established firms with the specialist expertise to invest into infrastructure. It is proposed that with a contraction in the market due to the 2008 GFC, more infrastructure products will remain in the translucent and opaque categories.

3.2.2 Methodology

As detailed in the previous chapter, the methodology utilised here comprised of database and document reviews as well as a thorough interview process in order to analyse the key characteristics of the infrastructure asset class and determine how the financial product offering has evolved.

Figure 5 below illustrates how the methodologies employed in this chapter were used to examine specific elements of the global infrastructure market. Three key areas were looked at; Market Size/Definitions, Investment Performance and Investor

Profiles. By analysing these three areas, the specific characteristics for categorising financial products based on their informational content and geographical structure (market scope, information intensity, specialist expertise required, perceived risk-adjusted return) could be examined for infrastructure (Clark and O’Connor 1998). Ultimately, the level of transparency associated with investment in this area could then be determined.

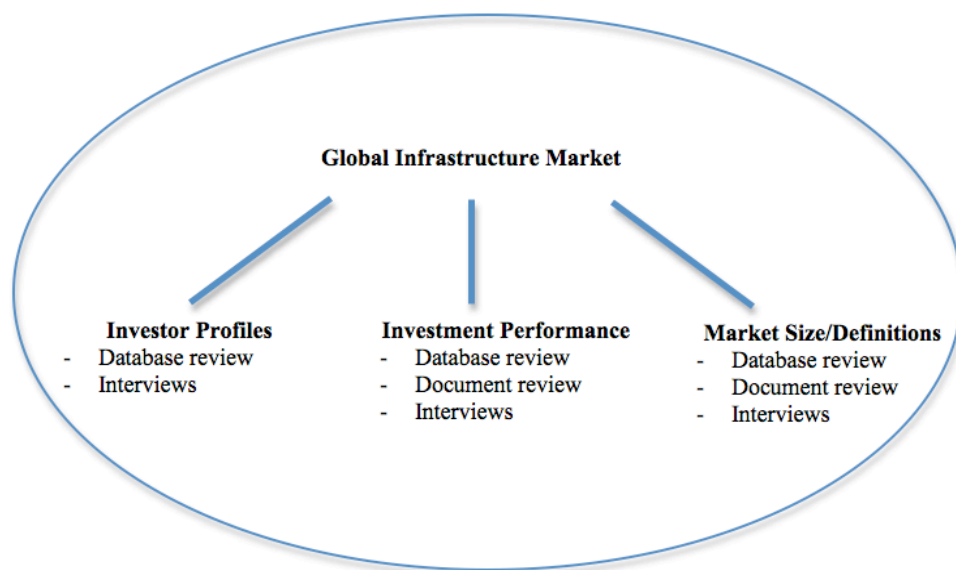


Figure 5: Methodologies to analyse Informational Content and Geographical Structure of the Infrastructure Financial Product

Screen shot samples of the Preqin database as well as the Interview questions utilised for this chapter are provided in Appendix 3 and 4 respectively. The next three sections present the analysis carried out on the three areas of the Global Infrastructure Market outlined in Figure 5 above.

3.3 Characteristics of a new asset class

As is the case for other asset classes, there are a number of different vehicles on offer for private investment in infrastructure. While it is debatable whether infrastructure

can be considered a separate asset class, the routes to market available for institutional investors take the traditional forms offered by other asset classes; listed securities, unlisted vehicles or direct investments (Preqin 2008). This section presents an overview of the current global infrastructure market to capture the growth experienced in the industry over the last half-decade. It must be noted that the primary source of data used to analyse the trends in market size, performance and investors of the asset class are based on the unlisted infrastructure fund market. It is through the unlisted fund investment vehicle, that the rapid financialisation of the urban infrastructure space has occurred enabling institutional investors to play a major role in this new phase of private infrastructure investment (Torrance 2009). The analysis carried out by Torrance (2006) in deducing infrastructure as a translucent financial product was primarily focused on the unlisted infrastructure fund vehicle. While the unlisted vehicle seems to be the most common approach for accessing the asset class for institutional investors, this chapter will look at the various other product offerings in order to gain a wider appreciation of the changing dynamics of the infrastructure financial product as a whole. It is likely that the informational content and geographical structure of each product offering within the infrastructure asset class may differ from one to the other. The work from this chapter seeks to analyse the development of the infrastructure investing universe and identify how the inherent qualities of the assets have evolved.

3.3.1 Infrastructure as an asset class defined

Infrastructure assets have been defined as the “physical structures and networks that provide essential services to the public and community” (Macquarie 2009). Such a broad definition has led to the inherent lack of uniformity for the infrastructure

financial product. Despite this, industry experts have portrayed infrastructure to private investors by categorising it into two main components:

Economic Infrastructure refers to the assets that provide services for production processes and final consumption in the economy (Macquarie 2009). These assets provide economic benefits to society and have a long operational life. A key characteristic of economic infrastructure is that it is usually easy to price or value gains from these assets in economic or financial terms (Macquarie 2009).

Social Infrastructure comprises a system of networks and facilities often operated by the private sector that support communities such as hospitals, education, housing, recreation and leisure. Social infrastructure investments are usually characterised by long-term contracts between the public and private sector as opposed to full privatisation. The gains from social infrastructure assets are less tangible and can be more difficult to price in economic or financial terms (Macquarie 2009).

Economic Infrastructure	Social Infrastructure
Toll roads, bridges and tunnels	Hospitals
Gas – pipelines, distribution, storage, distribution facilities	Schools
Electricity – distribution, generation, transmission	Recreation and leisure
Water – pipeline, water, sewerage treatment, distribution and desalination plants	Prisons
Sea ports – container and passenger terminals	Stadiums
Communications – towers, transmission, satellites, cable networks, switching stations, broadcast	Courts
Airports	Subsidised Housing
Rail – track, stations, rolling stock	
Ferries	

Table 3: Infrastructure Categories.
(Source: Torrance (2009), Macquarie (2009))

The core infrastructure assets outlined above have the following common characteristics: large, long-term assets providing essential services, limited or no competition and high barriers to entry, predictable and steady cash flows with a strong yield component, low volatility and correlation to other asset classes.

As mentioned in the introductory chapter, this thesis is primarily concerned with core economic infrastructure assets that provide viable investment opportunities for institutional investors.

3.3.2 Privatised Infrastructure Assets

The investment vehicles which make up the global infrastructure market are made possible by governments that undergo the process of privatisation. There are numerous forms of the privatisation process with varying degrees of private participation:

Full Private Provision (FPP) which involves the government transferring complete ownership of the asset to private players. In this case, the private investor takes on all of the risk of the investment (O'Neill 2009a, Macquarie 2009).

Public Private Partnership (PPP) is an investment funded and operated through a contractually agreed partnership between the government and one or more private sector players (Macquarie 2009). In 2008, there were 157 PPP deals globally worth US\$58.9bn that reached financial close. Transport was the leading sector benefitting from the PPP deals followed by social infrastructure (Macquarie 2009). Private Finance Initiative (PFI) is a form of PPP where the private sector is used in the financing and management of public sector projects. PFI's differ by the fact that in

this form of privatisation, the responsibility of providing essential services is not transferred to the private sector (Ernst & Young 2007). In the UK, the total value of PFI projects signed and recorded by Treasury up until April 2009 was £63.8 billion. In the European countries of France, Italy, Spain and Portugal, PFI in infrastructure increased from €7.5 billion in 2001 to €16 billion in 2009 (Macquarie 2009).

The methods of privatisation mentioned above have been offered through individual asset sales, sales of interests in state owned companies, outright sales of companies via initial public offerings (IPOs) or auctions. There is also a growing secondary infrastructure market enabling private institutions to acquire assets from other private players. While the basic arrangements are outlined above, a more elaborate explanation of the privatisation process is provided in Chapter Four.

3.3.3 Market Size

Unlisted Fund Market

The unlisted infrastructure investment vehicle enables institutional investors to invest into an unlisted fund as limited partners. The fund is managed by the general partner of the fund, often an investment bank or investment management firm. The general partner then invests contributions to the fund into various infrastructure assets on behalf of the limited partners. The unlisted fund configuration is shown below in Figure 6:

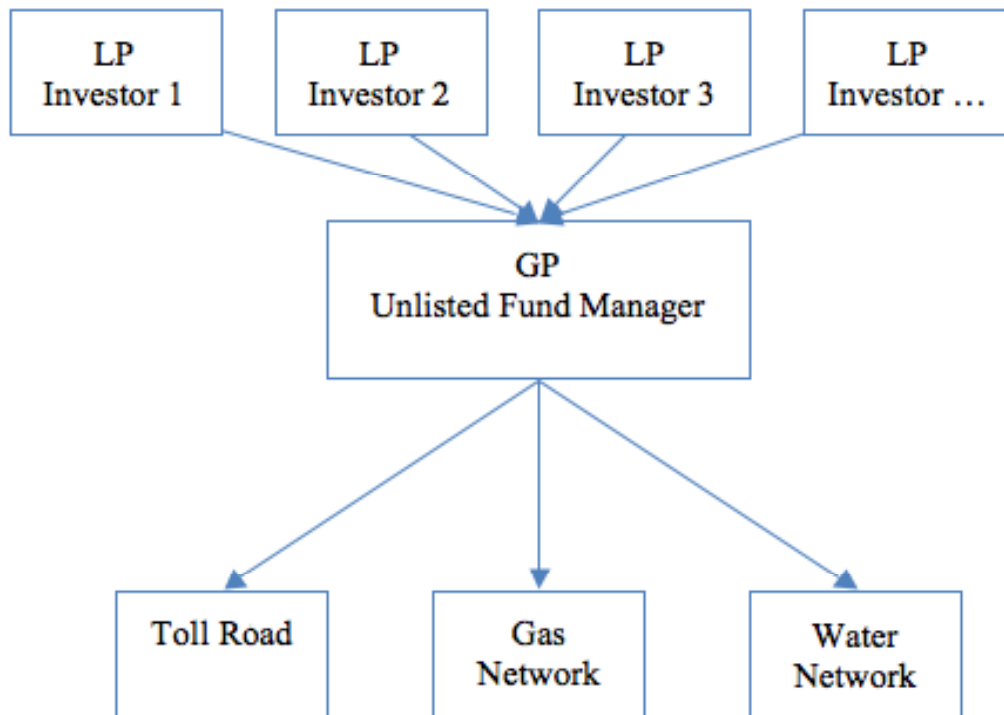


Figure 6: Unlisted Fund Configuration

Figure 7 shows the growth in the unlisted infrastructure fund market since 1993. The annual levels of capital raised by unlisted infrastructure funds has increased significantly since 2003. Figure 7 highlights the exponential growth experienced in the unlisted fund market during the period from 2004/05 to 2008. The greatest change within the growth of the market occurred between 2005 and 2006 when the aggregate capital raised more than doubled from \$9.4bn to \$21.8bn¹⁵ and the number of funds increased from 20 to 33. It is also interesting to note that between 2006 and 2007, while the number of funds raised in the market only increased by one, the aggregate capital raised actually increased by 99% from \$21.8bn to \$43.4bn. The effects of the GFC on infrastructure fundraising can be seen in 2009 with the number of funds decreasing from 46 to 18 and the aggregate capital raised reducing from \$37.3bn to \$8.4bn. In 2010, as the economy started to improve, investor sentiment for

¹⁵ All figures in this section are quoted in US\$ unless otherwise stated.

infrastructure seemed to rebound, with the number of funds more than doubling from the 2009 level to 38 and aggregate capital also more than doubling to \$31.6bn. The 2010 figures represent a 15% decrease from the 2008 levels (Preqin 2011).

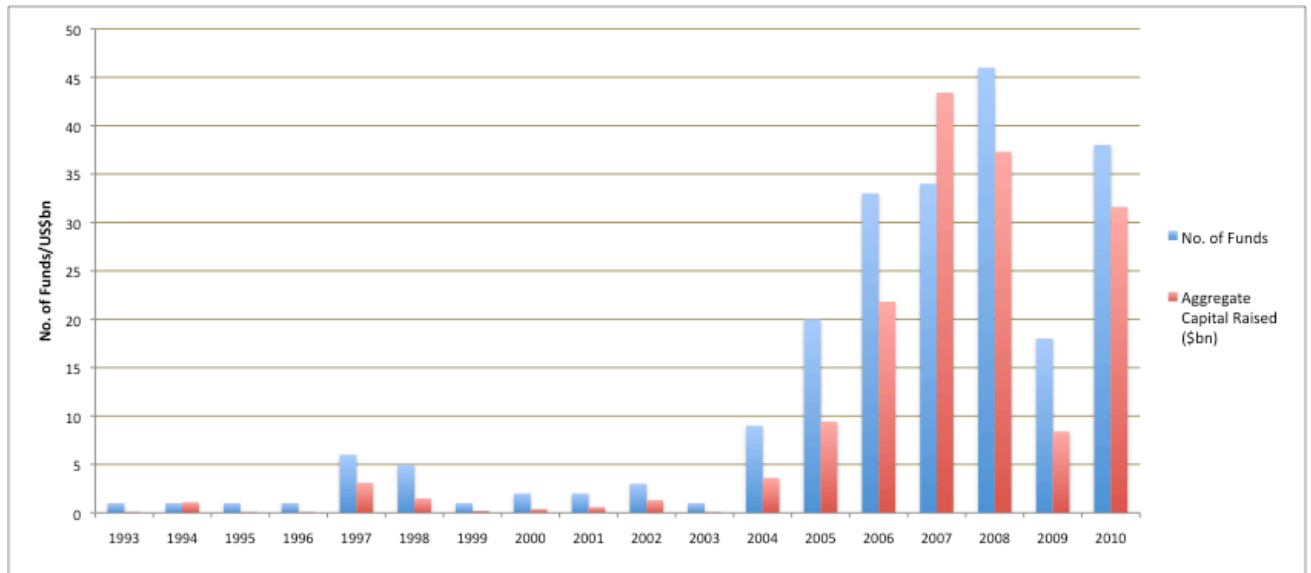


Figure 7: Growth in Unlisted Fund Market
(Source: Preqin 2011)

Figure 8 shows the allocation of fund sizes in the unlisted market up until 2008. It can be seen that 51% of the funds in the market are a size of \$0.5 billion or less contributing \$7 billion in total. However, in terms of aggregate capital raised, it is the funds closed in the range of \$1.1 – 2.5 billion that have had the greatest impact, accounting for 27.7% of the market (Preqin 2009).

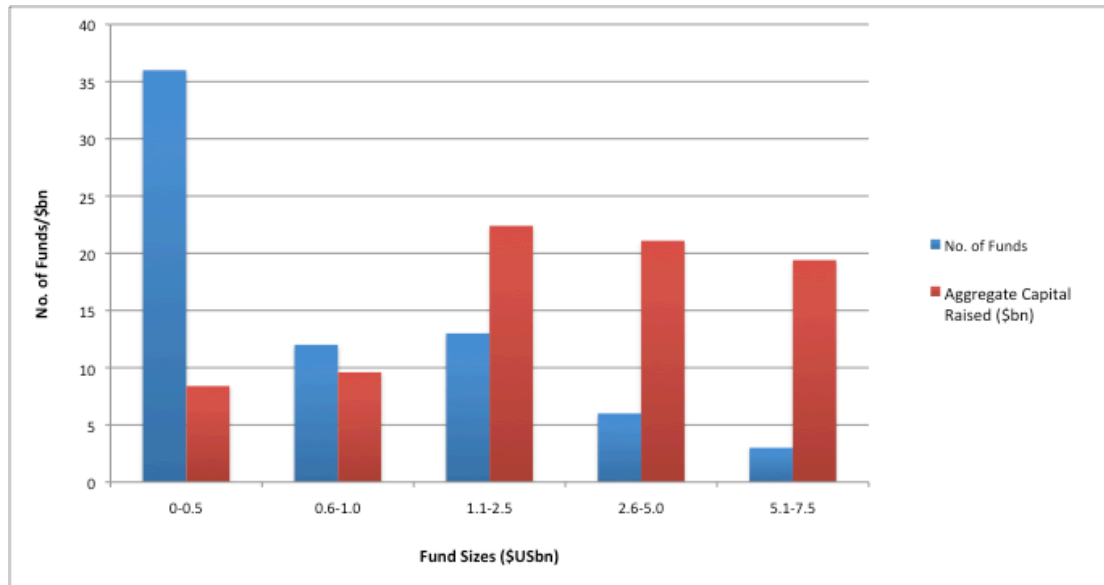


Figure 8: Allocation of Fund Sizes
(Source: Preqin 2009)

As of December 2010, there were 222 unlisted funds in the global infrastructure market that have closed. The total value of global infrastructure unlisted funds was \$164.1 billion. On top of this, there were 122 funds being raised at the time with a target size of \$85.8 billion (Preqin 2011).

With more governments privatising their infrastructure assets since the early movers in the 1980's, a globalisation of the infrastructure fund market has occurred as nations try to attract private sources of capital in order to fund their infrastructure deficits. Historically, infrastructure funds have focused primarily on the developed world specifically in Europe and other OECD countries. Surprisingly, the first unlisted infrastructure fund to close that focused principally in the US was not until 2004. This is due to the US not opening up private investment for infrastructure development as readily. Similarly, the number of unlisted funds focusing on Asia and the rest of the world since 2004 is consistently smaller than in Europe or the US. The size of the funds itself in Asia and the rest of the world are also a lot smaller which is due to the

fact that they are usually small country specific funds as opposed to vast European or US funds (Preqin 2008).

It is also interesting to note the types of assets, the unlisted funds are investing into. In the unlisted market, between 2008 and 2011, 87% of the deals were in economic infrastructure and 13% were made into social infrastructure. However, as the competition increases for the same core economic assets, it is anticipated that more funds will allocate a greater proportion of their capital to social infrastructure assets (Preqin 2008).

Listed Infrastructure Market

Listed Infrastructure Funds

The set up for listed infrastructure funds is similar to the unlisted fund structure in that an external manager invests on behalf of investors into various infrastructure assets. While the fund is publically listed, the assets invested into by the fund may or may not be listed. The listed infrastructure fund model pioneered by the Australian Macquarie Group Limited is typically aimed at retail investors as opposed to institutional investors. The ‘Macquarie Model’ has drawn criticism because of its complex financial structure which included high levels of debt similar to private equity transactions; poor corporate governance practices; overpaying for assets, in order to inflate fees payable by investors; and the payment of dividends and fees greater than the total profits of the companies i.e. paying dividends out of new debt (Hall 2009, RiskMetrics 2008, O’Neill 2009b). The listed infrastructure fund model was exposed with disastrous consequences during the 2008 GFC and credit crunch forcing institutions to revert to the unlisted model for infrastructure investments. At

least eleven infrastructure funds that were listed on the Australian Stock Exchange in 2007 are no longer listed (RiskMetrics 2008).

Listed Infrastructure Indices

Listed infrastructure companies contained in well-established stock market indices globally have provided opportunities for retail investors for a number of years. The index provider Standard & Poors (S&P) estimated the market capitalisation of listed infrastructure companies around the world to be US\$2.1 trillion in 2007 (S&P 2007). With the growth of infrastructure companies and interest in the asset class increasing, infrastructure indices have been formed to track the performance of listed companies in this asset class. Listed infrastructure securities funds have also been set up to enable investors to invest in a portfolio of publically listed infrastructure related companies.

The S&P Global Infrastructure Index was launched in 2006 to track the performance of the largest 75 companies in the infrastructure sector (energy, transportation, utilities). The constituents of the index include 40% from both transportation and utilities companies and 20% from energy companies. At the end of 2008, the index included 75 companies from 24 countries with a combined market capitalisation of US\$733.7 billion. The effect of the 2008 GFC on global stocks can be seen when compared with the end of 2007 market capitalisation figure of US\$1.2 trillion (S&P 2008a). The S&P Emerging Markets Infrastructure Index tracks 30 of the largest publically listed emerging market companies in the global infrastructure industry. The index is made up of companies from the transportation, energy, and utilities clusters with weights of 20%, 40%, and 40%, respectively. The combined market

capitalisation at the end of 2008 was \$US 51.95 billion compared with US\$ 103 billion at the end of 2007 (S&P 2008b).

The Macquarie Global Infrastructure Index (MGII) was introduced by Macquarie and FTSE in 2005. The MGII comprises a broad range of infrastructure stocks in the sectors (water, transport services, pipelines, multi-utilities, gas distribution, electricity and telecommunications hardware) (FTSE 2008). As of May 2009, MGII consisted of 231 stocks with a combined market capitalisation of US\$1.13 trillion (compared to US\$ 1.6 trillion in 2007). The index figure has grown from US\$383bn in 2000 (Macquarie 2009). The MGII is heavily biased towards utilities with over 80% representation. The investable Macquarie International Infrastructure Securities Fund uses the MGII as its benchmark. Macquarie, with FTSE have a total of 16 benchmark and tradeable indices covering all geographic regions and infrastructure sectors (FTSE 2008).

The FTSE IDFC India Infrastructure Index was formed by IDFC (Infrastructure Development Finance Company) and FTSE to represent the performance of Indian companies whose revenue comes mainly from infrastructure. The FTSE IDFC India Infrastructure Index is comprised of 60 companies in the sectors transportation, energy, water resources and communications infrastructure. The market capitalisation of the FTSE IDFC India Infrastructure Index in August 2009 was US\$ 52.5 billion compared to US\$ 50.0 billion in 2007 (FTSE 2007).

Some other indices include the Goldman Sachs INFRA Infrastructure Index, CNX Infrastructure Index and MSCI Infrastructure Indices.

A major problem with listed infrastructure indices is the vagueness with which infrastructure is defined and whether the listed index actually reflects the true infrastructure exposure that investors are looking for. The core economic and social infrastructure defined above are associated with steady, inflation-linked cash flows derived from appropriately-levered, contracted assets with low technology, market, and development risk (Orr 2009). The constituents of the indices mentioned in this section however include growth companies such as sellers of construction, electrical, engineering equipment, whose performance are much more volatile and vulnerable to new infrastructure development and business cycle risk (Orr 2009). Caution must be taken when using the indices above to measure the market for infrastructure. If institutional investors are only seeking core economic and social infrastructure asset exposure, it is unlikely that the indices above will generate a risk-return behaviour that is aligned with what investors want. This is highlighted by the significant drop in market capitalisation figures in the indices above as a result of the 2008 GFC (highlighted by Table 4 below). True economic infrastructure assets should not be as drastically affected by variations in economic climate (Interview 2009a).

One index that seems to have emerged from the sea of vaguely defined infrastructure indices is the Dow Jones Brookfield Infrastructure Indexes, which was formed in July 2008 (Orr 2009, Dow Jones 2008). Here the index components are derived from companies that exhibit the following strong infrastructure characteristics: high barriers to entry, royalty stream on economic growth/inflation, high operating margins, low capital expenditure maintenance and growing long-term cash flows. The market capitalisation of the Dow Jones Brookfield Global Infrastructure Index as at October 2009 was \$US376 billion. The sector with the highest allocation in the index

was oil, gas & transportation with 31% followed by transmission and distribution with 24% (Dow Jones 2009).

Table 4 below summarises the market capitalisation values for global infrastructure indices in 2007 and 2008.

	2007 (\$US billion)	2008/09 (\$US billion)
S&P Global Infrastructure	1200	734
S&P Emerging Markets	103	51.95
Macquarie Global Infrastructure	1600	1130
FTSE IDFC India Infrastructure	50	52.5
Dow Jones Brookfield Global		376

Table 4: Market Capitalisation Values (\$US billion) for Global Infrastructure Indices

The effect of the GFC on public markets can be seen in Table 4 with market capitalisation figures for all major infrastructure indices severely dropping in value from the 2007 figures. The slight increase in value of the FTSE IDFC India Infrastructure index highlights the reduced impact of the GFC on emerging economies compared with the large Western markets.

3.4 Infrastructure Investment Performance

One of the key indicators of a transparent financial product is that the perceived risk-adjusted rate of return is low due to their spatial and functional homogeneity. This section presents an overview of the published return figures for infrastructure investments and highlights the extreme variability in performance that has been achieved in the market thus far¹⁶. Table 5 below summarises the infrastructure return

¹⁶ Similar to other asset classes, the performance of infrastructure investments is measured by an annualised rate of return. That is, a percentage ratio of money earned or lost on an investment relative to the money initially invested. The risk adjusted rate of return is a measure of how much an investment returned in relation to the amount of risk associated with it. It must be noted that each of the different sources may have

figures outlined in this section, which have been produced in academic and industry publications.

Unlisted Funds

The performance history of unlisted infrastructure investments is fairly limited for a number of reasons. The industry is relatively new, firms are reluctant to make data publically available, the reliability of performance data is unclear, and different funds use different benchmarks (Inderst 2009).

The majority of academic studies looking at the performance of unlisted infrastructure investments have focused on the Australian market. When analysing the Australian infrastructure market for the period Q3 1995 – Q2 2006, Peng and Newell (2007) showed that unlisted infrastructure funds generated an average risk-adjusted annual return of 14.11%. The returns over the first half of the ten year period (16.57%) were a lot higher than the second half (11.7%). The study examined five Australian unlisted funds totalling US\$1.35 billion as of December 2005. An updated study by the same authors to take into account the GFC which looked at the same five Australian funds from Q3 1995 – Q2 2009, found that the average annual return for infrastructure remained unchanged at 14.1 percent in comparison to other asset classes (bonds, equities, property) which all showed a drop in performance as a result of the downturn (Newell et al 2011).

calculated the annual return for infrastructure in different ways creating a source of inconsistency for a detailed comparison. However, for the purpose of this section, which is to provide an indication of the annual investment return figure that has been achieved in the early stages of the infrastructure asset class, the quoted return figures from the various sources have been used.

Finkenzeller et al (2010) provides a similar performance analysis of Australian unlisted infrastructure for the period Q4 1994 – Q1 2009. The annualised return figure obtained for the period was 8.2%.

The study by Bitsch et al (2010) claims to be the first to use data of unlisted infrastructure fund investments (Center for Private Equity Research (CEPRES) based at the University of Frankfurt) as opposed to indices of unlisted infrastructure investments. The database used for the study comprises information on the monthly cash flows generated by private equity deals and includes all infrastructure deals that have had their initial investment and final exit between January 1971 and September 2009. It was found that the average Internal Rate of Return¹⁷ (IRR) for 363 infrastructure deals over the study period was 66.88% while the median IRR figure was 18.74%. The definition of infrastructure deals used in the study included transport (aviation, railway, road and marine systems), telecommunication (data transmission and navigation systems), natural resources and energy (including oil, gas, tele-heating and electricity) and renewable energy. Social infrastructure such as schools, hospitals etc. were not included.

Hartigan et al (2011), construct an estimated UK unlisted infrastructure return series based on information from different asset classes, and geographical markets, such as the Australian listed and unlisted indices described above. The estimated average annual return for UK unlisted infrastructure for the ten years up until September 2008 was found to be 6.5%.

¹⁷ Internal Rate of Return – discount rate when the net present value of all future cash flows from an investment is equal to zero. The greater the IRR, the more favourable the project.

A number of investment management firms have also published return figures for their unlisted funds. Macquarie bank show that for the period 1995 – 2002, unlisted infrastructure in Australia performed well, earning a return of 19.2%. In 2006, Macquarie reported an average annual compound return of 19.4% from its globally managed infrastructure funds over an 11 year period (Inderst 2009).

In 2005, investment management firm Mercer published figures for unlisted infrastructure in Australia by calculating the unweighted average of gross monthly returns. The average annual return of unlisted infrastructure is calculated as 13.3% over the ten year period 1996-2005. This compares favourably against Australian equities which had returns of 11.6% over the same period (Mercer 2005). In much the same way, Colonial First State Global Asset Management produced annual return figures for the ten years to June 2006 of 13.5% on five unlisted Australian diversified infrastructure funds (Colonial First State 2006). To incorporate the effects of the GFC, the same funds produced an annual return of 11.1% for the ten years to June 2010 (Colonial First State 2010).

Listed Market

In the study of the Australian infrastructure market Peng and Newell also examine the performance of listed infrastructure funds. The listed funds are grouped with listed individual companies to analyse the performance of the listed infrastructure market. Each of the funds and companies focuses on a range of infrastructure sectors: toll roads, airports, gas, electricity and water transmission and energy generation. For the same period, (Q3 1995 to Q2 2006) listed infrastructure yielded an average annual risk-adjusted return of 22.5% (Peng and Newell 2007).

To track the performance of the listed infrastructure asset class, a study was carried out by Macquarie research for the period 1994 – 2009. The Macquarie Global Infrastructure Index (MGII) was used to represent the infrastructure asset class in the latter years of this period. A proxy for the MGII, which comprised all stocks in the FTSE Global Index from the same industry classes as the MGII was used for the period, 1994-2000. The results show that infrastructure generated an annual return of 4.2% from 1994-2009, compared with 3.5% for bonds and 2.4% for global equities (Macquarie 2009). The Macquarie International Infrastructure Securities Fund has generated an annual gross return of 3.75% since its inception in September 2005 (Macquarie 2010).

The annualised total return for the Dow Jones Brookfield Global Infrastructure Index was calculated to be 14.55% (as at July 31 2011) since its inception on December 31 2002. For the five years up until December 2010, the S&P Global Infrastructure Index earned an annualised return of 6.80% while the S&P Emerging Markets Index figure was 15.57%. The annualised return for the MSCI Infrastructure index for the ten year period up until 19 August 2011 was given as 0.04%.

Singhal et al 2011 analyse the performance of listed infrastructure companies in India over the period 2002-2009 using the FTSE IDFC India Infrastructure top 30 index as a bench mark series. The average annual return for Indian infrastructure was recorded to be 31.98% in comparison to the UBS Asia-Pacific infrastructure index of 5.56% and the S&P global infrastructure index of 8.81% for the same time period.

For the 20 infrastructure funds listed on the Australian Stock Exchange (as at 31 December 2010), the average annual percentage return of the funds for the one year,

three year and five year periods were -1.438%, -12.875% and -2.79% respectively (ASX 2010).

Table 5 summarises the return figures deduced by the different infrastructure product sources.

Type	Source	Institution	Publication Date	Period Studied	Geographic Region	Annualised Return Figure (%)
Unlisted Fund	Academic	Peng and Newell	2007	1995-2006	Australia	14.11
Unlisted Fund	Academic	Newell et al	2011	1995-2009	Australia	14.11
Unlisted Fund	Academic	Finkenzeller et al	2010	1994-2009	Australia	8.2
Unlisted Fund	Academic	Bitsch et al	2010	1971-2009	Global	67.9 (IRR)
Unlisted Fund	Academic	Hartigan et al	2011	1998-2008	UK	6.5
Unlisted Fund	Private Sector	CEPRES	2009	1986-2007	Global	48 (IRR)
Unlisted Fund	Private Sector/Industry	Macquarie	2004	1995-2002	Australia	19.2
Unlisted Fund	Private Sector/Industry	Mercer	2005	1996-2005	Australia	13.3
Unlisted Fund	Private Sector/Industry	Colonial First State	2006	1996-2006	Australia	13.5
Unlisted Fund	Private Sector/Industry	Colonial First State	2010	2001-2010	Australia	11.1
Listed Funds	Academic	Peng and Newell	2007	1995-2006	Australia	22.5
Listed Funds	Index Provider	ASX	2010	2006-2010	Australia	-2.79
Listed Securities	Private Sector/Industry	Macquarie	2009	1994-2009	Global	4.2
Listed Index	Private Sector/Industry	Dow Jones Brookfield	2011	2002-2011	Global	14.6
Listed Index	Index Provider	S&P	2010	2006-2010	Global	6.8
Listed Index	Index Provider	S&P	2010	2006-2010	Emerging Markets	15.6
Listed Index	Private Sector/Industry	MSCI	2010	2002-2011	Global	0.04
Listed Index	Private Sector/Industry	FTSE/IDFC	2011	2006-2010	India	32.1
Listed Index	Private Sector/Industry	UBS	2011	2006-2010	Asia/Pacific	5.7

Table 5: Summary of Infrastructure Return Figures

There is still much debate as to what return figure can be attached to infrastructure investments with little academic research being done on the subject. The figures shown above illustrate the lack of standardisation and heterogeneity that exists in the

asset class. In the early stages of this market, some investors have been able to enjoy high equity type returns with the advantage of bond-type risk. With demand and knowledge rising, it is expected that returns will stabilize towards a much lower level in the long-term. In spite of this however, the underlying variability inherent in this asset class with regards to the types of assets/financial products offered as well as the effect of geographic location of investments, could result in further variations from an equilibrium level of return for infrastructure investments.

A number of firms have published their expectations of the risk return profile of infrastructure investments to illustrate where it fits with other asset classes. Infrastructure has been described as having risk and return both higher than equities, at other times both lower and sometimes higher returns but lower risk. Mercer state that financial products falling into the category of diversified infrastructure funds should be striving to achieve returns of 9-12% (Mercer 2005). RREEF separates the total return expectations of mature assets (10%-14% pa) from early-stage assets (18 % pa) (RREEF 2007). Within the infrastructure sector, returns can vary depending on the type of asset. For example, JP Morgan Asset Management expects lower rates of return for toll roads (2-8%) and PPP/PFI (9-14%) compared with airports (15-18%) and broadcast networks (15-20%). An overall infrastructure average is given as 10-15% (Quadrant 2008).

From the Preqin database of unlisted infrastructure funds, it was found that 24% of the funds are targeting returns between 10 and 13%. A further 24% are targeting between 14 and 17.9%. The greatest proportion of the funds (35%) are targeting a return between 18 and 21.9% which is still lower than the returns sought by other

alternative asset managers. Only 17% of the funds were seeking returns comparable to private equity buyout funds at 22-30% (Prequin 2009).

From an investor's perspective, Inderst (2009) reports on a recent survey of European pension funds that shows return expectations for the infrastructure asset class to be 9.5% return annualised over ten years putting it below private equity (11.3%) but above stocks (9.0%), bonds (5.1%) and cash (3.7%) (Inderst 2009). As an example of the large pension funds, the Dutch APG expects a return of 10% from infrastructure in comparison to 6% for property and 15% for private equity. CalPERS expect an annual return of inflation (CPI) plus 5-7% (Inderst 2009).

Asset Management firm Lazard separates core brownfield economic infrastructure from riskier greenfield infrastructure development on the risk/return spectrum as follows:

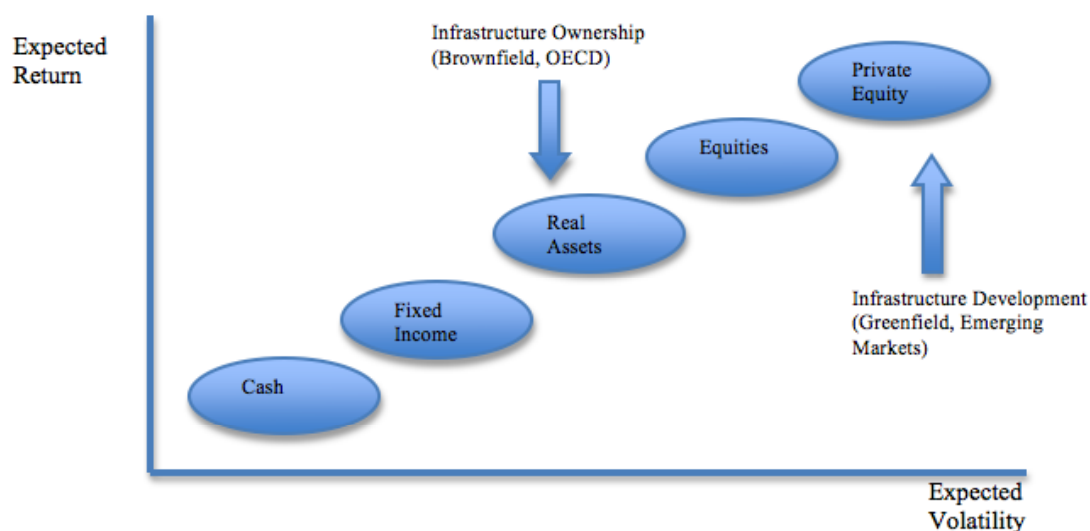


Figure 9: Infrastructure Risk/Reward Profile
(Source: Lazard 2007)

In summary, the level of return expected from an infrastructure investment will depend on how exactly the specific asset is defined and categorised within the sector.

The returns achieved for core economic urban infrastructure investments (transport, utilities, social) in OECD countries are predicted to reduce to a long-term stable level as more players enter the market and previously mispriced assets are valued correctly (Torrance 2009). However, the level of variability within the asset class is so great that it makes it very hard to suitably arrive at a consistent, standardised level of return for infrastructure investments (Interview 2009a, Interview 2009g).

3.5 Infrastructure Investor Profiles¹⁸

With the growth of unlisted infrastructure funds over the last five years, investors have been increasing their allocation to infrastructure at the expense of other asset classes. The common trend amongst institutional investors has been to move away from equities and bonds in order to create a more suitable risk-return profile with long-term capital gains and cash yield (Interview 2009a).

The growth and demand for infrastructure financial products has meant that some investors have developed dedicated infrastructure teams in house in order to invest directly into the asset class. However, the number of direct investors in infrastructure is relatively low (estimated to be around 20 by Clark et al 2011) and restricted to those investors with extremely high levels of capital at their disposal. This is due to the large size of capital required to make direct investments into infrastructure assets. Some examples include the Canadian Pension Plan Investment Board, Ontario Teachers' Pension Plan and AustralianSuper. These investors are large in size and have gained the necessary experience to be able to invest in infrastructure directly. Most institutional investors however do not have the in house resources to carry out

¹⁸ The data used in this section is taken from the Preqin database and relates to the investors in unlisted infrastructure funds.

the extensive due diligence and management processes involved with direct investing in infrastructure and are only able to invest through third party funds. As more large investors gain the necessary experience through investing in infrastructure funds, it is likely that more direct investors might emerge in the market.

Apart from achieving a sustainable return and matching long-term liabilities, investors are drawn to infrastructure due to the favourable social and economic impacts on the communities directly affected by the investment. A number of institutional investors such as pension funds have public policy goals and investing in infrastructure may help them achieve these goals. Conversely, public pension funds may be reluctant to invest in certain privatisation projects that might have adverse effects for plan members such as unemployment, lower compensation and union dilution (Beeferman 2008). Similarly for environmental policy goals, certain investors will only invest in infrastructure funds that comply with environmental regulations such as carbon emission reduction policies (Beeferman 2008).

Figure 10 shows the make up of the investors in the infrastructure unlisted fund market. It can be seen that public pension funds contribute 25% of the investors in the unlisted infrastructure market, the highest proportion of any type of investor. Private sector pension funds are the second highest with 12%. With superannuation schemes included at 7%, the overall proportion of pension schemes in the investor universe comes to 44%. The high proportion of pension investors represents the need to match long-term liabilities with an asset class like infrastructure. Figure 10 also highlights the growing interest of fund of funds and banks in infrastructure investing accounting for 8 and 9% of the investor universe respectively.

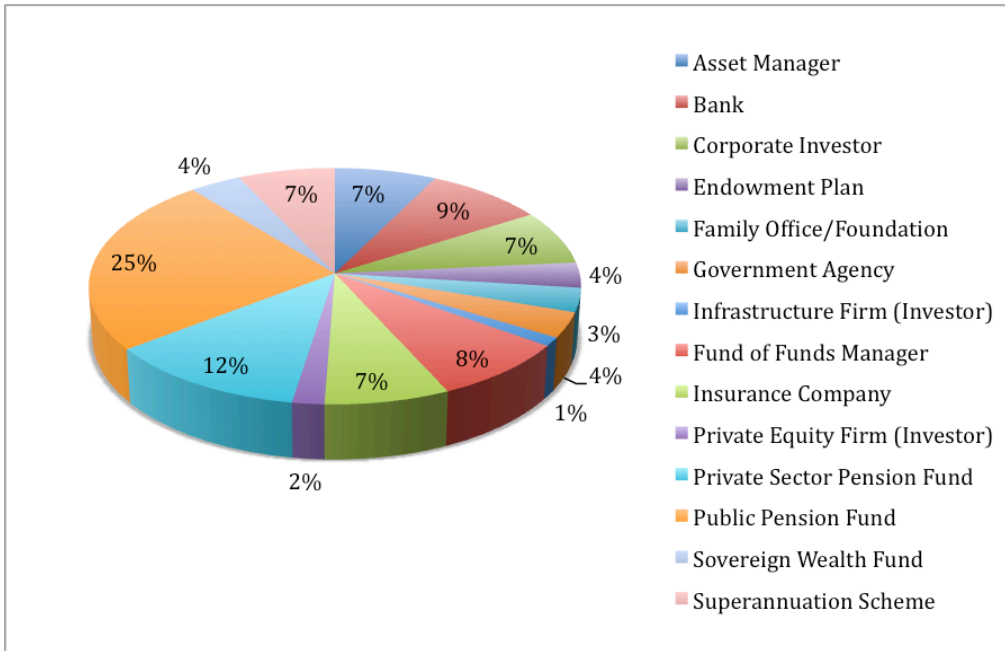


Figure 10: Unlisted Infrastructure Investor Universe
(Source: Prequin 2009)

As can be seen from Figure 11 below, the majority of investors come from Europe (43%). North America have the second largest number of infrastructure investors with 31%. Australia and NZ account for 9% of all investors while Asia are close behind with 8%. It must be noted that the figures for this regional analysis of the infrastructure investor universe only relates to the number of investors in each region and does not take into account the monetary values of each of the investors being deployed into infrastructure investments. Figure 12 illustrates the size of the investors in this market. It shows the total value of all assets under management and the proportion of investors under each total value category.

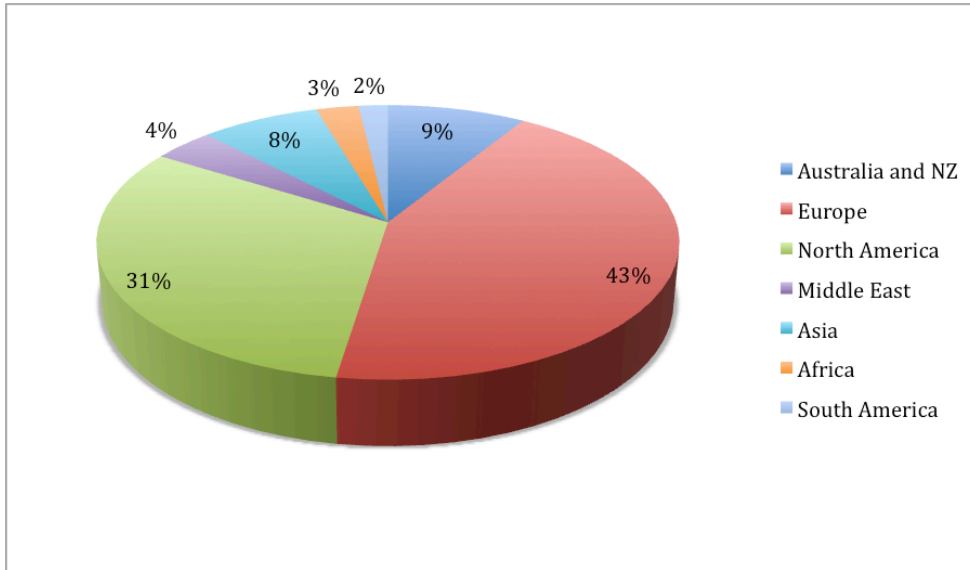


Figure 11: Regional Breakdown of Investor Universe
(Source: Prequin 2009)

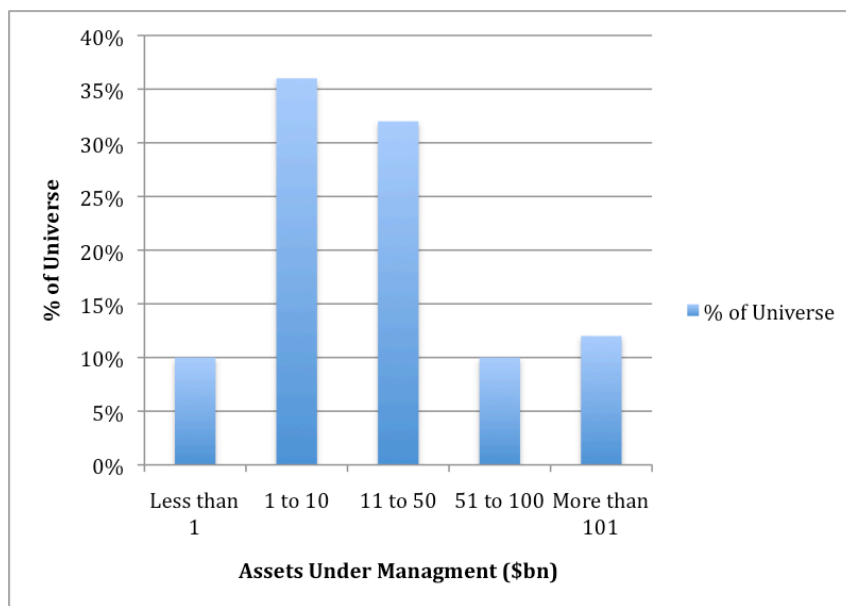


Figure 12: Size of Investors by Assets under Management
(Source: Prequin 2008)

It is mainly within Western Europe, Australia and Canada that investing in infrastructure has been established for the longest period of time. This is due to the early adoption of privatisation programs such as PPP and PFI projects in the 1990s in these regions. The economic growth experienced by a number of emerging economies has placed huge demand on the infrastructure services of these nations. This has led to

the opening up of foreign direct investment and various privatisation projects for infrastructure in countries in Asia and the Middle East. This has resulted in an increased number of institutional investors looking to invest into infrastructure in these regions. Within the United States however, many states had not allowed private investment or foreign investments into infrastructure until very recently. A shortfall in budget for infrastructure assets and a deterioration in the quality of a number of key infrastructure services has forced state governments to allow private investment and adopt PPP projects in order to finance infrastructure projects. It is expected that the number of US investors in the infrastructure universe is likely to increase significantly over the next few years (Preqin 2008).

Figure 13 shows how investors are allocating their investments to infrastructure with 47% having a separate allocation for infrastructure, 43% including infrastructure in their private equity allocation and 10% as part of their real estate allocation. There still appears to be a difference in opinion as to what an infrastructure investment might mean in terms of risk and return. While a large proportion of investors agree that infrastructure can be likened to a long-term stable investment with low risk and low return, a number of investors are still allocating infrastructure as a private equity investment which allows them to adopt an opportunistic strategy when investing into infrastructure funds (Preqin 2008).

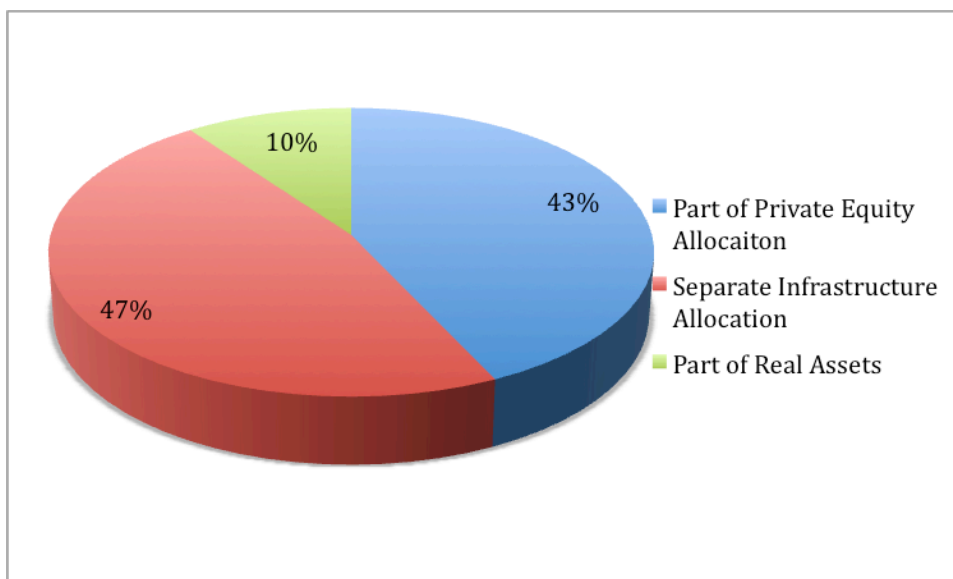


Figure 13: Source of Infrastructure Allocation
(Source: Preqin 2008)

3.6 Infrastructure: from opaqueness to transparency?

This chapter has looked at the emergence of infrastructure from a niche sector for private institutional investors to what many now regard as a separate asset class. It has in particular focused on the period of exponential growth following the early stages of the market which were analysed by Torrance (2006). A key question to be answered by this chapter is whether the infrastructure financial product has progressed, with the growth that it has experienced, from a translucent product towards a transparent financial product.

The growth in the infrastructure market since 2005 has been substantial with the amount of capital raised into unlisted funds growing by 297% by the end of 2008 and the number of funds increasing by 130% (Preqin 2011). Clark and O'Connor propose that financial products that start in the opaque category may end up in the transparent category due to the design of such products becoming increasingly understood in the

market with many other firms offering similar products. With the recent growth in infrastructure investing, it could be predicted that transaction-specific information has become diffused through market networks allowing firms to design competing products (Clark and O'Connor 1998).

There are a number of issues highlighted by the analysis of the infrastructure market carried out in the previous sections that would suggest that the infrastructure financial product has not reached a level of transparency. These are outlined below.

3.6.1 Standardisation at the Asset Level

The first issue that is apparent with the current infrastructure market is a lack of standardisation at the asset level. The word infrastructure may take on various meanings depending on who one is speaking to. In the research for this chapter, it was evident from speaking to investors, that an infrastructure asset to one product provider may be completely different to what another provider may perceive an infrastructure asset to be. While the definition of economic infrastructure, now widely used amongst product providers, can be seen as a step towards providing some element of standardisation for the asset class, there still appears to be so much variation within this definition that investors approach the sector with relative ambiguity and vagueness. It was observed that a fund manager would target certain investors for toll road investments and completely different investors for utilities investments because of the difference in risk/return characteristics and yet both are included under the similar economic infrastructure banner (Interview 2009f). As mentioned by one fund manager 'no two infrastructure assets are the same' and variation exists even within the same type of economic infrastructure; a large hub airport that is essential to a country's economy may be resilient to even the most challenging economic

circumstances and have a low risk attached to it. A small regional airport however may be a lot more volatile depending on local industries, population demographics and exposed to cheap airline operator risks (Interview 2009b). Furthermore, the types of assets included as economic infrastructure seem to vary from one provider to another. For example, power stations and terrestrial satellites, even though they may have monopolistic characteristics are perceived to be too risky for the inclusion in one provider's definition of economic infrastructure compared to another provider (Interview 2009a). The apparent lack of standardisation at the asset level and heterogeneity in the way infrastructure is defined appears to compromise its ability to be classed as a transparent asset class.

3.6.2 Standardisation at the Product Level

To compound the transparency problem of a lack of standardisation at the asset level for infrastructure is the lack of standardisation at the financial product level. The infrastructure financial product can take on various forms including listed securities, listed funds, investible indexes, unlisted funds and direct investments. Each of these vehicles can be seen as a type of financial product in their own right with the design and production differing greatly between them resulting in an asset class with complex informational and spatial characteristics. As Wójcik (2011a) notes, the level of transparency in the financial industry not only depends on the nature of assets but also by the investment vehicles in which they are stored.

In terms of the listed infrastructure securities product, it could be argued that the level of transparency is a lot higher. By their nature, listed vehicles have greater reporting requirements allowing investors to access more information in the public domain (Interview 2009b). Listed infrastructure companies have been around for many years

and are comparable to common stocks. Such products could be classed as transparent financial products due to the standardised nature of their offering. All information regarding a stock is publically available and easily accessible. Investors can trade in or out of positions purely on the basis of observed past and current prices. However, a proviso to this argument relates back to the lack of standardisation of infrastructure at the asset level. A lot of listed infrastructure companies may not fit under the core definition of infrastructure with the true underlying characteristics of the asset class and it may be debatable as to whether an investor is actually investing into an infrastructure asset. It is assumed though, that the listed security product enables an investor to gain as much information about the asset before investing into it. Therefore, as long as the listed infrastructure company being invested into matches the investor's definition of an infrastructure asset, the listed infrastructure security product can be viewed as a transparent financial product.

The problem of defining the infrastructure asset class is also very apparent when analysing the listed infrastructure index or securities fund product. Because the majority of infrastructure indexes are quite vague in how they define infrastructure companies, the indexes include a range of listed infrastructure companies with different business models which creates an opaque risk/return profile for the index as a whole. True economic infrastructure assets should be robust against economic cycles. The severe drop in value of infrastructure indices due to the 2008 GFC illustrates the opacity and lack of true economic infrastructure exposure associated with these vehicles. More recent indexes and securities funds have moved towards providing a more uniform representation of the infrastructure asset class. However, due to the diverse nature of the infrastructure asset class and the fact that there is a large amount of variation between assets even within the widely used 'economic

infrastructure' definition, it would be very hard to achieve a completely transparent investable listed infrastructure index.

The unlisted fund vehicle provides a different method of accessing the infrastructure asset class to those outlined above. The type of product offered through the unlisted fund vehicle relies heavily on the nature and incentives of the financial intermediary involved (Interview 2009b). The informational content of such highly contract-dependent products requires a sophisticated network of advisors to be able to securely invest into unlisted infrastructure products. For this reason alone, it would appear that this product offering has not reached a transparent level. This does not mean that unlisted infrastructure product providers do not disclose all information to investors in their funds about the underlying assets and risks being invested into, the argument is based upon the ability for investors to easily access information about an unlisted infrastructure investment before they have committed to a fund. The unlisted product offered by one intermediary due to their definition of an asset may be completely different to another's offering, or the way a product is structured for a similar asset may be different depending on the firm. As one intermediary mentioned 'a low risk economic infrastructure asset can be made into a risky asset purely through excessive leveraging levels' (Interview 2009a). While information about an underlying asset is disclosed by a product provider, the financial structure and set up of the final investment may not. An important issue to raise here is that intermediaries may have an interest in keeping hidden (or private) their special knowledge base, which is the basis of their competitive advantage over financial institutions offering comparable products (Interview 2009d). Even with the growth experienced over the last few years in the market, and the opening up of global investor networks and various informational characteristics of infrastructure, the ability of providers to withhold

confidential, competitive information for the design of unlisted infrastructure products still exists.

As is evidenced in this chapter, a large number of funds have been raised in the market from an increasing pool of global investors. The exponential growth in the unlisted fund market is due to investors coming to the realisation that infrastructure as a product has certain characteristics that may suit their investment mandate and financial intermediaries looking to ‘ride the wave of the latest successful upcoming asset class’ (Interview 2009b). This however has not meant that the number of direct investors into infrastructure assets has increased. Such investments are still only restricted to the few very large investors that have the necessary expertise and resources to bypass the specialist unlisted fund vehicle. The fact that the number of direct investors has not increased significantly during the latest growth spurt in the market further illustrates the lack of progression of infrastructure towards a transparent asset class. The informational content of the infrastructure financial product, including an understanding of the political, legal and geographical risks are still at a level of complexity that most investors must invest via funds managed by financial intermediaries.

It can be argued that most asset classes (e.g. real estate, equities, bonds etc.) offer a range of vehicles or products through which investors are able to gain access and thus have varying levels of transparency or opacity attached. Despite the different product offerings within a certain asset class, the underlying asset characteristics generally do not have a large amount of variation (i.e. commercial and residential real estate, homogenous bonds). It is usually the financial structuring of the products that affects the informational content and geographical structure and thus level of transparency

associated with their design. However, the analysis here has shown that it is due to the heterogeneous underlying asset characteristics that the level of transparency is obscured for the different products within the infrastructure asset class. The level of variability is so great that it is debatable whether infrastructure can be classed as an asset class or whether infrastructure should be categorised as a sub asset class further broken down into sub sectors such as water, transport and energy (Inderst 2011). More research is required to determine whether further standardisation can be achieved which is likely to only be realised once the industry matures.

3.6.3 Standardised Performance

As highlighted in the data analysis section of this chapter, there still appears to be a large amount of variation in the performance return figures that have been attained from infrastructure investments. The variation exists between the different vehicles offered as well as within the vehicles themselves. The data shows that expectations of investors and fund managers for returns from infrastructure investments range from 2% through to 30%. The actual return figures achieved from investments have ranged from -2.8% through to 68%. The great variability in return figures for infrastructure can be reflected in the relative infancy in the growth of the market. There still exists informational advantages that can be exploited by investors and fund managers to achieve a higher than expected return. Conversely, infrastructure investments with excessive leveraging have been exposed by the 2008 GFC and performed particularly badly. The long-term nature of infrastructure investments has meant that the true performance return for the asset class will not be known for a number of years still.

It is expected that returns will stabilize towards an equilibrium level in the long-term. However, due to the underlying variability inherent in this asset class with regards to

the informational content of assets and financial products offered as well as the effect of geographic location of investments, the current vacillating return levels of infrastructure investments may persist. Transparent financial products in contrast, because of their functional and spatial homogeneity make it very difficult to make more than an average return (Clark and O'Connor 1998). Because of their transparency, the products generally deliver a low risk-adjusted return and the upper and lower bounds around the appropriate benchmark return are well known. The early figures achieved in this industry indicate that this is not the case for infrastructure.

3.6.4 Investor Considerations

The statistics in the market have shown that pension funds are playing a larger role in the investment of infrastructure, making up 44% of the investor universe in the unlisted fund market (Preqin 2009). A reason for the recent growth of pension fund investment into infrastructure funds has been the attraction of reliable, long-term, stable, inflation linked cash flows associated with core infrastructure assets. The relative immaturity in the market thus far has enabled informational advantages for product providers to be translated into excessive returns. A lack of transparency in the early stages of the market has meant that investments have been structured more like private equity and sophisticated financial instruments with excessive fees and leverage levels. It is predicted that as the market continues to grow, the risk/reward level will converge to a single digit stable level. Such a stable level would still be attractive to pension funds looking for investments to match their long-term liabilities. However, based on the analysis presented in this chapter, it can be argued that a stable level of returns for infrastructure will never be achieved. While further growth in the market will allow further clarification of the risks, returns, fee structures, terms for core infrastructure investments, the underlying variability at the asset level, will mean

that a large amount of diversity will prevail, even for the core economic and social infrastructure financial products being offered. ‘Diversity is not necessarily a bad thing’ (Interview 2009b). One problem of infrastructure investments is the low level of liquidity attached to these types of investments. A lesson to be learned from the GFC is that liquidity is an attractive feature to have. And so, having a range of options within the infrastructure asset class can be desirable for investors. However, what is crucial for investors like pension funds, is to clearly define their intentions for infrastructure and invest accordingly.

3.6.5 The Effect of Geography

The data analysis carried out in this chapter has uncovered a number of dynamics associated with the geographical structure of infrastructure financial products. The globalisation of the infrastructure market has been directly influenced by the adoption of the privatisation process in certain regions of the world. As a result, a clear separation has occurred relating to how developed infrastructure financial products have been offered to private institutional investors. Early adoption in Australia, Europe and Canada has given these regions an advantage and are the most experienced in offering infrastructure products. Investors have favoured directing their investments in these locations where there is an established track record for investment and stable regulation, and there is a wider acceptance of foreign ownership. Other areas such as the USA and the emerging markets have only recently opened up their assets to foreign and private investment. Large direct investors have focused their investments in the geographical markets that are more developed for private investment. However, as mentioned in the previous section, the number of direct investors has not increased significantly during the latest period of growth meaning that the majority of infrastructure investments made have still

required a form of relational investing. This relational form of infrastructure investing brings together institutional investors, providers of capital; fund managers, who have financial expertise and transaction experience; and specialists, such as contractors, operators, and lawyers, who have specific local knowledge about the assets. The need for such relational type investments, as identified by Torrance (2006), further indicates a lack of progression to transparency for the infrastructure financial product.

With more governments around the world opening their assets to private and foreign investors, the role of relational infrastructure investing will be increased. Emerging market economies are providing the latest opportunities for producing new types of infrastructure investment products, enhancing the ability of investors to geographically diversify the risks of infrastructure assets. The risk and return profile of infrastructure assets in these new locations (in particular in the emerging markets) is very different to that in OECD countries and therefore are attracting different types of investors. The ability to geographically diversify the risk of investments is playing a crucial role in sourcing infrastructure products. For example, a toll road investment is a lot less risky in an OECD country than in an emerging market (where there is a wider bond spread, greater political and legal risks) and thus would be expected to generate lower returns (Interview 2009g).

The importance of geography for infrastructure investing was reinforced when speaking to a particular fund manager investing into the emerging markets. It is well known that the same economic infrastructure assets in an emerging market tend to be a lot more risky than those in an OECD country. This is reinforced by the higher expected risk adjusted returns associated with emerging market investments. However, it is not quite as well known, that what is perceived to be a risky asset in an

OECD country might not be as risky in an emerging market. For example, a power generation plant in an OECD country is considered to be a lot more risky due to the liberated and well developed nature of this type of industry exhibiting competition as well as operational risks. In an emerging market such as Asia or Africa, a power generation plant is considered to be less risky than say a toll road investment. This is because investing into a power generation plant in an emerging market can involve an exclusive contract with the central government with the monopolistic capacity of being the sole provider of power to the economy. Such investments have further guarantees from multi-lateral agencies such as the World Bank, Asian Development Bank, IFC to cover political and economic risks thus providing multi layer risk guarantees on receiving payments from the initial investment. Thus the competition risk of the same asset in an OECD country is mitigated in an emerging market enabling an investor to achieve a high (emerging market) premium with low risk and stable cash flows (Interview 2009c).

Such an investment does require an extensive network of local, ‘on the ground’ advisors to ensure the geo-political risks of investing in an emerging market are controlled. The importance of the contract in stipulating all arrangements of such an investment is also reinforced here. The underlying variability of infrastructure financial products can be seen from this case. The geographical risk diversification of similar asset types further highlights the heterogeneous nature of the infrastructure asset class. The need for relational investing with a network of advisors illustrates the lack of transparency with such financial products.

3.7 Conclusions

This chapter has built on the work of Torrance (2006) to analyse the further growth of the global infrastructure market and contributed to work on the geography of finance, focusing on the informational content and geographical structure of financial products (Clark and O'Connor 1998). In her appraisal of the rise of the global infrastructure market, Torrance (2006) has noted that the previously opaque unlisted infrastructure assets have shifted to translucent ones. This claim was based on the fact that investors are able to access basic information on price and scale of assets; investors have a network of partners that are up to date on the most specific information; specialist managers have offices in local markets; and the harmonization of regulatory environments around the world has decreased the significance of location in the investment process. The work from this chapter goes beyond that of Torrance (2006) to not only analyse further growth in the unlisted market but to holistically analyse the wider infrastructure investing universe and examine the underlying characteristics of the infrastructure asset class.

The analysis of the growth in the global infrastructure market has illustrated the heterogeneous nature of the infrastructure asset class. In an attempt to determine whether infrastructure has progressed towards a transparent financial product, it can be concluded that the level of transparency varies depending on the type of infrastructure product being offered. The unlisted fund and listed index/fund vehicles both appear to have a level of obscurity preventing investors to easily obtain information about the underlying assets being invested into or in the case of listed indexes/funds not enabling investors to gain true exposure to stable economic infrastructure assets. While the exponential growth in the unlisted market has enhanced the claims by Torrance (2006) of a progression along the financial product

life cycle, the GFC has exposed the complex nature of highly leveraged products, and a mismatch in fees and time horizons, leading to much scepticism amongst investors for the asset class.

An individual listed infrastructure security on the other hand can be seen as more of a transparent type of financial product with investors being able to obtain all necessary information about the underlying asset easily in the public domain before investing into it. The varying informational content and geographical structure within and between the types of products offered, emphasises the inherent heterogeneity and variability of infrastructure assets. While the level of transparency of a particular product can be linked to its public listing status, the fact that both listed and unlisted infrastructure vehicles have a certain amount of opacity attached, highlights the lack of transparency across the asset class as a whole.

The early performance indicators of infrastructure investments have further highlighted the variability in the asset class with annualised returns ranging greatly in value. The relative infancy of the infrastructure market has meant that historical performance data is limited. Some correspondents believe that infrastructure returns will converge to a stable, equilibrium level. However I argue that such a stable level will be hard to achieve due to the inherent variability and lack of standardisation at the asset level.

The analysis has highlighted the lack of transparency in infrastructure financial products despite the exponential growth experienced in the market over the period studied. The inherent heterogeneity present in infrastructure at the asset level will mean that the asset class is never likely to reach a transparent level. This has various

implications for the industry in the wake of the 2008 GFC where a lack of transparency in financial markets was exposed with catastrophic consequences. With investors looking to invest in stable, resilient asset classes following the GFC, core economic infrastructure assets appear to be a favourable option. However, caution must be taken by investors lured to infrastructure in search of stable, predictable, low risk returns and must ensure that the underlying asset invested into through the various vehicles reflects the specific definition that they have associated with the asset class.

A drawback of the framework used here is that the concept of a truly transparent financial product may be perceived as too idyllic. Wójcik (2011b) has shown using the case of one of the world's largest corporations, HSBC, that even the most liquid stocks of global companies cannot be considered fully transparent because of the spatial and temporal effects of the three international stock exchanges the company is listed upon. This chapter has engaged the Clark and O'Connor framework in a similar way to that of Faulconbridge et al (2005) who analysed the role of financial products to explain the decline of Amsterdam as a European financial centre. They state, drawing upon Swedberg (1998:193-194) and Weber (1972:3), that "the categories should be understood as theoretical conceptualisations of a complex and layered social reality which allow us to focus on the discrepancies between the two - ideal type and empirical observations". By engaging with the theory in this way, the work here provides a detailed insight and contextual outlay of the key characteristics of this emerging investment area.

In summary, this chapter has contributed to the under-researched field of infrastructure investing by highlighting the considerable amount of confusion that still

exists among practitioners and researchers about the definition of infrastructure, the investment characteristics and the appropriate investment vehicles. The economic geographic framework has highlighted the heterogeneous issues that need to be taken into account and recognised the need for a ‘relational’ form of investing when approaching translucent or opaque infrastructure assets. Having provided an overview of the infrastructure investing universe, the following two chapters will provide contrasting case studies to further examine the relational aspect of infrastructure investing and analyse the specific factors that might contribute to the success or failure of investments. A third case study provides an institutional analysis of the pension fund infrastructure investment process to uncover the institutional decision-making that goes into relational infrastructure investing.

CHAPTER FOUR: THE POLITICAL ECONOMY OF INFRASTRUCTURE INVESTING - A CASE STUDY ON AUCKLAND INTERNATIONAL AIRPORT LTD

4.1 Introduction

It is apparent that the urban infrastructure landscape is undergoing a financialisation process as governments have opened their core assets up as attractive investment opportunities for private investors. While the global market for infrastructure investing experienced a period of exponential growth in the mid 2000s, there is still a large amount of uncertainty associated with investing into the asset class. Part of this uncertainty is related to the private-public relationship being set up and how the arrangement affects the performance and investment decisions for the assets. Despite the shift in control of infrastructure assets from the public to private sector, the significance of the assets for regional and national economic development continues to draw influence from public sector authorities. More work is required to better understand the political economic dynamics of private urban infrastructure provision and facilitate successful investments.

Transportation infrastructure forms a key constituent of the wider definition of infrastructure assets currently providing opportunities for institutional investors. Within the transportation grouping, airports around the world have been opened up by neoliberal policies and are increasingly becoming part of the investment portfolios of institutional investors. Airport infrastructure is a fundamental contributor to the economic development of cities and nations making them highly sensitive to public perceptions and government decision-making. An efficient, functional airport is

crucial for a city to attract and retain visitors for tourism; for corporations with national and global ties; and for the individuals and firms that work internally within them.

Airports are attractive for institutional investors because of their core economic characteristics, which includes having a long operational life, showing monopolistic qualities and having predictable cash flows. The level of each of these features depends on the unique social, economic, political and geographic characteristics associated with the individual airport. Major airports in the UK, Australia, NZ, Europe and Asia are now privately owned by global institutional investors.

Auckland International Airport Limited is an example of such an asset that has been opened up to the private sector for ownership and management responsibilities. As the major international gateway, more than 70% of international travellers to NZ arrive or depart through the airport making the asset particularly important for the economy but also more politically sensitive for government authorities. NZ's isolated location and island geography provide underlying stability to AIAL's business base (AIAL Annual Report). As a result investors in the asset have been able to generate stable returns above that of the market. For this reason, AIAL has been chosen as a case study for this chapter as an example of a successful privately owned infrastructure asset. Success for the purpose of this chapter is defined as superior investment and financial performance in the opinion of private institutional investors.

The chapter sets out to investigate the political economy of infrastructure investing through a case study analysis of AIAL. Of particular interest in this chapter, is the relationship between the public and private sectors in the provision of urban

infrastructure for regional and national economic development. It addresses the question of what role the government plays in this latest phase of privatisation of urban infrastructure assets.

The chapter analyses the key performance indicators of the company and seeks to illustrate the factors that have contributed to its success. In particular, it will analyse the privatisation process, pricing regulation, governance strategies, and capital structure¹⁹ employed by the airport to explore the wide reaching implications that government decision-making can have and the subsequent implications for private institutional investors. It is argued that the role of government is central to the process of private urban infrastructure provision. This argument is developed in two separate parts. Part A of this chapter argues that for economically significant assets operating under light-handed regulation, the government plays a central role in influencing a favourable return for private investors. Part B argues that the greater the sensitivity of an infrastructure asset for a nation, will mean the government is likely to have a greater influence on the company's ownership. The research from this chapter examines in detail the various political economic relations and factors that investors need to take into account when investing into infrastructure assets. It thus contributes to the generally under researched field of institutional investment into infrastructure assets and in line with the geographical research of this thesis, the role of financial markets in the development of the urban city landscape.

The chapter is arranged as follows: the next two sections (4.2, 4.3) provide background information for the main arguments of the chapter. This includes an

¹⁹ These factors have been hypothesised as crucial indicators of the performance of infrastructure companies. The analysis in the chapter illustrates how they contribute to the performance of AIAL.

outlay of the academic debates and experiences surrounding privatisation and pricing regulation, particularly highlighting how decisions of the state influences private investors in infrastructure assets. Section 4.3 illustrates the financial and investment performance as well as the economic impact of the Airport. Part A of the chapter then examines the key factors that have contributed to the performance of the company and highlights the role of government for these factors. Part B analyses two takeover bids by institutional investors that AIAL was subjected to illustrating the influence of government decision-making on foreign ownership of infrastructure assets. Finally, the conclusions of the chapter are drawn in Section 4.12.

4.2 The Politics and Economics of Privatisation and Regulation

Before looking in depth at the AIAL example, a background to the political and economic rationale for private sector investment into infrastructure is explored in this section. The role of government decision-making can have wide reaching implications for private investors. It has been identified that the privatisation process and regulatory framework under which AIAL operates has contributed to the successful performance of the company. This chapter is essentially an inquiry into the emergence of the relations of political economy in the field of urban institutional infrastructure investment. This section provides background theoretical information surrounding the two political processes that have had significant effects for the company's ensuing business function. It can be seen that the corporate governance and capital structure strategies of the company, which have also contributed to the company's success, are heavily influenced by the government decision-making associated with the privatisation process and regulatory framework. It must be noted that this chapter is not intended to provide an exhaustive political or economic analysis of AIAL. Instead,

some of the key academic debates and empirical evidence of privatisation and pricing regulation theory are outlined in order to situate the AIAL case.

4.2.1 Privatisation

To provide context for the Auckland Airport example, it is useful to examine the evolution of the privatisation procedure as well as the premise for governments to carry out the process. Following the lead of the UK's Thatcher government in the early 1980s, there has been significant reduction in the amount of government control over infrastructure investments in many countries around the world. For many countries, governments have been forced into private participation, as they could no longer afford to be the sole operators and financiers of critical but expensive infrastructure (Estache 2001).

While most infrastructure had previously been run by the public sector to allow decisions to be made in line with the objectives of government infrastructure policy balancing the financial, social and environmental effects, discontent with this approach seemed to surface in recognition that government decision-making was not always competent and gave undue weight to short-term political advantage rather than long-term objectives (Nash 2005). Efficiency improvements have been a key component of the rationale for privatisation in an attempt to reduce the "budgetary burden caused by state enterprise inefficiencies" (Kikeri and Nellis 2004). Productive efficiency brought about by the requirement of private firms to achieve profits has been important in this regard (Kay and Thompson 1986). The privatisation of infrastructure assets has also provided budgetary relief for governments reducing the macroeconomic constraints on public borrowing and spending. In order to avoid fiscal crisis, governments have relied on the private sector to assist with financing the large

investments needed to modernise infrastructure services (O'Neill 2009a). In the UK, the objectives of privatisation by HM Treasury were summarised as follows – to maximise value obtained for the taxpayer; improve competition, leading to better quality services and lower prices for consumers; improve the management of resources; extend and deepen share ownership among the general public (Bush 1995).

The characteristics of the asset involved and the specific objectives for the process will dictate the approach that is utilised by the interested government. One option has been to sell public assets to the private sector through public offerings of shares or private 'trade' sales of assets (Estache 2001, Jenkinson and Mayer 1998). A simple privatisation that involves selling the organisation without changes to its structure or environment may be carried out if it was thought that there was sufficient competition and that monopoly power was not a problem. Where a natural monopoly is sold outright and no or limited competition is expected, the privatisation process is usually accompanied with regulation (Nash 2005). A further approach relates to the situation where deregulation takes place in order to provide new competitors in the market, such as airline or bus services where the monopoly is thought to be largely the result of regulatory control of entry rather than cost characteristics (Nash 2005).

Various forms of franchise arrangements have also been used by governments to facilitate private participation. Operations and maintenance contracts lasting a period of two to five years enable private operators to manage and maintain certain services but does not include investment obligations (Estache 2001). Concession contracts may be longer duration contracts and also involve investment and service requirements (Estache 2001). Build, operate, transfer (BOT) contracts are also used by governments to commission new investment projects such as new roads or airports

to a private owner (Nash 2005). At the end of the concession period, the asset is transferred back to the relevant government agency. Other variations of BOT contracts have included BOOT (Build, Own, Operate, Transfer), BLT (Build Lease Transfer), BOO (Build Own Operate), DBFO (Design Build Finance Operate), DCMF (Design Construct Manage Finance), the last three of which do not involve a transfer of ownership at any stage of the contract to the private sector. These types of divestiture have been preferred as a form of renting out assets without the politically sensitive permanent transfer of ownership from the public to private sector (Estache 2001).

There have been a number of studies that have looked at the general considerations and effects of the privatisation process with data becoming available from the various experiences around the world over the last three decades. While the decision to privatise or not has depended upon the respective economic, political and institutional environments, there has been variable performance outcomes in those locations where the privatisation process has been carried out. Bortolotti et al (2004) with data obtained from the International Financing Review Database of Thomson Financial, identify market, budget and institutional constraints affecting privatisation. They conclude that a well-functioning financial system facilitates the privatisation process and that deep, liquid equity markets enable the full market value of state-owned companies to be extracted. Liquidity provides enhanced diversification, information aggregation, monitoring of managers and regulation of firms. A liquid stock market favours the absorption of large issues, important for large state monopolies, promoting governments to sell high stakes and thus is associated with higher privatisation revenues. It is also observed that privatisation is provoked by high levels

of sovereign debt but that suitable political and legal institutions must be in place to provide adequate protection for private investment (Bortolotti et al 2002).

In developed countries, asset sales and concessions or franchises have dominated most of the privatisation approaches for infrastructure. The UK has led the way in the privatisation of state-owned assets mainly through asset sales, starting with British Petroleum in 1977, followed closely by the Conservative government's elaborate divestiture in the 1980's with the sale of Associated British Ports in 1983, British Telecom in 1984, British Gas in 1986, British Airports Authority in 1987, Regional Water Companies in 1989 and Electricity Distribution Companies in 1990 (Brittain 1984, Bush 1995). By 1990 42 major businesses employing almost 900,000 people had been privatised (Estache 2001). With the rise of the Private Finance Initiative²⁰ (PFI) in the UK, build-operate transfer projects have also been important. The early privatisation experience in the UK has been regarded as the catalyst for privatisations around the globe (Estache and de Rus 2000).

In the 1980s, the New Zealand economy also underwent a number of reforms as the incoming fourth Labour Government of 1984 was faced with a short-term foreign exchange crisis, built on top of long-term slow economic growth (Bateman 1987). On top of the ideological motivations or political opportunism, the reform program was based broadly around the objectives of ensuring macro-economic stability, and promoting micro-economic liberalisation (Wilson 1995). Named after the finance minister at the time, Sir Roger Douglas, Rogernomics was characterised by major economic reforms including tight monetary policy with a floating exchange rate,

²⁰ For more elaborate discussion on the PFI scheme please see: (Clark and Root 1999, Pollitt et al 2000, Musson 2008).

reducing the fiscal deficit and market-led restructuring. (Bateman 1987). While a number of the reform objectives were similar, it has been noted that the rationales for privatisation in the UK (emphasising wider ownership) and New Zealand (targeting taxpayer value) involved the invocation of different political-economic identities (Larner and Walters 2000).

Some of the major infrastructure assets that have been fully or partially privatised by the NZ government have included the Ports of Auckland in 1988, Telecom in 1990, Tranz Rail in 1993, Trustpower in 1994 and Contact Energy in 1988 (Wilson 2010). A summary of some of the major NZ infrastructure privatisation experiences are shown in Table 6 below:

Company	Year	Industry	Method	Result/Lessons
Ports of Auckland	1988	Transport	Share Float	- improved productivity - sustained share price appreciation - now back in public ownership following a takeover offer by the local government
Telecom	1990	Telecommunications	Share Float	- initial period share price appreciation and improved service - secondary period of share price decreasing towards float level and performance being affected by advent of internet, increased regulation
Tranz Rail	1993	Transport	Trade Sale	- insufficient enhanced efficiency leading to company being bought back by government in essentially non-commercial transaction
Trustpower	1994	Electricity Generator/Retailer	Share Float	- successful privatisation with efficiency improvements and value appreciation - regulatory competition issues
Contact Energy	1998	Electricity Generator/Retailer	Share Float	- successful business, wide shareholder base, significant share price appreciation - regulatory competition issues

Table 6: NZ Privatisation Experience of Infrastructure Companies

Source: (Wilson 2010)

There has been a long history of privatisation experience for infrastructure companies in New Zealand following the UK's lead. In the five examples illustrated here, the financial performance in the post privatisation period has been favourable although in two of the cases (Telecom and Tranz Rail), the performance has subsided in recent years (Wilson 2010). There has also been success achieved in other areas including helping to develop local capital markets through market listings and significantly reducing government debt from sale proceeds (Wilson 2010). Some concerns to come

out of the privatisation experience have revolved around assets being sold cheaply, small groups of people making a lot of money and privatised companies under-investing in necessary infrastructure (Wilson 2010).

This section has touched upon how the privatisation process has come about, the basic premise for governments to undergo the policy reform, how it has been achieved, along with some cases specifically relating to the NZ experience. The process of privatisation is a key determining factor for the success of the resulting company. The type of approach utilised will depend on the political, economic and institutional arrangement of the country of interest. Each asset is different however which means the type of privatisation approach will depend on the asset characteristics. Section 4.4 will look in detail at the privatisation process of AIAL and determine the specific characteristics that have contributed to its resulting performance.

4.2.2 Regulation

While the process of privatisation was accompanied by a significant retreat of the State from the role of producing infrastructure assets, this however has not meant that governments have ceased to exercise certain elements of control. Governments mediate the contracts with privatised infrastructure companies, by defining the role of the parties, and setting out the powers and duties of the regulators (Helm 2009). Where natural monopoly infrastructure industries have been privatised, governments must instil regulatory frameworks that protect consumers against abuses of monopoly power while still assuring investors achieve a fair return and address broader equity concerns (Kikeri and Nellis 2004). In effect, economic regulators try to ensure consumers pay a fair price while ensuring operators are able to achieve a reasonable return. The success of the privatisation exercise depends largely on the development

of a regulatory system that is independent, and resistant to capture by the private provider or the state (Kikeri and Nellis 2004). There is a need for clear policies, transparency and public disclosure, predictability over rulings, and appropriate institutional capacity (Estache et al 2000).

It has also been noted that greater success with privatisation was achieved when the regulatory frameworks were established up front with sufficient capacity to implement and enforce regulations (Kikeri and Nellis 2004). Ensuring that regulations and regulatory agencies are well defined in their function will mean that subsequent renegotiations of contracts will be minimised. Subsequent modifications to regulation can be time-consuming, disruptive, and signal wavering commitment (Kikeri and Nellis 2004).

Governments may use a number of different strategies to control an infrastructure provider that operates a natural monopoly. The idea of structural separation and unbundling to promote competition has been employed in order to influence the rate of return achieved by private investors²¹. When horizontal or vertical separation is applied to facilitate competition, the rate of return to an investor is dependent upon traditional rates of return on capital investments. Where no separation occurs, the rate of return is based upon the growing value of the asset i.e. asset pricing inflation can be exploited, as employed by the Macquarie Bank model outlined in Chapter Three (Estache et al 2000, O'Neill 2009b). In cases where introducing competition is not possible, regulatory tools have predominantly focused on controlling the prices

²¹ While not having a guarantee for the rights to a second airport (as is the case for Sydney Airport), the risk of a second airport being developed in Auckland has been considered low (AIAL Annual Report). This is important for ensuring rate of return in the long run.

charged to consumers. A government may also use regulation to achieve wider social objectives and will choose the regulatory methods or system that provides the most cost-effective way of achieving its objectives. Modern regulatory experiences have shown however that the objectives of regulators to promote efficiency and ensure prices are kept close to costs are conflicting (Forsyth 2004). This provides a considerable challenge for selecting the appropriate method for a particular situation.

Price Regulation

Central to a regulator's task is to ensure that the regulated monopolist infrastructure operator is able to achieve financial equilibrium whereby the total allowed revenue must equal its total costs as represented by the following equation:

$$\text{Price} \times \text{quantity} = \text{operational costs} + (\text{asset value} \times \text{the cost of capital}) \quad (1.1)$$

As can be seen from equation 1.1, the cost structure for the operator is made up of both operational and capital costs (Estache and de Rus 2000). Operational costs include the standard inputs, common costs and variable costs, the accounting for which needs to be guided by regulators. Capital costs require an assessment of the value of assets which poses problems because of the various methodologies, each with their own biases, that could be used i.e. historical value, market value, replacement value (Estache and de Rus 2000). The regulator must also oversee the controversial calculation of the cost of capital, which is the minimum rate of return required by the firm to stay operating (Estache and de Rus 2000). Essentially, the regulator must balance a double long-term objective, firstly to allow the private operator to get a reasonable rate of return on investment and secondly that the return

is not excessive (so that the operator does not abuse its monopoly power) (Estache and de Rus 2000).

The two main methods employed by regulators to achieve these objectives have been through rate of return and price cap regulation, with a number of hybrid variations developing that combine elements of the two.

Rate of return regulation controls the rate of return allowed from investment as an indirect way of controlling prices. The allowed rate of return will determine the profitability of the firm, as illustrated by:

$$\text{Allowed rate of return} \times \text{assets value} = \text{prices} \times \text{quantities} - \text{operational costs} \quad (1.2)$$

The regulator here requires detailed information on costs including an assessment of operational costs, assessing the value of assets and a suitable cost of capital. Equation 1.2 implies that there is an incentive to overinvest or to overstate the value of the assets when the correct value is difficult to assess as this would have the effect of increasing the value of allowed benefits. Other drawbacks include a lack of incentive to cut costs as well as excessive compliance costs for the regulator who would regularly need to collate information on costs, assets, and investments (Estache and de Rus 2000).

Price cap regulation was introduced in the UK as a regulatory tool in the early 1980s as an alternative to rate of return regulation. In essence, the price cap enables an operator to raise prices with inflation, while subtracting potential cost savings by the firm due to increased efficiency or technological progress i.e. in the UK (an RPI-X

cap) or Australia (a CPI-X) cap. When X is zero, prices are set in accordance with inflation. A positive X, reducing real prices, relates to the situation where efficiency gains might be expected in the regulated industry and so firms are encouraged to cut costs and achieve efficiency gains higher than the industry average. In cases where there is little capital, a negative X increases real prices in order to stimulate new investments or to improve the quality of service offered (Estache and de Rus 2000, King 1998).

Price cap regulation is becoming more common worldwide over rate of return regulation because of the incentives to cut costs and invest appropriately. When setting the value of X, the regulator often utilises historical performance data of the firm or other similar firms. The value of X is kept constant by the regulator usually for a period of five years, helping to reduce compliance costs for the regulator (Estache and de Rus 2000).

Price regulation methods have been applied to airports to protect the interests of airport users and promote airport economic efficiency. In the UK, the Civil Aviation Authority has applied a revenue yield price cap based on the RPI minus X formula, for airport charges at the airports owned by BAA (Francis and Humphreys 2001). This was a natural choice, given that this method of regulation had been developed in the UK as an alternative to rate of return regulation for the privatised public utility monopolies (Francis and Humphreys 2001). Australia has followed the British model of privatisation and regulation for its airports utilising the price cap regulation. Hamburg airport, which is partly privatised remaining under majority public ownership, is also subject to price caps (Forsyth et al 2004). Rate of return regulation, despite its less favourable characteristics, has been adopted at various times by

Dusseldorf, Sydney and Amsterdam airport (Forsyth et al 2004). In contrast to direct regulation of an airport, a contractual approach that relies on negotiations between users and the airport in setting prices and investment has been utilised, mainly in areas where at least a majority public ownership exists such as in Canada and the US. The contractual approach allows airports and airline customers to negotiate over price formulas and provision of investment (Helm 1998). In a step further away from direct control, New Zealand has adopted a light-handed regulatory framework for its airports with no formal pricing control but provision in the legislation for airports to consult with airlines over charges.

In conjunction with the form of pricing regulation employed, airport regulating bodies will also need to choose between the single-till or dual-till pricing cap systems. A single-till refers to the use of all airport revenues (both aeronautical and commercial) in the determination of the price cap. Alternatively, the dual-till system only considers aeronautical revenues in setting airside prices for an airport (Gerber 2002). AIAL operates under a dual-till framework. An account of the relative advantages and disadvantages of both systems is provided in Section 4.5.1.

There is great diversity in the privatisation and regulation approaches used by different jurisdictions around the world. The varying ownership structures, geographic/economic significance, size and travel patterns are some of the many factors that will affect the type of regulation employed by an airport. Further research has been called for to analyse the effect of the different regulatory systems and ownership structures on the performance of airports (Forsyth et al 2004). As the asset class continues to attract institutional capital from locations around the globe, it is important for investors to appreciate that privatised infrastructure assets are very

much still in the domain of the state and must be aware of how this might affect the performance of their investments. This chapter contributes to the field of airport pricing regulation and infrastructure investing by analysing the various effects of the light-handed regulatory framework that AIAL operates under. By highlighting the influence of political decision-making on regulated privatised infrastructure assets, the chapter shows how the corporate governance and capital structure strategies of the firm can be affected and the ensuing effects on performance.

4.3 Performance of Auckland International Airport Limited

This section illustrates the favourable performance of AIAL from the time the company was corporatised in 1989 and provides evidence for the arguments developed in this chapter. Various airport body organisations have produced reports comparing performance figures of different airports. A comparison of Auckland with other airports around the world, gives an indication of the relatively high levels of financial and operating performance it has been able to achieve. A summary of these reports is given in Appendix 5. The following part of this section illustrates the specific performance of AIAL in detail. For the purpose of this case study, the performance measures will focus on the financial values obtained through annual reporting data over the last twenty years. Along with the financial and investment performance figures, the findings of an economic impact assessment study on AIAL are also presented in this section.

4.3.1 Financial Performance Results

The data used to analyse the performance of AIAL was obtained from the published annual reports of the company since becoming corporatized in 1989²². As can be seen from Figure 14 AIAL continued to record profitability growth throughout the nineties transforming from an outdated and congested transport depot to one of the world's leading gateway airports. The 'per passenger' efficiency performance of the Airport reflects the improved and more efficient decision-making process that was brought about by the corporatisation process.

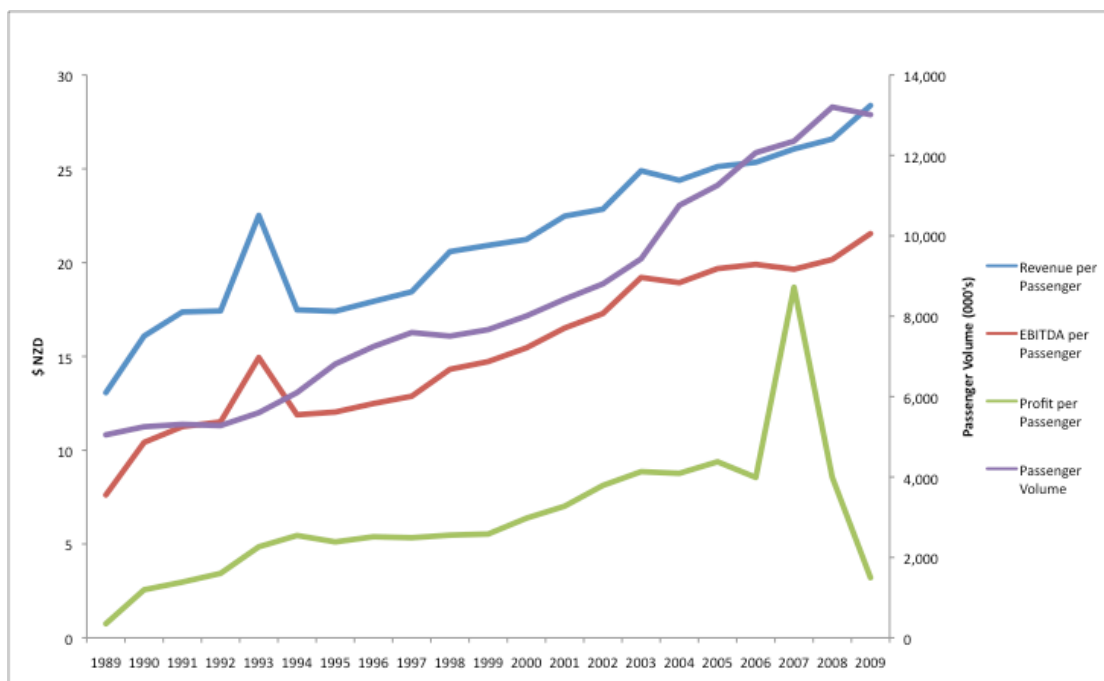


Figure 14: AIAL Financial Performance (1989-2009)
Source: AIAL Annual Reports

Figure 14 highlights the strong financial performance of AIAL with revenue, profit and EBITDA increasing by 117%, 327% and 183% respectively over the twenty year period of analysis. The average annual passenger growth over the period was 4.85%. The steady growth in performance has been robust against the major terminal developments it pursued in the late 1990's as well as the Asian Financial Crisis of

²² All values are nominal unless otherwise stated.

1997-1998. The strong performance has continued through the 2000's in spite of the fallout in the aviation sector due to the September 11 terrorist attacks. There was however a significant drop in profit from 2007-2009. This was due mainly to one off costs associated with ownership/takeover proposals and the revaluation of investment property as a result of changes in the international financial reporting standards for the fair value of a company's investment properties (AIAL Annual Report 2008). These one-off costs are not expected to occur in future periods. The reasonably flat profitability performance over the last few years is also due to the Airport's extensive capital expenditure program that it has undertaken in order to accommodate for increasing passenger number forecasts. Significant investments have been made over the last few years to increase the capacity of the airport including developments to accommodate the new Airbus A380 aircraft. The airport is now in a strong position to handle forecasted passenger growth without requiring large investments, which should translate into strong profitability results for the coming years.

Figure 15 and Figure 16 show how the different sources have contributed towards total revenue for the Airport. It is interesting to note that in 1999, for the first time, the revenue generated from the airport's retail income exceeded the revenue from airline landing fees. This was due mainly to the redevelopment of the retail areas in the international terminal and provided an indication of the success of AIAL's commercial development strategy. Commercial sources of revenue exceeded all aeronautical sources (including landing fees, development charges and terminal services charges) in 2002. AIAL is in the unique position of having 1500 hectares of free hold land available for development in property and other commercial undertakings. The significance of this is elaborated upon in the discussion on price regulation in Section 4.5.

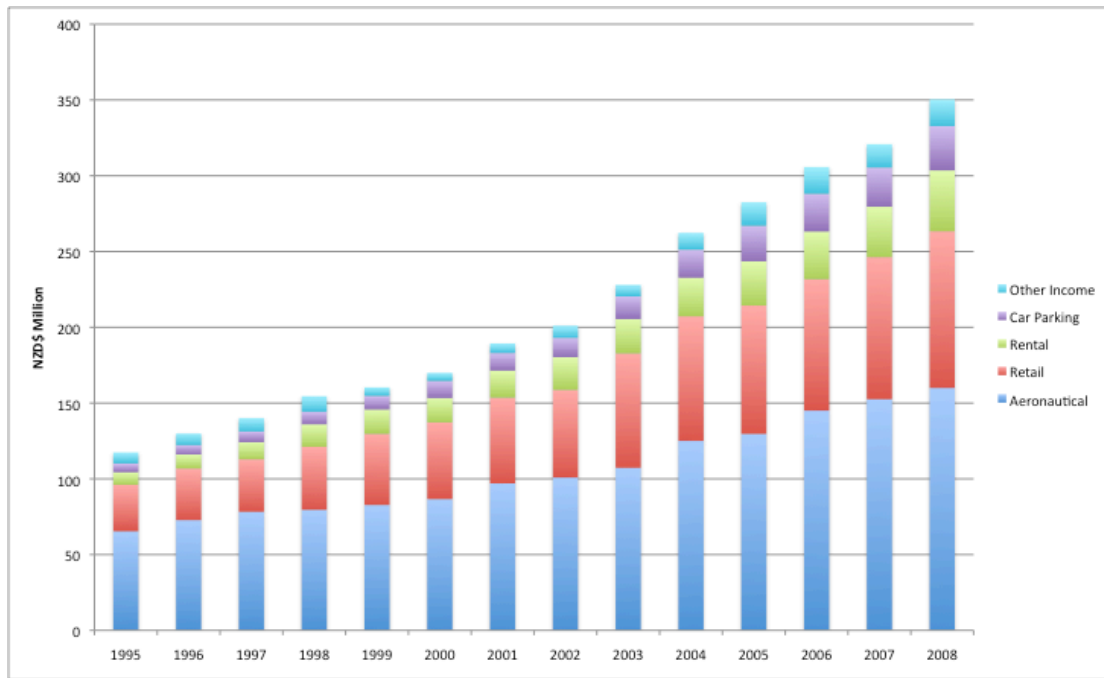


Figure 15: Sources of Total Revenue
Source: AIAL Annual Reports

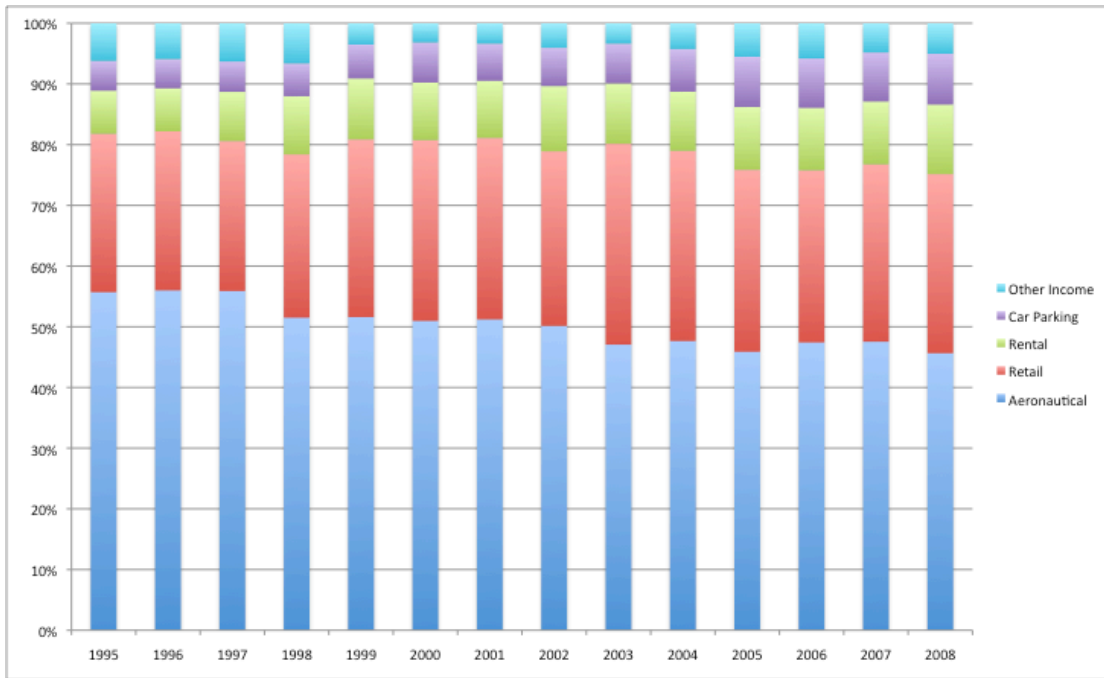


Figure 16: Proportions of Revenue Sources
Source: AIAL Annual Report

4.3.2 Investment Performance Results

As can be seen from Figure 17, the share price of AIAL has appreciated in value significantly since it was listed on the NZ stock exchange in 1998. The company's share price enjoyed a steady increase up until 2005 when it recorded its first major decrease in price. A sharp rise in value followed in 2006 and 2007 while the airport was subject to two takeover offers. The drop in share value from mid 2007 to mid 2008 was due to the same takeover bids failing. The relatively small fluctuation since mid 2008 illustrates the robustness of AIAL through the GFC highlighting the infrastructure qualities (with conservative leveraging levels) that the asset possesses.

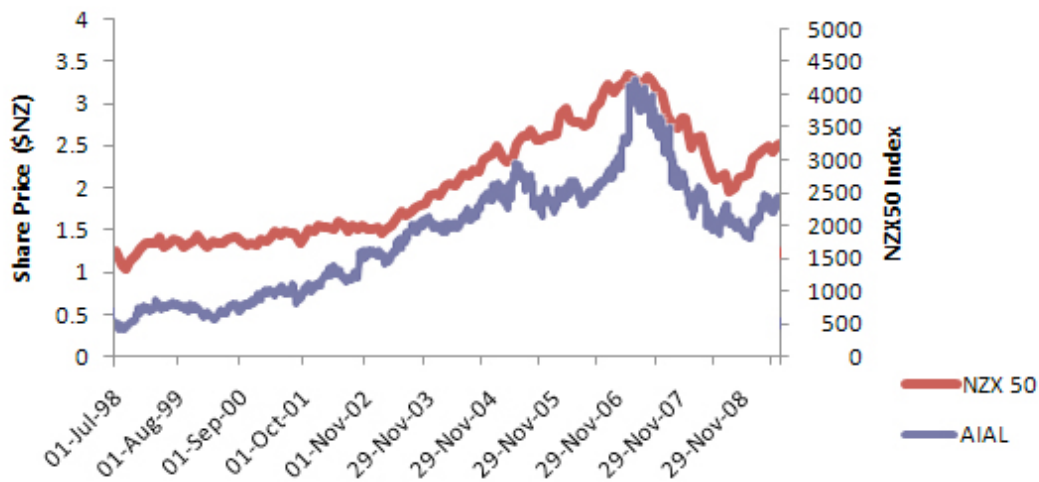


Figure 17: AIAL Share Price against NZX50 (1998-2009)
Source: Datastream

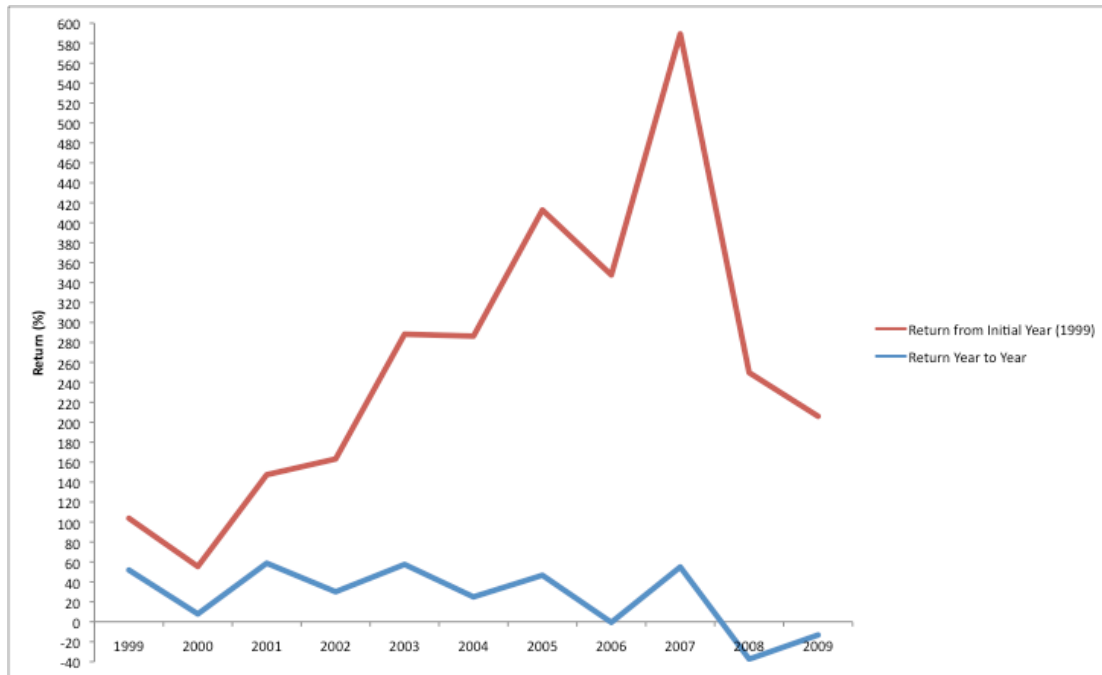


Figure 18: Return on Investment (1998-2009)
Source: Author's Calculations

Figure 18 shows the return on investment for an investor investing in AIAL since becoming a publically listed company. While the year to year returns have fluctuated since 1998, it can be seen that investors who held their shares since 1998 have enjoyed a 219% return on their initial equity investment into the company based on the 2009 year end share price and dividend payment. The compounded annual rate of return for the 11 year period from 1998-2009 was 11.12%²³. The return for the market (NZX50) over the same period was 6.51%. Investors have enjoyed a return significantly higher than the market by investing into AIAL. The company has also been able to achieve favourable investment performance when compared with other listed airports around the world. The historical share prices of Frankfurt, Vienna and Sydney airport since their respective privatisations up until the end of 2009 are shown in Appendix 5. The annual compounded rate of return for the three airports since

²³ This figure of 11.12% is consistent with the majority of return expectations of investors and fund managers for core economic infrastructure assets outlined in Chapter 3.

privatisation were calculated as 0.295% (Frankfurt), 1.27% (Vienna) and 11.2% (Sydney). It can be seen that AIAL, like Sydney Airport has performed well when compared globally with other airports.

4.3.3 Economic Impact Assessment

On top of the financial and investment performance of AIAL, it is also interesting to look at the effect of the company's business on the wider economy. Economic impact assessment studies have been conducted for AIAL by the independent consulting firm Market Economics. The preliminary study conducted in 2007 measured the economic impact of the activity associated with AIAL based on 2006 data while the 2010 report records the projected economic significance of the company. The key findings of the studies, showing the contribution of AIAL to GDP in absolute dollar and percentage terms are given in Table 7 below.

	NZ GDP (\$NZ/ % GDP)	Auckland GDP (\$NZ/ % GDP)	NZ Employment	Auckland Employment
2006	\$19bn (13%)	\$10.7bn (21%)	319,000 (15.3%)	174,000 (28%)
2021 (est)	\$26-32bn (14-16%)	\$14-18bn (22-24%)	441,000- 539,000	236,000-291,000
2031 (est)	\$30-44bn (14-19%)	\$17-25bn (22-27%)	528,000- 756,000	251,000-363,000

Table 7: AIAL National and Regional Economic Contribution

Source: Market Economics (2010)

While acknowledging that these types of reports tend to overestimate potential effects, it can be seen from Table 7 that AIAL has a significant impact on the New Zealand economy. The report uses three scenarios for its projections, business as usual, high growth and low growth scenarios to provide a range of possible estimations, and assumes that no major structural changes take place in the national and regional economies. The calculations for GDP contribution are based on data sets on each key driver of the airport's impact including International and Domestic passenger

projections; airport activity projections (capital and operating expenditure), other industry projections, export and import volumes. The data was collated from AIAL passenger forecasts, trade projections, Tourism New Zealand arrival and domestic travel forecasts and AIAL operating expenditure and capital work forecasts. The report observes that the GDP impact from AIAL's operation has grown consistently since the mid-1980s, including substantial growth since 2000. At the national and regional level the activity facilitated by AIAL has increased both in dollar value and relative to the economy, which indicates that growth in the air transport sector is increasing at a greater rate than the economy as a whole. It is noted by the studies that the direct manifestation of AIAL is most noticeable in the Airport Corridor, which represents the economic activity located either within or in close proximity to the airport and its major access routes. The wider economic significance is less obvious and is represented by the flows of people and goods to and from the airport (Market Economics 2010).

PART A: Factors for Success

This chapter seeks to investigate the political economic dynamics associated with infrastructure investing through a case study analysis of AIAL. Of particular interest in this chapter, is the relationship between the public and private sectors and the role of the government for the provision of privatised urban infrastructure assets. By analysing the factors that contribute to the performance of AIAL, it is argued in this part of the chapter that the government plays a central role in affecting the performance of infrastructure investments. This is achieved by examining how the privatisation process, regulatory framework, corporate governance and capital

structure strategies influence the performance of the company and the effect that government decision-making has on each of these factors.

Based on the favourable investment and financial performance presented in the previous section, it is further argued in Part A here, that the greater the significance of an infrastructure asset for its respective regional and national economies, the greater the likelihood of achieving a favourable return for a private investor. These arguments are developed in this section through a detailed analysis of the contributing factors of performance for AIAL. A multi-disciplinary approach drawing upon the privatisation and regulation theories introduced in the previous section as well as corporate governance and finance theory is applied to provide a deeper understanding of the political economic relations involved with private institutional infrastructure investment.

4.4 Privatisation and IPO

Since the mid 1980's a number of airports around the world have been through the process of corporatisation, commercialisation and privatisation including BAA in the UK, Sydney, Frankfurt, Copenhagen, Vienna, and Zurich airports. Airports have undergone ownership restructuring in order to better access sources of finance for investments and for potential efficiency gains. The commercialisation and privatisation have taken different formats/models in different countries. This subsection will look in detail at the privatisation process of AIAL and identify the unique elements of the process that have contributed to its performance.

4.4.1 The Process

The New Zealand government first signalled its intentions to sell its 50% stake in the airport just a few months after the corporatisation of AIAL when an announcement was included in the 1988 Budget. This did not eventuate until ten years later in 1998 when the government announced that it would sell its 51.6% shareholding (216,762,152 shares) and publically list the company on the stock market through an IPO (Initial Public Offering). This decision was brought about as AIAL considered the development of a second runway. The government felt there was no logical reason to retain its shareholding and was reluctant to shoulder the burden of funding major development projects and related contingent liabilities (Thompson and Clements 2003).

Investment management firm, Merrill Lynch conducted the sale process through an open price book-build share float as opposed to the more traditional fixed-price share float. This involved inviting selected institutional investors to bid for shares through a tendering process with competing bids to determine the final share price²⁴. The New Zealand general public were also invited to apply to purchase shares by dollar value rather than by number of shares (AIAL Annual Report).

When the IPO was opened, it was five times oversubscribed with 65,837 New Zealanders wanting to purchase a part of the airport, surpassing the previous record of 35,000 retail NZ investors when Telecom NZ listed on the stock market in 1991. Within a month of opening the share offer, AIAL had become a publically listed

²⁴ The open price book build approach enables the government to achieve a price nearer to the 'market' at the time. See Jenkinson and Mayer (1988), Bush (1995) for a detailed explanation of different IPO privatisation procedures

company with private ownership and market capitalisation placing it in the top ten companies on the NZ Stock Exchange (NZSE) (AIAL Annual Report).

AIAL was only the fifth airport company in the world at the time to be publically listed and remained 80% owned by New Zealanders. The Government Ministers overseeing the sale agreed that the objectives of the float had been not only achieved but exceeded (Interview 2010a).

In order to attract investment from Australian Fund Managers, AIAL was subsequently listed on the Australian Stock Exchange (ASE) in 1999 gaining full listing status in 2002.

4.4.2 The Effect

The obvious advantage of listing on a stock exchange through an IPO is the ability to access capital. In the case of AIAL, this was achieved successfully. The key transformation after the float in 1998, was the make up of investors and ownership in the company. Ownership of a company can influence performance because different owners pursue different goals and have distinct incentives (Oum et al 2006). Under government ownership, firms are run by bureaucrats, to primarily satisfy social goals and political agendas (Levy 1987, De Alessi 1983). Under private ownership, firms are run to maximise profit and shareholder's wealth (Back et al. 2002). Shifting from government ownership to private retail and institutional investors has had a positive effect on the performance of AIAL. Certain institutional fund manager investors have brought an element of expertise in airport ownership. This has contributed to not only efficiency improvements in the running of the airport but also in ensuring growth opportunities are identified and acted upon (Interview 2009 b).

The corporatisation of the airport enabled a shift in management thinking towards financial incentives and improving profitability which has been depicted in the subsequent performance results. After the privatisation process, the airport has been subject to the scrutiny of public markets. There has been a further shift towards a commercial focus with the thinking of the business aligned with growing revenues, margins, innovating on product offerings and competing for market share. This evolutionary transformation process from government ownership and control (where providing a service was priority and financial metrics were nearly irrelevant) to corporate structure (bringing financial and operational objectives more in balance) followed by complete privatisation (where the main objective is to maximise profits) has been a key driver for achieving superior outcomes (Interview 2009 b).

There is a great emotional connection to airports, particularly in smaller countries and this has been clearly evident in the case of AIAL through its historical development to the current day (Interview 2009f). The public share offering was patriotically promoted with All Black rugby players as an opportunity for New Zealanders to own a piece of 'their' airport. A lot of the investors that joined the company at the time of the float have continued to hold their investment to this day. The loyal retail shareholder base since listing has strengthened the overall investor perception of the airport which has been helped through delivering positive results during this time. This has enabled the airport to achieve favourable outcomes when entering into the bond and capital markets for financing purposes as well as from rating agencies (current S&P credit rating of A-) (Interview 2009f). The IPO process in New Zealand can be compared with the success of the sale of British Telecom in 1984, which also involved a large advertising campaign to promote widespread share ownership among

the public and more generally the promotion of 'popular capitalism' (Larner and Walters 2000). The sale was five times over subscribed and produced an 86% premium on the first day of trading.

In contrast to the successful processes for AIAL and British Telecom, the privatisation of British Rail through the Railways Act 1993 has come under scrutiny for the dysfunctional, fragmented nature of the resulting organisation. Through a mixture of restructuring, outright privatisation, privatisation with regulation and franchising, British Rail had essentially been fragmented into a group of over 100 separate companies. This resulted in deteriorating quality of service, inadequate investment, and compromised safety with a series of fatal accidents at Southall in 1997, Ladbroke Grove 1999, and Hatfield 2000 (Martin 2000). The ineffective privatisation of British Rail was eventually realised after the company ran into financial difficulty and Railtrack plc was forced to go into administration in 2001. Commentators and those close to the running of the companies, have proclaimed that the failed British Rail privatisation process can be attributed to the fragmented structure (Nash 2005).

These differing experiences illustrate the importance of the privatisation process on the subsequent performance for infrastructure assets. If a process that is supposed to improve the service offering while reducing costs actually leads to worse services with fatal consequences, public outcry and corporate executives exploiting market power, the influence of politics and intervention will be greater (Martin 2000). It can be seen that the decision by the government to carry out the IPO privatisation process for AIAL in the way that it did, not only led to favourable impressions with the

general public, but contributed to the financial performance of the company through a loyal shareholder base, transparent governance structures and effective management.

While the privatisation process in 1998 has been a key success contributor for the performance of AIAL, there are certain drawbacks to being a publically listed company. Being publically listed can be quite constraining on the business. ‘With the shareholder base quite broad and operating in a conservative NZ environment, it is very hard to do anything different without being heavily criticised. The business is not very volatile, but the volatility of markets gives a false sense of value variance in the airport’ (Interview 2009b). Such unwarranted volatility can be deterring for pension fund trustees who are after long-term stable investments. If the airport was a delisted privately owned asset, more institutional investors with specific expertise in helping the airport business to grow could be brought on board, enabling the company to perform more efficiently. Not being listed would reduce the perceived volatility given the airport business is generally a stable economic infrastructure asset.

4.5 Price Regulation

Following the process of privatisation, governments are able to exercise control of infrastructure assets through the tools of pricing regulation. The shift in ownership has been accompanied by government regulation in order to restrict airport owners with substantial market power. Governments have attempted to set up independent regulating agencies²⁵ while in certain jurisdictions like New Zealand, government ministers are still able to influence pricing regulation through legislative provisions.

²⁵ In the UK, independent regulating agencies have been established to control prices in infrastructure industries such as CAA (air traffic services) OFWAT (water), OFGEM (electricity and gas), ORR (rail regulation)

Investors looking to invest into an infrastructure asset must know how regulation may affect the ability to generate returns from the asset. AIAL operates under the dual-till model and is regulated under the Airport Authorities Act 1966, Airport Authorities Regulations 1999 and Commerce Act 1986 (AIAL Annual Report). The Airport company is also constituted under the Auckland Airport Act 1987 and Companies Act 1993 (AIAL Annual Report). It is argued that the ‘light-handed’ pricing regulatory framework that AIAL operates under has contributed to the financial performance of the company. Through the regulatory provisions listed above, this framework allows the government to have influence on how airport prices are regulated and subsequently the performance of the company.

This section looks specifically at the pricing regulation AIAL is subjected to, examining different aspects of the regulation, and identifies how it has affected the performance of the company. It will consider the AIAL case in light of examples used elsewhere in the world and the possible effects on performance, that regulation changes might have for the company in the future.

4.5.1 The Dual-Till Model

The regulatory framework for private airports in NZ is based on the ‘dual-till’ model. The dual-till approach separates the price-cap regulation on aeronautical activities from other unregulated commercial activities (Forsyth 2006). Aeronautical activities of an airport relate to the services provided for airlines including; airfield services for the landing, take-off and movement of aircraft, facilities at the terminals for the processing of passengers; facilities for the maintenance of aircraft. Commercial activities do not relate to airlines or their services and include retail outlets in terminals, taxis, public transport, car parks, car rental tenancies and property leases.

In this way, aeronautical activities are subject to legislative regulation, however commercial activities are unregulated and subject to open market competitive forces. This is in contrast to the single-till model where commercial revenues are included into the price cap regulation by government authorities (Forsyth 2006). With the single-till approach, revenues from commercial activities can be used to cover the deficits from aeronautical services (Lu and Pagliari 2004). Aeronautical charges can thus be set at a lower level because of the cross-subsidisation, given that a profit is made from commercial activities (Czerny 2006). Under the dual-till model, the level of aeronautical charges is determined by considering only aeronautical revenues and costs (Czerny 2006). Aeronautical charges will most likely be set at a relatively higher level under the dual-till model than under a single-till model.

Proponents of the dual-till approach argue that regulation should focus on the activities which are characterised by a natural monopoly, and therefore not be affected by the commercial activities. However, others argue that it is not possible to separate the aeronautical activities from commercial ones, and a single-till model is more appropriate. A common conclusion in the academic literature has shown that from the perspective of total social welfare and efficiency, the dual-till approach is preferable over the single-till approach where airport capacity of aeronautical services is fully utilised, while a single-till approach may be more appropriate where excess capacity exists (Lu and Pagliari 2004, Forsyth 2001, Starkie and Yarrow 2000, Czerny 2006). A review process in the early 2000's carried out on a number of airports around the world highlighted a shift from the more traditional single-till model to the dual-till approach. A similar dual-till regime to New Zealand is employed in Australia. South Africa has intended to move away from the single-till approach as has the German state of Hamburg with the partially privatised Hamburg Airport regulated under the

dual-till principle (Lu and Pagliari 2004). Seven of the ten largest airports in the US have moved away from the 'residual approach' (US version of single-till) and instead have adopted the 'compensatory approach', focusing only on the cost recovery of aeronautical assets (Lu and Pagliari 2004). In the UK, while the CAA has recommended the use of a dual-till model, a lack of support from airlines and the Competition Commission forced it to retain the single-till model (Forsyth et al 2004).

Whether a single or dual-till model is employed will depend on a number of different characteristics associated with the airport including geographical location, size, ownership structure and capacity constraints. In the case of AIAL, the dual-till regulatory regime has been a contributing factor for its successful financial and operating performance (Interview 2009g). Illustrated by Figure 15 and Figure 16, AIAL has been able to enjoy significant profitability growth almost every year since becoming a corporation. One of the key reasons for this has been the ability of the airport to develop its commercial ventures. From Figure 15, it can be seen that in 2002, the revenue from the airport's commercial activities for the first time exceeded the revenue from aeronautical services. This is consistent with trends in airports around the world. In medium to large US airports, commercial operations represented between 75-80% of total revenue while Los Angeles airport drew 90% of its total revenue from commercial activities (Zhang and Zhang 2003). Commercial revenues at Hong Kong International Airport have grown to 66-70% of total revenues in the late 1980s and 1990s (Starkie 2000, Forsyth 2003). Commercial activities also tend to be more profitable than aeronautical activities (Jones et al. 1993). In 1990-91, 60% of revenues at BAA's London airports came from commercial activities with the operating margin for aeronautical charges being -7% while the operating margin for commercial revenues was 64% (Jones et al 1993).

Under the dual-till, light-handed regulatory regime, it is argued that airports are unlikely to abuse their monopoly power due to the complimentary demand for aeronautical and commercial services (Starkie 2000). Airport operators would benefit from an increase in traffic volume and so will not unnecessarily increase aeronautical charges which would compromise their ability to generate returns from their commercial activities. Airports are incentivised to attract new carriers as customers to help increase passenger volumes. Imposing excessive aeronautical charges for airline customers would be in conflict with achieving a key value driver for the business.

The effect of the dual-till regulatory regime on AIAL's aeronautical activities is explained in the following section.

4.5.2 Light-handed Regulation

Under the dual-till regime for NZ airports, aeronautical activities at AIAL are subjected to light-handed regulation. A key aspect of the NZ regulation is the lack of explicit regulatory control for the setting of airline charges. The light-handed regulation of NZ airports is conveyed through Section 4 of the Airport Authorities Act which states that 'airports must consult with major airline customers when setting aeronautical charges or undertaking major capital expenditure'. The legislation calls for consultation, as opposed to negotiation, of aeronautical charges, after which, airports are able to implement charges as they see fit. In addition, AIAL is required to consult with its substantial airline customers before embarking on any capital expenditure where the amount of the expenditure is equal to, at least the value of 20 per cent of the assets (AIAL Annual Report).

AIAL is also subject to the Commerce Act, which is the key legislation governing competition law in NZ. The Commerce Act prohibits a number of restrictive trade practices and provides for the imposition of price control in a market in which competition is limited (AIAL Annual Report).

When AIAL was privatised in 1998, under the agreement of the Mixed Member Proportion elected coalition government, support was required from the minority coalition party, NZ First before the privatisation could go ahead. NZ First agreed to the privatisation, as long as the Commerce Commission (CC) was satisfied that airline prices were fairly charged. As a result, the Commerce Commission conducted an inquiry in 1998 to determine whether regulatory control was required at the three major airports in New Zealand, Auckland, Wellington and Christchurch. Following the Commerce Commission's inquiry in 2002, it was recommended that price controls should be introduced at AIAL. The recommendation was made after three commissioners believed that AIAL's assets should be valued at historical cost and airline prices controlled compared to the view of two commissioners who believed that assets should be periodically revalued and no price control should be enforced. Despite the overall recommendation for price control at AIAL, the Minister of Commerce did not support it, stating that 'the current regulatory mechanisms were sufficient to facilitate the industry relationships between the Airport and the significant customers'. The dual-till, light-handed regulatory environment where AIAL was able to revalue its assets in whatever way they liked for airline price charges was maintained. The consultation process for setting airline charges continued with the airports ultimately able to price as they saw fit. The Commerce Commission inquiry has since been criticised by economists who believe the review was economically flawed and that the wrong section of legislation was referred to by

the review which effectively would have prevented regulatory control being enforced (Forsyth 2006, Mackenzie-Williams 2004).

The light-handed regulatory environment governing NZ airports has enabled AIAL to earn substantial revenues from its Aeronautical activities and thus contribute to its successful financial performance (Mackenzie-Williams 2004). As illustrated in the introductory section to this chapter, aeronautical activities have contributed a significant proportion of the total revenue growth for the company over the last two decades enabling the airport to be consistently ranked at the top end of major airport performance comparative studies.

Since becoming privatised, AIAL has set airline charges four times, 2000, 2002, 2006 and 2009 (Interview 2010b). The consultation process undertaken by the airport before setting its airline charges usually takes around a year with the airport publicising three or four proposals for its charges. Each time a proposal is put out, the airlines and representative bodies conduct their own analysis with expert advisers before responding. Through this process, airlines have had an effect in reducing the initial pricing proposals set out by the airports, but have not achieved the desired result that they believe is fair or in line with the findings of the initial Commerce Commission inquiry in 2002. The airlines express their frustration at the consultation process by comparing it to the inquisition of price control that the Commerce Commission undertakes. The main difference between the two processes, is that the final outcome in the consultation process for airline charges is determined by the airport. The situation can be likened to a Commerce Commission review where one of the submitters to the process actually has the final say in the discussion. This appears to be the main difference between the process of consultation and negotiation in

practice and is a drawback from the perspective of airlines (Interview 2010c, Interview 2010d).

As a result, it appears that the consultation process of aeronautical charges favours the stance of airports, with limited threat of regulatory control. The airport is a lot more wary of the threat of a Commerce Commission pricing inquiry. However, the fact that the Commerce Commission's recommendation following an inquiry, requires the support of the Minister in charge, means that an inquiry is unlikely to take place if it is believed that there is a small political will for pricing control. Unless AIAL acted in a radical way, the threat of pricing control under the current regulatory environment is quite small.

The current regulatory arrangement enables AIAL to set its aeronautical charges based on recovering the costs associated with its aeronautical activities. The total allowable revenue that the Airport can recover through its aeronautical charges consists of three elements: a return on capital through depreciation of its physical asset base; a WACC (weighted average cost of capital) return on its total asset base; the aeronautical share of total operating expenses for the company (Interview 2009a).

Land revaluations have been a contentious issue in the setting of aeronautical charges as they have the effect of increasing the regulated asset base from which the return of capital recovered by airports is calculated. AIAL has a freehold ownership interest in approximately 1500 hectares of land, which enables the company, to revalue its land for calculating its asset base. The company benefitted significantly from the increase in Auckland property prices in the mid 2000's and have been accused of over valuing its land during this time. The airport argues that prior to the 2002 consultation round

for airline charges, it was agreed with airlines that the airport, as part of the risk sharing, would take values of land with the market if they went up or down. As it turned out, the land values increased significantly up until the 2007/2008 GFC but have since been corrected and readjusted for the overvaluations that had occurred previously (Interview 2009a).

The argument for valuing airport land at opportunity cost or market value over historical cost has been to provide the company with an “incentive to make the most productive decisions about how to allocate the land for different purposes, such as for aeronautical uses over commercial activities” (Corcoran 2005). It is claimed that regulation must enable it to do this in order for the land to be put to the best use for the community at large (Corcoran 2005). Historical cost or non-market based valuations penalise the community as economic efficiency is reduced i.e. If airport land is not valued at the correct amount, excessive hubbing may result meaning that capacity at airports may not be put to its highest valued use. (Corcoran 2005). In this way, AIAL has argued that the current dual-till, light-handed regulation in NZ enables the company to make optimal economic decisions for pricing but also for timing of investment in aeronautical as well as commercial assets benefitting all stakeholders from passengers, airlines, freight companies and government agencies (Interview 2009a).

While benchmarking aeronautical charges with airports around the world is difficult due to the unique set of characteristics relating to capital expenditure, aircraft and passenger mix, operating costs and foreign currency conversion, AIAL’s charges are comparable with other similar airports in the Australasian region and globally (Forsyth 2006, Mackenzie-Williams 2004). However, AIAL’s costs are one of the

lowest in the world, which means that the ratio of revenue to costs has consistently been one of the highest. Airline bodies have argued that the favourable profitability performance of the company has been a direct result of its aeronautical charge, revenue generating ability. This scrutiny and challenging by the airlines has resulted in a second review to be conducted by the Commerce Commission for an amendment to the way airline charges are treated, the details of which are provided in Appendix 6.

4.5.3 The Relational Aspect of Light-handed Regulation

It can be seen that the light-handed pricing regulation that AIAL operates under is influenced by certain political relations. The nature of the framework requires the company to approach regulation in a co-operative, relational way with its key stakeholders.

The lack of political will for explicit pricing control at AIAL was evident after the first recommendation by the Commerce Commission in 2002 was over turned by the Minister of Commerce. To understand why the government disagreed with the Commission's inquiry requires an appreciation of the government's objective at the time of privatisation. One of the key aims of any government going through a privatisation process is to generate as much revenue as possible from the sale process. In order to maximise the sale of AIAL, the government needed to minimise the restrictions on airport pricing, to make the airport appeal as an attractive investment opportunity that would perform well. As mentioned, the privatisation process was a resounding success with the IPO oversubscribed, attracting over 50,000 retail investors into the airport. The political importance of the 50,000 'mum and dad' investors was clearly visible in the government's lack of action towards pricing regulation for AIAL post privatisation. It would have been very hard for the

government to enforce price controls on the airport, which would affect the company's revenue stream and investment performance especially after receiving a record amount from its investors during the privatisation tendering process. The vested interest of the government to ensure the successful performance of one of its strategic assets, and the political incentive to keep its large shareholder base on side, can be seen to have influenced the regulatory environment of AIAL after privatisation (Interview 2010c).

The light-handed regulatory system used for NZ airports has also been employed in Australia following the privatisation of its airports in the late 1990's and early 2000's. Previously, Australian airports had been subjected to a CPI-X form of price cap regulation. The system adopted following privatisation, was one in which the Australian Competition and Consumer Commission (ACCC) was required to monitor prices, costs, profits and quality over a period of five years. The difference between the NZ and Australian light-handed regulatory system was that a periodic review would be undertaken by the Productivity Commission every five years to determine whether explicit price regulation should be re-introduced in order to discourage airports from using their market power excessively (Forsyth et al 2004). There have been a number of interesting observations from the Australian light-handed regulatory experience. From the Productivity Commission's review in 2006²⁶, it was concluded "that the light-handed regime had delivered a better environment for investment, productivity was higher than the international average and regulatory compliance costs were reduced" (Schuster 2009). There was no evidence of misuse of market power by airports in setting aeronautical charges. The review highlighted that a range

²⁶ Subsequent to the review, the government confirmed that the light-handed regime would continue for another 6 years.

of reasonable price outcomes through compromise rather than a single price solution based on a regulatory precedent could lead to more overall successful commercial outcomes (Schuster 2009). The light-handed regulatory framework facilitated the “development of strong commercial relationships between airports and their airline customers leading to enhanced investment, increased responsiveness and value for money for airport users” (Schuster 2009). If all parties to the regulation contract approached the negotiation purely to maximise their own respective utilities, it would be very hard for an outcome that promotes both market and social efficiencies to be achieved. The light-handed regulatory environment can be seen as an implied relational contract between the airport and its relevant customer stakeholders, placing an emphasis on the relationship between the parties and the need for a deeper understanding of each respective party’s requirements in order to achieve a mutually beneficial outcome. The Australian example has not been without its own disputes as was shown when the airline company, Virgin Blue filed a formal complaint against Sydney Airport over the calculation of landing charges. By resolving the dispute in a mutually effective way, without the need for official arbitration, a landmark resolution was achieved by the aviation industry in Australia, with Virgin Blue chief executive, Brett Godfrey exclaiming “This is the first time since the removal of price capping at major airports by the Productivity Commission that an airline/airport dispute has been resolved constructively to the mutual satisfaction of both parties” (Fiddian 2007).

The light-handed price monitoring framework of Australia and NZ are very similar in relying on the parties involved to resolve disputes through maintaining close relationships. The main difference between the two systems is the process for triggering a sanction for unsatisfactory performance by the airports. In the case of Australia, despite the successful outcomes of light-handed regulation deduced by the

Productivity Commission, there have been complaints over service standards and excessive profits, particularly at Sydney Airport (O'Donnell et al 2011). Similar complaints over excessive pricing have been voiced by major airlines at AIAL. The mounting pressure for explicit regulation to replace the light-handed frameworks in both countries has placed a greater emphasis on airport owners to further develop a co-operative approach to the commercial relationships with their customer stakeholders.

In sum, it appears that the neo-liberal, free market policy of the NZ government to privatise AIAL has been distorted by its political incentive to extract revenue from the privatisation sale process. It has been argued by airline representatives that an absence of competitive forces has compromised the NZ Government's free market economic efficiency goals at the expense of its ulterior political motives. While the latest Commerce Amendment Bill would indicate that the regulating bodies are warming to the idea of enforcing explicit control, the economic significance of AIAL for local and national economic growth may provide further impetus for maintaining the light-handed regulation framework that is currently in place. In order to dispel the doubts that the government may have for the current regulatory framework, it is clear that AIAL must continue to approach the regulation issue by maintaining strong, open relationships with its customer stakeholders.

4.6 Corporate Governance

The OECD defines corporate governance simply as the system by which business corporations are directed and controlled. Corporate governance involves the relationship among various participants or stakeholders in determining the direction and performance of a company. The primary participants which make up the

corporate ‘tripod’ of the Anglo-Saxon governance model are shareholders, management and the board of directors (Monks and Minow 2001). A key theme of corporate governance is to reduce the effect of agency problems between managers and stakeholders and to hold management accountable for their decisions (Kent Baker and Powell 2009). Good corporate governance is specifically associated with a larger proportion of independent board members, higher frequency of board meetings and greater shareholder rights (Barbu and Bosean 2007). While the consistency of results from reports has been mixed, there is sufficient evidence in the literature to suggest that good corporate governance leads to superior financial and operating performance (Barbu and Bosean 2007, Shivdasani and Zenner 2005, Vafeas 1999, Farber 2005, Gompers et al 2003).

The literature on corporate governance also suggests that different ownership arrangements with distinct patterns of authority, and economic incentives affect the managerial performance and thus overall performance of a firm (Carney and Mew 2003, Charkham 1996). For airports, this relates to governance reforms over the last two decades and the extent of public and private ownership control. Oum et al 2006 classify airport ownership/governance into six separate models from mixed private-government ownership with a private majority at one end of the scale to 100% government corporation ownership/operation²⁷. AIAL falls under the former with a private majority ownership. The corporate governance challenge of AIAL has entailed

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Airport ownership/governance models explained by (Oum et al 2006) include: (a) government agency or department operating an airport directly; (b) mixed private-government ownership with a private majority; (c) mixed government-private ownership with a government majority; (d) government ownership but contracted out to a management authority under a long-term lease; (e) multi-level governments form an authority to own/operate one or more airports in the region; (f) 100% government corporation ownership/operation.

balancing public service and commercial development goals. With a large number of internal and external stakeholders affected by its operations, the successful performance of AIAL has depended largely on the corporate governance structures it has put in place.

This section will outline AIAL's approach to corporate governance and identify some of the key governance challenges it has encountered. It will then highlight some of the strategies employed to ensure the successful performance of the company.

4.6.1 AIAL Corporate Governance Structure

Since becoming a corporation in 1988, the corporate governance of AIAL has fallen under the responsibility of the company's Board of Directors. Before becoming privatised, each fifty percent shareholder (central government and local government) provided three members to the Board of Directors. The company's subsequent constitution (2004) states that the maximum number of board members is eight and appointments can be made by shareholders (by ordinary resolution) or by board appointment (AIAL Annual Report). The board's nomination committee has the responsibility of identifying the capabilities required and recommending potential candidates for nomination as Directors (AIAL Annual Report). The current board is made up of six non-executive directors, five of which are independent with one substantial private shareholder as a non-independent director. The board has the responsibility for hiring the CEO, who is in charge of the senior management and overall direction of the company. Directors hold office for an initial term of no longer than three years after which they may offer themselves for re-election by shareholders. Each year the performance of individual directors is evaluated by the chairman, whose own contribution is discussed with the rest of the board. The board

receives regular briefings on the company's operations and tours of the company's facilities from senior management (AIAL Annual Report).

The Board and Management of AIAL regard corporate governance to be absolutely critical and explicitly state that the highest level of governance practice is employed by the company (Interview 2009f). This is facilitated by being listed on both the NZ Stock Exchange and Australian Stock Exchange, which stipulate specific reporting guidelines as well as complying transparently with regulatory bodies. These guidelines are sensibly honoured by the company who have the aim to be one of the leading listed companies as opposed to being a 'follower' in governance issues (Interview 2009f). The company's corporate governance constitution and social responsibility initiatives for the community, environment and sustainability are contained on the company's website. A corporate governance section, which outlines AIAL's compliance with the fundamental principles of good governance recommended by the ASE Corporate Governance Council has been included in the annual reports for the company since 1999.

4.6.2 Governance in a Monopoly Environment

Good governance practices are especially important for infrastructure companies, like AIAL, operating in a near natural monopoly environment. In such an environment, poor governance standards would force regulatory authorities to intervene in company operations. 'If there is no price setting in a market structure, there is an extra emphasis on transparency' (Interview 2009g). If the wider public service demands on airport managers are not satisfied within broad parameters, public and regulatory confidence in the managers will be lost (Carney and Mew 2003).

In the case of AIAL, good corporate governance has been crucial in order for the company to maintain and prosper operating under light-handed regulation. With such a large stakeholder base, from local schools and residents, local indigenous people, local and central government officials, having the support of its community has been critical for the success of the airport. From a governance perspective, this has meant setting the right tone for the business by the Board of Directors which in turn is reflected in the style of the CEO and his/her management team. ‘If the tone and standards are not right at the senior management/Board level, questionable policies will manifest itself in other areas of the business’ (Interview 2009g). The tone for the business starts at the top with the Chairman and the Board who have the ultimate responsibility to hire and fire the CEO and so should not be ‘hijacked’ by the CEO (Interview 2009g). The Board must also ensure that as there is rotation in Board members, the governance standards of existing members are maintained.

With infrastructure companies perceived as having monopolistic characteristics, it is especially important to demonstrate the value that the company brings to the community. Governance strategies must be employed to avoid appearing as a ‘tax on people’s lifestyles’ (Interview 2009b). For AIAL, this has meant shifting the focus to their role in tourism development and superior GDP growth through contributing to travel, trade and tourism. Passenger volume and in particular international passengers is a key value driver for the airport. A gateway airport like Auckland can significantly impact international travellers’ impressions as they are the first and last encounters with the country (Yeh and Kuo 2003). “The overall airport experience recollected by international passengers can have an impact on future international tourism and business activities in the country” (Yeh and Kuo 2003). The airport’s goal towards producing a world class airport and increasing passenger volume has not only

translated into successful financial performance measures, but has also contributed to the economic growth of the country. As part of its strategy to drive passenger volume, the company is looking at increasing its share of the Asian tourism market which is currently dominated by Australia. An acquisition for minority stakes in two North Queensland airports (January 2010) is seen as a stepping stone towards increasing AIAL's exposure to Asian carriers.

Another key strategy employed by the airport to manage the perception of a monopolist is to offer choices to its customer stakeholders. From car parking to food and beverage, passengers are offered a range of choices with 'good, better, best' options for these services. For example, car parking is offered at a range of prices depending on proximity to the terminals and whether covered or not. Similarly, fast food outlets are offered at one end of the customer scale while restaurant grade facilities are also available. Many of the outlets would prefer to charge premium prices at their airport branches, however AIAL does not allow this (even though they would also benefit from the higher prices in terms of return) with prices being pegged to downtown figures. By allowing these choices for customers, the sense of an overpowering monopolist is reduced as there is something available for every budget and the prices and quality compare with similar services provided in the locality (Interview 2009b).

The offering of choices also applies for the airline customers. With airlines differentiating their market share, the services provided to each airline are based on what they require with an appropriate cost and value based pricing to match. A contract with one airline may be completely different to another airline. For example, a low cost carrier would only want to pay a per passenger charge with everything

bundled into a package, as their business is based on a variable price model. They prefer long-term certainty with their airport charges as they grow. However, a larger national carrier, on the other hand, is looking to differentiate their offering and maintain a disproportionate share of high value customers. They would prefer to pay more to the airport for premium services to offer their customers. For these airline customers, a payment to the airport is a fraction of what can be gained through extra tickets sold to their differentiated customer base. By offering different packages to different airlines, this helps to ensure that the Airport is not perceived as behaving like a monopolist (Interview 2009b).

4.6.3 Agency Problems

The mixture of private and public ownership for airports can lead to conflicts of interest between parties with different interests in the same asset. Agency theory literature has looked mainly at the conflicts between shareholders and managers of companies and between shareholders and bondholders. A major governance challenge for AIAL has been satisfying both public and private shareholders in the company.

The major difference between the two types of shareholders is the type of return and strategic interests that each is aligned to. Private, institutional managed funds and retail investors are more inclined towards the total shareholder return, which includes both dividends and share value accretion. The interests of private investors are more strategically in line with those of the company as a long-term infrastructure asset (Interview 2009b). Public shareholders on the other hand typically only value cash returns as they never see themselves as sellers due to political and community reasons

(Interview 2009b)²⁸. Public shareholders are thus much more yield focused than other investors and would generally be in favour of extracting cash from the asset as it currently stands instead of deploying capital for growth. Such a strategy may be suitable for certain types of infrastructure businesses like water and utilities, however, airports are growth businesses, relying on passenger growth and value extraction (Interview 2009b). The above conflict of interest between shareholders can be problematic if there is a large public stake which can be used to influence Board positions and the overall direction of the company. So far, for AIAL, this has not been the case. The company's corporate governance constitution, charters and policies have ensured that the local council ownership has not overpowered the interests of other shareholders and the overall strategic direction of the company.

Having good governance structures in place has been critical for AIAL to perform strongly in an environment with such a wide stakeholder interest. There will always be a differing of opinions and by play between stakeholders, however AIAL has shown that ensuring transparency, honesty, well managed practices and timely investment will reduce the role play and associated challenges for companies with a dominant market position.

4.7 Capital Structure

The capital structure of a company relates to how a company finances its assets either through debt (loans and borrowings) or equity (shareholders) (Brealey et al 2006). A company may use leverage (debt financing) in order to earn a greater rate of return than the cost of interest. By increasing leverage, an investor is able to earn greater

²⁸ AIAL has local government shareholding of 22.7% on its register (as at December 2010)

returns on equity but the potential to lose money is also greater (Brealey et al 2006)²⁹. For companies producing excess cash, increasing debt levels can also provide significant efficiency improvements to the business through the discipline of debt. A sharp increase in debt levels would mean that cash is no longer abundant and would be needed to pay off debt holders (Helm and Tindall 2009). Managers would thus feel the pressure to make efficiency gains that previously might not have seemed worthwhile.

It has been noted that within the infrastructure sectors, prior to the GFC, mature toll roads have used leverage levels of 40-80%, water infrastructure 60-90% and 50-80% for mature gas and electric power distribution, and transmission (Beeferman 2008). For infrastructure companies where regulators calculate the allowed rates of return based on the weighted average cost of capital (WACC), a marginal cost of debt below the WACC would enable an arbitrage opportunity to be exploited (Helm and Tindall 2009). By extracting a return from the difference between the WACC and the marginal cost of debt, the resulting gain represents a transfer of wealth from customers to shareholders (Helm and Tindall 2009). In this way, equity in infrastructure companies has been replaced with debt by opportunistic investors. This short-term financial engineering strategy employed by private equity type investors was badly exposed during the GFC because of debt repayment issues, severely compromising the ability to make capital investments into the assets (as evidenced in Chapter 5). Such investors had little or no regard for the long-term quality and robustness for the infrastructure networks and have come under heavy scrutiny from

²⁹ The topic of debt financing and leverage for infrastructure investments is discussed in more detail in Chapter Five.

stakeholders as an inappropriate way of financing infrastructure companies (Helm and Tindall 2009).

As illustrated by Figure 19, AIAL has maintained a much more conservative approach to leveraging since becoming a corporation in 1989. It can be seen that the level of debt exceeded 50% of total assets on only one year during the twenty year period and the average level of debt to assets for the period was 36.6%.

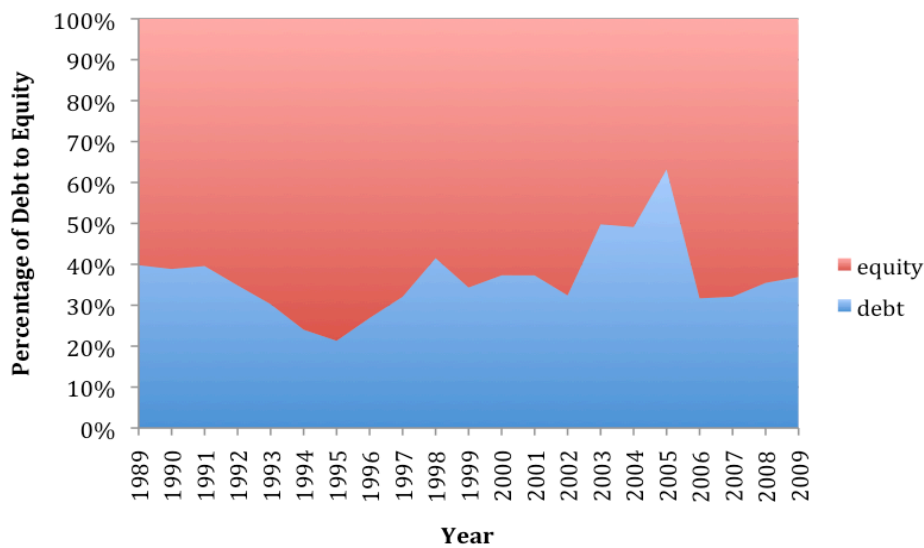


Figure 19: Capital Structure of AIAL
Source: AIAL Annual Reports

With AIAL being publicly listed and having a broad shareholder base (including local government councils, long-term retail investors), the amount of gearing the company has utilised has had to accommodate this. Investors in AIAL have traditionally been attracted by the conservative nature of the asset, with a long-term perspective and the company has adopted a capital structure that is appropriate to its ownership structure. This is in contrast to airports that are unlisted and privately owned such as Sydney Airport with the airport fund manager MAP having a majority stake. Private investors

in these companies are prepared to take on more financial leverage and risk, enabling management to take on more of a short-term, opportunistic strategy³⁰.

AIAL has also maintained relatively lower levels of debt in order to keep a strong credit rating. From the time AIAL was privatised and listed, the company, through its capital expenditure program and distributions to shareholders, has dropped from a credit rating of A+ to A- compared with Sydney Airport's BBB-. It is board policy that AIAL does not fall below an investment grade credit rating of A- to ensure that it reflects and is commensurate with the quality of infrastructure asset that it is (Interview 2009f). This in turn enables the company to use its debt paper effectively and efficiently and gives it better pricing of debt (Interview 2009f). This was evident during October and November 2008 when the company raised NZ\$130 million through a retail bond issue which was oversubscribed. This was followed up by a subsequent fully subscribed bond issue which raised a further \$50 million. The company also has access to a syndicate of bank facilities which encompasses nearly 50% of its source of borrowings (AIAL Annual Report).

AIAL had been criticised for its stance on leverage and having a 'lazy balance sheet' for many years prior to 2007 (Interview 2009a). The financial risks associated with the high-leveraging model were made apparent during the 2007/2008 credit crisis. During the GFC, when debt was maturing and companies could not replace their debt from the markets, shareholders of companies with high leveraging levels had to use their funds to make up the difference. A number of infrastructure assets financed through the private equity/fund manager, high leveraging model suffered during the

³⁰ See O'Donnell et al 2011, for an explanation of MAP's highly leveraged strategy for Sydney Airport.

crisis with investors left high and dry from their investments. AIAL, as a publicly listed, stand alone entity was able to refinance successfully and retain the active support of its shareholder base. Apart from a general decrease in stock price from the public markets, investors in AIAL were not as badly affected during the GFC. An independent ratings index of financial structuring for listed Australasian companies had ranked AIAL second to last in 2008. With no change in its debt level, the same rating index placed AIAL at the top of the list for its position on capital structure (Interview 2009b).

By maintaining a conservative capital structure, AIAL has not only acted in a way that reflects the aspirations of its shareholder body, but it has also shown to other stakeholders including the regulating bodies, its firm commitment towards the long-term development of the asset. The low leverage levels, has ensured that the airport is in a strong financial position to make investments in physical capital in order to make the most of forecasted passenger growth and continue to provide a high quality efficient asset. The risk of the company falling into a financially distressed state has been kept low providing a further signal to the Government and other stakeholders that the private monopolistic owners are acting in a responsible way. The prudent approach to capital structure thus far, has ensured that AIAL investors have not been as badly affected by the turbulent economic conditions of the last decade, and allowed the true economic infrastructure qualities of the asset to flourish.

4.8 Synthesis of Results

The analysis in this section has illustrated the factors that contribute to the performance of urban infrastructure investments and examined in detail the various political economic relations that investors need to take into account when investing

into infrastructure assets. It can be seen that the common element in all of the success factors for AIAL, is the role of government decision-making. In answering the primary question of this chapter, it can be seen that the role of government is central to the private provision and investment of urban infrastructure assets

Perhaps the most compelling of the factors in this case and contingencies for the argument above has been the favourable regulatory environment around pricing legislation for the Airport. Since the privatisation process, AIAL is one of the only examples in the world where it has not been subjected to any formal pricing regulation. The dual-till model with light-handed regulation for aeronautical activities has enabled the airport to generate significant revenues from its aeronautical activities and provided the freedom to develop its freehold land for commercial purposes. The airport has come under criticism for charging excessive aeronautical fees as a result of the light-handed regulatory framework, with airline customers calling for a change in legislation. The airport has argued that its fees are in line with corresponding airports elsewhere in the world and believe the current framework allows the airport to make the required investments necessary to accommodate forecasted passenger growth. It can be argued that the lack of formal price control at AIAL was due in part to the Government's political incentive to extract revenue from the privatisation sale process. It is further argued in this chapter that the economic significance of AIAL for local and national economic growth provides further impetus for maintaining the light-handed regulation framework that is currently in place. The experience of light-handed regulation in Australia has shown the importance of viewing airport pricing regulation as a relational contract with parties approaching the issues in a co-operative way in order to gain mutually beneficial outcomes. Developing strong commercial

relationships with its stakeholders will also be important for AIAL to continue operating under a light-handed framework.

Strong governance structures have been crucial for the airport's success since becoming a private corporation. One major governance challenge for AIAL which is common for most infrastructure companies, has been to reduce the perception of an overpowering monopolist for its stakeholders. The threat of regulatory intervention has provided the incentive for AIAL not to exploit its market power. Such intervention can not only be financially crippling for the business, but compromise the integrity of the managers and Board members. In response, AIAL has tried to demonstrate the value the company brings to the community and its contribution to trade, tourism and economic development has been central to this. International travellers' impressions of a country are frequently affected by their first and last encounters at the airport through which they arrived and departed. AIAL has been committed to providing a unique NZ experience for travellers at the airport to encourage future international tourism and business activities in the country. Another key strategy for AIAL to detach themselves from the perception of a monopolist has been to offer a range of choices for their public and airline customers in order to cater for a range of needs and budgets. The robust and transparent governance system of the airport, facilitated by stock exchange guidelines, has also ensured agency problems between the private and public shareholders of the company has not affected the overall strategic direction of the company.

The IPO privatisation process of AIAL in 1998 was well received by the general public, which has resulted in a loyal shareholder base for the company and strengthened its overall investor perception. Through the privatisation process and

further shift towards a commercial focus, the productive efficiency of the company has been enhanced, which can be seen by the sustained growth in revenue per passenger figures and consistently high ranking in airport productivity survey reports. The privatisation listing on the NZ stock exchange has facilitated the robust, transparent governance structures of the company as well as a prudent approach to leveraging. However, being listed has also conveyed a false sense of value variance with the public markets even though the business is not volatile. Such perceived volatility can have deterring effects for conservative pension fund trustees.

Finally, AIAL investors have benefitted from the company's conservative approach to leveraging especially in light of the GFC between 2007-2009. Investors in highly leveraged assets have lost a significant portion of their investment during the global credit crunch. However, the company's conservative approach to capital structure has meant AIAL investors have come away relatively unscathed. By maintaining a conservative capital structure, AIAL has not only acted in a way that reflects the aspirations of its shareholder body, but it has also shown to the regulating bodies, its firm commitment towards the long-term development of the asset. While excessive leveraging has been exposed, there is a place for a certain degree of leveraging in order to extract greater returns and add efficiencies into the business. In this way, AIAL has the scope for capital restructuring which could add further value for the company in the future.

Infrastructure assets are politically sensitive and economically significant, the extent of which will determine how wide reaching the effect of political decision-making can be on the performance of the asset. In the case of AIAL, the economic significance of the stand-alone asset, has meant that political decision-making has helped contribute

to the company's successful performance. The effect of favourable politics has not been made in isolation, this chapter has shown that transparent, robust corporate governance and responsible capital structure strategies of the firm have ensured that political decision-making has not affected the company in a detrimental way through regulatory intervention. Such strategies are essential for investors to continue to reap the benefits of the significant standing of the asset.

In sum, it is argued here, that under light-handed regulatory conditions, government decision-making is central in affecting the performance of private infrastructure assets. Not only has the government's privatisation process through an IPO contributed to the company's successful performance but the analysis has highlighted the 'potential' role of government as a passive overseer of the corporate governance and capital structure strategies of the firm, disciplining the process through the potential threat of regulatory intervention.

PART B: Investor Considerations – Failed Takeover Bids

While the first part of the chapter has examined the factors that have contributed to the performance of AIAL, this second part looks at the influence of government on the ownership of infrastructure assets through two takeover bids that the company was subjected to. With the successful performance contributing factors outlined in this chapter, it is not hard to see why two institutional investors were drawn to make a partial take over bid for AIAL. Following the IPO privatisation process, AIAL had an open share register at the time of the two bids, and with share markets around the world increasing in value in 2006/07, airports within the infrastructure asset class were becoming attractive investment opportunities. Out of all the publically listed

airport stocks in the world, AIAL has always featured as one of the strongest performers (Interview 2009d). This is confirmed when looking at the investment criteria for AIAL: light-handed regulatory environment, ownership of underlying freehold assets, asset with a degree of liquidity, one of the highest proportions of high yielding international traffic to total traffic. The conservative capital structure of the airport also provided an opportunity for investors to initiate a tax effective, restructuring of the balance sheet to further enhance efficiency and investment returns. On top of this, AIAL had just completed a significant capital expenditure program. One of the best times to invest into an airport is following the completion of a capital expenditure cycle in order to capitalise on forecasted passenger volume growth (Interview 2009a).

For international investors, NZ was perceived as an attractive country to invest into with a stable legal and political framework. Asia-Pacific was one of the world's largest air travel markets and forecast to grow the fastest providing the greatest opportunity (AIAL Annual Report). AIAL was in a good position to play a large role in the 21st century high growth area of Asia. It was just a matter of time before an institutional investor placed a significant bid for the Airport.

By analysing the takeover bids placed by Dubai Aerospace Enterprise (DAE) in 2007 and Canadian Pension Plan Investment Board (CPPIB) in 2008, this section illustrates how political decision-making can affect the strategies and decisions of private investors looking to invest into infrastructure assets. In addressing the central question of this chapter of what role the government plays in the provision of private infrastructure, this section argues that the greater the sensitivity of an infrastructure asset for a nation, will mean the government is likely to have a greater influence on

the company's ownership. While AIAL continues to perform strongly, the two bids exposed an unclear and misleading legal and political framework surrounding investment into the company. Part B of this chapter will look at each bid individually, how they were structured, what drew them to the asset and ultimately why the bids failed.

4.9 Dubai Aerospace Enterprise

Dubai Aerospace Enterprise (DAE) was established in 2006 to build a global aerospace, manufacturing and services corporation comprising of six divisions: Airports, Capital, Manufacturing, Engineering, University and Services. A sovereign type fund, DAE is a long-term investor with the Government of Dubai being a major shareholder. It was the vision to become a global powerhouse in all aspects of the aviation industry that drew DAE to place a bid for AIAL. The strategic objectives of AIAL were aligned with DAE's plans to add value, providing greater access to global networks of airlines, technology providers and other aviation services (NZ Herald 2007).

The bid by DAE, which valued existing AIAL shares at \$3.80, was unanimously supported by the AIAL Board to be put in front of shareholders to vote upon. The Board was impressed by the potential upside in value that DAE could bring to the aeronautical activities of the Airport. Chairman of DAE, Sheikh Ahmed bin Saeed Al Maktoum was also the Chairman of Emirates Airline. It was proposed that AIAL would be used as a hub to create new routes and services for the airline, encouraging more tourists to visit NZ not only from the Middle East, but from other parts of Asia such as India and China. DAE airports CEO, Kjeld Binger would also lend useful expertise from his experience in helping to transform Copenhagen Airport into a

world leading airport. At the time of the bid, there was speculation that a number of other companies were to place offers. By putting the DAE bid forward, the Board felt that details of other possibly better offers may also emerge (NZ Herald, Interview 2009f).

Following the announcement of the bid by DAE, media interest grew in the proposed transaction. There was a lot of political out cry from central as well as local government officials. While there is no legislation in NZ that specifically states that airports are strategic assets and that foreign ownership of airports is restricted, the sentiment amongst politicians seemed to echo these feelings strongly. Concerns were raised over national interests being compromised and monopoly pricing power falling into foreign hands. This was compounded by the government in power stating publically that it supported the views of local councils in not wanting the airport to be sold off. The bid was going to struggle to get the 75 percent approval of shareholders because of the Auckland and Manukau councils' combined shareholding. The government also moved to prohibit the tax benefits of the stapled securities offered to investors in the bid and expressed publically, xenophobic comments about the proposed foreign ownership. With DAE's link to Emirates airline, Air NZ voiced its concerns over the planned merger with Chairman, John Palmer exclaiming: 'The owner of Auckland International Airport Ltd should not be linked in any form to an airline, so that there is no possibility of preferential treatment of any kind that would disadvantage any other operator' (NZ Herald 2007).

While DAE was acutely aware of wanting to succeed in its takeover intentions, being a sovereign fund, it only wanted to succeed if its proposal was supported by the public and government officials. Due to the negative political and public attention that

seemed to cloud over the takeover proceedings, the company was forced to pull out of their merger proposal before shareholders had had a chance to vote on it (Interview 2009g).

Looking back on how or why the deal failed, it can be seen that a strategic error was made by DAE when approaching the stakeholders of the Airport. The company had made a conscious effort to speak to the Board and senior management of AIAL, who understood the value add of the takeover bid but ultimately failed because of a lack of consultation with the local councils and central government. By not meeting with government officials, both parties failed to understand the drivers behind each other leading to negative, unwarranted speculation. From a financial perspective, the DAE bid was offering a significant premium to shareholders. Even for the council shareholders, who do not have to pay tax and therefore cannot use imputation credits, the DAE bid would have not only contributed to an appreciation of their share value, but through the stapled security structure, the overall return on their investment in the company would have been increased. The financial benefits of the bid however were not sufficient enough to overcome the wider stakeholder and national interest associated with a strategic infrastructure asset.

4.10 Canadian Pension Plan Investment Board

The Canadian Pension Plan Investment Board has been one of the leading pension plan direct investors into the infrastructure asset class during this latest financialisation process. The CPPIB was established in 1966 by the federal government and nine provinces of Canada, (all provinces except Quebec), as a contributory, earnings related social insurance program. Before outlining their proposal to the AIAL Board of Directors and shortly after DAE had withdrawn their

takeover offer, CPPIB announced to the public markets on September 19 2007, the pricing details of a partial takeover of AIAL.

The Board subsequently rejected the offer with concerns over the increased debt levels and lack of additional expertise for growth in aeronautical activities when compared with the DAE bid.

In early December 2007, the Board of AIAL advised shareholders to reject a second partial takeover bid by CPPIB. The Board felt that the offer of \$3.65 for 40% shareholding did not fully reflect the value of AIAL and that CPPIB as a cornerstone shareholder would not assist the company in any material manner. The Board was optimistic about the value of AIAL, particularly the way in which it was positioned to benefit from growth in the Australasian aviation sector. Furthermore, the partial nature of the offer would not give shareholders certainty on the total value they would receive from the takeover (NZ Herald 2008, Interview 2009f).

However, in February 2008, the Board revised its decision and unanimously recommended shareholders to sell shares into the takeover offer from CPPIB. The main reason for a reversal in the decision was put down to a change in market conditions since the bid was announced and the partial offer price now becoming a lot more favourable for shareholders (Interview 2009f). Throughout this process, there seemed to be a tension amongst Board members over their fiduciary responsibility to shareholders in securing a favourable pricing offer from CPPIB against the general public view of keeping AIAL, a strategic long-term infrastructure asset under NZ ownership (Interview 2009f).

As the bid closing date approached, significant shareholder backing was generated for the offer. The final hurdle for the bid to pass through required an approval by the Overseas Investment Office and relevant ministers acting on the Overseas Investment Act 2005, which stipulates the criteria for consent for overseas investment in sensitive New Zealand assets. NZ's Land Information Minister and Associate Finance Minister jointly declined the application by CPPIB to buy a 40% shareholding in AIAL by promulgating an amendment to the Overseas Investment Act 2005 adding an additional factor for determining whether to grant an application with respect to sensitive land. Under the Act, ministers are required to decline consent if they are not satisfied that the proposed investment will benefit NZ. However, the ministers' decision was contrary to the conclusion made by the referring regulatory body, the Overseas Investment Office (OIO), which concluded that the 'benefit to NZ' criterion was met (NZ Herald 2008).

4.11 Synthesis of Results

Looking back on the two bids, it can be seen that the CPPIB was able to get further in the process than DAE, eventually finding support from shareholders but being denied at the final hurdle by central government. This can be put down to a number of reasons. The CPPIB made sure they consulted with the councils and major shareholders through their bid process to ensure they explained the intentions and implications of their takeover deal. In their first offer, CPPIB may have overdone their intentions to side with the councils and major shareholders, emphasising that these parties would be better off over the other shareholders from the bid. The Board did not allow this and subsequently rejected the first proposal put forward. The second CPPIB bid, while not quite as high as the DAE offering price, represented a premium above the current share price and prevailing share price before the start of takeover

speculation for AIAL. However, CPPIB's bid for 40% was only partial in nature thus affecting the number of shares that could be sold at the offer price of \$3.65 per share.

While both institutional investors represented patient, responsible, long dated capital for the Airport, the strong public opinion and political sentiment over a single foreign party becoming influential over the company's strategy and future direction eventually was the downfall for both parties. With DAE being a sovereign fund, the negative public feedback seemed to affect their plans in a larger way than CPPIB who had the resolve to come back with a second offer having been denied in their first attempt. It was the way in which the second CPPIB offer failed that has sparked a debate amongst the NZ investment community about the influence of government and politics on investment activity. The concern is that the Government's decision to veto the partial takeover was politically motivated and that similar decisions could be made in the future. The Labour Government in power at the time had been performing poorly in the polls in the lead up to the 2008 general election. Strategic assets like AIAL are an ideal political issue because of their strong emotional and nationalistic appeal with little costs from a fiscal point of view. When the privatisation of AIAL occurred in 1998, there was no indication that the company would be classified as a strategic asset. The same minister who signed the prospectus for the IPO, now at the time of the bids, a leader of a political party just prior to an election, interestingly enough took a completely different stance on investment in the company. If the restrictions for companies and investors are clearly defined, there would not be such an issue. However, when policy decisions are retrospective, short-term focused and inconsistent, as has been evidenced by the AIAL takeover bids, there would be considerable concern amongst the investment community (NZ Herald 2008).

NZ as a nation has historically suffered from a low savings rate and needs to attract investors (Interview 2009c). The unwillingness of the country to invest in domestic companies has contributed to the country's decline to 22nd in the OECD GDP per capita rankings (NZ Herald 2008). The government's handling of the partial takeover bids of AIAL can be seen as an intrusion of shareholders' private property rights and a further dent to investor confidence. As a result of the failed takeover bids, a number of other international investors withdrew their share ownership in the company and further detrimental implications for foreign investment into the country have transpired (Interview 2009e).

The failed takeover bids for AIAL have highlighted the economic significance and political sensitivity of infrastructure assets. Investors must be aware of the strong emotional attachment and the nationalistic sentiment that the general voting public of a country has with its infrastructure assets. Different countries have approached the topic of foreign ownership of infrastructure assets in different ways. The experiences have shown that foreign ownership can provide improved productivity and profitability in certain sectors (OFT 2010). This is contrasted with negative effects for local communities when new owners took steps to restructure the acquired businesses and the view that foreign ownership provides a threat to the national security of essential infrastructure services (OFT 2010). In the UK, forty percent of the country's infrastructure assets have foreign-based owners and the country has no formal process that enables the government to safeguard the nation's infrastructure security interests (OFT 2010). The UK's blocking mechanisms are limited as they are based purely on standard economic and competition grounds and do not take account of the wider public interest considerations (Barnard 2011). This is in contrast to the USA, Canada, Germany, Australia and France who have committees set up to decide whether a

foreign takeover should be approved or not (Barnard 2011). Despite processes and committees being put in place, the AIAL example has shown that political pressure can escalate very sharply once the spotlight is placed on sensitive foreign ownership, especially on an investment which may have national security implications. Regardless of what politicians might proclaim in situations of positivity and calmness, they are often forced to respond in haste when under intense political pressure.

In summary, it can be seen that the qualities and strategies detailed in Part A of this chapter formed part of the enticement factor for the DAE and CPPIB to make takeover bids for the company. Perhaps the over-riding reason for the failure of both bids was the sensitivity over ownership of a strategic asset for the people of NZ. Both bids generated significant media interest and prompted unmerited xenophobic comments to be made by the general public and government officials. While the economic significance has contributed to the favourable investment performance of the company, the sensitivity of AIAL as a strategic asset has also meant that political decision-making has led to adverse effects for foreign investment, to the extent where legislation was changed at the last minute to stop a foreign takeover. Part B of this chapter has illustrated the slightly pernicious role of government where, subject to short-term political influences, the ownership of infrastructure assets can be influenced with adverse effects for foreign investors.

4.12 Conclusions and Implications

This chapter has used a multi-disciplinary approach drawing upon economic regulation, privatisation and corporate governance theories to provide a deeper understanding of the factors that contribute to the successful performance of an infrastructure asset. An extensive interview and document analysis process was used

to investigate the complex relations and dynamics associated with a privately operated listed infrastructure asset. The chapter has specifically looked at the power of the state to continually influence urban infrastructure assets during and after the privatisation process. The relational perspective employed here has illustrated the wider, social, political and economic context under which infrastructure investments are made. In this way, this chapter has furthered our knowledge of the financialisation process taking place for the urban infrastructure landscape and contributed to the relational geography of private institutional infrastructure investment.

Success, for the purpose of this chapter has been defined as superior investment performance, which is based primarily on key financial performance indicators for the company. It has been shown that investors have been able to achieve an annual investment return of 11.12% since the privatisation, considerably outperforming the NZX Top 50 index, and the profitability and operational indicators have consistently been at the top of airport benchmarking reports over the last ten years. Furthermore, economic impact assessment studies have shown the significance of AIAL for the wider economy with the airport's contribution to national GDP expected to grow at an increasing rate from 13% in 2006 to reach 19% in 2031.

Implications can be drawn from the AIAL example for the bigger picture of private institutional investment into infrastructure. It can be seen that the common element in all of the success factors and takeover bid experiences for AIAL, is the role of government decision-making. In answering the primary question of this chapter, it can be seen that the role of government is central to the private provision and investment of urban infrastructure assets. For AIAL, the government has played a role in the enforcement of light-handed price regulation for aeronautical charges and in deciding

on an IPO for the privatisation process as opposed to a trade sale. The governance strategies of the company are influenced by politicians through the threat of intervention if market power is exploited while the government's privatisation process and resulting ownership structure for the company (council shareholding and large retail shareholder base) has contributed to a robust policy on capital structure. A particularly significant influence of political decision-making on investors of AIAL was the veto to stop the partial take-over bid by CPPIB. The AIAL example has highlighted the far-reaching consequences of government decision-making on an infrastructure asset, which can have both beneficial and detrimental effects on the business. Investors must be aware of these wide ranging implications and how they might affect their investments.

As has been mentioned in the previous chapter of this research thesis, infrastructure is an extremely heterogeneous asset class with stark variations between and within assets. Airports are no exception. The unique economic, social, political and geographical characteristics of an airport will affect the relative success that can be achieved by institutional investors. For this reason, generalisations for the asset class as a whole can be difficult. Despite this, it has been shown that the AIAL model of infrastructure ownership and investment has translated into successful outcomes and provides an illustrative example for other jurisdictions looking to undergo the urban infrastructure privatisation process. Furthermore, it can be concluded from the case that the greater infrastructure investment opportunity for private investors, defined by the financial performance and resulting achievable return, is linked to the relative importance of the asset for a nation's economy i.e. an asset which contributes significantly to the economic development of a nation and is considered a strategic asset is more likely to generate a favourable investment return for a private investor.

In situations where an infrastructure company exhibits monopoly market power, it is argued in this chapter that the influence of government intervention will depend on the economic significance of the asset. This is evident in the AIAL case, operating under light-handed regulatory conditions, where in the decade following privatisation, despite two pricing reviews being conducted by the Commerce Commission, no formal pricing regulation has been introduced. AIAL plays a significant role in the nation's economy through its contribution to travel, trade and tourism. Therefore the government is more likely to provide a favourable regulatory setting in order for the company to do well. This is due to the fact that success for the company is likely to also generate success for the local and national economies. For such significant assets, it would not make sense for a government to undergo the privatisation process, if it was restricting the ability of the new private financial actors to utilise their expertise to full potential.

However, a proviso to this argument is that the greater the sensitivity of the asset for a nation will mean the government is likely to have a greater influence on the company's ownership, which can have adverse effects for foreign investors. In the case of AIAL, this was evident in the government's veto decision to deny the CPPIB takeover offer.

Having illustrated how certain factors can contribute to the successful performance of an infrastructure investment, particularly highlighting the impact of government decision-making, the next chapter looks at the less successful investment of UK airport operating company BAA by the Spanish led consortium ADI, specifically looking at the corporate governance and financial engineering issues of the cross-border transaction. As mentioned in Chapter One, despite both asset case studies

falling under the airport infrastructure category, the unique geographic, regulatory, financial and economic market conditions of each make comparisons difficult. Both case studies provide unique examples of infrastructure investments with valuable lessons and implications being drawn from each.

CHAPTER FIVE: EFFECTS OF THE GLOBAL FINANCIAL CRISIS: INFRASTRUCTURE GOVERNANCE REVISED

5.1 Introduction

As shown in Chapter Four, the last 25 years of privatisation programs has transformed the economic landscape in countries around the world. The privatisation process has been the main driving force behind infrastructure governance reform, with the Anglo-American corporate entity structure now the predominant decision-making organisational structure for the provision of urban infrastructure services.

Early observations of the global infrastructure fund market have shown the unbundling of urban infrastructure assets to the private sector has resulted in both positive and negative repercussions for private investors as well as the general public. In particular, the governance of these new private institutions have become scrutinised with the distinct qualities and sensitivities of infrastructure assets highlighting the unique governance considerations that need to be taken into account when investing into these assets.

This chapter looks at one of the biggest infrastructure transactions of the last decade when the Ferrovial-led Airport Development Investment (ADI) consortium successfully acquired the UK airport operating company, BAA. The acquisition, which took place in 2006, was highly publicised and drew much criticism due to the acquirers' subsequent poor handling of the wider stakeholder interests in BAA including the poor conditions of customer services and vulnerability to regulatory

interventions. The poor stakeholder management has been influenced by the concentrated focus of the consortium to maximise shareholder wealth, by using excessive financial leverage in the investment acquisition.

Within management and business ethics literature, there is an academic debate over the merits of stakeholder and shareholder theory for corporate governance. The work from this chapter draws upon various shareholder principles based on corporate finance theory as well as stakeholder governance principles to analyse the governance structures of infrastructure assets. Certain infrastructure investors have been criticised for the methods used in their shareholder approach to investments as well as the lack of consideration given to the stakeholder governance of the assets. In order to achieve a successful investment for investors, consideration must be given to the wider stakeholder interest in the asset. This is especially important for monopoly type infrastructure assets, which are of national or local significance and draw substantial interest from the general public. If the level of service provided by the owners of infrastructure assets is heavily criticised by customers, the regulating body is likely to intervene, compromising the financial return achieved by investors from their investment in the asset.

This chapter argues that an appropriate method of market-based (global) governance as well as a properly considered relationship-based (local) governance model is necessary to achieve a successful infrastructure investment. These arguments are illustrated using a case study of the Spanish based Ferrovial-led consortium acquisition of the world's largest airport operating company, UK-based BAA. The acquiring consortium has run into financial and operational trouble as a result of poor stakeholder and financial management questioning the original intentions and

motivation of the parties involved in the acquisition.

Section 5.2 below outlines the corporate governance and finance theories drawn upon for this chapter. This section is then followed by a background description of the parties involved in the acquisition. Sections 5.4 and 5.5 present an analysis of the acquisition itself and the subsequent events before the implications and conclusions from this case study are drawn in Sections 5.6 and 5.7.

5.2 Theoretical Framework

The latest unbundling of urban infrastructure networks has meant that the infrastructure sector has become an important area of research with international flows of finance, capital, technology and expertise all needing to be examined (Graham and Marvin 2001, McKinsey 2010). A multi-disciplinary approach has been called upon to help look at networked urban infrastructures in its entirety (Torrance 2008, Graham and Marvin 2001). This has meant analysing the ways in which social, political, economic, cultural and environmental influences from the construction and use of infrastructure networks allow for a dynamic and sophisticated appreciation of modern urban development (Graham and Marvin 2001). The academic field of economic geography, which has been at the heart of the emergence of the global economy provides a suitable basis framework to approach the heterogeneous research area of global institutional infrastructure investment. One of the more developed strands in economic geography in this area has been the theorization of the changing political economies of urban infrastructure, including analysing the governance structures of these corporatised assets (Torrance 2008, Graham and Marvin 2001).

Using BAA's Heathrow Airport as an example, McNeill (2010) shows the importance of engaging with the political and cultural economy of airports in order to understand the functioning of these significant strategic spaces within cities. In this paper, McNeill provides a detailed illustration of the regulatory and financial history of Heathrow Airport emphasising the role of the state and firms and how economic and political decision-making take effect at the micro-scale. By outlining the regulatory, economic and socio-political issues that the new private owners of Heathrow Airport are subjected to as well as an account of the acquisition of the airport's owners, the paper goes a significant way to providing an understanding beyond the physical and architectural attributes of an airport. Instead it demonstrates how the spatial configurations and functionality of the airport are affected by politicians and the investment decisions of managers and shareholders. Situating the research within the field of political and cultural economy literature, McNeill (2010) explores the ontology of airport buildings showing that their make up is a temporary assemblage of various factors and that consumers might not be aware of where the blame should be directed for poorly functioning services. It also emphasises that the calculative practices of economic valuation (e.g. airline fees, retail charges, advertising) and technology adaptation that underpin airport buildings and spaces need to be understood. Finally, an assessment of the building in 'event' mode, such as the opening of Heathrow's Terminal Five, provides an ethnographic sensitivity to how the buildings are used in practice.

While McNeill's case study provides an exposition of the political and economic landscape in which Heathrow Airport operates, the paper fails to delve deeply into the causes of BAA's woes. In particular it seems to pass over the actions of the company's new owners, the Ferrovial-led ADI consortium, in what has been regarded

as one of the biggest failed transactions in this latest phase of infrastructure investing (Robertson 2008). The BAA/ADI takeover case provides an opportunity to uncover insights and lessons about what might contribute to a failure for infrastructure investing. Studying cases, whether failed or not, allows us to open our minds to new knowledge or information and in the case of a failure, redirect efforts to follow a different set of plans (Eisenhardt 1989). By answering the call for an interdisciplinary approach to investigate how the provision of networked urban infrastructures are being channelled in space, this chapter looks in detail at the reasons why the BAA/ADI transaction did not transpire the way the owners would have wanted and illustrates the repercussions of this deal for the field of urban infrastructure investment. This is achieved by focusing on the governance strategy of ADI in their takeover and subsequent operational management of BAA. Economic geography research into governance has highlighted the impact of national corporate governance characteristics on the long-term structure and performance of local firms and their relationships with stakeholders and shareholders (Clark and Wojcik 2007, La Porta et al 1998, 1999). The cultural influences on corporate structure and governance of infrastructure companies is an important feature of economic geographers' interest in financial globalization (Clark and Wojcik 2007). In this way, this chapter extends the work from McNeill's (2010) political and cultural economy study of Heathrow airport and contributes to the research agenda in the field of economic geography by enhancing an appreciation of the continuing financialisation of the urban infrastructure landscape.

Glocal Governance in its Entirety

The corporate governance of an entity only usually comes under scrutiny after a catastrophe or scandal shakes the very foundations of the company and compromises

its future operating sustainability. Examples of such events include the corporate accounting scandals of Enron, WorldCom, Tyco, Parmalat and burst of the technology, media and telecommunications (TMT) bubble in 2000 (Hagerman 2007). These events raised awareness and the need for greater transparency, accountability to shareholders, and more rigorous corporate reporting standards.

As mentioned in Chapter Four, with infrastructure networks increasingly shifting from the public to private sphere, the governance mechanisms of these assets are playing a crucial role in their resulting performance. In particular, the growth in the global infrastructure fund market has enabled a number of global investors to play an increasing role in the management of infrastructure projects at the urban scale forging a new form of ‘glocal’ governance for infrastructure assets (Torrance 2008). This “local unbundling and global interlinking” has changed the governing structures of infrastructures as locally acting regulators have been set up and the relationships between governments and various private sector players are defined by contracts (Torrance 2008, Babcock-Lumish and Clark 2005). The ‘glocal’ governance associated with these new infrastructure financial products was first highlighted by Torrance (2008) using the Highway 407 toll road in Toronto, which was leased to a private consortium by the Ontario provincial government in 1999. In an effort to reduce congestion on the road, the 1,000 page contract originated by the government placed no restrictions on the concessionaire’s ability to raise tolls, given that the traffic did not fall below a calculated threshold. However, a proposed toll rise in February 2004 was opposed by the new Liberal government. As a result of the disagreement, and apparent disregard for the provincial Ontario government’s contractual obligations, the European Union presented complaints to the Canadian authorities, on behalf of the Spanish consortium owners of the 407, which threatened

to derail an ongoing EU-Canadian Trade and Investment agreement. In the case of the 407 toll road, the government retracted on their decision to allow the private operator to increase tolls without installing a cap, which then escalated into a geopolitical issue destabilizing the global governance of the infrastructure asset. With many jurisdictions employing neo-liberal infrastructure policies, it is now uncommon for a global equity player not to govern their investments around the world in a similar fashion by adhering to contractual obligations established by local infrastructure regulating bodies.

The 407 toll road case highlighted the impact of geography on the governance of infrastructure companies. The governance tensions emerging in these types of projects can be directly related to the social and cultural as well as institutional and legal framework differences underpinning the distinct corporate governance jurisdictions of owners and asset locations. It has been noted that corporate governance systems vary from nation to nation with a clear divide between Anglo-American 'open' systems and 'closed' systems found in other western economies (Clark and Wojcik 2007). Closed governance regimes involve corporations having concentrated ownership with controlling owners, while corporations in an open regime have ownership dispersed with a clear separation in the relationship between shareholders and managers (Clark and Wojcik 2007). The continuity of distinct corporate governance systems depends in large part on the persistence of local and regional traditions in the face of globalization with arguments both for and against the robustness of nation state corporate governance traditions during cross-border takeovers (La Porta et al. 1999). Such differences need to be taken into account by institutions looking to purchase infrastructure assets in jurisdictions other than their own.

While the term glocal describes the geographical implications for the new ownership structure of infrastructure networks, the term has also been used to illustrate certain aspects of corporate governance theory. When using the term in a corporate governance context, the global element relates to the ‘shareholder approach’ while the local element relates to the ‘stakeholder approach’ (Hilb 2005). The shareholder governance approach is modeled on a market-based strategy, which emphasises the maximisation of shareholder wealth (Berle and Means 1932, Friedman 1962). The concept of governing a firm and making decisions in order to maximise the return for shareholders is widely supported in the academic finance community and provides the fundamental building block for corporate finance theory (Danielson, M.G et al 1998). One aspect of corporate finance theory for increasing shareholder returns that has come under scrutiny in the wake of the GFC is the use of financial leverage. As noted in Chapter Four, financial leverage has increasingly been used in infrastructure investment transactions and the next section will explain this process in more detail.

The stakeholder approach in contrast is a relationship-based model, which emphasises the interests of a broader stakeholder group (Hilb 2005). The theory argues that governance must allow for business prosperity as well as accountability. “There is a responsibility to safeguard the interests of shareholders but also to protect and promote the interests of other stakeholders such as managers, employees, customers, suppliers, governments” (Hampel Committee 1998). It has been argued that corporations cannot afford to ignore the interests of stakeholders in their quest to maximise shareholder wealth because all stakeholder groups can have an effect on the success of the corporation (Nwanji and Howell 2005).

Within the field of corporate governance literature, an academic debate has surfaced

between the shareholding and stakeholding perspectives with proponents of each side, defending their views (Sternberg 1998, 2000; Vinten, 2001; Turnbull, 1997, 2002). Advocates of the shareholder approach believe that the stakeholder model is incompatible with business and the true definition of corporate governance since it does not require corporations to be accountable to their owners and therefore lacks a common standard against which corporate leaders can be evaluated (Vinten 2006). Furthermore, the same advocates state that the stakeholder theory of accountability is unjustified and undermines private property, agency and wealth (Turnbull 1997). Stakeholder theory proponents on the other hand highlight the limitations of managers who are only concerned with maximising profits and emphasise the importance to take into account the views of all stakeholders of the business including shareholders. The OECD Principles on Corporate Governance state that “countries’ corporate governance frameworks in part depend on the legal, regulatory and institutional environment. In addition, the Principles note the impact that business ethics, societal, community and environmental interests have on the reputation and long-term success of an enterprise” (Jones 1999). This highlights the importance of corporate governance frameworks for balancing the different and competing interests of a wide range of actors that all contribute to the success of an entity. It is argued that the stakeholder model further develops the shareholder model, instead of being a substitute (Jones 1999). In this way, shareholders are also stakeholders, and this may add value for them (Jones 1999). Studies have quantitatively shown that the stakeholder approach adds more value to an entity than solely concentrating on maximising the rate of return for shareholders (Charreaux and Desbrieres 2001). The authors do admit to certain drawbacks in the quantitative methodology used in the study indicating a qualitative approach may be more useful.

Letza et al (2001) provides a detailed overview of the corporate governance debate but criticises the conventional methods of theorising the topic and provides a new mode of analysing corporate governance. It is argued that governance should not be polarised into either 'hierarchy' or 'market' approaches but rather a combination of the two thereby recognising the importance of networks and a relational approach which views the modern complex world as fundamentally interconnected, interdependent and mutually influential.

In the UK, the system of corporate governance was adopted from the traditional US model of shareholder focus and profit maximisation relying mainly on self-regulation and market-based sanctions (Clark and Wojcik 2007). Over the last twenty years, there have been a series of studies conducted to improve corporate governance in the UK with each investigation resulting in a final report of guidelines. These have included the Cadbury Report (Committee on the Financial Aspects of Corporate Governance 1992), Greenbury Report (Study Group on Directors' Remuneration 1995), Hampel Report (Committee on Corporate Governance, 1998) and Turnbull Report (ICEAW, 1999) (Jones and Pollitt 2004). Other reviews conducted for corporate governance include the Paul Myners led DTI and HM Treasury reviews, as well as the government backed Company Law/Higgs Review of 2003 (Jones and Pollitt 2004). These reports have formed the basis for a code of good governance and best practice to be developed (see FRC, The Combined Code). The earlier reviews/reports were based on the experiences of US board structures and sub-committees while latter reviews have drawn upon academic and survey research reflecting the growing respectability of academic research on corporate governance (Jones and Pollitt 2004).

There is a plethora of research that has been conducted on various aspects of corporate governance theory. It is not the intention of this chapter to provide an exhaustive review of all aspects of this field of research, instead some of the key issues of shareholder and stakeholder governance theory have been identified and a theoretical framework for analysing the governance of the Ferrovial-led consortium acquisition of BAA has been developed.

Financial Leverage

The shareholder approach to corporate governance, which highlights the fundamental obligation of managers to return profits to shareholders has been criticised for its narrow minded and short-term focus. As mentioned in Chapter Four, one of the tools used by practitioners to help achieve the shareholder wealth maximisation aim has been to alter the capital structure of an entity through an increased use of debt financing. The section below elaborates on the discussion of financial leverage introduced in the previous chapter to illustrate how such strategies can affect other governance areas of infrastructure assets, which is the focus of this chapter.

At the time of the ADI consortium's acquisition of Ferrovial, global financial markets were awash with capital and the terms within credit markets were favourable for investors. The institutional infrastructure investment model had taken on many of the characteristics of private equity financing and in particular the leverage buyout (LBO) model for acquisitions³¹.

³¹ The leveraged buyout (LBO) practice is the purchase of investments, which are financed largely by debt and with a limited amount of equity investment consistent with the risk appetites of debt providers. LBO's were used extensively by private equity firms in the 1980s as growth in the public debt markets enabled access to large amounts of capital on favourable terms (Opler 1993).

There are a number of financial and economic reasons why debt financing is used by various institutions. Firstly, the use of debt in financial transactions enables a greater return on the equity investment to be achieved. If the return on assets is greater than the cost of debt (interest on loan), then the return on equity would be higher than if there was no borrowing (Brealey et al 2006). Leverage thus allows the possibility of greater returns to the equity investor that otherwise would have been unavailable. Secondly, the advantage of debt financing is that the interest the company pays is a tax-deductible expense. An increase in debt financing will increase the amount of tax shield an acquirer is able to gain (Brealey et al 2006). Thirdly, because of the sheer size of investments, a certain amount of leverage is required to fund an investment because of the inability to raise sufficient equity contributions for the acquisition. This is especially true for the case for infrastructure assets where the funding of acquisitions are usually measured in excess of \$US billions.

The major risk associated with LBO transactions is the possibility of falling into financial distress. If an overly aggressive debt structure is used and market conditions are not favourable or deteriorate, the acquired entity may be unable to service debt obligations from operating cash flows, forcing them to default on debt payments and possibly leading to bankruptcy (Brealey et al 2006). During the 1980's a number of LBO transactions failed for these reasons.

While core economic infrastructure have been considered low risk at the asset level, the use of excessive leveraging and complex financing structures can serve to increase the overall risk. The systemic risk exposure for holders of equity in an infrastructure

investment increases with the amount debt in the capital structure. It has been perceived in industry that because of the associated stable cash flows, infrastructure assets are able to service higher levels of debt than typical industrial companies. However, if extreme levels of gearing are used, the risk associated with changing economic conditions can be a lot greater for infrastructure assets compared to industrial companies.

Regardless of the motivation for the initial transaction, the increased debt obligations from an LBO transaction are usually met by improving the corporate efficiency and/or restructuring of the new firm. The increase in financial leverage, and associated disciplines of cost cutting and profit maximisation, has the effect of fully aligning the interests of managers with those of shareholders (LBO Advisers 2007). In this way the LBO strategy can be seen to narrow the focus of management away from stakeholder interests to solely concentrate on shareholder concerns.

5.3 Parties to the Transaction

The method of investment for the BAA takeover was through a ‘club’ deal, where two large institutional investors partnered with a leading infrastructure specialist to form a consortium bid. Details on the various forms of institutional infrastructure investment process are outlined in Chapter Six. The actions of a takeover consortium mainly reflect the strategies, beliefs and motives of the leader of the consortium (Interview 2011b). Leadership is crucial in a takeover consortium attempt in order to formulate strategy and drive the operation to a successful completion (Interview 2011a). ‘If there is no leader, deals just don’t get done. The consortiums that have an effective front leader will mean that the deal has a higher probability of coming off’ (Interview 2011b). A major reason why the two smaller pension fund members joined the ADI

consortium was because Ferrovial was going to lead the bid. The smaller members were consulted on the various issues that came up and had veto rights if they did not agree on a particular matter but generally speaking accepted the actions of Ferrovial as a strong leader, with operational expertise greater than that of the pension funds (Interview 2011b). The specific airport expertise of the pension funds were never really utilised with the strategies employed by ADI being mostly reflective of Ferrovial (Interview 2011b).

In this way, the chapter focuses on the strategies of Ferrovial as the leader of the ADI consortium with all references to the consortium unless specifically stated being demonstrative of Ferrovial. This section provides a background of the takeover target, BAA and lead consortium member Ferrovial with a brief description of Caisse de Dépôt et Placement du Québec (CDPQ) and Government Investment Corporation (GIC), the smaller pension fund members of the acquiring consortium.

BAA

The British Airports Authority was established in 1966 following the passing of the Airports Authority Bill in 1965 which took Heathrow, Gatwick and Stansted airports out of government control in order to make them run more efficiently. As the popularity for air travel grew, the Authority subsequently acquired Edinburgh airport from the government in 1971 as well as Aberdeen, Prestwick and Glasgow in 1975. British Airports Authority operated under a corporatised structure with the government still acting as the major shareholders. In 1986 however, the Conservative government introduced the Airports Act, which led to the disestablishment of the Authority with all property, rights and liabilities passing on to a new company, BAA plc (BAA 2011).

In 1987, BAA was floated on the Stock Market and achieved a market capitalisation of £1,225 million, reflecting the strong profitability record and high standing of the company in the aviation world (BAA 2011).

During the 1990's, the company experienced a number of significant developments including acquiring Southampton Airport in 1990 and selling Prestwick Airport. A major international expansionary initiative included winning operating leases for Indianapolis Airport and Harrisburg Airport in the USA as well as Melbourne and Launceston Airport in the Asia Pacific region. In 1998, the £450 million Heathrow Express rail link was opened at London Paddington station (BAA 2011).

Further expansion by BAA was conducted in 2000 winning a 10 year operating lease at Boston Logan International Airport. With concern growing over BAA's monopoly position, the first competition review was undertaken in 2000 with the Government subsequently announcing that the company could retain ownership of its London airports (BAA 2011).

Prior to the ADI consortium takeover in 2006, further investments were made in Budapest Airport, various Australian airports, Pittsburgh Airport and Baltimore/Washington Airport while interests in non-core assets such as McArthurGlen designer outlet centres and other retail property on Bond St, London were sold. The September 11 2001 terrorist attacks made a significant impact on the airline industry, reducing passenger numbers and increasing security costs. The company was forced to cut costs by retrenching hundreds of staff and in 2005/2006, pressure for a breakup further intensified.

Ferrovial

The Spanish Civil War in the 1930s left the country's economy in ruin and a large amount of its infrastructure destroyed. Following WWII, the Facist dictator Francisco Franco initiated a widespread infrastructure rebuild across Spain. During this time, Rafael del Pino, a successful civil engineer, founded Ferrovial, whose original purpose was to set up workshops for Spain's Railway Company (RENFE) to maintain and replace track. In its first decade of operation, Ferrovial grew its operations abroad with its first international work in Venezuela, it secured large scale contracts for railways work, and diversified its competencies in to hydraulic projects and road construction. In 1969, Ferrovial completed its first toll road concession project (Bilbao-Behobia) as well as constructed its first building project. It continued to build its toll road construction business in Spain and abroad (mainly in Spanish speaking countries) while also expanding into real estate construction and water treatment engineering (Ferrovial 2011).

In 1981, the company founder's son, Rafael del Pino Jr, joined Ferrovial and would later graduate to become Group CFO in 1989 before Managing Director in 1992. Ferrovial continued to expand in the 1990's with various acquisitions and investments in construction companies, toll roads, waste management, car parks and real estate. In 1998, Cintra was created as a subsidiary of Ferrovial to control toll roads and car parks in Spain and abroad. Ferrovial made a major impact on the airport management business with the acquisition of nine airport concessions in southeast Mexico. Ferrovial was listed on the Madrid Stock Exchange in 1999, and in the early 2000's, made significant acquisitions of airports around the world, including Niagra Falls (99 year concession), Bristol (50%), Belfast (100%) and Melbourne (19.8%), purchased

the UK utilities firm Amey, Texas construction company Webber and Swissport freight handling. Ferrovial had grown to one of the leading private infrastructure construction and management companies in the world (Ferrovial 2011).

In recent times, Ferrovial has progressively moved away from construction towards infrastructure concessions, and diversified away from Spanish dominated assets in favour of Anglo-American projects. The infrastructure arm of the business now forms the major source of revenue for the company. In line with this shift towards infrastructure investing, Ferrovial have created a number of relationships with other infrastructure investment partners including Macquarie and various pension funds. Ferrovial has an extensive relationship with Macquarie, with the latter being the main financial advisor for Ferrovial's infrastructure transactions. The Del Pinos have recognised the opportunities that could be brought about by partnering with construction and asset management firms. The two companies have worked together on a number of projects including the 407 toll road and Sydney Airport in order to avoid having to suffer from aggressive competition. Ferrovial have also typically worked with Caisse de Dépôt et Placement du Québec (CDPQ), who backed them on the Highway 407 deal, and are one of the main backers on BAA, along with Singapore's Government Investment Corporation (GIC) (JP Morgan 2006).

Ferrovial's foray into the UK through its lead role in the BAA acquisition was part of a growing trend for Spanish companies to extend operations beyond their home country and Latin America (Crawford et al 2006). Between 1997 and 2006, Spain's net FDI outflows were US\$181 billion, the sixth highest out of OECD countries (Chislett 2007). The internationalisation of Spanish business was the result of a period of sustained economic growth prior to the early 2000's, which led to a booming

Spanish corporate sector with many entities posting record profits. Many of these companies however felt that the period of economic expansion in the Spanish market was slowing forcing businesses to look at opportunities abroad. (Chislett 2007). Another key factor behind the expansion was that Spanish companies were able to gain a 30% tax credit from the Spanish government of the goodwill costs of any foreign company purchase. This provided companies with a substantial competitive advantage when approaching the bidding process for takeovers (Chislett 2007).

As indicated by (Chislett 2007), some of the landmark overseas investments made by Spanish companies include: Santander's €12.5 billion purchase of UK bank Abbey in 2004, the acquisition by Banco Bilbao Vizcaya Argentaria (BBVA) of two banks in California and Texas, Telefónica's investment in 2005 in China Netcom and in 2006 its €26 billion acquisition of the O2 mobile telephony operator in the UK, Germany and Ireland, the largest Spanish acquisition of a foreign company to date (Chislett 2007). Ferrovial already had experience in the UK through its ownership of Bristol airport with Macquarie and in 2003 invested in Amey, the project-management group that manages three of London's underground rail lines (Chislett 2007).

Part of the trend for global expansion can also be put down to a new generation of Spanish business leaders with strong personalities educated at some of most elite institutions in the English-speaking world. Ferrovial's Rafael del Pino Jr. is a case in point of a Spanish corporate executive with an international outlook, proud of the family institution that he leads and dedicated to see it flourish (Crawford et al 2006).

In playing a lead role in the ADI consortium acquisition of BAA, Ferrovial was joining a host of large Spanish companies in an attempt to become bigger, diversify their sources of income and play a significant role on the global stage.

Caisse de Dépôt et Placement du Québec (CDPQ)

CDPQ is a global fund manager that was initially set up in 1965 to manage the funds of the Quebec Pension Plan. The mission of the Caisse “is to make profitable investments with funds of public and private pension and insurance plans and organizations, while contributing to Québec’s economic development” (CDPQ 2011). CDPQ has net assets under management totalling \$131.6 billion, investing the funds of 25 clients and is a shareholder in over 4000 businesses in Quebec, Canada and internationally (CDPQ 2011).

CDPQ has had exposure to the infrastructure asset class through the specialised investments and infrastructures portfolio that was created in 2003. Since then, the allocation of the entire fund to infrastructure has grown to 4.1% (as at December 2009) (CDPQ 2011). Investments in infrastructure assets have included the Interconnector natural gas pipeline linking the UK and continental Europe, UK’s South East Water and 407 toll road in Canada (CDPQ 2011).

Government Investment Corporation (GIC)

GIC was incorporated in 1981 under the Singapore Companies Act and manages funds on behalf of the Government of Singapore. The corporation was set up in order to preserve Singapore’s foreign reserves by working towards achieving a rate of return above global inflation for a time period of 20 years. With over 1000 employees and over \$100 billion of assets, GIC is one of the largest investment management

firms in the world. Being a long-term investor, the corporation has made infrastructure one of its core asset classes for investment, investing in the asset class since the early 1990s (GIC 2011).

GIC's infrastructure mandate focuses on equity investments in water utilities, power generation, transmission and distribution, as well as transport assets such as airports, seaports and highways. Some examples of investments include: Associated British Ports, Yorkshire Water, US Natural Gas Power Plants and the Infrastructure Development Finance Company (India) (GIC 2011).

5.4 The Acquisition

5.4.1 BAA's Legacy

To understand why BAA was such an attractive proposition as a takeover target, it is useful to look at the history of the company since its privatisation in 1987 and its steady progression to becoming one of the world's leading airport operating companies.

After becoming a majority, privately owned listed company in 1987, BAA plc went through a number of different eras of leadership style, which affected the direction that the business took. The importance of studying the types of leaders that head major corporations has been recognised by Schoenberger (2001:278) who states: 'a lot of corporate behaviour is hard to explain without taking into account the distinctive ways in which the people who run the firms understand the world and their position in it'. She goes on to mention that 'what these people and their firms do in the world affects the livelihoods of hundreds of thousands of people'. It can be seen

that the backgrounds and personalities of those taking the top position of BAA have played a part in how the company has been run.

Jeremy Marshall, who was previously at the Hanson Trust plc, a large, multinational building materials company, was installed as CEO of BAA immediately prior to the privatisation. Using his experience from Hanson, Marshall believed that BAA, as a private sector company should diversify its assets. Thus during his time, BAA extended operations into freight forwarding, cargo, transport, trucking, hotels and property development (Interview 2010a).

Sir John Egan, who succeeded Jeremy Marshall in 1990 came to BAA as a charismatic, visionary leader with experience as head of Jaguar automobiles. Egan was keen to build and develop the business in much the same way that other infrastructure utilities companies had. For BAA, this meant expanding the business internationally with the acquisition of overseas airports and building on the strength of its retail business, where a lot of the shareholder value had been created until that point. During Egan's reign, the BAA share price rose steadily towards £7 /share as shown in Figure 20 below, a level that wouldn't be achieved again until interest by the ADI consortium for an acquisition of the company began in 2006 (Interview 2010a).

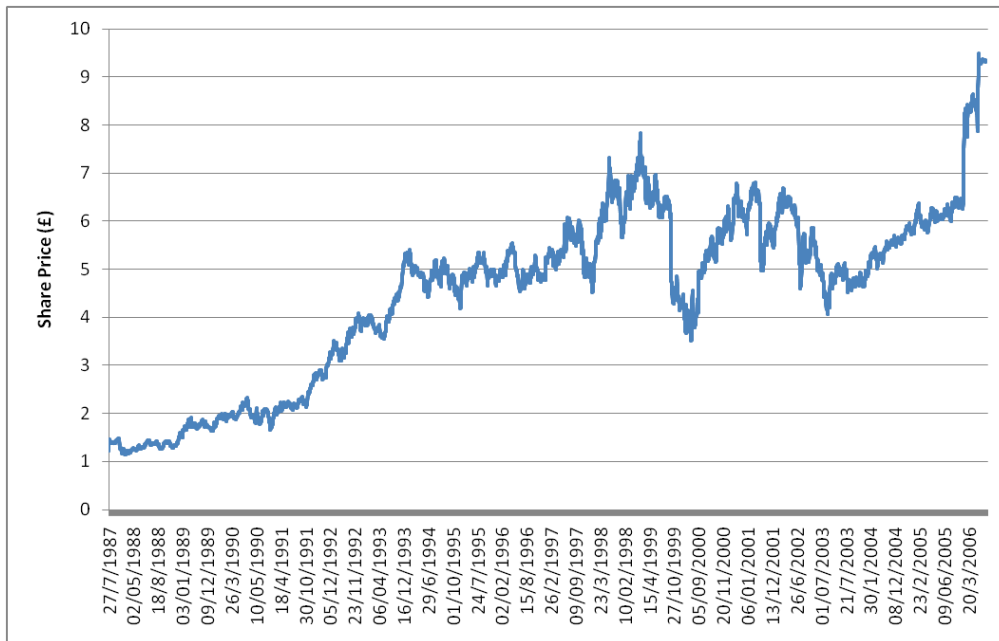


Figure 20: BAA plc. Historical Share Price

Source: Datastream

By 1998, the majority of BAA’s revenue came from its retail duty free sales and the company relied heavily on this retail revenue stream to continue. In 1999 however, the European Union collectively abolished the sale of duty free goods for travel within European countries. On top of this, a poorly diligenced acquisition of a US duty free company which resulted in £400m being written off, led incoming CEO, Michael Hodgkinson to announce the company’s first profit warning in late 1999 with the share price effectively halving to £3.50 overnight. From 1999-2003, Michael Hodgkinson’s time at BAA could be seen as an ‘austerity driven’ period where expansion was very capital constrained and operations were much more focused on conservatively running a core UK utility company. Resources were concentrated into the infrastructure ‘horsepower’ of the business at a challenging time for the aviation industry due to the events of the September 11 terrorist attacks (Interview 2010a).

From the outside perspective, new CEO in 2003, Michael Clasper saw a very ‘sleepy’ business and had the ambition to rejuvenate the company as a world leading airport

operator. It was of his opinion that BAA was not being run commercially and efficiently enough, it was not dynamic and did not focus on the cost base. The two initial areas of attention for Clasper, involved bringing about change to the internal management and management processes of the firm as well as ensuring that the new Terminal 5 building was built according to budget and on time. With a number of new senior management hirings and confirmation of the Terminal 5 Capex program running to plan, the focus shifted back towards international expansion in a more meaningful way, to drive the business forward. Previous international expansions had proven to be a successful strategy, however Clasper's team realised the importance of committing more finances to the plans. Throughout previous administrations, BAA had held a conservative approach both in terms of its stakeholder management, but also with regards to its balance sheet and in particular its capital structure. In late 2005, this changed as an acquisition was made by BAA for Budapest Airport with its low gearing used to fund the deal. BAA's gearing capacity was used to fund a high acquisition multiple of Budapest in the order of 30 times EBITDA³². At the same time, BAA was trading on the stock market with a multiple one third of that figure. Such a mismatch in multiples could be explained by BAA either being significantly undervalued or the company paying too much for its acquisitions. It was this mismatch that signalled to the market that BAA might be an attractive proposition as an acquisition target. With debt financing being a major source of funding for such takeovers, there was sufficient ability to 'gear up' BAA for financing measures, as well as room for efficiency improvements, the question was whether an acquirer was

³² EBITDA (Earnings before interest, tax, depreciation and amortisation) multiple – is an estimated valuation of a business excluding investment activities (bills, bonds etc.) where EBITDA is the operating revenue minus the operating expenses of the company. The EBITDA multiple is calculated by dividing the market value of the business by the EBITDA and estimates how many times of the EBITDA, the business is worth.

able to match the funding size of BAA with over 100,000 shareholders and £10bn equity required for the transaction (Interview 2010a).

In 2003, the Government sold its remaining golden share in BAA, which had been in place primarily to prevent a take-over by foreign investors (Osborne 2003). With Ferrovial looking to grow the infrastructure operations side of its business, it was the first to see the opportunity and signal their interest in acquiring BAA.

5.4.2 The Lead up to the Acquisition

Speculation for a takeover of BAA began in February 2006 when Ferrovial made a general announcement to the market that it was interested in making a cash bid for the company. This was followed soon after on March 17 when the first formal takeover offer was made for BAA by Ferrovial at 810p per share valuing the company at £8.75bn. Ferrovial held the majority stake in the consortium (60%), which also consisted of GIC and CDPQ. This first conditional offer represented a 27% premium to the average price of 637p in the 30 days prior to when speculation of a possible bid for BAA began but well below the all time high price of 843p. The first offer of the consortium was rejected by the BAA Board within a few hours of receiving it (Done et al 2006).

Meanwhile, Macquarie Bank of Australia also started early-stage discussions for a possible bid for BAA, but ruled itself out of a potentially costly battle and instead joined Ferrovial as a financial adviser while also negotiating a favoured buyer position of any existing Ferrovial airport assets that might need to be sold due to competition authority intervention (Done et al 2006).

On April 7, 2006, the Ferrovial consortium launched a second unchanged takeover offer of 810p per share and was subsequently rejected by both the Board and shareholders of BAA. A week later, it was revealed that BAA had received a preliminary confidential and conditional takeover offer from a consortium led by US Investment Bank Goldman Sachs for 870p per share valuing the company at £9.4bn. This bid was also rejected by the Board on the grounds that it did not reflect the true value of the company (Done et al 2006).

The high profile nature of such a take over, naturally drew involvement from a number of government officiating bodies. The Civil Aviation Authority (CAA) publically expressed its concerns about potential bidders incorporating highly leveraged financing structures which would undermine BAA's credit rating and compromise its ability to meet necessary future investment programs for the airports. The CAA also issued a statement that it would not bail out the owners of BAA for the costs of financing a transaction stating that the costs and risks of any financial transactions would be for the present or future owners to bear (Done et al 2006).

Approval by the European Commission was granted for the proposed Ferrovial consortium bid for BAA stating that neither of Ferrovial's UK airports was in competition with BAA airports. Soon after the European Commission's approval, the UK's Office of Fair Trading (OFT) said it was considering looking into the UK airport industry to see if the current market structure worked well. The OFT proclaimed that it would undertake a review in six months time with the idea of providing recommendations to the Competition Commission about possible regulation of the airports. Upon the OFT's announcement, the BAA share price dropped to a level below the Ferrovial asking price of 810p. BAA still urged

shareholders to reject Ferrovial's offer, who confirmed to the markets that their bid would not be deterred by the OFT plans, pushing the share price back to its original level of around 820p (Done et al 2006).

On May 30, the Ferrovial consortium raised the bid for BAA from 810p to 900p per share valuing the company at £9.73bn but was again rebuffed by the BAA Board who had stated that the company was worth at least 940p and that they were determined not to sell BAA at a discount. To provide further defence of the takeover bids, BAA announced that they would make a special dividend payment in the order of £750m to investors as a special sweetener to reject the takeover offer from bidders. Shortly after the third rejection, but with the Ferrovial consortium staying strong in its takeover plans, the consortium's investment banking advisor, Citigroup attempted to buy 108 million BAA shares at 900p per share to get 10 percent of the company in an effort to build a blocking minority of 10 percent. On the 2nd June, as a conclusion to the bidding race drew closer, the takeover panel gave Goldman Sachs until June 9 to reveal whether it intended to make a bid for the group (Done et al 2006).

The pivotal day in the bidding war arrived on June 5th 2006 when BAA received revised takeover offers from both the Ferrovial and Goldman Sachs consortiums. The Ferrovial consortium intended to offer the group 950.25p per share valuing the company's equity at £10.11bn. The Goldman consortium on the other hand, submitted a fully financed proposal for BAA at a total of 955.25p per share (Done et al 2006).

By the end of the day, BAA had announced that it had accepted the slightly lower but 'definitive proposal' from the Ferrovial consortium for the group, favouring the offer partly because it offered shareholders the ability to take part of the cash offer in shares

in a new vehicle, Altitude Assets, which would hold a stake of 5-10 percent in the newly created holding company for BAA. The Ferrovial led consortium's offer was also favoured because it was further advanced in getting clearances from regulatory bodies, other stakeholders and offered more certainty. The Takeover Panel agreed to extend the bid timetable to June 26 for shareholders to accept the Ferrovial offer. The Goldman consortium would have until June 16 to announce a firm intention to make a rival bid or to withdraw. Two obstacles were faced by Goldman to revise their offer. Firstly a fee of £115.5m would have to be paid by BAA to the Ferrovial consortium if any competing bidder gained a stake of 50 percent or more in BAA, or if the company recommended another offer. Secondly, Ferrovial confirmed that it had bought 14 percent of BAA on the share market making it difficult for the Goldman Sachs led team to supersede the accepted offer (Done et al 2006).

These stumbling blocks for the Goldman Sachs consortium were realised two days later when it announced that its talks with BAA had ceased and that it would not be proceeding with an offer for the company. Meanwhile, Ferrovial moved to strengthen its stake in BAA to help block a rival bid by buying more shares, increasing its holding to 28.7 percent in the company (Done et al 2006).

The Ferrovial-led consortium's offer valuing BAA equity at £10.11bn and gave an enterprise value³³ of £16.4bn became unconditional on June 26th, after it had won control of 83.4 percent of the shares.

³³ Enterprise value is a measure of a company's value that includes the company's debt, preferred shares as well as the equity value (Brealey et al 2006).

5.4.3 The Deal Closed (Shareholders' Arrangements)

With a significant majority of shareholder acceptances, the ADI consortium took control of the Board on June 26th. The final break down of shareholders in the consortium was Ferrovial 62%, CDPQ 28% and GIC 10%.

In what was one of the largest infrastructure acquisition transactions to date, the ADI consortium paid £10.1bn for the shares in BAA, the majority of which was funded through debt financing³⁴. The final offer valued BAA at 16.1x 2006 EBITDA (JP Morgan 2006). As a result of the BAA acquisition, Ferrovial's debt profile was increased to 90% (Interview 2011b). The consortium had the intentions to refinance the senior debt facilities used in the acquisition with a longer term financing structure.

The company was shortly delisted from the stock exchange and the key terms of the shareholder's agreement were that Ferrovial would appoint the majority of BAA's Board members, there would be a lock-in period³⁵ of 18 months and no relisting before 5 years (Ferrovial 2006). BAA plc was now known as BAA Ltd³⁶.

³⁴ The ADI consortium paid £10.1bn for the shares in BAA, £1.33bn for the convertible debt, £500m to redeem employee share options and transaction costs while also inheriting the company's £4.6bn debt. The financing of the deal involved only £4.27bn of equity, of which Ferrovial contributed £2.6bn for the controlling stake. The remaining finances came from £4.72bn senior debt and £2bn of junior debt. The senior debt paid interest at one percentage point over the interbank rate, but had step-ups after 18 months while the junior debt cost 400 basis points (4%) over the interbank rate. The financing costs all up after the acquisition came to 7 percent (JP Morgan 2006).

³⁵ Lock-in Period - Period during which a loan cannot be paid-off earlier than scheduled without incurring penalties (Brealey et al 2006).

³⁶ For simplicity, the term 'BAA' is used interchangeably to represent the company before and after the acquisition in 2006. While the remaining part of this chapter is concerned with BAA Ltd. as a whole, a lot of the subsequent analysis focuses on Heathrow Airport, which contributes 86% of the overall company's worth (BAA 2011). As shown, the airport assets included under BAA Ltd. changed following the transaction due to Competition Commission rulings.

5.5 The Perfect Storm

Upon completing the acquisition of BAA, a sequence of unfavourable events seemed to transpire, significantly impacting the ambitions of the new ADI consortium owners of BAA. It was mentioned in 2008 by the head of airports division at Ferrovial that while the BAA deal was well thought out and possible scenarios taken into consideration, ‘almost all the negative scenarios have been played out and none of the positive’ (Gordon et al 2008). A timeline of the ‘The Perfect Storm’ events is provided in Appendix 7.

5.5.1 Governance and Management Changes

Prior to the acquisition by ADI, as a publically listed company, BAA ran a traditional Anglo-American governance model comprising of an executive committee responsible for the day-to-day decision-making which reported to a Board of Directors. In line with the Financial Reporting Council’s UK Corporate Governance Code and to meet the challenges associated with governing a 10,000 employee strong company, the Board consisted of 12 members, with six independent non-executive directors and six executive directors. All non-executive directors of the company had experience in managing or directing other large British public listed companies, with a number also having specific infrastructure and regulated industry experience (BAA 2011).

Shortly after the acquisition, BAA was delisted from the public stock market and while the Board of Directors underwent change to reflect the new ownership structure of the company, the majority of the existing BAA management were initially retained. Ferrovial chairman Rafael del Pino had publically stated his intentions of co-operating

with the current management of the company. Despite this however, incumbent CEO, Michael Clasper who was reported to have aligned himself with the rival Goldman Sachs bid, resigned almost immediately after the acquisition. Margaret Ewing, chief financial officer and Ian Hargreaves, corporate and regulatory affairs director left the group a few months later, leaving a significant hole in the executive branch of the company (Done 2006).

Existing Chairman Marcus Agius, initially agreed to stay on as chairman but also resigned a few months later, placing Rafael del Pino at the top position. By the end of 2006, the Board had expanded to 14 members with twelve of the existing Board replaced by seven new members from Ferrovial, three from CDPQ and two from GIC (BAA 2011). As the chairman of Ferrovial explained, the company was clearly operating as a 'UK business but with headquarters based in Madrid' (Mulligan 2007).

Over the next few years following the acquisition, a deteriorating financial situation, increased security measures and declining service quality seemed to take its toll on the ADI consortium which struggled to cope with the circumstances as top level management and board membership rotated in and out of positions frequently. In 2007, the management upheaval at BAA intensified as the CEO of Heathrow Airport, Tony Douglas, director of safety, security and services, Donal Dowds and head of human resources Peter Blausten all departed within a few weeks. On top of this, BAA's head of corporate affairs and media relations had also resigned in protest at the growing interference from Madrid in the conduct of public relations in the UK. In an attempt to restore the company's ailing fortunes, the consortium appointed Sir Nigel Rudd as chairman of BAA, who had gained a reputation as a leading UK business turnaround specialist, having chaired a number of large public company Boards

including vice chairman of Barclays Bank and security adviser to former Prime Minister Gordon Brown (Done et al 2007).

In less than two years in the job, Stephen Nelson stepped down as CEO of BAA, in what appeared to be the biggest shock since the ADI consortium took over the company. It was the first big management change to be instigated by Sir Nigel Rudd and the first casualty to have been appointed by Rafael del Pino. Mr Nelson was replaced by Colin Matthews, who had experience as CEO of a number of FTSE 100 companies in both the utility and airline sectors and whose breadth of experience was an important factor in Sir Nigel Rudd's decision in replacing Mr Nelson (Done 2008).

Following the Heathrow Terminal 5 opening debacle on March 27, 2008, Mark Bullock, chief operating officer of Heathrow Airport left the company and was replaced by Mike Brown, the latter lasting only until September 2009, when he returned to London Underground as managing director (Done 2008).

From the latter half of 2009, movements in Board membership and management personnel seemed to settle relative to the previous two years following the acquisition. Despite still including a majority of Spanish based members on the Board of Directors, by 2010, the company has moved to include UK based non-executive independent directors, although the expanded size of the Board remains (BAA 2011).

From the events that transpired following the acquisition, it was quite apparent that the ADI consortium had not put enough thought into the senior management personnel of the company and underestimated the effects of having a majority Madrid-based Board of Directors. It did not appear that the consortium fully

understood the true drivers of value for the business and the effect of the wider stakeholder base in extracting value from the company, instead it was very much an acquisition driven by financial engineering, with the idea that the company would be able to run itself.

The fact the consortium had set up an arrangement where the company would effectively be a subsidiary of Ferrovial and therefore sit within the hierarchy of the Spanish-based company shows a lack of foresight into the global-local dynamics and associated tension of non-localness with cross-border acquisitions.

The Code of Best Practice Corporate Governance developed by the Committee on Corporate Governance states that “the board should include a balance of executive and non-executive directors such that no individual or small group of individuals can dominate the board’s decision taking” (FRC 2010). In the case of BAA, following the ADI acquisition, while the Board make up was reflective of the share ownership, it can be seen that Ferrovial’s stronghold of the Board seemed to excessively influence the executive decision-making process of the company leading to inefficiencies and poor performance for the firm.

It was the intent of ADI to ‘make do’ with the incumbent management following the acquisition and yet at the same time, there was a dysfunctional shareholder base sitting above them. It was clear that the decision-making process for the firm was carried out only in Madrid, and certainly not in the UK at the BAA headquarters (Interview 2010a). As a consequence, a lot of the senior management left the firm in an unsatisfactory way but were given no choice. Most of the management believed in the business and wanted to make a contribution but weren’t allowed to because

Ferrovial wanted to do things their way, and the only way to control it was to put in their own people (Interview 2010a). For the existing staff, to see the CFO leave after three months and then the CEO of Heathrow to follow after six months, a large amount of doubt seemed to set in to their own future at the company. On top of this, for the managers who previously were making decisions and having a direct impact on the company, but then became relegated to being an operating subsidiary of a Madrid-based company was hard to accept affecting their decision to stay (Interview 2010a). As a result, the company lost a large amount of talent and experience in management (crucially in the areas of public, regulatory and media affairs), which proved to be costly for the firm. If ADI had had the foresight and shown a deeper understanding for the company they were acquiring by basing themselves in the UK and particularly in the South-East of England, a lot of the cross-cultural tensions and subsequent management exodus could have been avoided.

A lot of the incumbent management had material share options in BAA, which until takeover speculation began had been of no meaningful value to them (Interview 2010a). Following the acquisition, a significant profit on these options was made by a number of the senior executives which also could have swayed their decision to leave the company having cashed up their options. Furthermore, prior to the acquisition, BAA had been renowned as a leading airport operator and attracted talent because of its global scope and wide ranging career opportunities and clear career path structure (Interview 2010a). ADI however had made it clear that it had the intentions of selling off a large number of its assets and to solely focus on its airport operations in the UK. As a result, the same career prospects and ambitions of staff at BAA were somewhat thwarted reducing the incentive for many to stay on.

5.5.2 Financial Implications

The Ferrovial led acquisition of BAA has not only come under much scrutiny because of its fragmented governance structure and poor operational service, but the ADI consortium have been put under significant financial pressure to the extent where it faced the prospect of severe financial distress (Lex 2007). It can be seen that insufficient regard was given to the stakeholder approach in favour of an acquisition driven by financial engineering. The events following the take over, accentuated by the GFC, have shown that the concentrated strategy to drive shareholder wealth was in fact flawed because of the amount of financial leverage utilised in the take over transaction, which some have reported as being overpriced.

The BAA acquisition was funded with short-term debt with the view of selling non-core assets to pay down principal and refinancing with longer-term debt. However, due to the GFC and the collapse of the credit markets in 2007-2008, the consortium has struggled to sell off assets as well as refinance their debt. The financing problems around BAA pushed the consortium to the brink of financial distress, because of the imminent maturity of the debt (Osborne 2008).

Following the acquisition, the consortium announced its intentions to refinance its debt through an asset backed securitisation process and started to look at refinancing options in 2007. The credit squeeze of August 2007 delayed the refinancing plans with warnings over the ability to refinance existing debt starting in late 2007 and continuing in early 2008. The GFC had forced interest payments on BAA loans to unsustainable levels with the consortium having to pay annual interests of €2 billion, significantly eating into its EBITDA of €3.04 billion (Gordon et al 2008). The capital expenditure set aside at the time of the acquisition was being used to pay off debt,

rather than being invested in the new buildings and improvements required to drive future revenue growth (McNeill 2010). Figure 21 below illustrates the flat performance in revenue and profits for the company before (BAA plc) and after (BAA Ltd.) the ADI acquisition. As will be detailed in section 5.5.4, BAA was forced by the Competition Commission to sell Gatwick Airport in 2009 leading to a significant loss for the company. The graph also highlights the exorbitant level of debt used by the acquiring consortium relative to the revenue and profit figures of the firm.

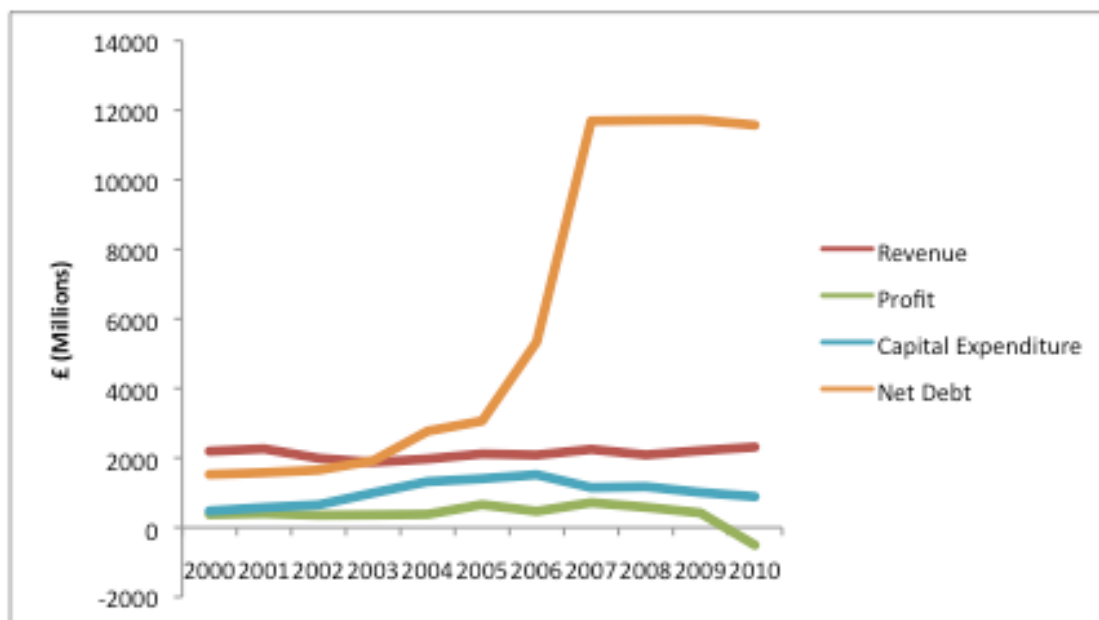


Figure 21: Key financial performance indicators of BAA before and after the acquisition
(Source: BAA Annual Reports)

Figure 22 below shows how the passenger numbers at BAA’s airports have evolved over the last ten years, with a significant decline in 2008-2009 following the GFC, contributing to the company’s declining financial performance. In the five year period before the acquisition in 2006, the average annual passenger growth was 4.1%, while in 2008 and 2010 (removing the effect of the Gatwick sale), passenger numbers decreased by 2.8% each year.

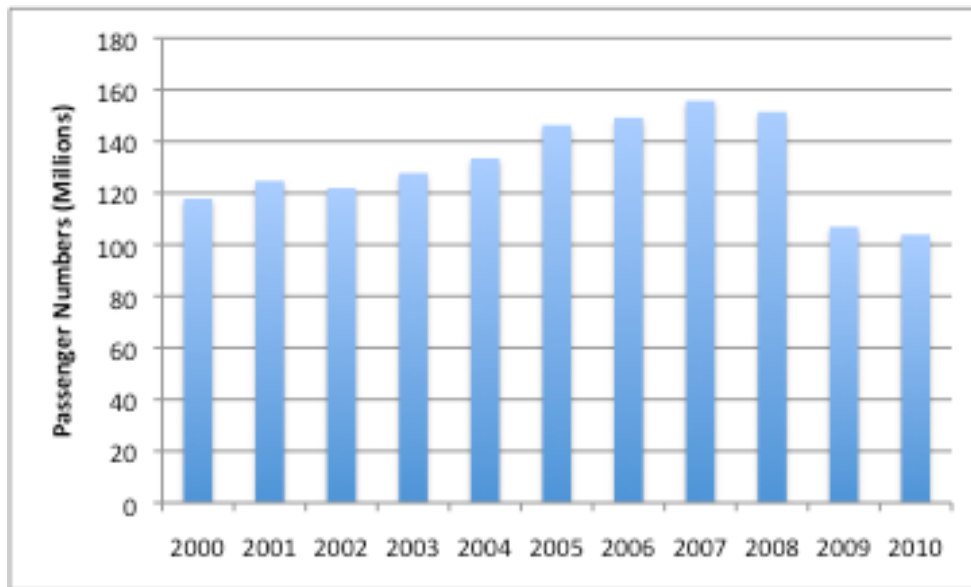


Figure 22: Passenger numbers at BAA airports since 2000
(Source: BAA Annual Reports)

In an effort to address the refinancing issues, ADI proceeded to sell a large number of BAA's assets, with the aim of refocusing the business on its UK assets. This included selling Budapest Airport, all of its Australian Airport interests, part of its Airport Property Partnership, World Duty Free and four US retail management contracts (Done et al 2008).

While the company was able to organise a portion of the re-financing, and improve its debt ratios through 2008 and 2009, a signal that the consortium had got their financing plans for BAA wrong came when Ferrovial announced that it was putting its controlling stake in BAA up for sale in 2010 (Mulligan 2010). The sale of its stake in BAA was part of Ferrovial's strategy to regain control of its own finances.

At the time of the acquisition, cheap credit with minimal security or covenant restrictions was abundant. In 2006, the average leveraged loan represented about 5.9 times the borrower's EBITDA compared with the same figure in 2001 of 4.7 times

(Larsen 2006). i.e. Companies in 2006, that had a cash flow of about £170m were able to get a £1bn loan. In many respects, the amount of leverage used by Ferrovial, was reflective of the markets and transactions occurring at the time. The deterioration of global credit markets, and the need to refinance the significant level of debt in the company can be seen to have narrowed the focus of management, with other areas of the business and stakeholder management being adversely affected. Ultimately, an indication of how badly the Ferrovial-led acquisition of BAA has turned out can be seen in the destruction in value of equity from the transaction. At the time of the transaction, BAA's equity was valued at £4.6bn. Subsequently a further £900m has been injected into the business to help with financing issues (Interview 2011b). Even though the company was delisted, the significant standing of the company in the economy and highly publicised operations has meant that financial analysts have continued to appraise its valuation based on a variety of financial indicators such as earnings, capital structure and projected revenue drivers. Based on the deterioration of the company's value drivers, the general broker consensus value of equity for BAA, at the time that Ferrovial announced their partial sale (October 2010), was £729 m, which represented an 87% decrease in value from the investment put into the company by the consortium³⁷. Given the consortium's improved handling of its debt situation and recovery in passenger growth forecasts, this consensus value subsequently rose to £2.3bn (as at June 2011) still representing a 58% or £3.2bn destruction in equity value³⁸ (Interview 2011b).

³⁷ Values were obtained from interviews with the financial advisors to Ferrovial, reflecting the general broker consensus at the time.

³⁸ At the time of writing, in October 2011, Ferrovial sold 6% of its share in BAA for £280m, implying a £4.8bn valuation of 100% of the company (13% decrease from initial investment). This value was considered a shock to the market given the general consensus values. Some of the reasons for the high price of the sale have included: a large supply of pension fund money seeking long-term infrastructure investments; trend away from Euro denominated assets; the buyer was scaling up its interest into a

Furthermore, the Ferrovial share price since the acquisition in 2006 has fallen from over €12 to its lowest point of €3 in March 2009 before rebounding to its June 2011 price just below €8.70, as can be seen from Figure 23.



Figure 23: Ferrovial Historical Share Price
(Source: Bolsa de Madrid 2011)

5.5.3 Deteriorating Terminals, Increased Security and Reputation Threats

While it is argued that the ADI consortium inherited the poor condition of BAA’s airports, further deterioration in buildings, service standards and public outcry has plagued the company since the acquisition.

Prior to the acquisition, BAA had focused more heavily on its commercial developments in retail and duty free and in many ways compromised the basic servicing needs of customers in terminals. British economist John Kay highlights the narrow-minded shareholder perspective that ADI employed for its governance of BAA, “the activities that generate customer satisfaction – providing seats, enough governance role (so it was strategic). While still representing a considerable loss, the value would indicate that ADI has recovered significantly since arriving in a situation of near insolvency.

security guards, clean toilets and travelators that work – are a cost, not a source of revenue. Profits are derived from landing charges, parking fees and selling Burberry scarves and smoked salmon” (Kay 2007). Figure 24 below illustrates the significant proportion of revenue that is attributed to commercial ventures of BAA’s UK airports.

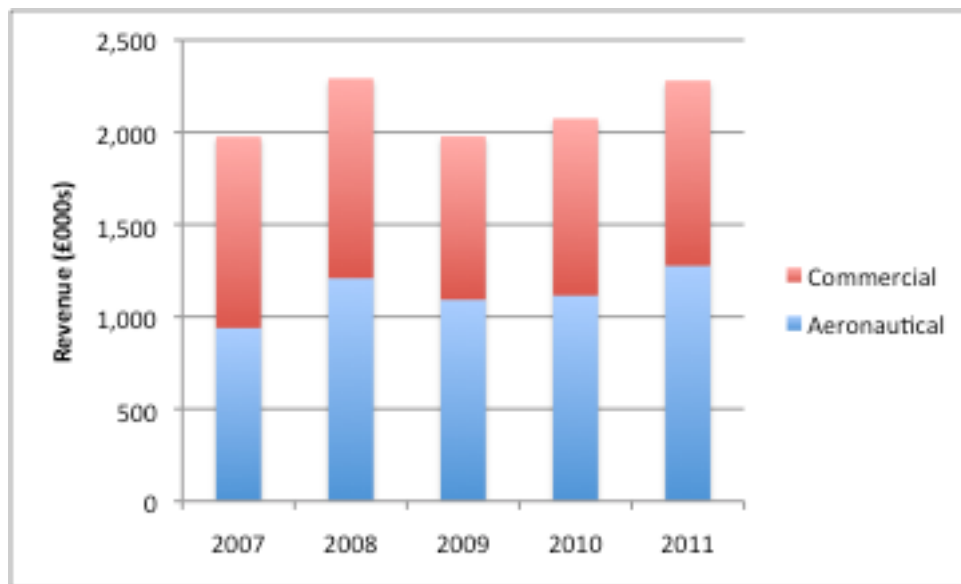


Figure 24: Sources of Revenue at BAA Ltd. UK Airports
(Source: BAA Annual Reports)

As a result, insufficient capital investment had led to maintenance shortfalls, stalled redevelopment projects and subsequent overcrowding and delays. While most of the criticism had been blamed on Heathrow airport, other BAA airports have also come under scrutiny. A Ryanair executive described the standards at Stansted Airport as ‘nothing short of appalling’. The situation had deteriorated so badly that executives were forced to bypass flying out of the UK and were instead taking trains to mainland Europe to catch onward flights. The mayor of London at the time, Ken Livingstone, proclaimed that Heathrow was an embarrassment to the city and country (Done and Sherwood 2007).

Table 8 and Table 9 below illustrate the poor customer performance at Heathrow and Stansted airports by detailing the number of failures and rebates incurred through the service quality rebate scheme introduced by the CAA in 2003. The service quality rebate scheme penalises the airports for failing to meet certain standards of service quality. The scheme scrutinises queuing times at the airports' security areas, availability of seating, cleanliness, information display clarity, and efficiency of passenger sensitive equipment such as lifts, escalators, baggage reclaim belts. Table 8 and Table 9 below show the number of failures in service quality for the company and the costs incurred as a result of the failures at both Heathrow and Stansted.

	Heathrow	Terminal 1	Terminal 3	Terminal 4	Terminal 5	Total
2008	Number of Failures	9	24	25	22	80
	Required Rebate	£828843	£2089602	£1576831	£2562460	£7057736
2009	Number of Failures	5	23	3	18	49
	Required Rebate	£480841	£2009649	£188697	£1040646	£3719833
2010	Number of Failures	0	12	0	18	30
	Required Rebate	£0	£1612869	£0	£1109052	£2721921
2011	Number of Failures	0	11	0	18	29
	Required Rebate	£0	£1368360	£0	£2493596	£3861956

Table 8: Service Quality Rebates at Heathrow Airport
(Source: BAA 2011)

	Stansted	Total
2009	Number of Failures	29
	Required Rebate	£578,319
2010	Number of Failures	17
	Required Rebate	£204,736
2011	Number of Failures	14
	Required Rebate	£216,630

Table 9: Service Quality Rebates at Stansted Airport
(Source: BAA 2011)

A lack of foresight by ADI to take into account the wider stakeholder interest in BAA has hurt the company badly. In addition, the disjointed governance structure put in place, with half the Board based in Madrid as well as the high frequency of experienced and talented staff leaving has contributed to the sub par performance and public outcry. The managing director of American Airlines described the situation since ADI acquired the company as follows: “In the last two years BAA has been less responsive over operational issues and access to senior management has deteriorated” (House of Commons Transport Committee 2008).

The inefficiencies experienced by BAA customers seemed to culminate with the highly publicised opening of Terminal 5 where poor logistical planning led to over 500 flights being cancelled during 10 days, thousands of passengers stranded and more than 23,000 bags being misplaced. Ironically, the same problems that had plagued Terminals 1 – 4 of the airport previously, and the type of problems that Terminal 5 was supposed to address were apparent from the first day of operation causing significant embarrassment for the company and further frustration for customers (Taylor 2008).

Another major challenge for the ADI consortium affecting the performance and reputation of BAA was the sudden increase in security measures at airports in the UK after a red level severe terror alert. The alarm was raised in the UK in August 2006, after 24 people had been arrested on suspicion of planning to smuggle liquid explosives in carry-on luggage onto flights operated from the UK to the US. As a result, thousands of flights from BAA’s airports were cancelled and tougher security measures were put in place. Increased security procedures meant that full body searches were required on every passenger and all hand luggage was banned, placing

severe capacity constraints on airports. BAA's ability to cope with the exacerbated situation was criticised with some government officials and airline representatives, likening the situation at Heathrow to 'third world chaos and disorganisation'. The terror alert situation in the UK in August 2006 consolidated BAA's reputation for poor service and inadequate facilities (Done et al 2006).

While the full extent of the security measures were reduced soon after the initial threat was downgraded, airport security had been significantly tightened compared to before the terror scare, increasing the costs for airport operators. On top of the various compensation suits filed by various BAA stakeholders and a severe dent to its reputation, the estimated costs of the terror alerts for BAA exceeded £13 million (Done et al 2006).

As a defence to the criticism that ADI has been subjected to, the consortium owners have claimed that a lack of runway capacity at London airports has been the main reason for the poor service experienced in recent years (House of Commons Transport Committee 2008). BAA has argued that Heathrow airport has been operating at full capacity and is desperately in need of additional capacity. The company as well as other public figure proponents have argued that the UK economy has suffered due to the global reach of Heathrow decreasing as other European hub destinations with greater capacity have taken a larger portion of the market share. Since the election of the Coalition Government in May 2010 confirming that a third runway would be disallowed, it can be seen that BAA have started to prioritise the improvement of existing facilities at Heathrow. Table 8 and Table 9 show that the situation at both Heathrow and Stansted airports is improving with the number of failures decreasing. The company's 2011 annual report disclosed £900 million (10% increase from 2010)

being invested into Heathrow with Terminal 5C successfully being completed, progress being achieved on the new Terminal 2 and works nearing completion on overhauling the airport's baggage system.

5.5.4 Regulatory Backlashes

Competition Commission Review

Within days of gaining the majority shareholder acceptance, the UK Office of Fair Trading, true to their word prior to the acquisition completing, launched an investigation into the market structure of UK airports and its effects on customers. By the end of their study, the OFT had referred BAA to a Competition Commission inquiry for a possible break up of the airports group stating that “there was evidence of poor quality and high charges raising significant concerns among customers”. The Competition Commission (CC) subsequently undertook a comprehensive two year inquiry into the running of airport services by BAA to determine if any features of the market “prevents, restricts or distorts competition and, if so, what action might be taken to remedy these” (House of Commons Transport Committee 2008).

The provisional, preliminary findings of the inquiry found that there were competition problems at each of BAA's seven UK airports because of their common ownership by BAA leading to detrimental outcomes for consumers. The proposed remedies upon which further consultation would take place included instructing BAA to sell two of its three London airports and also, either Edinburgh or Glasgow airport (Done et al 2006).

Pre-empting the final report mandate, the ADI consortium initiated the bidding for Gatwick Airport prior to an official direction from the CC in order to secure the highest price from a bidder. It was in the interest of ADI to sell its airports separately rather than grouped together, as might have been the case if left to the CC's direction.

The CC inquiry was initiated as a result of declining service standards at a number of BAA airports but in particular at Heathrow. The public outcry of poor service ranging from long queues, dismal facilities, lost baggage and delayed flights was evident prior to the acquisition but deteriorated significantly under the ADI consortium's ownership.

The final report of the CC Inquiry was released in March 2009, which, as had been expected, ordered BAA to sell both Gatwick and Stansted as well as either Edinburgh or Glasgow (Competition Commission 2009). With the process already under way, Gatwick airport was sold in October 2009 for £1.5bn, which represented a value significantly lower than the owners had suggested it would achieve when it was first put on sale. The company incurred a £225 million loss on the sale of the airport which was valued for accounting purposes at £1.735bn. The lower than expected sale price was mainly due to declining passenger numbers and cargo at the airport as a result of the economic downturn (Clark 2009).

After the sale of Gatwick, BAA launched an appeal against the sale of Stansted and its Scottish airports due to an "apparent bias" in the CC's investigation. The bias referred to a conflict of interest where a member of the panel examining BAA's market position was also an adviser to the Greater Manchester Pension Fund, an organisation which was part of a consortium bidding for Gatwick. The appeal was successful with

the Competition Appeal Tribunal (CAT) allowing BAA to keep the airports the CC had previously ordered it to sell (Clark and Peel 2010). The Court of Appeal ruling was subsequently challenged by the CC and after a second hearing, the CAT upheld the CC's original order for BAA to sell Stansted and either Glasgow or Edinburgh airports. At the time of writing, BAA were contemplating placing another appeal against the order to sell (Clark 2011).

CAA pricing regulation round of April 2008

To provide further uncertainty for the ADI consortium, the Civil Aviation Authority, shortly after the acquisition, conducted a separate inquiry into the five year price-cap regime for airline charges at BAA airports for the April 2008 pricing round. Under the existing regime, airline user charges at BAA's London airports were capped by the CAA, using the RPI-X formula and adjusted every five years according to criteria such as the company's profitability and size of its asset base³⁹ (House of Commons Transport Committee 2008). The CAA was required to gain approval from the CC for its pricing recommendations.

Following the CAA's inquiry for the April 2008 pricing round, the CC recommended that the allowable cost of capital for BAA should be reduced from 7.75% to 6.2%, sparking outrage from the airport operator who believed that the proposals failed to give adequate incentives for badly needed investment (CAA 2008). The reduction in cost of capital was based on what the regulator believed a suitable (lower) level of leverage should be for the company. This had the effect of reducing annual cash flows for the firm by £150 million and severely impacted the ability of the new owners to refinance their £8.5bn of debt (Osborne 2008). Because of the credit crunch, ADI

³⁹ As illustrated in Chapter Four.

were forced to overlook a lot of the capital investment plans for improving buildings and accommodating future growth in order to pay off debt. However, the consortium was warned by the CAA prior to the acquisition of the level of gearing affecting the required investment. The CAA considered the consortium would be acting disingenuously by assuming that any regulatory changes wouldn't affect the debt servicing or investment plans (Done 2007). This in fact has been the case further emphasising ADI's lack of consideration given to the regulatory repercussions of acquiring BAA.

5.6 The BAA Governance Challenge

While a 'Perfect Storm' of unfavourable events seemed to materialise following the ADI acquisition of BAA, this case has illustrated some of the wide-ranging influencing factors of infrastructure assets, and the detrimental consequences of not controlling the issues appropriately.

In synthesising the events of the BAA takeover, a useful starting point is to understand why BAA was perceived to be an attractive takeover target. Having always had a dominant position in the running of major airports in the UK, fitting the core economic infrastructure definition perfectly, and then extending its operations overseas to become the leading airport management company globally, the only question for potential acquirers was whether the size of the transaction would be too large for investors. The conservative capital structure and significant opportunities to improve the company's cost-effectiveness provided further financial incentives for a well-resourced takeover consortium.

The form of infrastructure investing illustrated by this case was through a hostile takeover with ownership transferring between two private owners as opposed to a direct sale or auction from the government. It can be seen that through the bid process here, the ADI consortium paid a significant premium in their acquisition of BAA. The first offer by ADI in their takeover bid started at 810p per share before being forced to pay 955.25p per share to close the deal, representing a 50% premium to the average price in the 30 days prior to when a speculation of a possible bid for BAA began. The price paid by ADI for BAA was considered to be at the high end given that the average premium paid in corporate takeovers over the last two decades has varied between 20 and 60% (Bloomberg 2011).

Despite the financial attractiveness and quality of economic assets involved, the ability of BAA's capital procurement left much to be desired, as reflected by the poor quality of customer facilities at its airports. This combined with the vastness of BAA as a complex business to operate has further added to the subsequent sentiment that the price paid was too high.

Prior to the acquisition, it was evident that the buildings and services at BAA's airports were in need of a significant repair and maintenance upgrade. Furthermore, both the CC and CAA had indicated their intentions of investigating the market dynamics and pricing structures of airports in the UK. The ADI consortium seemed to plan poorly for their ownership of BAA and failed to install a robust governance strategy to deal with the ensuing problems, many of which, it would be disingenuous for the new owners to think might not have happened.

Firstly, the idea of using the incumbent management to continue running BAA seemed to backfire when a large number of experienced and talented senior management left the firm because of the disjointed Board structure and inefficient decision-making process of a majority Spanish-led Board of Directors. Despite the make up of the Board reflecting the new ownership of the company, the installation of a majority of Spanish-based Ferrovial members, seemed to create a certain anxiety amongst senior managers at the firm, due to the cultural and ownership differences between Ferrovial and BAA. Prior to the acquisition, there had been little opposition by the UK government to the foreign ownership of BAA, however once it appeared that the company was going to face a number of difficulties, the tension surrounding foreign ownership of a strategic UK company seemed to come to the fore. From a governance and managerial perspective, the challenges associated with moving from a UK public limited company to becoming unlisted under foreign ownership, the largest shareholder of which being a family owned business, took its toll, leading to a raft of crucial managerial exits. It appears that ADI failed to understand the true ramifications of installing a majority foreign-based board in one of the largest strategic UK infrastructure companies on both the employees in the firm as well as the wider marketplace leading to the resulting detrimental effects on financial and operating performance.

The loss of key personnel with specific experience of dealing with stakeholders and the lack of any contingency plan to invest in the firm's relationships with its key stakeholders was reflected in the escalating public indignation towards the company and subsequent ruling of the CC to break up BAA's monopoly position of UK airports. Prior to the acquisition, BAA had invested a large amount of intellectual capital and monetary resources to manage the relationships with regulators. The ADI

consortium on the other hand perhaps failed to recognise the size of the task to gain a favourable regulatory outcome and did not invest the necessary resources adequately enough. There was a lack of appreciation or naivety around what was required to successfully invest into the UK because ‘in order to achieve the financial metric, there had to be a strategy in place to consolidate the idea that you were operating a world class facility’ (Interview 2010a).

It could be argued that not all of the regulatory outcomes that BAA were subsequently subjected to could have been prevented by the ADI consortium. Shareholders of regulated assets in the UK had been treated very favourably up until the acquisition of BAA and there seemed to be a regulatory pendulum shift occurring away from the owners towards the consumers and end users of the assets, including the water industry (Interview 2010a). From an investor’s perspective, a key lesson learned is that the regulatory risk for infrastructure assets in the UK is a lot greater than what was previously thought leading to a higher risk premium and discount rate when financially appraising these assets. Also, the events between 2005-2010, would indicate that the risk associated with the airport sector in general has gone up because people now realise that the drivers of value for airports are a lot more volatile to predict.

The ADI/BAA takeover case has highlighted the importance of establishing strong local relationships with the key stakeholders of infrastructure assets, because of the material impact and influence that these stakeholders have on the resulting financial performance. There are additional challenges associated with globally governed infrastructure assets where cross-cultural tensions must be overcome by global owners to strengthen the required local relationships with stakeholders. As can be seen, the

Ferrovial-led ADI consortium failed to understand the dynamics of the local element associated with locally governed infrastructure assets.

With respect to the financial governance of the takeover, it can be seen that the ADI consortium employed a model of debt financing that was typical of many infrastructure transactions at the time. By using the significant amount of debt in the financing of this transaction, the ADI consortium was forced to focus the governance strategy of the corporation towards cost cutting and profit maximisation, firmly aligning the interests of managers with those of shareholders. However, as global economic conditions started to deteriorate, the high leveraging strategy for the acquisition was becoming exposed with disastrous consequences. Over the last few years since the GFC began, as much as \$1 trillion in infrastructure debt issued between 2005 and 2008 has been coming to maturity (Jacobius 2011). The credit crunch as well as a drop off in air passenger numbers severely affected profit figures and the ability to pay back loans. Because of the magnitude of this transaction and the high proportion of debt used for the BAA deal, the resulting effects on ADI were exacerbated, leading to a sharp decline in value and the company being pushed to the brink of financial distress because of refinancing problems. A number of infrastructure deals that were heavily debt loaded in a similar way have been forced into bankruptcy, including the South Bay Expressway Ltd. toll road in San Diego and Macquarie Atlas Roads to name just two, while many others have been regarded as having unsustainable financial structures (Jacobius 2011).

Figure 25 below summarises the poor governance approach of the ADI consortium in their acquisition of BAA illustrating the linkages between the various events that propagated as a result of the consortium's actions.

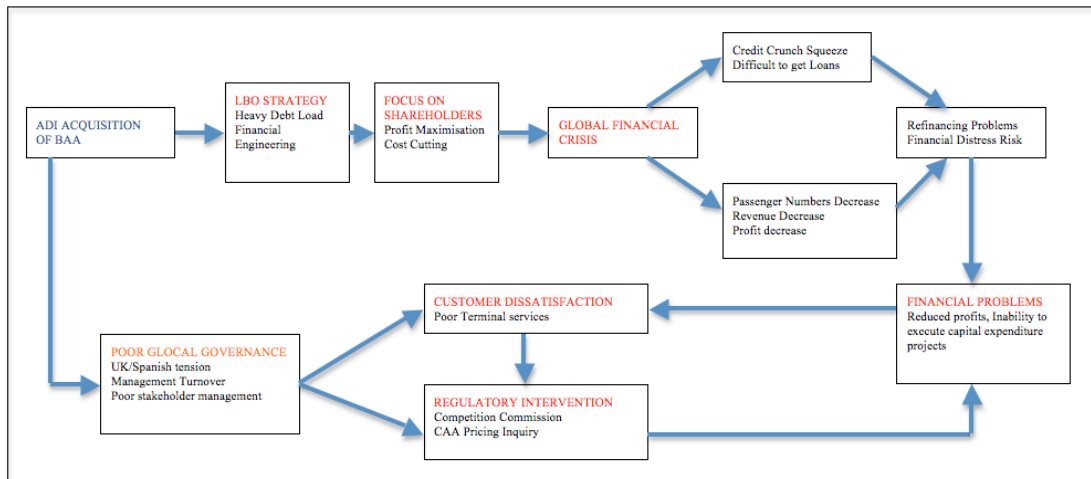


Figure 25: Governance Repercussions for ADI

So what could ADI have done differently? From a governance perspective, it could be argued that a more cohesive Board of Directors that was closer to the everyday activities of the company headquartered in the SouthEast of England (as opposed to being a subsidiary of Spain’s Ferrovial headquartered in Madrid) would have enabled decisions to be made in harmony with stakeholders expectations and resulted in less turnover of experienced senior staff. A greater recognition of the stakeholder impact on the company through investing in people and other resources to develop local relationships with regulators and the general public may have reduced the adverse impacts of many of the events that seemed to plague the company following the acquisition.

Perhaps the biggest need for the consortium was an intensive capital investment program to improve the standard of the terminals and general customer services around BAA’s airports. This however was compromised by the excessive amount of financial leverage that was used to fund the acquisition. In their attempt to use excessive leveraging to generate superior investment returns, the ADI consortium not

only approached their 'global' shareholding governance strategy in an inappropriate way due to the untimely global credit crunch, but the shareholder approach has had detrimental effects for the 'local' stakeholder governance of its infrastructure assets.

This chapter has delineated the different factors that contributed to the company's equity investment valuation being significantly eroded over the last five years following the acquisition. As outlined, a number of governance lessons for infrastructure investing can be deduced from this case study. Despite this, recent governance changes, capital expenditure projects, financial and operating service indicators of the company have shown that BAA has started to make improvements and is on the road to recovery, which indicates that the extent of the failure recognised by this chapter may be recovered over the long-term.

5.7 Implications and Conclusions

This chapter has built on the work carried out by McNeill (2010) who illustrates the wider political and cultural economic implications of infrastructure assets and highlights the need for a greater appreciation of these important spaces of society. This is achieved using the case of Heathrow Airport, a strategic infrastructure asset for London and the UK, which has come under much scrutiny of late for its sub-standard quality of facilities.

McNeill's work moves beyond the predominant visual composition framework for understanding an airport's terminals by outlining the political and economic considerations that have contributed to 'Heathrow's Hassle' for passengers. Having acknowledged the wider appreciation required to understand airport systems, as outlined by McNeill (2010), this chapter focuses on the effectiveness of the strategies

used by infrastructure asset owners by specifically looking at the Ferrovial-led ADI acquisition of BAA.

The purchase of BAA by the Ferrovial-led ADI consortium has been considered a landmark deal in the field of infrastructure investing, for the sheer size of the transaction (one of the largest deals in the last decade) as well as for the ensuing effects on the relevant parties that have resulted from the consortium's ownership of the company. This chapter thus addresses the call of Torrance (2008) for further studies to "investigate the actors that acquire ownership and responsibility for assets in the growing global infrastructure market". An analysis of the governance mechanisms employed by Ferrovial in their takeover of BAA provides a number of insights and lessons to be learned for the field of institutional infrastructure investing.

It can be seen that the performance of the ADI takeover of BAA has failed both from an investor's perspective with the equity value of the company significantly shrinking since the acquisition as well as from the public user's perspective as is evidenced by McNeill (2010) highlighting the substantial public and media outcry of poor service at the company's airports. This chapter has identified contributing sources for the investment failure and provides an awareness of the governance challenges for institutional owners of infrastructure assets. The case study extends the global infrastructure governance definition by analysing the financial market based approach as well as the relationship stakeholder approach to governing cross-border infrastructure acquisitions.

A major reason for the ensuing failure of ADI's takeover for BAA can be traced back to the original motivations for the acquisition of the lead party in the consortium,

Ferrovial. Financial commentators have stated that the transaction was too large for any consortium to be able to handle, which begs the question as to why Ferrovial were so keen to make the transaction work. The acquisition took place at a time when Spanish companies were expanding operations worldwide in an attempt to defend their interests from predators but also to become bigger and stronger players on the global stage. This was certainly the case for Ferrovial, led by the latest ambitious son of the family business dynasty, to take over the world's biggest airport company. The motivation for the acquisition can in part be put down to the strong, patriotic personalities at Ferrovial eager to achieve the biggest possible prize in the infrastructure asset landscape. In retrospect, the egotistical effort that was put into attaining BAA, seemed to cloud over the true magnitude and extent of the implications of the acquisition which were quickly made apparent to the consortium upon taking control. The resulting financial implications of the acquisition for the consortium and in particular Ferrovial would suggest that the initial ambitions were set a little too high in their attempt to take over BAA.

There was also a strong financial motivation for the acquisition. BAA, with high-quality airport assets, seemed to fit the definition of a core economic infrastructure company perfectly (high barriers to entry, monopolistic characteristics) and so was a prime target for an LBO type takeover, commonly used in infrastructure transactions at the time. With stable cash flows predicted, a relatively conservative balance sheet and a low EBITDA multiple, it would have been no major surprise at the time, that Ferrovial used substantial debt financing in their acquisition of BAA. However, the extent of leverage that was used, to finance the deal has proven to be problematic for the company due to refinancing issues but also through the subsequently neglected and yet badly needed capital expenditure projects at the airports.

It can be argued that the poor performance of ADI in their takeover of BAA was due in part to a significant amount of unforeseen bad luck. Not many would have predicted that the global economy would deteriorate into the worst recession since the Great Depression of the 1930s and that an unprecedented credit crunch would unfold, leading to a sudden reduction in the general availability of loans. Not only has the GFC made the refinancing of debt for ADI very challenging, but the slowdown in the economy has severely affected air passenger numbers and thus revenue for BAA. A key lesson learned from the BAA case here as well as from other highly leveraged investments prior to the GFC, is that despite the strong resilience of infrastructure assets, the added risk of excessive leverage in the search for slightly higher returns for investors is not as sustainable as previously thought. Future research in the field of corporate finance will be needed to identify the appropriate level of gearing that will ensure that stability with infrastructure investments is maintained.

The problems of the Ferrovial-led ADI consortium in their ownership of BAA, can ultimately be put down to a failure in corporate governance on two levels. Firstly, the excessive amount of financial leverage, even by pre-GFC standards, has put the consortium under immense pressure. Under normal economic conditions, excessive leveraging has the effect of concentrating the efforts of managers towards servicing debt and maximising returns from the business for shareholders. This focus was accentuated by the GFC, purely as a matter of survival for the company, leading to the much-needed wider stakeholder management (airport users, regulators, media) being overlooked.

Secondly, a cross-cultural lack of understanding associated with the glocal ownership of BAA appeared to have contributed to a governance breakdown. A predominantly foreign-based board seemed to stifle the decision-making process leading to internal frustrations and the exit of key personnel, particularly those with experience in handling crucial stakeholder issues. An acknowledgement of the lack of local understanding and expertise by the new consortium ownership was evidenced by the recent addition of independent UK infrastructure investment experienced personnel to the Board of BAA.

The BAA case here, has illustrated the vulnerability of a financialised strategic urban infrastructure asset to a financially engineered consortium consisting of one of the leading infrastructure concessionaire companies in the world. The governance tensions associated with the globalisation of urban infrastructure assets have been tested by Ferrovial's foreign ownership of BAA. While this case study has illustrated some of the key factors that might lead to a failed infrastructure investment, the fact that BAA did not fall into bankruptcy, has shown that an effective recovery initiative, despite coming at a substantial cost, was employed by the Ferrovial-led consortium. With infrastructure assets regarded as long-term investments, time will tell whether investors will be able to recover their losses and the investment continues to be regarded a complete failure or not. Having analysed the contributing performance factors of two contrasting infrastructure assets, the thesis now shifts in focus to the sources of capital for infrastructure investments, by analysing the decision-making process of institutional investors seeking to invest in infrastructure assets.

CHAPTER SIX:

THE RELATIONAL GEOGRAPHY OF THE PENSION FUND INFRASTRUCTURE INVESTMENT PROCESS: THE ROLE OF THE INVESTMENT CONSULTANT

6.1 Introduction

Global pension fund assets soared in value throughout the latter half of the twentieth century following the Great Depression and second World war, events, which evoked nations and institutions of the pressing need to provide for their future economic security. Despite the recent GFC impacting fund values, pension assets are still the largest form of savings and will continue to transform the nature of global financial markets (Towers Watson 2010a).

The latest cycle of private financing of infrastructure and subsequent financial product offering has been attractive to pension funds due to the associated ‘real’ physical assets that represent a value proposition over the long-term as opposed to a growth prospect in the short-term. The long-term, inflation linked cash flows associated with infrastructure assets provides a worthwhile diversification investment opportunity for pension funds looking to match their long-term liabilities. Despite infrastructure providing a suitable return profile for pension funds, the investment models offered so far have made it difficult for schemes to invest efficiently in the asset class. Many pension funds have struggled with the mechanics of investing in infrastructure.

As observed in Chapter Three of this thesis, the opaque nature of infrastructure assets and various information asymmetries has meant a relational form of investing has been adopted with a large reliance on intermediaries for the infrastructure investment

process. Whether an investor invests directly into the asset class or utilises financial intermediaries will depend in large part on the size and internal resource capability of the investor. Furthermore, the governance and internal resources of a pension fund will determine the extent of intermediary reliance for investing through investment consultants or fund managers.

This chapter looks at how the role of financial intermediaries has evolved in the relational infrastructure investment process with a particular focus on the emergence of the investment consultant. Investment consultants act as intermediaries between pension funds and infrastructure product suppliers by providing market research, asset allocation services and manager selection advice. The role of investment consultants has come under scrutiny with practitioners questioning whether consultants actually add value to the pension fund investment management process. A primary focus of this chapter is to investigate whether investment consultants are ‘thought leaders’ for the infrastructure investment process or whether they are backward looking followers that are simply adaptive to the market.

In order to achieve this, an economic geography approach is used in this chapter to examine the relationships between actors and institutions engaged in the pension fund investment process for infrastructure assets. It is argued that in a differentiated infrastructure investor universe, investment consultants play a crucial value-added, leading role for smaller pension funds but have followed the lead of larger pension funds that have invested directly into infrastructure assets. This argument is developed by analysing the characteristics of pension fund investors in the market as well as the different structural forms of investment process that pension funds use to invest into infrastructure assets. The chapter extends the literature on pension fund governance

by examining the role of investment consultants in the infrastructure investment process.

This chapter proceeds in the following manner. The next section discusses the premise for relational infrastructure investing and how investment consultants fit into this process. Section 6.3 provides an analysis of the infrastructure investor universe, tracking the increasing significance of pension funds as well as the increasing role that investment consultants are playing in this space. This section also presents the results of interviews and a survey conducted on the pension fund clients of investment consultants. The penultimate section looks at the role of investment consultants for infrastructure investing in detail before the implications from research in this chapter are discussed in Section 6.5 and 6.6.

6.2 Relational Infrastructure Investing

The different investment vehicles through which infrastructure investments are made have been described in Chapter Three of this thesis. Pension funds have been able to gain exposure to the infrastructure asset class for many years through listed equity investments into utility and other infrastructure companies. These listed products behave like normal securities in public markets and as such can be seen as transparent products, easily traded based on observed past and current prices without the need for external service providers as information is readily available in the public domain. However, due to financial product innovation and the need to diversify plan assets, alternative unlisted infrastructure equity funds have been developed (Torrance 2006). These investments can be seen as translucent or even opaque financial products lending themselves to a relational form of investing where specialist expertise is required to access transaction specific information. Relational investing has been

common with Alternative Investment Products (AIP) such as real estate investment trusts, private equity funds, hedge funds, mutual funds and venture capital (Torrance 2006). AIP is a category to which many now believe infrastructure belongs.

Behind every pension fund investment decision into an AIP, there is a complex set of inter-personal processes and relationships, which integrate available information for investors. A relational perspective for studying financial research questions can offer insights to the interactions, contingencies and dependencies within the investment process (Bathelt and Glückler 2011, Torrance 2006). The literature on the relational geography of infrastructure investing has focused on the relationship between investors and fund managers and investigated the misalignment of interest between the two parties in the early stages of the market (Torrance 2006). For example, because infrastructure investing is a new field, a significant amount of trust had been placed in fund managers to ensure investment objectives were achieved from the asset class. Due to a large number of managers entering the market and the poor performance of certain vehicles being exposed by the GFC, pension trustee boards are widely relying on investment consultants for advice when looking to enter into the infrastructure asset class. Investment consultants have been considered as ‘gatekeepers’ of pension fund investment management providing board operations with advice and thought leadership for the decision-making process (Knight and Dixon 2009). The true value add of investment consultants however has been questioned by fund managers and pension funds alike. This chapter investigates how the relational pension fund infrastructure investment process has evolved and particularly focuses on how investment consultants are affecting this process.

6.2.1 Pension Funds and Infrastructure

The pension fund industry has become the single largest source of savings in Anglo-American economies with both the funds themselves and their market representatives (second-order intermediaries) playing a core role in global capital markets (Clark 2000). Pension fund investment strategies have traditionally followed convention by allocating funds to a mixture of equity products, fixed-income products and property investments (Muralidhar 2001). The GFC has forced fund administrators to question traditional asset allocation decisions and consider other investment strategies.

The mixture of investments made by pension funds has also depended on the type of fund, relative maturity and membership base. For example, Defined Contribution (DC) plans do not promise a final benefit or retirement value. Instead, they are based on contributions and the short-term performance of investments to generate a retirement annuity for plan beneficiaries. DC plans are therefore particularly sensitive to the relative short-term performance of investments (Clark and Evans 1998). In contrast, Defined Benefit (DB) plans require an employer to commit to a formula for determining retiree annuities. In this way, investments are made that match the inflow of contributions with the expected out-flow of benefits over a time horizon that is linked to the pay out of benefits (Clark and Evans 1998, Irakson 2008).

While the investment opportunities associated with infrastructure assets have been extremely varied in nature, there seems to be a growing acceptance amongst the investment community of what the key characteristics might be for the asset class to be an attractive proposition for pension funds. Firstly, the extended life of infrastructure facilities and long-term nature of the concession rights for associated investments make them a match for the long-term liabilities of a pension fund. The

accompanying cash flows of infrastructure investments are usually stable and predictable due to the monopolistic characteristics, high barriers to entry and inelastic demand associated with the assets. Infrastructure investment cash flows are often inflation linked providing pension funds protection against volatility and inflation. Pension funds may also use infrastructure as a diversification strategy having low correlations with other asset classes (Beeferman 2008, Macquarie 2009, Probitas Partners 2009).

The key distinguishing characteristic between DC and DB plans is that the DC framework focuses on the current value of a retirement account whereas the DB plan focuses on the flow of benefits an individual will receive upon retirement (Bodie et al 1988). In a final average pay DB plan, retirement benefits are indexed to inflation for the duration of the employee's active years with the firm (Bodie et al 1988). Furthermore, greater benefits accrue towards the end of the employee's working life or are 'backloaded'. If inflation increases significantly over the course of a worker's life, the backloading effect is more pronounced. In contrast, backloading or frontloading in DC plans is not affected by inflation because employers can choose an appropriate system of contribution rates over the course of an employee's working life (Bodie et al 1988). An investment into the infrastructure asset class with a long-term horizon, inflation linked, volatility-protected cash flows thus provides an attractive proposition for DB plan administrators looking to match liabilities. In a DC plan, a DC participant values an infrastructure investment in the same way as a DB sponsor without the pressing need of matching liabilities. However, the trustees of DC plans are more sensitive to excessive fees charged by fund managers for certain products as members of the plan take the risk and pay for the fees (Interview 2010a). Another concern for DC plan providers, is the illiquidity of infrastructure assets. DC plan

providers have preferred to make more liquid investments to reduce the risk on members. For these reasons, infrastructure assets have initially been more common for DB plan providers over DC.

6.2.2 Pension Fund Investment Management and Consultants

The internal organisational structure for pension fund investments can vary by jurisdiction although arguably is fairly standardised in many places around the world. For the purpose of this chapter, I focus primarily on trust-based pension jurisdictions of the defined benefit format. In these types of funds, contributions are made by employees and/or employers, which are then held in a trust. The general administration of the fund, which involves liaising with trustees, service providers, employers and employees is controlled internally or externally depending on the size of the fund (Knight and Dixon 2009).

Regardless of size, the board of trustees plays a central role in the investment process and usually has the final say in the decision-making process. A sufficiently large fund however may have an investment committee set up that makes recommendations to the Board while smaller funds may not have a separate committee set up. Governance has been recognised as a significant barrier to the flow of pension fund capital and funds have relied heavily on intermediaries for advice on investment issues (Knight and Dixon 2009).

The basic map of functions for the pension fund investment management process is outlined in Figure 26.

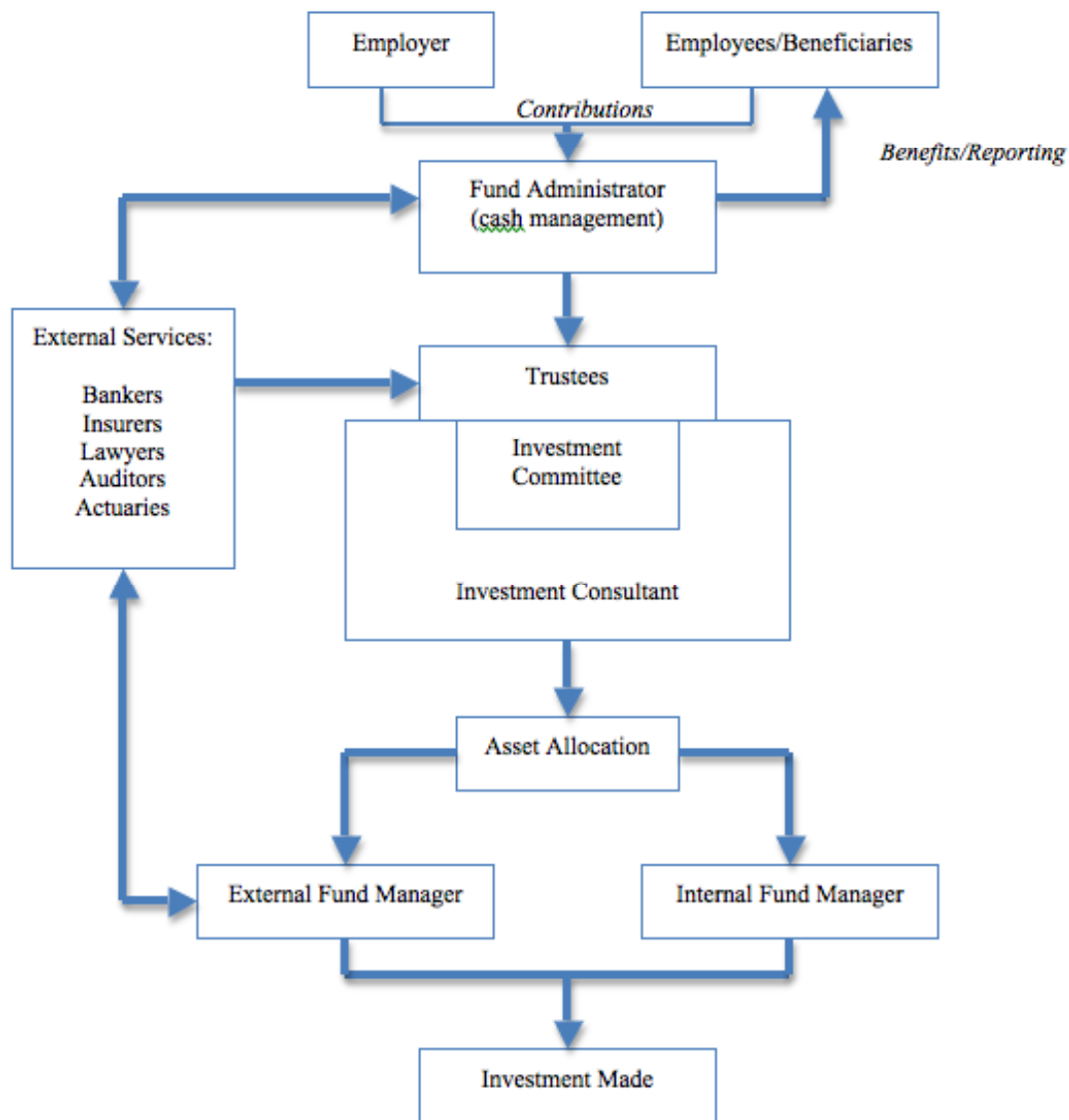


Figure 26: Pension Fund Investment Management Institutions
(Source: Clark (2000))

With consultants sitting in between fund managers and the pension funds themselves, it can be seen that “by virtue of their place in the industry, they are able to identify what works and what doesn’t, relaying this information back to their clients” (Clark 2000). Consultants are used in many ways by pension funds although not all pension plans have been convinced of the actual value-add by consultants to investment performance (Clark 2000). Some consulting firms provide accounting and asset allocation services while the largest consultants are able to provide assistance on the majority of external services outlined in Figure 26. Critics of investment consultants

have stated that despite their highly influential position in the investment management process, consultants are arguably the least credentialed and least regulated in the management process. Their ability to have a material effect on investment performance is questionable and there may be conflicts of interest with the many different functions that the consultants carry out, especially if they have received payments from certain managers (Siedle 2010).

Proponents however state that consultants are more likely to be aligned with their pension fund clients. Day (2009) has observed that the client/consultant relationship is “often very long-term and the advice and depth of thought often reflects a long loyal relationship”. In addition, he proposes that consultants help to remove the opaque nature of financial products and provide transparency to clients so that they can make an informed decision. The overall intermediary fees should also be materially lower than if the client had not engaged a consultant (Day 2009).

This chapter is concerned with assessing the behaviour of investment consultants to address whether they act as agents of innovation in the infrastructure investment management process. Knight and Dixon (2009) have shown that investment consultants are ‘thought leaders’ and play an important role in overcoming information asymmetries associated with incorporating environmental, social and governance issues into the investment management process. Similarly, the unique informational characteristics of infrastructure financial products prevents the majority of pension funds in the market to invest directly into the asset class forcing them to pass on the investment decision-making process to managers and rely on the advice of consultants. Furthermore, investors have approached the asset class with caution in response to the adverse experiences of past investors whose investments suffered

from an array of convoluted, risky products offered by fund managers exposed by the GFC. Having illustrated the opaqueness of the informational content and geographical structure of infrastructure financial products in Chapter Three, it is argued here that investment consultants also play a ‘thought leading’, innovative role for a large portion of smaller pension funds in the infrastructure investor universe. Investment consultants however act as followers of large pension fund investors who have lead the way for direct infrastructure investing. Investment consultants follow and learn from the largest pension fund investors in the market where the strategies are aligned with the long-term, stable, liability matching objectives that pension fund clients of investment consultants are also in search for.

These objectives are achieved in this chapter by analysing the types of investors in the market and the function of investment consultants in detail to provide a deeper understanding of their role in the infrastructure investment process.

6.2.3 The Relational Geography of Infrastructure Investing

The relational geography of infrastructure investing has been looked at by Torrance (2009) who highlights the agency relationships and tensions experienced between investors and fund managers in the early stages of the market. Relational thinking in economic geography has investigated the relationships between actors and institutions that influence economic activities and more recently has focused on power relations (Torrance 2009, Yeung 2005). This has been applied to the infrastructure investment process by analysing through a relational lens, the power relationships that have developed between institutional investors, fund managers and other contracted local specialists (Torrance 2009). Instead of building relationships with the specialists that have specific local knowledge of infrastructure assets, pension funds have formed

relationships with fund managers, relying heavily on the analysis of assets carried out by managers.

The attachment of early infrastructure funds to the investment banking industry led to a number of conflicts of interest arising for pension fund investors. Firstly, the fees charged by managers have been excessively high resembling private equity fees despite private equity returns being higher⁴⁰. Investors have also been concerned over the short time horizon of fund managers, with most funds offering closed-end models around 10 years. Investors on the other hand have been attracted to the asset class for the long duration of investments which can be held for up to 30 to 50 years. It has been further noted that certain organisations lack financial discipline and are conflicted in their motives. The amount of contributed capital has been directly related to the power in these relationships with larger investments enabling greater power with both the fund manager and other investors (Torrance 2009). These factors have led some investors to find alternatives to the fund manager route although most do not have the internal resources to be able to invest directly themselves or through co-investments. Whether investing directly or indirectly, the development of strong relationships among investment partners is crucial to be successful.

Contractual provisions are central to the investment relationship by providing a formal mechanism for defining time horizons, allocating risk between investment partners, setting fees and measuring performance against accepted benchmarks (Clark and Evans 1998). In his exposition of the pension fund investment management industry, Clark (2000) has noted that consultants provide a bridge between fund

⁴⁰ This has typically involved a base management fee of 1 to 2 percent and performance fees of 10-20 percent, with an 8 to 12 percent hurdle rate (Inderst 2009).

trustees and the investment services industry, linking fund managers to pension funds on a contractual services basis. He recognises the importance of designing a contract which separates consultants from investment managers, sustaining the loyalty of consultants to trustees but limits the possibility of capture by either party. This issue is particularly apparent for AIPs where the potential for misinformation is higher than commonly found in the investment management industry. From the early stages of the infrastructure investing market, it can be seen that the delegation of power in long-term investment contracts and design of agency relationships remains unclear (Clark and Evans 1998). A lot of the delegated, agency relationships such as that formed between pension funds and infrastructure investment managers have been misrepresented for the short-term. Long-term relationships in the investment industry should be based on trust relations embedded in a social environment instead of formal discrete contracts (Clark and Evans 1998). This thesis argues that a relational form of contract that focuses on building long-term relationships, and relies upon mutual interest and solidarity between pension funds and investment firms is required for infrastructure investing. Investment consultants provide a mechanism to help align interests and promote the long-term relational approach to investing for the infrastructure asset class.

The relational geography of infrastructure investing has focused to date on the dynamics involved between pension fund investors and fund managers, highlighting the recurring themes of trust, expertise and power relationships. This chapter extends the literature on pension fund governance and relational investing by investigating the role of the investment consultant in the pension fund infrastructure investment process.

6.2.4 The Pension Fund Infrastructure Investment Methods

As mentioned above, the relational form of infrastructure investing can take one of two main structural forms; indirect or direct, with variations being developed within each of the two main forms. The key difference between the methods relates to the extent of reliance on financial intermediaries and how the flow of investor capital is structured. These methods and adaptations are described below and illustrated in Figure 27. It must be noted that the external service providers that fund managers and investors also partner with such as engineering, legal and accounting firms have not been shown in Figure 27 for clarity.

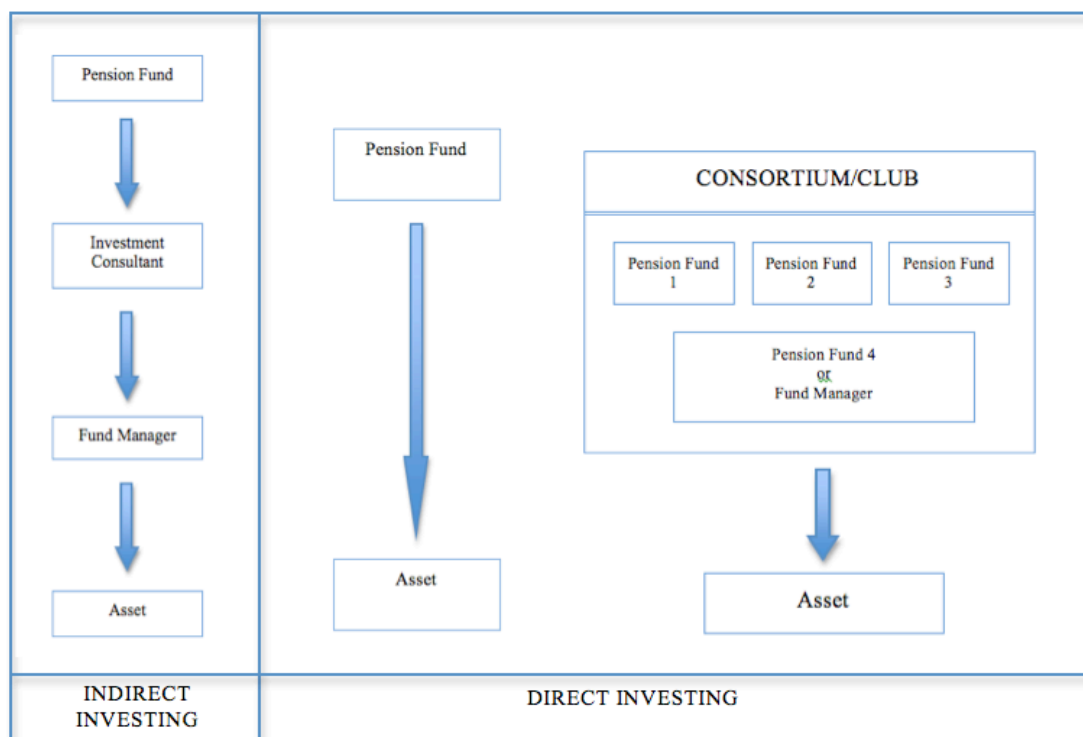


Figure 27: Structural forms of the Infrastructure Investment Process
(Source: Author)

The first indirect method involves the pension fund investor deploying its capital into an infrastructure fund passing on all responsibility to the fund manager for the investment. With investment consultants playing an increasingly important role in the indirect relational infrastructure investment process, a further step in the process has

been added before the investment is made into the infrastructure asset, as shown in Figure 27. Two separate relationships between investors and fund managers with the investment consultant are formed for the investment process with additional issues of power, trust and expertise being formulated. The investment consultant usually initiates the process by advising the investor of the benefits of an allocation to infrastructure. Once the investor has agreed to invest into infrastructure, the consultant then provides advice on a suitable manager through which to invest. The manager's role in the process is to source appropriate assets to invest into on behalf of institutional investors. The types of investors and precise function of investment consultants are elaborated on in Sections 6.3 and 6.4.

As shown in Figure 27, the second direct method relates to the situation where the pension fund investor has the capability to forego the consultant and manager stages of the investment process and is able to invest directly into infrastructure assets. This means that these investors have the in-house resources to be able to source assets, finance the investments and manage/maintain them.

Direct investments can be made alongside co-investment partners in a consortium consisting of other pension fund investors and infrastructure fund managers. The equity arrangement in a consortium of direct investors varies for different assets. In a co-investment arrangement, it is usually the fund manager or largest pension fund investor in the consortium that leads the transaction.

A further development of the direct investing method for pension fund investors has been to form a club or partnership model consisting of like minded investors in an attempt to avoid the conflicts of interest associated with the fund manager route. Such

a model has consisted of a group of pension funds collating together to align interests when approaching infrastructure investments. The rationale for joining a club has been to spread risk, negotiate better terms by reducing competition and ensure local knowledge. The ‘club’ concept is new in the market and difficult to set up unless interests are well aligned and the decision-making process is efficient. The challenge for investors has been to find reliable partners who can be trusted to share the burden of activities involved in the pre and post financial closing periods (Clark et al 2011). The co-investment and club variations of the direct investing method are shown in Figure 27.

The very large pension funds capable of directly investing into infrastructure will have a separate division of the investment committee solely focused on infrastructure investments. Medium to large funds may have one member of the investment committee dedicated to infrastructure with the responsibility of carrying out due-diligence on fund managers and making recommendations to the wider committee. It is likely that this person would not be entirely focused on infrastructure and would have other asset classes to look after. The smallest funds would most likely have no dedicated infrastructure asset analysts and based on a collective trustee or investment committee decision employ the advice of an investment consultant for an allocation to the infrastructure asset class.

It is clear that pension fund investors have been dissatisfied with the existing infrastructure fund model offered by investment management and banking firms. The alternative methods for investing have revolved around the direct investing models restricted mainly for larger resourced pension funds. The rest of this chapter examines the unique characteristics of pension fund investors that make up the infrastructure

investor universe and argues that the majority of funds in the market are unable to invest directly and must rely upon financial intermediaries to guide them through the infrastructure investment process. In this way, it is shown that investment consultants are playing an increasingly important role in the relational infrastructure investment process.

6.3 The Infrastructure Investor Universe – The Case for Consultants

This section will firstly provide an overview of the infrastructure investor universe to quantify the presence of pension funds for infrastructure investments. It will then analyse the characteristics of the pension fund clients of three investment consultancies who are investing into infrastructure assets. The last part of this section categorises a range of pension funds interviewed for the purpose of this chapter and examines the governance structures of these funds using the best practice governance framework developed by Clark and Urwin (2008).

The data for this chapter was obtained through case study interviews on seven different pension funds of varying size and characteristics, as well as with three of the largest global investment consultants by size of assets under advisement. On top of this, a survey was conducted on the pension fund clients of each of the consultants to extract information on the structure, size and characteristics of funds investing into infrastructure assets. Details of the survey questionnaire and pension funds interviewed are provided in Appendices 7-10.

6.3.1 Analysis of Funds in Market and Vehicles Utilised for Infrastructure

Investing

A comprehensive document and database review was conducted in order to examine the types of investors in the global infrastructure market and the types of investment vehicles employed by investors looking to invest in this field. A summary of the various industry-based publications is provided here.

Probitas Partners, an investment management and advisory firm published the Infrastructure Market Review and Institutional Investor Survey 2010 which included an online survey of 160 senior investment executives from pension funds, fund of fund managers, family offices, endowments, and foundations conducted during the second half of September 2009. Of the respondents that were active investors in infrastructure (the largest percentage of which were Pension Funds), 52.6% invested through closed end infrastructure funds compared with 15.7% investing via direct investments. Fourteen percent of infrastructure investors made co-investments while 8% each invested through publically traded infrastructure vehicles and fund of funds (Probitas Partners 2009).

From the Preqin database of the unlisted infrastructure fund market, it was found that the overall proportion of pension schemes in the infrastructure investor universe was the largest at 44% (Preqin 2009). The same database shows that 10% of infrastructure investors have assets under management less than \$1bn, 36% have assets under management between \$1-10 bn and 32% of investors have assets under management between \$11-50 bn. Less than a quarter of investors have assets of more than \$50 billion (Preqin 2008).

The Global Alternatives Survey conducted by financial services company Towers Watson and the Financial Times newspaper has shown that over 60% of assets under management in the world's top 50 infrastructure funds at the end of 2009 were managed on behalf of pension funds i.e. \$108.6 billion out of the total \$179 billion of assets in infrastructure funds were pension fund assets, representing the highest proportion of the five alternative asset classes (real estate, private equity, hedge funds, and commodities) covered by the survey. The survey also shows that the largest manager of pension fund assets across all asset classes was the infrastructure fund manager Macquarie Group which manages \$52 billion of assets on behalf of pensions. There is a high concentration of assets in the top five infrastructure managers who account for 80% of all infrastructure assets under management (Towers Watson 2010c)⁴¹.

The Infrastructure Investor 30 collated by PEI media is a ranking of firms who have formed the greatest amount of infrastructure direct investment capital over a five year period starting on January 1 2005. The list includes fund managers, pension funds and infrastructure developers based on the amount of direct capital they have created for infrastructure investments. Out of the top 30 firms, headed by Macquarie Group, only eight are pension fund direct investors, with the majority (19 out of 30) being investment fund managers (PEI Media 2010). Table 10 below summarises the various industry-based publications on investor statistics.

Name	Year	Organisation Type	Study Type	Results
Probitas Partners	2010	Investment Management/ Advisory	Pension Fund Survey on method of infrastructure	52.6% fund manager 15.7% direct

⁴¹ These include Macquarie Group, Brookfield Asset Management, Alinda Capital Partners LLC, Industry Funds Management and Goldman Sachs.

			investment	14% co-investment
Preqin	2009	Data Provider	Types of Investors in infrastructure funds	44% pension funds (largest)
Towers Watson	2009	Investment Consultant	Types of Investors in infrastructure funds	>60% pension funds
PEI	2010	Media/Data Provider	Top 30 direct infra investment capital providers	19 fund managers 8 direct Pension fund investors

Table 10: Summary of Infrastructure Investor Universe Statistics

Two key findings can be deduced from the analysis of industry-based publications that explain the increasing role of investment consultants in the pension fund infrastructure investment process. Firstly it is clear that pension funds are the largest investors in the global infrastructure investing market. In addition, it can be seen from the statistics, that the predominant structural form of investing into infrastructure is through the fund management route as the majority of pension funds in the market do not have the sufficient resources and in-house capability to make investments directly.

6.3.2 The Pension Fund Clients of Investment Consultants

A survey was conducted on the pension fund clients of three investment consultants with combined assets under advisement of US\$7 trillion in order to understand the characteristics of pension funds that utilise investment consultants for infrastructure investing.

From the survey, it was found that the average proportion of total clients that invest into infrastructure was 4.5%. The average allocation of each client to infrastructure was 5.1%. Eighty two percent of the funds surveyed were from pure DB schemes and 95% of funds invested into unlisted infrastructure vehicles over listed vehicles.

Figure 28 below shows the distribution of pension fund clients that invest into infrastructure, by size of assets under management. It can be seen that the majority of clients (89%) had fund sizes ranging between £0 and £5 billion with few funds greater than £5 billion.

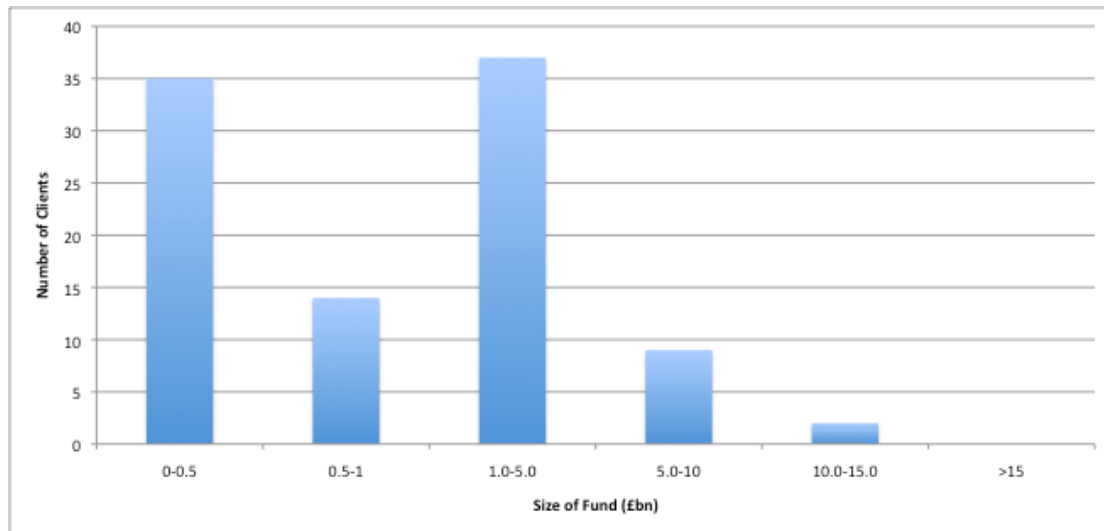


Figure 28: Distribution of Pension Fund Clients by Size

From the client survey undertaken and interviews conducted for this chapter, an estimation of the typical size range of pension funds that utilise investment consultants for infrastructure investing can be deduced. The pension funds that utilise investment consultants for infrastructure investing could be attributed to a ‘small to medium’ size range with assets under management between £0-5 billion. This could be put alongside a ‘medium to large’ fund size range of £5-10 billion and a ‘large’ category consisting of pension funds with size greater than £10 billion. The majority of ‘medium to large’ and ‘large’ pension funds would have sufficient in-house capability that they would not require the services of an investment consultant to invest into infrastructure assets.

The size ranges of the three pension fund categories identified above are not intended to be strict categories for all pension funds to fit into, instead the three measures provide a useful gauge for which to classify funds in the investor universe, and thus determine the likely method of infrastructure investing utilised. The sample of pension funds used is not representative of the entire infrastructure investor universe and therefore the categorisation method does not cover all possibilities of classifying funds. This is one of the limitations of the data set. The three categories however help to conceptualise the responses of pension funds used in this case study and provide a framework to further understand the decision-making process of pension funds when investing into infrastructure.

It must also be noted here that size alone, may not be the only factor that determines whether a pension fund utilises an investment consultant to invest into infrastructure. Political and economic geographic differences of regions can also play a large role in determining whether a fund uses an investment consultant. For example, there has long been a culture in the UK for pension funds to utilise investment consultants which was brought about by the Pensions Act of 1995, 2001 and 2004 (Horack et al 2003). The legislation states in various forms, a requirement to seek formal, written advice from experts before making investment decisions (Horack et al 2003). As a result of this legislation, pension funds in the UK have utilised investment consultants more than in other parts of the world. Australia is well regarded as the pioneer of the private institutional infrastructure market with many PPP opportunities opening up in the 1980's and a number of institutional investors gaining significant experience over a relatively longer period of time. With a more developed market and information about investments more readily available in Australia, institutional investors have

relied a lot less on investment consultants when investing into infrastructure compared with other areas.

6.3.3 Pension Fund Investment, the Effect of Scale and Governance

The interview process conducted for this chapter highlighted the distinct characteristics of pension funds in the market and need for various methods of accessing infrastructure assets. The method of investment employed by pension funds for infrastructure was seen to be determined in large part by the governance structure and size of the fund. Clark (2004) has argued that size can have a constraining effect on governance capacity and performance. The funds interviewed for this chapter were allocated to three categories depending on their size of assets under management: Small to Medium; Medium to Large and Large. The governance of each of the category of funds was then analysed using the best practice pension fund governance framework looking specifically at three key areas: organisational coherence, people, and process (Clark and Urwin 2008a,b). Organisational coherence refers to the pension fund's organisational strategy and mission, including how clear and focused the investment objectives are. The 'people' aspect refers to the skills and expertise of those involved in making investment decisions including trustees, investment and general purpose committee members as well as external consultants. Finally, the 'process' of best practice governance refers to how investment decision-making is organised and implemented. Furthermore, Clark and Urwin identify three types of fund structure and organisational design for constrained best practice pension fund governance as shown in Figure 29. Type 1 relates to a system where the Board of Trustees makes most of the decisions regularly with the support of external consultants and advisors. Type 2 is a slight extension of Type 1 where an investment committee is added for collective decision-making on a routine basis subject to Board

approval. Type 3 funds have extensive in-house resources and capability to carry out real-time investment decision-making.

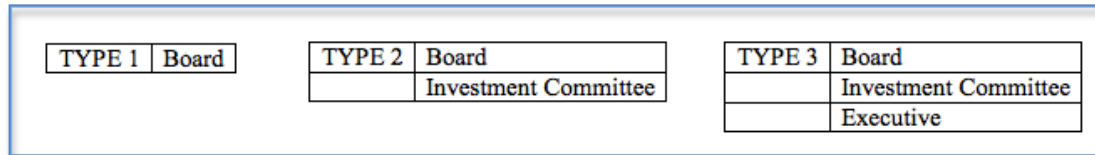


Figure 29: Governance Structures
(Source: Clark and Urwin 2008)

The responses of the pension funds used in this study are not intended to cover the entire pension fund investor universe and as such, the analysis is not representative of all funds within each size category. Instead, the findings provide an insight into the institutional arrangements and various limitations of pension funds when investing into infrastructure. Details of each of the funds used for the analysis in this section are provided in Appendix 8.

Small to Medium Funds

The funds interviewed at the lower end of this size category started their operations off very much as ‘amateur’ like organisations where the Board of Trustees and investment committee were made up of industry personnel without any real financial expertise. Such funds then progressed towards more ‘professional’ institutions as the importance of retirement planning and a fiduciary responsibility became apparent for its members. This has meant recruiting people within the fund’s industry who also have a certain degree of financial acumen or experience dealing with investment issues. More frequent meetings are held and the setting up of an investment committee and general purpose committee has occurred where they did not previously exist. With such humble beginnings, these small funds had to employ the services of external consultants from the start mainly for advisors for actuarial services and

subsequently for investment consulting advice. The general sentiment amongst board members has been to keep the same advisors through the development of the funds and for advice on investing into new areas such as infrastructure. The reliance is so great on external advisors that trustees find it hard to voice their own opinions. As one trustee member stated 'Members feel uncomfortable making investment decisions for the fund without consultants' advice' (Interview 2010b). In this way, investment consultants have been instrumental in introducing small funds to the infrastructure asset class and acted as thought leaders for smaller funds to access infrastructure investments. The main reason that consultants have advised clients to invest into infrastructure has been for diversification reasons and in order to match the long-term liabilities of the funds. A number of small funds had initially thought of gaining access to the infrastructure asset class through publically listed infrastructure/utilities companies, however the advice of consultants has been not to make infrastructure investments by themselves, and to use the unlisted fund market instead. Once the investment consultants have narrowed down the range of fund managers depending on the most suitable products for certain funds, each manager will go through a 'beauty parade' process before the investment committee and board make their final selection (Interview 2010b). The final selection of fund manager can be made quite arbitrarily as 'all the managers seem pretty similar to each other'. The final decision could be made due to an affinity with a particular asset in the portfolio of a certain fund manager as infrastructure assets tend to strike a loyal, sentimental chord with the general public. The well regarded name and reputation of a fund manager has also tempted the decision of these funds.

Most of the funds in the small to medium category had a structure provided by statute with responsibilities of the Board and various sub-committees defined so that actions

are carried out for the benefit of plan members. These funds however lacked a clear investment objective or mission statement apart from recognising the need to match the long-term liabilities of the fund through their investments. A key distinguishing factor of the organisational coherence of the small funds was the limited ability to provide an appropriate resources budget for the investment functions of the fund.

The 'people' governance aspect could also be seen as a factor contributing to the indirect procedure of infrastructure investing being employed by small to medium funds. The smaller funds were restricted by their requirement to appoint Board members and committee members from within the plan organisation. The level of financial expertise and skill set filled by these positions was thus limited. Furthermore, board members and investment committee members took up their positions on a part time basis further restricting their ability to carry out their roles as effectively as might be possible. Effective compensation practices have been linked to the performance of an institution in achieving its mission (Clark and Urwin 2008a). Little or no compensation was given to the board and committee members of most of the small to medium funds. Perhaps the most significant effect on institutional performance is leadership at the board level and particularly by the chairperson. In the small to medium fund environment, where expertise is lacking amongst committee members, the importance of showing strong leadership and being accountable for making tough decisions was made apparent during the interviews. It was perceived by one fund that the external advisors 'hunt in packs', influencing the perceptions of committee members and so it is very hard to go against their advice. It was recalled by one chairman that he did not agree with the advice of a consultant on a particular decision. A lack of expertise amongst the committee members forced them into the mindset that they must take the advice of the consultant leaving the Chairman helpless

in his position to voice his concerns. It is very easy for a chairman of a small to medium fund to be forced into the mentality that it is safer to take the advice of consultants, especially in the current pensions 'crisis' climate. A serious leadership challenge is faced by small to medium funds in order to avoid falling into the predicament described by John Keynes: 'it is better to fail conventionally than to succeed unconventionally' (Interview 2010b).

The infrastructure investment 'process' of small to medium funds, as outlined above, is mainly initiated by the investment consultant. The decision to invest and the selection of a fund manager can be quite arbitrary particularly in the case of a new type of financial product such as infrastructure. Such a selection process of external managers falls short of the best practice investment process which calls for 'selection by rigorous application of fit-for purpose criteria as well as a clearly defined mandate, aligned to specific goals' (Clark and Urwin 2008a:12). The arbitrary nature of the investment process for small to medium funds in many ways reflects the lack of a clear mission statement and ability to attract relevant expertise or skilled personnel. The final decision-making responsibility of investment issues falls to the Board members who may be contacted informally in order to quickly approve a decision reached by the investment committee. Thus arrangements can be made to ensure that investment decisions are not restricted by pre-arranged quarterly or less frequent meeting times.

It can be seen that the small to medium type of funds interviewed for this chapter would primarily fall in the Type 2 category of organisational structure. Some may have started off as Type 1 institutions but over time progressed towards Type 2. The total number of board members and committee members would be in the low teens.

Both fund structures suffer from limited capacity and are resource constrained leading them to rely heavily on consultants when investing into infrastructure assets.

Medium to Large Funds

In between the small to medium and large direct investor funds are a group of mid size funds that can be grouped as medium-large. The medium-large funds are large enough in size that they have the institutional resources to make investment decisions without the need of investment consultants however do not have the in house resources to make direct investments into infrastructure assets. These funds usually have one or two people looking after the infrastructure mandate (although infrastructure will not be their sole focus) and will carry out the due-diligence and selection process of fund managers. The size of these funds enables them to attract interest from fund managers themselves, which facilitates their own process of sourcing appropriate vehicles to invest through. Quite often, fund managers will approach medium to large pension funds to provide information on their product and service offerings. Once a fund manager has been selected, which usually requires general investment committee and Board approval, the fund divulges all responsibility for investing its capital to the fund manager.

The medium to large funds seem to be of a size large enough with special significance for a provincial or even national community that a mission statement and investment objective is clearly defined. It was perceived from the interviews that the obligation to these funds' members was very important to the investment executives and the underlying mission of the fund was engrained in the investment operations of the institution.

The investment management team of the medium to large funds could be seen to exhibit a similar skill set to the managers of large funds, although the function of each was quite different. The investment manager in the medium to large funds, seemed to have a much more varied role, primarily due to there being only one person, with responsibilities involving researching the industry, carrying out due-diligence on managers, as well as cross-checking the investment analysis carried out by the selected managers. The leadership function in the medium to large funds is slightly different to that of the small funds in that greater expertise can be called upon around the Board table when making decisions. The medium to large funds are not as reliant on external consultancy advice reducing the principal-agent problem when deciding how to invest into infrastructure investments. The due-diligence process and selection of fund managers is more thorough than that employed by small to medium funds. Quite often an RFI (request for information) process is carried out by the funds to identify potential managers. This is followed by an RFP (request for proposal) to narrow down the selection to around four or five candidates who are subjected to an elaborate survey consisting of over 100 questions around the investment philosophies, strategies and business practice of the manager. The process is concluded by an on-site visit to the fund manager before the final selection is made with Board approval. Such a process is in line with best practice measures for funds that recognise their restrictive resource capability and have effectively utilised external agents to emphasise diversity and limit risk. Medium-large funds can be categorised as Type 2 funds but differ from small-medium Type 2 funds by the amount of specialist financial expertise that can be called upon in the decision-making process for infrastructure investments.

Medium to large type funds, while not being able to lead direct investments on their own, have started to join consortiums in the co-investment or club models as minor partners.

Large Funds

At the far end of the spectrum lies the large pension funds who have developed specialist management companies or dedicated teams for different investment asset classes including infrastructure. These pension funds have the in-house resources and capability to source deals, carry out due-diligence on investments, provide finance and manage the assets they invest into. In contrast to the smaller funds, strong leadership was required to not only start investing into a new sector like infrastructure, but to start up a new management division within the fund to solely focus on infrastructure assets (Clark and Urwin 2008b). In these funds, global teams of up to forty have been set up to manage the infrastructure mandate of the fund which has commanded a portfolio allocation of up to 20% of the total assets under management. All aspects of the investment process are controlled within the fund although external contractors may be used prior to making investments in order to gain construction, legal or tax/accounting advice. The expertise and level of resources contained within these institutions is comparable to the fund managers that smaller pension funds invest through. Board members of these large funds are chosen by the parent company or in some cases the finance ministry via a rigorous selection process designed so that only those with specialist expertise in investment, business and finance are appointed. In certain circumstances, it was observed that large direct investors would sometimes utilise the services of a fund manager or investment consultant when working on a specific investment where the external advisor could bring specific expertise to the investment analysis process.

While also inheriting a form or structure provided by statute, the large funds often have a clear mission statement with specifically defined goals for their infrastructure investments. This was made apparent in the interviews and are usually explicitly stated on the company's website. Risk analysis forms a crucial part of the investment analysis process for direct investments into infrastructure. The infrastructure investment team would not be able to make commitments of the fund over a certain size without Board approval. With sufficiently experienced personnel on the Board, a cross-check of the risks and other issues pertaining to infrastructure investments is obtained before a final commitment is made. Because a significant amount of analysis is done in-house by the large funds, a greater amount of information must be digested in the investment analysis process. This means that the decision-making process is likely to take longer, especially before gaining the final Board approval and in some cases, compromising its ability to cope with the real-time demands of financial markets. In summary however, the substantial size of the large funds in the infrastructure market have enabled them to sufficiently resource each element in the investment process and governance chain. Naturally, such funds fit in to the Type 3 fund structure and tend to have a higher proportion of best practice measures in place for infrastructure investments. However, as can be seen from the market analysis above, such resource capability is restricted to only a few pension fund investors in the market.

Clark et al (2011), in their analysis of the new era of infrastructure investing, provide a detailed account of the governance practicalities associated with direct infrastructure investing. Using a similar best practice governance framework, the paper highlights

the need for an institutional investor to define the aim, strategy and resourcing requirements before pursuing the direct investing route.

In terms of the *people* aspect for the governance of direct infrastructure investors, the paper notes that the skill set required for infrastructure investment is different to what an institutional investor may be used to. An understanding that infrastructure investments are transaction oriented as opposed to market oriented (requiring origination, structuring, execution, risk analysis skills), are long-term over short-term and place an emphasis on asset management (overseeing management and improving efficiency) is essential. It was also noted that remuneration must be able to attract appropriately skilled people from competing employers (Clark et al 2011).

The *process* for direct investing requires risk control functions to work within tight timeframes and relevant committee members having the experience to appraise analyst reports, asset allocation investment targets while also being able to facilitate the in-house team's long-term performance (Clark et al 2011).

The large funds are often the leading members of a co-investing or club/partnership consortium.

6.4 The Role of Investment Consultants in the Infrastructure

Investment Process

Stemming from the actuarial profession, institutional investment consulting services developed in the 1990s and 2000s to reflect the changing landscape of risk reduction and asset management complexity (Prequin 2011). Consultants have grown in size and influence providing a wide range of financial and investment related services with

core competencies in consulting, outsourcing and investment product solutions. As witnessed from the interviews conducted for this chapter, investment consultants are called on to consult pension funds who are slightly smaller in size by assets under management and who do not have sufficient resources to draw upon for the infrastructure investment process. In this way, using the best practice governance framework, investment consultants can be seen to advise pension funds on the three areas of: organisational coherence, people and process (Knight and Dixon 2009). They assist with formulating a clear strategy and mission for the pension fund; they help select fund managers; and they are responsible for managing the overall investment process including regularly evaluating the performance of managers and making recommendations for possible new managers (Knight and Dixon 2009).

In the wake of the GFC, pension funds are looking to explore all investment possibilities in these difficult conditions creating opportunities for consultants who have a broader range of views and can bring new perspectives to resource-constrained institutions. In light of the current macro-economic climate, investment consultants are playing a crucial role in connecting pension funds to the infrastructure investment opportunity. This section looks more deeply in to the role of consultants, the relational influence of their behaviour and practices on decision-making in the pension fund infrastructure investment process.

6.4.1 The Consultant's Role for Infrastructure Investing

To provide an insight into the functional role of investment consultants for the infrastructure investment process case studies were carried out on three of the largest investment consultants in the world with combined assets under advisement of USD 7 trillion as of June 2008. An analysis of the organisational coherence, people and

process of the consultants and how each of the firms advise their clients on these aspects is outlined here.

Consultant 1

The resources allocated to infrastructure investing by this consultant consisted of ten people, with six based in the UK and four in North America. Each of the ten consultants, varying in seniority within the firm, would also be analysing and researching other asset classes and so would spend approximately twenty percent of their time on the infrastructure asset class. The firm started advising on infrastructure in 2005 and noted that client interest peaked in 2007 before slowing down in 2008 and 2009 due to the GFC but have noticed interest picking up in 2010.

Observations of the client base indicated that the majority of the funds that were advised on infrastructure were DB schemes. It was advised by consultants that core infrastructure investments were a good fit for DB pension plans in order to match liabilities over the long-term generating stable cash flows linked to inflation. In their experience with infrastructure, the consultant has observed that the larger the fund (by AUM), the greater the governance budget of the fund is, which translates into a greater likelihood that the fund will invest into unlisted infrastructure through a specialist fund manager. The smaller the fund, and smaller governance budget will lead to a lower likelihood of investing into infrastructure. An approximate estimate of the critical size of fund was given as £50 million, meaning a fund below this figure by AUM would be unlikely to have a portfolio beyond equities and bonds and thus unlikely to invest into infrastructure. It was also observed that a fund may not invest into infrastructure, even if they were sufficiently large and sophisticated enough, due to the lack of liquidity attached to such investments. A fund that was looking to

become independent of new sponsors would value liquidity highly. A minimum ten year investment horizon for an infrastructure investment would not appear attractive for such funds. Also, if a fund was looking to sell its liabilities to an insurance company, the consultant would not put infrastructure forward as an investment proposition as it may be too risky or too much of an unknown in the eyes of an insurance company.

The asset allocation advisory process of the investment consultant utilises both quantitative and qualitative analysis methods involving an interaction between the various internal divisions including the client team, risk/strategy team and manager selection team. The client team will initiate the process by examining the objectives of the funding valuation of the scheme i.e. the time horizon over which the client wants their assets to build up to a certain level and the level of reserves (technical provisions) they want to hold. The Risk modelling team would then develop the most efficient strategy to achieve the objectives of the fund. This would involve using an asset liability model and efficient frontier in order to combine different assets for achieving the desired risk and return profile. Central to the work of the Risk team is a thorough analysis of the volatility and correlation of asset classes as these assumptions directly control the final allocation of assets. The asset liability model would then generate a range of portfolios with different combinations of asset classes for a given risk and return appetite. Once the quantitative aspect of the asset allocation process is carried out, a qualitative review of the client's governance budget is undertaken to ensure that the portfolio of asset classes only matches the investments that the fund is capable of making. For example, 'even though the model might say to put 5-10% of the fund into infrastructure, if the trustee board doesn't have the time to make the investment or for any other reason, then we would not allocate to

infrastructure' (Interview 2010c). Once the portfolio allocation has been decided, the next task is to select the manager to look after the fund allocations in each asset class. A dedicated manager selection team for each of the different asset classes carries out research and analysis to narrow the selection of managers to three or four options. In order to narrow down the options of infrastructure managers, a rating procedure is carried out by the manager selection team. Details of the manager selection procedure carried out by consultants is provided in Appendix 11.

Consultant 2

The second consultant analysed for this chapter, utilised a global team of nine for infrastructure investing with three based in the UK, three in North America (two in Canada, one in USA) and three in Asia Pacific (two in Australia, one in Hong Kong). There is one consultant of the nine member team that looks at infrastructure on a full time basis while other members also spend time looking at other asset classes. Infrastructure advising formally started up globally at the firm in 2005, however before then infrastructure research was carried out on an 'on-demand' basis. It was noted that the Australian offices had been researching infrastructure due to client demand since 2001. As with the first consultant, it was observed that client interest in infrastructure was low before 2005 but increased significantly between 2005 and 2008 before slowing down during the GFC. In contrast to the first consultant, the clients for the second consultant seemed to be a lot larger in size with the smallest client advised on infrastructure being £400 million (AUM). This consultant reported that initially investors would come to them for advice as opposed to the consultant initiating the discussions around infrastructure investing. This could be put down to the larger size of client base, where fund managers had directly contacted the pension funds about their infrastructure products. Subsequently, the funds would then approach the

consultants for advice, who initially held a pessimistic view of the infrastructure funds due to the unfavourable terms and conditions including fee structures for investors. Over the last few years, a stronger impetus has come from the consultant for investing into infrastructure funds as the structures have slowly become more attractive for investors. The consultant utilises an 'advisory model' throughout its business including infrastructure which entails working mutually with the client. 'At the end of the day, the clients are the decision makers' (Interview 2010d). In this way, the consultant tries to guard against dominating or overpowering the relationship with the client.

The asset allocation procedure for this consultant is similar to that of the other consultants where the client consultant and risk/strategy team work together to determine the asset allocation based on the particular attributes and characteristics of the fund. Once an allocation has been assigned for infrastructure, a manager selection process is carried out. The manager selection process is very similar to the first consultant which utilises a formal multi-attribute rating technique. As with other consultants, the track record of infrastructure managers has not been regarded as overly important with the key areas of focus for this consultant being risk mitigation and the fees charged by managers. One distinct feature of this consultant was that it did not offer the 'beauty parade' process to make the final selection of manager. Instead, the consultant brings the best fit manager for the fund as and when the opportunity arises to invest straight away into the product. The reasoning behind this is due to the nature of the unlisted funds opening and closing at various times. Once an option is recommended by the consultant, a two-way conversation outlining the benefits of the fund takes place which usually ends with the client deploying capital into the fund.

Consultant 3

The third consultant consisted of an eight member team focused on infrastructure worldwide with the main research hubs based in London and Chicago. All members split their time amongst all asset class research with no one member solely focusing on infrastructure. This consultant has also noted that there have been a lot of impediments to recommending infrastructure to their clients with the product offering not being very helpful to investors. It has been very hard for the investment committees of clients to do the amount of due-diligence required for infrastructure to put the proposition in front of the board of trustees. An observation was made that the majority of clients' board chairmen were 50 to 60 years old (particularly in the UK) and the well known 'war stories' of private infrastructure provision such as Eurotunnel and UK Rail⁴² have been firmly engrained in their memories affecting perceptions about infrastructure investing. However, with the growth in the market, and move towards more investor friendly terms and conditions of products, pension fund interest in infrastructure has improved since the GFC of 2008/2009.

The process used by this consultant to advise on infrastructure has depended on the investment function of pension funds. The consultant categorises the form of investing into two types by the different decision-making process employed by the funds: opportunistic investing and traditional asset allocation investing. Traditional asset allocation refers to the process wherein the research/strategy team, manager selection team and client consultant combine to provide a range of product options for

⁴² The failure of the privatisation of UK Rail was described in Chapter 4. The Eurotunnel link between Britain and France, which opened in 1994 filed for bankruptcy in 2006 after failing to recover from severe cost over runs and poor passenger forecasts.

the client to choose from. The opportunistic model is more akin to Consultant 2 above where the fund characteristics and product options have been analysed and instead of providing a range of options at a specific time, the investor waits until the next opportune time to invest into the product that best suits their fund. Larger pension funds with greater in house specialist expertise have been more receptive of the opportunistic model of investing into infrastructure while smaller funds have been content with applying the traditional asset allocation approach to infrastructure investing.

The manager selection procedure for the third consultant was consistent with the others in that managers are assessed on a number of key factors. In this case; idea generation, portfolio construction, implementation and business management formed the criteria to rate managers from A to C, with 'A' managers having the 'highest conviction that they will achieve their stated objectives' while a 'C' rating indicated a below average manager.

6.5 Synthesis of Results

The relational form of investing into infrastructure was identified by Torrance (2007) at a relatively infant stage of the market when the key area of focus was the relationship between investors and fund managers and investors and strategic partners. She looked at the relationships generated by large pension funds with strategic partners for making direct infrastructure investments and the importance of trust and contracts in forming a necessary long-term allegiance. "Relationships are overriding issues of distance (through trusted contacts in a local scene) and time (through long-term contracts)" (Torrance 2009:90). Similarly, it was identified that the selection process of a fund manager for an investor was based on a lot more than

just quantitative financial modelling. Other factors that are important for investors to understand include the product designers' reputation, proposed size and global focus and expertise (Torrance 2009).

In this chapter I have identified a new agent in the relational infrastructure investment process in the form of the investment consultant. The extent to which a pension fund investor will rely directly on a fund manager to invest into infrastructure will depend on the size and governance budget of the fund. There has been growth in the number of smaller funds in the infrastructure investor universe, emphasising the increasing importance of the role of the investment consultant. From the interviews conducted, the majority of cases showed that infrastructure had been advised as an investment prospect by the consultant, indicating that the pension fund would not have thought about investing into infrastructure otherwise. The strong reliance on external intermediary advice further illustrates the opacity of infrastructure investments. The importance of trust identified by Torrance (2007) in the investor/fund manager relationship is acknowledged by investment consultants as can be seen through their elaborate fund manager selection process, combining both quantitative and qualitative methods of appraisal. The level of advice offered to the investors by consultants would depend on the size and characteristics of the fund. Certain investors may require advice on their own governance structures before advising on portfolio allocation and fund manager selection placing significant responsibility on the investment consultant for the investment objectives and overall direction of the pension fund. In other cases, pension funds have developed advisory boards and added independent directors to the Board or Investment Committee to oversee the infrastructure investment process. This is to ensure that the same people making the recommendations to invest into the asset class are not also making the final decision

on the investment. A concern was raised by one pension fund regarding the over-powering nature of consultants when dealing with investment issues. Although the services offered vary, in most cases, it could be seen that the power in the relationship lies firmly with the consultant. A degree of frustration was felt by one chairman interviewed over the imbalance of power in the relationship with a consultant to the extent where, no trustee member felt they could challenge the advice of the consultant. He wished that the consultants were more open to trustee input and wouldn't take advantage of ill-informed investors given their position of power in the relationship with pension funds. Especially with smaller funds, consultants must show a deeper understanding of the personnel within the board room and not assume that because they have been called in to advise on investment issues, 'their word is the only word'.

Another relationship that has been created due to the growing importance of the investment consultant in the infrastructure investing process is that between the fund manager and consultant. In their appraisal of fund managers, consultants carry out on-site visits to the fund managers' premises in order to gain a better idea of their business practices. Managers have generally been receptive of consultants as they realise the importance of their role in connecting potential investors to their own fund. At an early stage of the market approximately six or seven years ago, there were only a few managers offering infrastructure products and so the connection between investor and manager was made a lot easier. This has changed dramatically over the last few years with the number of investors looking for infrastructure exposure and the number of fund managers in the market both increasing. In the wake of the GFC, fund raising for infrastructure managers has been especially challenging. In 2009, the total capital raised for unlisted funds was USD 7.5 bn compared to USD 44.8 bn in

2007 (Preqin 2010). With over US\$7 trillion of assets under advisement, if consultants are able to advise just a small proportion of these funds to invest into a particular product, cooperating with consultants can be very profitable for managers. In light of the macro-economic settings, fund managers have shown a keenness to engage with consultants to pass on information about their product offerings and get access to a wide range of investors.

As has been outlined in this chapter, the early stages of the infrastructure investment market has uncovered a number of conflicts of interest in the investment relationship between fund managers and pension fund investors relating mainly to time horizon of investments, fees charged, and reckless opportunistic manager behaviour. In a recent survey of investment consultants by data provider, Preqin, it was found that management fees and other fund terms and conditions were the greatest concern for the infrastructure asset class (Preqin 2011). Before the GFC, with the field of infrastructure investing being so new, a lot of the power in the relationship between fund managers and investors lay with the fund managers. Since then however, as managers struggle to maintain their performance targets and fund raising has become more challenging, the balance of power seems to have shifted towards investors. While some progress has been made and fund managers have started to align their fund conditions with investor interests, the topic is still widely debated with a number of the issues still to be resolved.

Investment consultants can be seen to provide a way of bridging the gap between investors and fund managers to help align the interests of both parties on fund terms and conditions. By engaging with consultants, managers are more easily able to understand the requirements and desirable specifications that investors have for

infrastructure products. Managers have the incentive to structure their products to the specifications of investors in order to gain a favourable rating from consultants and thus be exposed to more investors. By working with and alongside both parties to the transaction, the consultant can be seen as reducing the information asymmetries that have existed in the infrastructure investing universe and facilitates an agreeable level of fees, terms and conditions being achieved between the suppliers and demanders of capital in the unlisted infrastructure fund market.

Fund managers, however have also expressed a certain level of concern around the growing presence of consultants in the infrastructure investment world. Managers have questioned whether their involvement adds any substantial value to the infrastructure investment process and whether they are an unnecessary fee-collecting link that just erodes the net return of investors from infrastructure investments.

By analysing in detail the functional role of investment consultants, this chapter has illustrated various sources of their value add for the infrastructure investment process. Firstly, the advice and recommendation of fund managers can be seen as a source of value add for pension funds. The due diligence carried out by consultants is a thorough process with thirty to forty pages of analysis, in-house appraisals and application of a formal rating technique combining both qualitative and quantitative inputs. The evaluation of infrastructure fund managers carried out by consultants can be analogised to stockbrokers researching companies not only at the selection stage but for ongoing monitoring. Just as a stockbroker provides value to a prospective investor by carrying out due-diligence on equity investment prospects, a consultant performs the same function for pension funds on infrastructure fund managers. With a

number of information asymmetries apparent in the infrastructure market, consultants can be seen to add value in this way to the investment process.

Also, the asset allocation modelling techniques used by consultants to match fund characteristics and long-term liabilities with investments can be seen to add value to the pension fund infrastructure investment process. Financial literature has shown that strategic asset allocation adds value to the total return of investments over simple balanced allocations (Blake et al 1999, Brinson et al 1991). In a similar vein, academic research has also shown that governance can affect the rate of return achieved by pension fund investments (Clark and Urwin 2008a, Watson Wyatt 2006, Ambachtsheer 2007). The general advice given by consultants to trustees on custody and governance improvements is a further source of value-add for the investment process.

From the analysis carried out in this chapter, it can be seen that investment consultants are leading the infrastructure investment management process and acting as ‘thought leaders’ for their clients. In most cases observed, investment consultants are initiating the process indicating that these clients would not have invested into infrastructure otherwise. For slightly larger funds that approached the consultant for advice on infrastructure, it can be seen that consultants play an ‘adaptive’ role but subsequently lead the process by utilising their knowledge of the needs of their clients and the potential returns of infrastructure investments. They have an understanding of the ‘good’ managers and the ‘poor’ managers and thus offer a wealth of knowledge for clients. For the largest type of investors, it can be seen that investment consultants are followers of these funds who provide examples of how the structural form of pension fund infrastructure investing should be carried out. The direct method of

investing is the most preferred method of investing however is only restricted to a minority of funds of sufficient size and governance capability. In this way the role of investment consultants is reflective of the differentiated nature of the infrastructure investor market.

While it is recognised that investment consultants play a leading role for certain types of pension funds in the market, it can be seen from this research that investment consultants have not innovated the field of infrastructure investing from the start. Investment consultants formally established infrastructure advisory services after many larger pension fund investors and pioneering fund managers had already made significant investments into the asset class. Accordingly, the formal aspect of infrastructure advisory in investment consulting firms has been set up in reaction to market demand. Despite this, as illustrated in this chapter, investment consultants have played a significant role in recent times as agents of innovation for the infrastructure investment process and as more smaller pension funds enter the market, it is proposed that they will continue to do so.

An alternative to the indirect, fund manager route of infrastructure investing that has started to emerge in the market is that of a 'club' or partnership model for investing. The club model arrangement pools together like-minded pension funds into a consortium led by a significantly large pension fund as opposed to a fund manager. Such a model however has only been restricted to the medium to large and large types of pension funds. A significantly large pension fund that was able to offer an investment vehicle to smaller pension funds could be seen as a way to reduce the

conflicts of interest for investors into infrastructure. The ‘captive GP’⁴³ structure outlined by Clark et al (2011) would be the natural providers of these vehicles enabling broader cultural, strategic, and operational alignment of interests. There are challenges in setting up a captive GP structure such as attracting talent, significant resourcing costs, and maintaining alignment between the investment team and parent organisation. Clark et al (2011) have identified only two of these structures being formed to date.

As the market continues to develop, more options will be offered to investors to facilitate smooth investments, remove inefficiencies in the investment process and ensure that the true investment qualities of infrastructure assets are materialised. Regardless of the method of investing, the importance of cultivating relationships and a recognition of the power, expertise and trust dynamics in these relationships will be crucial for investors approaching the heterogeneous infrastructure investing field.

6.6 Conclusions

Pension fund trustees are in the control of significant financial resources, the allocation of which, can have wide-reaching implications for cities, regions and nations. This chapter has examined the decision-making process of pension funds looking to invest into infrastructure assets and investigated the role of investment consultants, an increasingly important actor in the relational infrastructure investment process. Analysing trustee decision-making is an essential step in understanding the macro, spatial patterns of financial investment and economic development (Clark 2000). By investigating the relational infrastructure investment process, this chapter

⁴³ Large institutional investors that have set up wholly owned, stand alone infrastructure funds management groups, subsidiaries of parent pensions and operating autonomously (Clark et al 2011)

builds on the work of Torrance (2009), Clark (2000, 2008) and contributes to the economic geography literatures on pension fund governance and relational investing.

Analysis of the market in this chapter has shown that pension funds have already and will continue to play a major role in the global infrastructure investing market. Pension funds currently make up the largest portion of the investor universe for investments into the unlisted infrastructure market. Furthermore, the predominant form of investing into infrastructure assets for pension funds is through a fund manager as most pension funds do not have the necessary in-house resources and capability to make investments into assets directly. As a higher proportion of smaller pension funds enter the market, investment consultants will play an increasingly significant role in the pension fund infrastructure investment process. With infrastructure investing in the early stages of its development as an asset class, there has been a large amount of reliance and responsibility placed on consultants giving them significant power in their relationship with a pension fund client.

From the survey and interviews conducted for this case study, it was found that the majority of pension funds that utilise consultants to invest into infrastructure were in the size range between £0 and £5 billion by AUM. It was likely that a fund of size greater than £5 billion would have the sufficient resources to select fund managers independently of consultants. Similarly, a fund greater than £10 billion was likely to be able to invest directly into infrastructure assets without the need to invest through a fund manager. Three categories of funds were thus deduced for the infrastructure investor universe: 'small to medium' (£0-5 bn), 'medium to large' (£5-10bn) and 'large' (>£10bn).

It can be concluded that the smaller the fund, the smaller the governance budget of the fund is and therefore the lower the likelihood that the fund will invest into the infrastructure asset class. Based on the survey and interviews conducted for this case study, an approximate estimate of the critical size of fund for investing into infrastructure is £50 million, meaning a fund below this figure by AUM would be unlikely to have a portfolio beyond equities and bonds and thus unlikely to invest into infrastructure.

It was also found that size alone, may not be the only factor that determines whether a pension fund utilises an investment consultant to invest into infrastructure with geography also playing a role. In the UK, legislative requirements have meant that investors have used consultants on a more frequent basis compared to other parts of the world while the more developed infrastructure investing market in Australia has meant that investors there have not depended as greatly on investment consultants.

A number of interesting dynamics have also emerged in the relationship between investment consultants and fund managers. On one hand, fund managers have been receptive of investment consultants to carry out due-diligence on their funds as they see consultants as a cost effective method of gaining exposure to prospective investors in a difficult fund raising environment. However, other fund managers view consultants as an unnecessary addition to the infrastructure investment process that simply erodes the net return for investors from investments. This leads to a debate as to what the actual value add of the investment consultant is to the investment process. In the early stages of the market the investment consultant can be seen to add value for a pension fund through its extensive due-diligence and market research carried out on fund managers. Secondly, the strategic asset allocation and governance advice

offered to pension fund clients, as backed up by academic literature, also adds value to the investment process. Perhaps the greatest value add to the infrastructure investment process is the role of the investment consultant as a moderator between fund managers and investors over fees and terms of funds, where various conflicts of interest have yet to be resolved between the two parties.

In this way, the value-add of investment consultants illustrated in this chapter has shown that consultants are acting as ‘thought leaders’ for many smaller pension funds in the predominant unlisted fund method of infrastructure investing. However, it can be seen that investment consultants are ‘backward looking followers’ of large pension fund investors who have led the way for infrastructure investing. Investment consultants follow and learn from the largest pension fund investors in the market where the strategies are aligned with the long-term, stable, liability matching objectives that pension fund clients of investment consultants are also in search for. The significance of the role of investment consultants in the infrastructure investment process is thus dependent on the differentiated investor market outlined in this chapter. Investors must position themselves within the categories to select the most appropriate form of relational investing, and recognise the nature of the relationships and types of actors they are forming alliances with.

While it might make more sense for institutional investors to source infrastructure investments in house, the lack of transparency associated with infrastructure financial products has meant that a relational form of investing with a dependence on financial intermediaries is required for most pension funds investing into infrastructure. In the wake of the GFC, investment consultants are providing a crucial link for pension funds to access the infrastructure asset class as well as providing fund managers an

opportunity to gain exposure to potential Limited Partners of their funds. It can be concluded that investment consultants provide a crucial mechanism to help align interests and promote the long-term relational approach for the institutional infrastructure investment process.

CHAPTER SEVEN: CONCLUSIONS

7.1 Introduction

The global infrastructure crisis has been regarded as one of the great challenges of the 21st century with the deterioration of urban infrastructure networks worldwide bringing the topic of infrastructure investment to the forefront of public policy and government strategy considerations. With the GFC further exacerbating both the funding and growth lifting needs of nations, private institutional investors will continue to provide a source of financing for a much needed investment area. This thesis has examined the continuing involvement of private institutional investors in the provision of urban infrastructure services by tracking the dynamics of the global infrastructure market through asset case studies and sectoral analysis. I investigated how further developments in the market and the GFC have affected the performance of infrastructure investments and how the perceptions of investors for the field have changed. I approached this using a relational framework to investigate the interactions between different actors and the complex social, political economic context under which investment decision-making takes place. The empirical work from the thesis highlights some of the crucial considerations of institutional investors and provides a deeper understanding of how financial markets are influencing the urban infrastructure landscape.

In this concluding chapter, I synthesise my findings and comment on the broader implications of this thesis. I firstly highlight the principal findings of each of the four core chapters and illustrate how the insights contribute to the specific literatures. I then use the findings to show how this thesis has contributed to the development of

the relational framework and show the importance of this conception for analysing the dynamics of infrastructure investments. The broader implications of the thesis are explored before the possible directions for future research in this area are suggested in the final section.

7.2 Principal Findings and Contributions to Literature

This thesis has been structured around four core chapters in order to achieve a greater understanding of the under researched area of private institutional investment in infrastructure. Recognising the increasing importance of private institutional investors, this thesis has investigated the unique considerations of investing into the infrastructure asset class and illustrates through case studies the factors that might contribute to the success or failure of investments. In this way, this research work has addressed the overarching objectives and research questions set out in the introductory chapter.

In view of the heterogeneity and diversity associated with infrastructure investing, this thesis has used a multi-disciplinary economic geography approach. As such, it has drawn upon the basic building blocks that have shaped the development of this research framework. With an appreciation that economic systems are complex and subject to change, Chapter Three has shown how financial market dynamics have changed the way infrastructure assets and financial products are being offered to private investors. The work here has illustrated how the informational content and geographical structure of infrastructure products have evolved over time, and the subsequent implications for investors. Similarly, Chapter Six has examined how private actors have revised the relational investment process as a result of lessons from the GFC and other early experiences. The asset case study chapters have

uncovered the factors that have contributed to the performance of the respective investments particularly highlighting the effects of the privatisation process, regulation, governance and capital structure. While each of these factors are context specific, important implications for the wider field of infrastructure investing can be drawn. The approach to these case studies has recognised the geographical and institutional organisation of economic activity given the cultural, institutional and regulatory differences that exist between regions and nations.

The empirical work laid out in this thesis also draws upon a number of specific disciplines for the geographical analysis and discourse on the subject. This includes introducing corporate finance, economic pricing regulation and management theory into the economic geography research areas of urban investment, pension fund research and relational investing. By examining the key factors that institutional investors must consider when making urban infrastructure investments, this thesis contributes to the development of multi-disciplinary relational economic geography as a general framework for the analysis of complex contemporary economic activities.

This section presents the principal findings from this research thesis in accordance with the four central research aims outlined in Chapter One.

AIM 1: Examine how infrastructure as a financial product has evolved through a period of exponential market growth followed by a significant contraction due to the Global Financial Crisis (GFC).

With a significant amount of growth being experienced in the infrastructure market over the last two decades and change occurring in global economic conditions, Chapter Three set out to investigate what the nature of infrastructure investing

actually comprises of, how it has changed and what the characteristics of the infrastructure financial product are. Using a geography of finance framework, and specifically Clark and O'Connor's financial product classification paper, the chapter examined the informational content and geographical structure of the infrastructure financial product to determine whether it has progressed along the financial product life cycle towards transparency. Interviews were conducted with investors, fund managers as well as an analysis of the Preqin database was carried out to explore the investor profiles, investment performance, market definitions and the role of relationships and networks in the infrastructure investment process.

Building on the work of Torrance (2006) who concluded that infrastructure had shifted from opaque towards translucent financial products, I found that despite the market experiencing growth, a lack of standardisation at the asset and product level, extreme variation in the investment performance achieved thus far and the continued effect of geography to diversify risk and return for investments, have prevented infrastructure from reaching a transparent level. It is further argued that the inherent heterogeneity associated with infrastructure assets and products, will inhibit the investments ever reaching a transparent level. This has various implications for the industry in the wake of the GFC where a lack of transparency in financial markets was exposed with catastrophic consequences. Caution must be taken by investors in search of stable, predictable, low risk returns and must ensure that the underlying asset invested into reflects the specific definition that they have associated with the asset class. The chapter has highlighted the importance that geography plays as well as the confusion that still exists among practitioners and researchers about the definition of infrastructure, the investment characteristics and the appropriate investment vehicles.

This chapter contributes to work in the geography of finance, which emerged as a subfield of economic geography in recognition of the limitations of the efficient markets hypothesis for explaining situations in which information asymmetries and market imperfections are present. This work contributes to this field by highlighting the significance of geography in financial markets (Clark and O'Connor 1998, Coval and Moskowitz 1999, Clark and Wójcik 2007, Wójcik 2009) and also the relationship between finance and the urban landscape (Olds 2001a, Pryke 1991, 1994, Torrance 2006).

By illustrating the unique, complex nature of the infrastructure financial product, the chapter has contributed to a growing body of literature that looks at the financial characteristics of infrastructure assets (Torrance 2009, Newell and Peng 2007, 2008, 2010, Dechant and Finkenzeller 2009, Sawant 2010, Bitsch et al 2010, Hartigan et al 2011, Singhal et al 2011, Inderst 2009, 2011). The economic geographic framework has illustrated the heterogeneous issues that need to be taken into account and recognised the need for a 'relational' form of investing when approaching translucent or opaque infrastructure assets.

AIM 2: Uncover the underlying factors that might contribute to the success of a private institutional investment into infrastructure.

In line with the second aim of the thesis, Chapter Four served to identify and analyse an example of a privately invested infrastructure asset that has performed well through the GFC. A multi-disciplinary approach was undertaken to uncover the factors that have contributed to the performance of AIAL. Drawing on the economic theories of privatisation and pricing regulation, the chapter addresses the question of

what role the government plays after the privatisation process of urban infrastructure assets has taken place.

Having outlined the superior investment performance of AIAL over the market since becoming privatised, the research for this chapter confirmed that a light-handed regulatory environment, the IPO privatisation process, strong corporate governance strategies and a conservative capital structure have all contributed to the company's success. The common element in each of the success factors was the influence of government decision-making highlighting the central role that the government plays in affecting the investment performance of privatised infrastructure assets. The chapter in particular analyses the light-handed regulatory framework that AIAL operates under, comparing it with other jurisdictions around the world, highlighting the decidedly political nature of the process. Drawing on the experience of light-handed regulation in Australia, the importance of viewing airport pricing regulation as a relational contract with the relevant parties viewing issues in a co-operative way, was emphasised, in order for the company to continue benefitting from a favourable regulatory setting.

Using the AIAL example under light-handed regulatory conditions, the chapter concludes that the investment performance of an infrastructure asset for a private investor can be linked to the relative importance of the asset for a nation's economy. For an economically significant asset, the government is more likely to provide a favourable regulatory setting in order for the company to do well. This is due to the fact that success for the company is likely to also generate success for the local and national economies. However, the AIAL case also shows that the greater the sensitivity of an asset for a nation will mean the government is likely to have a greater

influence on the company's ownership, which can have adverse effects for foreign investors.

In recognition of the need to view regional and urban development in the context of national political economies, this chapter contributes empirical evidence to the growing field of geographical political economy (MacKinnon et al 2007). The chapter contributes to this field by illustrating the central role that government plays through the privatisation and regulation processes of urban infrastructure assets. The thesis has argued that infrastructure investment is grounded in social relations, the relationships between different groups of people in the economy such as employers, workers, consumers, government regulators. The AIAL case has provided a deeper understanding of how infrastructure assets are influenced by the reconfigured political economic landscape under which they now operate.

This chapter also contributes to airport regulatory research by highlighting the distinct regulatory framework in the AIAL example in comparison with cases around the world. The geographical political economic framework utilised to uncover the light-handed regulatory framework including implications and reactions of stakeholders to the review process provides a unique perspective for illustrating the effects of airport pricing regulation. The chapter therefore sets up the intersection between economic geographical infrastructure investment research with the established economic theories of airport privatisation and pricing regulation.

AIM 3: To determine the causes of investment failure for urban infrastructure investments that have been accentuated by the 2008 Global Financial Crisis.

In contrast to the AIAL case study, Chapter Five provides an insight into an

infrastructure investment transaction that has not performed as well. By focusing on the corporate governance of infrastructure assets, the chapter builds on the work carried out by Torrance (2008) to reconceptualise the dynamics involved with globally governed infrastructure assets. Through an analysis of the Ferrovial-led ADI acquisition of UK-based airport operating company, BAA, the chapter argues that an appropriate method of market based (global) governance as well as a properly considered relationship-based (local) governance model is necessary to achieve a successful infrastructure investment. The case draws upon the stakeholder and shareholder theories within corporate governance literature as well as corporate finance theory on financial leverage for the analysis. A similar case study methodology comprising of interviews with various stakeholders as well as an extensive review of industry reports, news articles, regulatory and government reports was carried out to highlight the wide-reaching influencing factors of infrastructure assets, and the detrimental consequences of not controlling the issues appropriately.

The chapter reveals that the performance of the ADI takeover of BAA has failed both from an investor's perspective with the equity value of the company significantly shrinking since the acquisition as well as from the public user's perspective which could be seen by the continued deterioration and poor service at the company's airports. It is concluded that the problems of the Ferrovial-led ADI consortium in their ownership of BAA, could ultimately be put down to a failure in corporate governance on two levels. Firstly, the excessive amount of financial leverage utilised in the financing of the transaction has put the consortium under immense financial pressure. The use of financial leverage had the effect of concentrating the efforts of managers towards maximising wealth from the business for shareholders (as a matter of survival) leading to the much-needed wider stakeholder management (airport users,

regulators, media) being overlooked. Secondly, a cross-cultural lack of understanding associated with the glocal ownership of BAA appeared to have contributed to a governance breakdown. A predominantly foreign-based board seemed to stifle the decision-making process leading to internal frustrations and the exit of key personnel, particularly those with experience in handling crucial stakeholder issues. The importance of developing relationships with advisors and stakeholders for infrastructure investing was made apparent during this case study.

The Ferrovial-BAA case provides further evidence of the glocal governance structure developing for infrastructure investments with local assets owned at a distance by global institutions and highlights the key factors that investors need to consider when looking to take over the ownership and running of these assets. In the wake of the GFC, certain structures have been exposed providing lessons for prospective players to take into account in order to achieve the intended objectives.

This chapter contributes to the broad economic geography research area of urban infrastructure investment, particularly building on studies carried out on the governance of privately owned infrastructure (Graham and Marvin 2001, Torrance 2009) as well as work exploring the political and cultural economy of airport spaces (McNeill 2010). The chapter charts new territory in this field by introducing corporate finance and management theories to provide a deeper understanding of the rationale behind investment decisions of infrastructure service providers. The work here adds to the finance literature by highlighting the detrimental consequences of utilising excessive leverage to fund what many previously thought were stable infrastructure assets. Both the idea of safe leveraging levels and the relative robustness of infrastructure assets through changing economic climates will need to be re-assessed

by practitioners. In the management literature, this case study has shown that a governance strategy that places too much weight on maximising shareholder wealth while forgetting the relationships that need to be built with stakeholders can lead to disastrous results for infrastructure investors.

AIM 4: To examine the decision-making process of institutional investors looking to invest into infrastructure and investigate the role of the investment consultant.

Having analysed the different factors that might affect investments at the asset level, the final core chapter of the thesis provides an analysis at the institutional level, to understand in detail the decision-making process of those committing capital into infrastructure assets. As has been identified, relationships are crucial to facilitate smooth investments, remove inefficiencies in the investment process and ensure that the true investment qualities of infrastructure assets are materialised. Financial intermediaries have played a significant role for investors looking to access infrastructure. The role of investment consultants for the investment management process has come under scrutiny with pension funds and fund managers questioning the actual value add of these actors for the investment process. Chapter Six of the thesis examined the infrastructure investor universe and determined whether investment consultants are ‘innovators’ leading the process for pension fund investors. This chapter tied together relational contract theory and economic geography research into pension fund governance and investment management for the analysis.

The methodology of the chapter consisted of an interview process of a wide range of pension funds and three of the leading investment consultants in the industry. The analysis of the global infrastructure investor universe has shown that pension funds

are the most common type of infrastructure investor by assets deployed and the indirect/fund manager route was the predominant structural form of investing as most pension funds do not have the necessary in-house resources and capability to make investments into assets directly. Based on the analysis, three size categories of investors were formulated which depicted unique governance characteristics and the appropriate structural form of investment for each category. These included ‘small to medium’ (£0-5 bn, investment consultants used), ‘medium to large’ (£5-10 bn, investment consultants not used) and ‘large’ (>£10bn, direct investors). Predictably, the smaller the fund, the smaller the governance budget of the fund, and therefore the lower the likelihood that the fund will invest into the infrastructure asset class, emphasising the informational asymmetries that still exist and need for relational investing.

In analysing the role of investment consultants for the infrastructure investment process, it was shown that consultants are acting as ‘thought leaders’ for many potential investors who otherwise would not be aware of the opportunity. While providing investment and governance advice to small pension funds is central to the function of the consultant, it could be seen that the consultants also add value to the infrastructure investment process by acting as a moderator between fund managers and investors over fees, time horizons and terms of funds, where various conflicts of interest have yet to be resolved between the two parties. Conversely, it was also shown that investment consultants are ‘backward looking followers’ of large pension fund investors who have led the way for infrastructure investing. The significance of the role of investment consultants for the infrastructure investment process is thus dependent on the differentiated investor market.

The findings from this chapter extend the literature on pension fund governance by examining developments in the relational infrastructure investment process and highlighting the role of investment consultants. Knight and Dixon (2009) have shown how investment consultants incorporate environmental, social and corporate governance risks in their investment analysis and advice to pension fund clients. By illustrating the importance of the role of investment consultants for the relational infrastructure investment process, the chapter builds on the work of Knight and Dixon (2009), Clark (2000, 2008) and contributes to an under examined area of academic research in the professional services literature.

7.3 Broader Implications of Thesis

The principal findings of each of the core chapters are nested within the broader relational context and financialisation theme running through the thesis. The research from this thesis has developed the work of Torrance (2006) who introduced the financialisation process of the urban infrastructure landscape occurring at an early stage in the market. As Torrance notes “The financialisation of the urban infrastructure landscape involves the continuous assessment of activities by financial markets”. This thesis examined how the investors, advisers, regulatory bodies, rating agencies and other finance industry dynamics have evolved through the GFC and how these factors have affected the investment management process for urban infrastructure assets. In an age where infrastructure investment has been recognised by many nations around the world as the most important growth lifting strategy, there is a renewed significance for understanding how this financialisation process is occurring. By focusing on the specific factors institutional investors need to consider when approaching their investments, the thesis argues that relationships are crucial for affecting the performance of infrastructure investments. The section below illustrates

how insights into the urban infrastructure financialisation process from this thesis also help to develop the conception of relationality in economic geography research.

7.3.1 Relational Context

As mentioned in Chapter Two, this thesis uses the relational conception as an overarching framework by drawing upon the use of the term in economic geography and law and economics. Firstly, from the field of economic geography, which stems from work in economic sociology, relational refers to the fact that economic actors are geographically constituted and is concerned with how these actors understand the world around them in carrying out their actions. It is a deeper understanding of how the world is made up taking into account of the wider social, political and institutional context in which economic action takes place. Within law and economics, relational contract theory, which relates to the long-term, self-enforcing form of exchange based upon co-operation and commitment, is also drawn upon in this thesis to describe the long-term and relational nature of infrastructure investing.

As a means of providing a basis for the relational perspective, Chapter Three of the thesis has highlighted the complex, heterogeneous nature of the infrastructure investing field. The lack of standardisation at the asset and product level, the volatility in performance returns and the continued significance of geography for diversification indicates the unique informational and geographic information still attached to infrastructure investments. The chapter illustrates the need for investors to form alliances with trusted partners in order to gain access to vital information and be able to make informed decisions about their infrastructure investments. It is argued that the inherent heterogeneity of infrastructure investments has prevented the dispersion of knowledge beyond a network of financial, legal and technical specialists. Gaining

access to this network and forming a relational proximity is a necessary requirement for investments to be successful.

By determining how a successfully performing infrastructure asset is financed and operated, Chapter Four has illustrated the importance of a relational form of regulatory contract for infrastructure investments. Relational contracts have been defined as long-term, self-enforcing agreements based on trust, commitment and co-operation (Baker et al 2001, 2002). This chapter contributes to the work on relational contracts for the regulation of public goods by examining the unique light-handed regulatory framework that AIAL operates under. It was observed that the light-handed regulatory framework for controlling airline charges provides the government with a 'potential' role as a passive overseer of the operations of the company, disciplining the process through the potential threat of regulatory intervention. The experience of light-handed regulation has shown the importance of viewing airport pricing regulation as a relational contract with parties approaching the issues in a co-operative way in order to gain mutually beneficial outcomes. Developing strong commercial relationships with its stakeholders is crucial for AIAL to continue operating under a light-handed framework.

The two takeover bids that AIAL was subjected to in 2007-2008 also highlighted the slightly 'pernicious' role of government where, subject to short-term political influences, the ownership of infrastructure assets can be influenced with adverse effects for foreign investors. The chapter here highlighted the importance of a relational perspective with investors needing to understand that infrastructure investments are constituted by regional or national politics.

The significance of a relational perspective for infrastructure investing was also highlighted in Chapter Five of the thesis. The detrimental investment and operating performance of the ADI acquisition of BAA was caused as a result of poor governance strategies. It could be seen that the global equity acquirers of the asset, failed to recognise the influence of foreign ownership on the locally based employees of the company. As Bathelt and Glückler (2011) attest, the relational perspective allows the effects of globalisation and global-local tensions to be taken into account. Here the importance of global investors having a deeper understanding of the effects of their actions on local employees and stakeholders was emphasised. It was observed that the new owners failed to invest in the relationships of the company with local regulating bodies and customers. Subsequently, the company was subjected to unfavourable competition commission and pricing inquiry rulings. The lack of consideration for the wider stakeholder interest could be put down to the financial engineering strategy of the firm narrowly focusing the interests of managers towards the concerns of shareholders.

The final core chapter of the thesis examined the relational infrastructure investment process highlighting the role of investment consultants. Relational contract theory sheds light on how the long-term, co-operative commitment made between investment partners needs to be governed to ensure that the interests of partners are aligned. Investors need to be aware of the role of intermediaries who bring expertise and power into the relationship. Investment consultants are the latest type of intermediary playing a role in this process, acting as thought leaders for pension funds who have limited in house capability. They also act as gatekeepers for infrastructure fund managers providing access to much needed sources of capital for their funds. Relational forms of contract based on trust and long-term commitment are required in

this process, given the power asymmetries that exist between partners. Many of the delegated, agency relationships such as that formed between pension funds and infrastructure investment managers have been misrepresented for the short-term. Investment consultants provide a mechanism to help align interests and promote the long-term relational approach to investing for the infrastructure asset class. Regardless of whether a fund invests directly or indirectly into infrastructure assets, a relational form of investing is required. The categories of infrastructure investor funds developed in Chapter Six are based on size, resources and governance capabilities. Investors must position themselves within these categories to select the most appropriate form of relational investing, and recognise the nature of the relationships and types of actors they are forming alliances with.

The above discussion illustrates the importance of adopting a relational perspective for approaching the field of private institutional infrastructure investment and shows that relationships are crucial in affecting the performance of infrastructure investments. The significance of this relational approach is due to the unique geographical information attached to the actors and assets involved in the process. The empirical work has shown that a co-operative, relational approach towards private infrastructure ownership and investment assists in not only achieving successful investment performance, but also beneficial wider, social and economic outcomes. Conversely, a lack of consideration for the relationships with wider stakeholders may compromise the investment performance of politically sensitive and economically significant assets. The thesis also illustrates the nature of the relationships that need to be formed with investment partners, based on trust, understanding and commitment over the long-term. While it is recognised that there may be differentiated opinions between actors, maintaining honesty and transparency

in the relational network will ensure that any by play is reduced. The thesis has developed the early academic work carried out on private ownership relations of infrastructure (Graham and Marvin 2001, Clark 2000, Torrance 2006) by explicating some of the key considerations for investors to achieve favourable outcomes from their infrastructure investments.

By working on the assumption that more investment into infrastructure contributes to economic and social development, this thesis has provided evidence of the beneficial effects of private institutional infrastructure investment. It shows in detail what the factors are that attracts investment from private institutional investors and indicates that private infrastructure investment can have wider benefits for society. The findings from this thesis thus have broader implications beyond the theoretical significance considered above. The bigger policy issue at stake in this thesis is how private institutional investors can be called upon to help contribute to a much-needed growth lifting infrastructure investment strategy. The thesis provides a deeper understanding and creates greater awareness of the issues and idiosyncrasies for investors. This awareness is crucial to help bring infrastructure investing into the mainstream. It can be argued that infrastructure should be more of a mainstream investment consideration for investors given that privately financed infrastructure dates back to the 18th and 19th centuries. Despite the long history and appreciation of infrastructure, the associated financial products are not considered to be core assets and instead are placed into the alternative basket with a large amount of opaqueness attached. This research analysis provides deep insights into possible solutions at a time when governments around the world are calling upon the assistance of private institutional investors more than ever before:

"We are encouraging the appetite of investors - both at home and also abroad - for investment in infrastructure, taking advantage of our stability and open markets. In a world in which too much investment has been high-risk and short-term, there is huge potential for a different approach."

David Cameron (2012)

This thesis has explicated the various factors that might shape this 'different approach' to private institutional infrastructure investment.

7.4 Future Research

In recognition of the limitations of this thesis research outlined in Chapter One, the final part of this chapter discusses the possible directions of future work.

This thesis has looked at how the dynamics of the private institutional infrastructure investment market have evolved over the last decade and considered the effects of the GFC on the performance of investments. While the case studies illustrated in this thesis have highlighted crucial aspects of the financialisation process occurring, more empirically grounded research will further our understanding of the depth and scope of the issues involved. While certain aspects of the GFC have been taken into account, the effects of what has been regarded as the worst recession since the great depression are still being felt around the world. More in-depth cases that provide further evidence and lessons learned from both successful and failed investments will be important for the field moving forward. In particular, the interaction of financial markets and government regulation as well as how micro-level financial decision-making is affected by the transforming macro-level political economic context should be explored.

The thesis has been concerned with tracking the flows of western institutional capital into the urban infrastructure landscapes of OECD countries. As highlighted in Chapter One, the thesis predominantly focuses the research in the United Kingdom and New Zealand. The rise of the infrastructure investing market has however not been restricted just to OECD countries and future research should extend the analysis to determine how or why pension fund capital may or may not be flowing into other regions such as developing countries. It has been recognised that infrastructure assets are not only deteriorating within developed nations but insufficient infrastructure provision is causing significant bottlenecks for sustained economic growth in developing countries. While Chapter Three identified certain western investors having an appetite for the riskier prospect of investing into the emerging markets, future research should analyse in detail how the governance, legal and political framework and other financial relationships might influence the decisions of private institutional investors and the extent to which these issues differ from the dynamics identified in developed countries. Furthermore with infrastructure investments in developing countries likely to comprise of more greenfield projects, building from scratch, as opposed to existing brownfield assets with established cash flows in developed countries, future work will determine how the financialisation process will be adapted for the different modes of urban infrastructure landscape transformation.

As described in Chapter Two, this thesis applies a multi-method qualitative approach to track developments in the institutional infrastructure investing market. Future methodology considerations for research in this area would develop the qualitative approach and incorporate quantitative methods into the analysis. In terms of qualitative methods, future work might include a wider range of respondents as more investors of differing characteristics enter the market. Ethnographic fieldwork and

participant observation within the different institutions i.e. investors, fund managers, consultants as well as in different locations would help develop our understanding of the trust, power and expertise in these financial relationships. As more reliable returns data become available, financial analysis could be carried out to quantify the risks associated with infrastructure investments. In the wake of the GFC, Chapter Five has illustrated that the overall risk of regulated assets in the UK has risen as well as the risk premium associated with the airport sector. Perceptions on the amount of financial leverage that should be attached to infrastructure investments has also been revised. Future work will look at quantifying these changes in order to assist investor decision-making.

A further direction for future research relates to widening the parameters of success for analysing infrastructure investments. In this thesis, success has been defined primarily as investment performance based on return on equity investment. Future work might widen this measure of success to include operational service, productivity, environmental and social objectives. It is assumed in this thesis that successful infrastructure investments will lead to the economic and social development of the surrounding regional and national economies. Future work might look at building a more robust method of measuring the extra-financial metrics of infrastructure investments based on qualitative and quantitative methods. It has been shown in this thesis that the wider stakeholder interests can materially impact the performance of infrastructure investments. Future research will look at how social, economic and environmental performance indicators can be incorporated into the analysis. The measure of success also depends on whose perspective one approaches the investment from. Because of the material impacts of extra-financial factors, future

work should incorporate how success of an infrastructure investment can be measured from the perspective of other stakeholders.

And finally, future research must look at how infrastructure provision will be determined for future generations. It is debatable whether the incremental enhancements to large urban infrastructure networks predominantly looked at in this thesis will be sustainable for the long-term future. Further research must take into account how the effects of climate change might influence the way infrastructure investments in the future will be shaped. At issue here, is whether infrastructure provision will consist of incremental investments or structural transformation, short-term adaptation or long-term development, technological solutions or technological innovation. Future research will need to explore how investors should take account of the long-term environmental and social challenges associated with future infrastructure provision. This may mean a shift from large highly-centralised infrastructure networked systems servicing vast suburban metropolises to much smaller, human scale, localised and decentralised systems that can sustain themselves within their own land base. From an investor's perspective, this may involve investing into innovative clean technologies and materially incorporating environmental, social and governance issues in the infrastructure investment analysis process. Private investors may need to consider adjusting their strategy from late stage investment management to early stage venture capital investment into new technology companies similar to the entrepreneurial approach that pioneered private sector infrastructure investment in the 19th century.

APPENDIX

Appendix 1: Abbreviations

Appendix 2: List of Interviewees

Appendix 3: Preqin Online Database Screenshots

Appendix 4: Interview Questions (Chapter 3)

Appendix 5: AIAL performance review

Appendix 6: Commerce Amendment Bill 2008

Appendix 7: Timeline of Events Post ADI Acquisition of BAA

Appendix 8: Pension Fund Interviewee Details (Chapter 6)

Appendix 9: Interview Questions (Chapter 6)

Appendix 10: Investment Consultant Client Questionnaire (Chapter 6)

Appendix 11: Fund Manager Selection Procedure (Chapter 6)

APPENDIX 1: Abbreviations

ADI	Airport Development Investment Ltd.
AIAL	Auckland International Airport Ltd.
AIP	Alternative Investment Product
ATRS	Air Transport Research Society
AUM	Assets Under Management
ARA	Auckland Regional Authority
BAA	British Airports Authority
BOT	Build Own Transfer
BOOT	Build Own Operate Transfer
BOO	Build Own Operate
BLT	Build Lease Transfer
DBFO	Design Build Finance Operate
DCMF	Design Construct Manage Finance
CAA	Civil Aviation Authority
CC	Competition Commission (UK)
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CDPQ	Caisse de Dépôt et Placement du Québec
CPI	Consumer Price Index
CPPIB	Canadian Pension Plan Investment Board
DAE	Dubai Aerospace Enterprise
DB	Defined Benefit
DC	Defined Contribution
EBITDA	Earnings before Interest, Tax, Depreciation and Amortisation
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GIC	Government Investment Corporation
GP	General Partner
IPO	Initial Public Offering
IRR	Internal Rate of Return
LBO	Leveraged Buyout
LP	Limited Partner
PFI	Private Finance Initiative
PPP	Public Private Partnership
NZ	New Zealand
OECD	Organisation for Economic Co-operation and Development
RFI	Request for Information
RFP	Request for Proposal
RPI	Retail Price Index
SPV	Special Purpose Vehicle
TMT	Technology, Media and Telecommunications
TRL	Transport Research Laboratory
UK	United Kingdom
USA	United States of America

APPENDIX 2: List of Interviewees

Project Manager	Dubai Airports
Global Investment Practice	Hewitt
Executive Director	Board of Airline Representatives NZ
Head of Investment Process	CP2 Investment Management
Managing Director, Europe	Macquarie Capital
CEO	CP2 Investment Management
Minister of Finance (1984-1988)	NZ Labour Party
Associate Commissioner	Commerce Commission
Executive Director	The Treasury (NZ)
National Infrastructure Unit	
Chairman of Board of Directors	Auckland International Airport Limited
Direct Investments	CP2 Investment Management
Senior General Manager	DLF
Infrastructure Manager	Actis
Senior Investment Consultant	Towers Watson
Partner	Arcus Infrastructure Partners LLP
Global Director of Consulting	Mercer
Vice President	CPPIB
CEO 2003-2008	Auckland International Airport Limited
Investment Manager	CP2 Investment Management
Head of Strategy	NZ Stock Exchange
Senior Principal	CPPIB
Head of Infracapital	M&G Investments
Director, Infrastructure Group	AXA Private Equity
Consultant	Macquarie Capital
Infrastructure Advisory	
Executive	Campbell Lutyens
CEO	SREI Finance
Investment Analyst	CP2 Investment Management
Managing Director, Europe	RreeF
Global Investment Practice	Hewitt
Finance Division	Auckland City Council
General Manager	
Investment Manager	Railway Pension Investments
CEO	Auckland International Airport Limited
Infrastructure Manager	Actis
Executive Director,	Macquarie Capital
Unlisted Equity arranging team	
Managing Director	IDFC Private Equity
Associate Director,	Macquarie Capital
Infrastructure Advisory	
Chairman	Oxford Staff Pension Scheme
Head of Alternative Assets	Unniversities Superannuation Scheme
Minister of SOEs (1987-1990)	NZ Labour Party
Head of Investment Analysis	NZ Super
Head of Private Markets	UniSuper
CFO	Auckland International Airport Limited
CEO	Glengarry Infrastructure Capital Pty Ltd
Principal	QIC
Chairman	Manukau City Investments Ltd.
Senior Vice President	Borealis Infrastructure
Senior Member,	Macquarie Capital
Unlisted Equity arranging team	
General Manager	Air NZ
Corporate Finance	
Investment Origination	CP2 Investment Management
Senior Investment Consultant	Mercer
Principal	CPPIB
Head of Research Strategy	CP2 Investment Management

Interview References by Chapter

Chapter Three:

Interview 2009a, Personal Communication, Oxford
Interview 2009b, Personal Communication, London
Interview 2009c, Personal Communication, London
Interview 2009d, Personal Communication, New York
Interview 2009e, Personal Communication, New York
Interview 2009f, Personal Communication, London
Interview 2009g, Personal Communication, London
Interview 2009h, Personal Communication, London
Interview 2009i, Personal Communication, London

Chapter Four:

Interview 2009a, Personal Communication, Auckland
Interview 2009b, Personal Communication, Auckland
Interview 2009c, Personal Communication, Wellington
Interview 2009d, Personal Communication, Wellington
Interview 2009e, Personal Communication, Wellington
Interview 2009f, Personal Communication, Auckland
Interview 2009g, Personal Communication, Auckland
Interview 2009h, Personal Communication, Auckland
Interview 2009i, Personal Communication, Auckland
Interview 2010a, Personal Communication, Auckland
Interview 2010b, Personal Communication, Auckland
Interview 2010c, Personal Communication, Auckland
Interview 2010d, Personal Communication, Auckland

Chapter Five:

Interview 2010a Personal Communication, London
Interview 2010b Personal Communication, London
Interview 2011a Personal Communication, Singapore
Interview 2011b Personal Communication, London

Chapter Six:

Interview 2010a Personal Communication, London
Interview 2010b Personal Communication, Oxford
Interview 2010c Personal Communication, London
Interview 2010d Personal Communication, London

APPENDIX 3: Preqin Database

The Preqin database draws upon several different sources of data to provide an overview of the global market for private infrastructure funds. These data sources include:

Fund Managers

The database has contacted over 120 infrastructure firms around the world to collect information on firm preferences and fundraising information.

Investors

The database has surveyed over 200 investors from around the world to ascertain their investment preferences, past history within the asset class and plans for the future.

Placement Agents

The database has surveyed over 100 placement agents in order to ascertain their involvement in the infrastructure market.

Law Firms

Enquiries with numerous law firms have been made to provide information on fund formation services.

Regulatory Filings

Regulatory filings in the US, UK and other regions have been reviewed to uncover additional fund information.

The following screen shot figures show the layout of the information contained in the Preqin infrastructure database.

The screenshot shows the Preqin website interface. At the top, there is a navigation bar with the Preqin logo and links for 'MyPreqin', 'Support', and 'Contact'. Below this, there are three main sections: 'Private Equity', 'Real Estate', and 'Hedge Funds', each with a dropdown arrow. The 'Infrastructure' section is highlighted in orange. Under 'Infrastructure', there is a list of sub-sections: 'Fund Managers', 'Search by Fund Manager', 'Search by Type/Location', 'Available Capital', 'Advanced Search', 'Funds', 'Performance', 'Investors', 'Advisors', 'Fund Terms', 'Placement Agents', and 'Lawyers'. The 'Fund Managers' sub-section is selected, and the page displays 'Infrastructure Fund Managers - Search Results'. The results are presented in a table with two columns: 'Firm' and 'Location'. The table lists 20 infrastructure firms and their respective locations.

Firm	Location
aAIM Infrastructure	UK
ABN AMRO Infrastructure Capital Management	UK
Abraaj Capital	United Arab Emirates
Abu Dhabi Investment Company	United Arab Emirates
Abu Dhabi Investment House	United Arab Emirates
AC Desarrollo	Spain
ACP Capital Infrastructure	UK
Actis	UK
Africa Infrastructure Investment Managers	South Africa
AG Angra	Brazil
AIF Capital	Hong Kong
AIG Investments - Infrastructure	US
Alcazar Capital	United Arab Emirates
Aldwych International Ltd	UK
Aeltho Limited	UK
Algonquin Power Management	Canada
Alinda Capital Partners	US
Allco Equity Partners Management	Australia

Private Equity

Real Estate

Hedge Funds

Infrastructure

- ▶ Fund Managers
- ▶ Funds
- ▶ Search by Fund
- ▶ Funds Seeking Capital
- ▶ Recently Closed Funds
- ▶ Recently Added Funds
- ▶ Fundraising Outlook
- ▶ Infrastructure Fundraising Stats
- ▶ Advanced Search
- ▶ Performance
- ▶ Investors
- ▶ Advisors NEW
- ▶ Fund Terms
- ▶ Placement Agents
- ▶ Lawyers

Infrastructure



Funds - Search Results

Fund	Vintage	Strategy	Manager Location	Fund Size (Mn)	Fund Status
aAIM Infrastructure Fund	2009	Primary	UK	2,000 GBP *	Raising
ABN AMRO Global Infrastructure Fund	2006	Primary	UK	1,100 EUR	Closed
Abraaj Infrastructure and Growth Capital Fund	2007	Primary	United Arab Emirates	2,000 USD	Closed
AC Infraestructuras	2006	Primary	Spain	150 EUR	Closed
Actis Infrastructure Fund II	2008	Primary	UK	1,250 USD *	First Close
ADCB Macquarie Infrastructure Fund	2009	Primary	Australia	1,000 USD *	First Close
ADIC-UBS Infrastructure Fund I	2009	Primary	Switzerland	600 USD *	Raising
African Energy Infrastructure Fund	2009	Primary	Mauritius	500 USD *	Raising
African Infrastructure Investment Fund	2004	Primary	South Africa	1,320 ZAR	Closed
AG Angra Infrastructure Fund	2006	Primary	Brazil	698 BRL	Closed
AIF Asia I	1994		Hong Kong	780 USD	Closed
AIG African Infrastructure Fund	2000	Primary	US	408 USD	Closed
AIG Asian Infrastructure	1994	Primary	US	1,087 USD	Closed
AIG Asian Infrastructure II	1997	Primary	US	1,670 USD	Closed
AIG Brunswick Millenium Fund	1996		US	290 USD	Closed
AIG Emerging Europe Infrastructure Fund	1999	Primary	US	525 USD	Closed

Private Equity

Real Estate

Hedge Funds

Infrastructure

- ▶ Fund Managers
- ▶ Funds
- ▶ Performance
- ▶ Fund Performance
- ▶ Investors
- ▶ Advisors NEW
- ▶ Fund Terms
- ▶ Placement Agents
- ▶ Lawyers

Infrastructure



Performance

Fund	Vintage	Called (%)	DPI (%)	RVPI (%)	Multiple (X)	Net IRR (%)	Quartile	As at:
3i India Infrastructure Fund	2007	34.2	0.0	92.1	0.92	n/m	-	18-Jun-08
ABN AMRO Global Infrastructure Fund	2006	53.0	1.1	96.6	0.98	n/m	-	31-Mar-08
AIG Asian Infrastructure	1994	94.2	70.9	0.1	0.71	-6.4	4 th	31-Mar-08
AIG Asian Infrastructure II	1997	67.9	110.8	25.0	1.36	6.7	3 rd	31-Mar-08
AIG Indian Sectoral Equity	1996	81.9	229.6	7.7	2.37	15.2	2 nd	31-Mar-08
AIG-GE Capital Latin American	1996	94.3	68.3	31.5	1.00	0.0	4 th	31-Mar-08
Alinda Infrastructure Fund I	2007	106.0	27.2	72.0	0.99	n/m	-	30-Sep-08
Alinda Infrastructure Fund II	2008	0.0	0.0	0.0	0.00	n/m	-	31-Mar-08
ArcLight Energy Partners Fund I	2002	109.4	160.4	20.3	1.81	25.3	1 st	30-Nov-08
ArcLight Energy Partners Fund II	2004	88.3	79.8	66.4	1.46	21.4	1 st	30-Sep-08
ArcLight Energy Partners Fund III	2006	97.7	14.6	86.8	1.01	n/m	-	30-Sep-08
ArcLight Energy Partners Fund IV	2007	57.8	0.0	94.8	0.95	n/m	-	30-Sep-08
AXA IM Infrastructure	2005	28.9	0.0	96.2	0.96	-4.0	3 rd	31-Dec-08
Barclays European Infrastructure Fund	2001	96.6	144.4	44.1	1.89	n/a	1 st	30-Jun-08

- Private Equity ▶
- Real Estate ▶
- Hedge Funds ▶
- Infrastructure** ▶
 - ▶ Fund Managers
 - ▶ Funds
 - ▶ Performance
 - ▶ Investors
 - ▶ Search by Investor
 - ▶ Search by Type/Location
 - ▶ Investors by Firm/Fund
 - ▶ Investors in Recent Funds
 - ▶ Advanced Search
 - ▶ New/Updated Investors
 - ▶ Recent Investor News
 - ▶ Target List
 - ▶ Investor Contact Search
 - ▶ Advisors NEW
 - ▶ Fund Terms
 - ▶ Placement Agents
 - ▶ Lawyers

Infrastructure



Investors - Search Results

Investor	Location	Type
AA Pension Scheme	UK	Private Sector Pension Fund
Abu Dhabi Investment Authority	United Arab Emirates	Sovereign Wealth Fund
Access Capital Advisers	Australia	Asset Manager
Access Capital Partners	France	Private Equity Fund of Funds Manager
ACG Private Equity	France	Private Equity Fund of Funds Manager
Acta Group	Norway	Asset Manager
Adams Street Partners	US	Private Equity Fund of Funds Manager
Adelphi University Endowment	US	Endowment Plan
ADEME	France	Government Agency
Aegon N.V.	Netherlands	Insurance Company
AEVWL	Germany	Public Pension Fund
African Development Bank	Ivory Coast	Bank
Akershus County Council	Norway	Government Agency
Akron Community Foundation	US	Family Office / Foundation
Al Hail Holding	United Arab Emirates	Investment Company
Alabama Power Foundation	US	Family Office / Foundation
Alameda County Employees' Retirement Association	US	Public Pension Fund
Alaska Permanent Fund Corporation	US	Sovereign Wealth Fund

APPENDIX 4: Interview Questions (Chapter Three)

How do you define infrastructure?

Where do you see the market for private infrastructure investment currently, do you think it will continue to grow? Do you believe it has grown sufficiently to become its own asset class?

What are the key characteristics that distinguish infrastructure from other asset classes?

What investment return figure are you generally aiming for in infrastructure projects? Does it depend on the type of project? What is the variation? Which types have similar return figures?

What are the main risks? How do you incorporate risks into the investment analysis process? How can such risks be materialised in the investment process and what tools are used?

What type of investors are you looking to attract for your investments? Do you think infrastructure investments are suited to a particular type of investor?

Are there any specific investor relations issues that you have come across with infrastructure investments? i.e. conflicts of interest over time horizon or fees?

How has the Global Financial Crisis affected how you invest in infrastructure?

Can you provide an example of an investment into an infrastructure asset that has performed well and an example of an asset that has not performed very well? What are the key distinguishing factors between the two investments? What can be said of the respective investment processes?

How do you think infrastructure investing will be shaped in the future?

APPENDIX 5: AIAL Performance Review

Historically, academic studies on airports have focused on technical areas such as planning, design, construction, legal and environmental issues (Sarkis and Talluri 2004). However, in recent years, as airports have increasingly moved from public utilities that concentrate on operations to businesses that focus on commercial activities, there has been a shift in research focus towards benchmarking airport performance. With the process of corporatisation and privatisation, a surge in air traffic and airline market deregulation, airports have become challenging and dynamic sub cities. Airport managers and government officials need to measure efficiency from a financial and operational perspective, evaluate alternative investment strategies and monitor safety and environmental impacts. The commercialisation and privatisation of airports has particularly increased the need for performance monitoring and measuring from the perspectives of both investors and price regulators.

Developing comparable performance measures for airports can be problematic due to their diverse and heterogeneous nature. Airports have a high degree of quality differentiation, different ownership structures and regulatory settings, varying operating characteristics and other external constraints such as geographic and environmental factors. Because of the lack of consistency in the industry, the ability to carry out like-for-like performance comparisons between airports is very difficult (Francis et al 2002).

A number of different performance measures and methodologies have been developed in the past. Humphreys and Francis (2002) provide an explanation of the evolution of airport performance measurements through the transformations in ownership and other factors that Airports have experienced. In the past, performance measures were primarily used to make publically owned airports accountable to the government. The work load unit (WLU), defined as one passenger processed or 100kg of freight handled, originally developed by airline companies was used as the main measure for airports. This included costs per WLU and revenues per WLU. A key flaw of the WLU measure for performance is that it combines two outputs (passengers and freight), which depend on very different inputs (Francis et al 2002).

As airports were transformed into corporate entities through the processes of corporatisation and privatisation, financial accountability has resulted in a greater focus on measuring operational and business performance. While difficulties have arisen in measuring operational performance and at best used for internal purposes, various revenue and cost per passenger values have been useful as financial measures (Humphreys and Francis 2002).

To enable airports to benchmark their performance against each other, the world airports body, Airports Council International (ACI) has produced an annual survey of performance figures (income, revenue, expenses, capital expenditure, employment) for its member airports (currently 709 members) since 1995. Likewise, the Air Transport Research Society (ATRS) publish an annual airport benchmarking report with over 30 performance measures ranging from productivity, cost and financial performance. The research organisation, Transport Research Laboratory (TRL) also produces a publication called Airport Performance Indicators, which encapsulates the major airport performance figures on an annual basis.

With data becoming relatively more available and standardised, empirical economic analyses have been carried out to measure the various performance measures of airports including operational efficiency and productivity. The main technique used in the various studies has been the data envelope analysis, a nonparametric method relating certain inputs to outputs to produce an efficient production function thus providing a benchmark for airport productive efficiency (Gillen and Lall 1997). Total Factor Productivity and Variable Factor Productivity are used as performance measures to enable more consistent comparisons between different airports. For an in depth explanation of these methods see (Oum and Yu 2003, Oum et al 2003, Sarkis and Talluri 2004, Gillen and Lall 1997, Parker 1999).

Despite the various limitations associated with studies comparing different airports, Auckland Airport has performed favourably in almost all areas of performance measuring. Forsyth et al (2004) show with reference to the 2003 TRL report that the Operating Profit and EBITDA figures of AIAL are clearly high by world standards in the airport industry. AIAL has consistently featured at the top of the rankings in the TRL publications (Forsyth et al 2004).

From the ATRS Airport Benchmarking Studies, Auckland Airport has recorded productivity measures considerably higher than the Europe, North American and Asia Pacific Airport productivity means. The measures of productivity used in the reports include residual variable factor productivity, gross total factor productivity and residual total factor productivity which attempt to correct for factors such as scale and traffic volume (Forsyth 2006, Oum and Yu 2004).

A comparison of Auckland with other airports around the world, gives an indication of the relatively high levels of financial and operating performance it has been able to achieve. The historical share prices of Frankfurt, Vienna and Sydney airports since their respective privatisations are shown below. The annual compounded rate of return for the periods were calculated as 0.295% (Frankfurt), 1.27% (Vienna) and 11.2% (Sydney). It can be seen that AIAL, like Sydney Airport has performed well when compared with other global airports.



Figure A1: Frankfurt Airport Historical Share Price
Source: Datastream

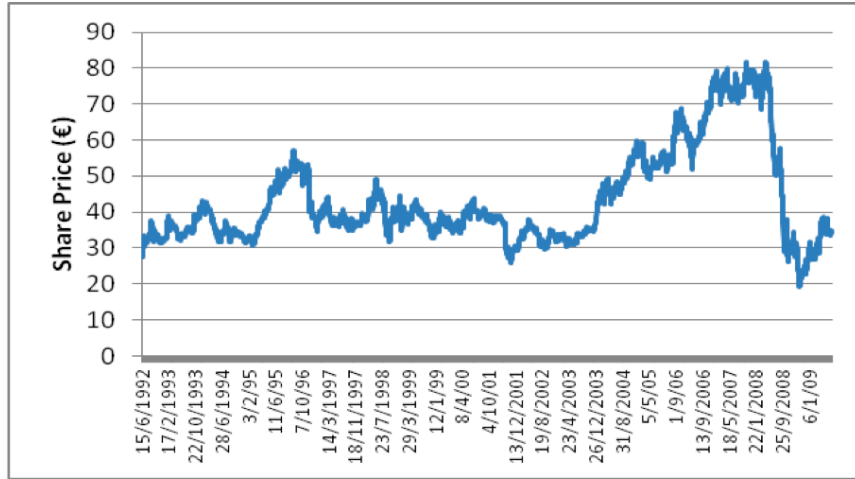


Figure A2: Vienna Airport Historical Share Price
 Source: Datastream

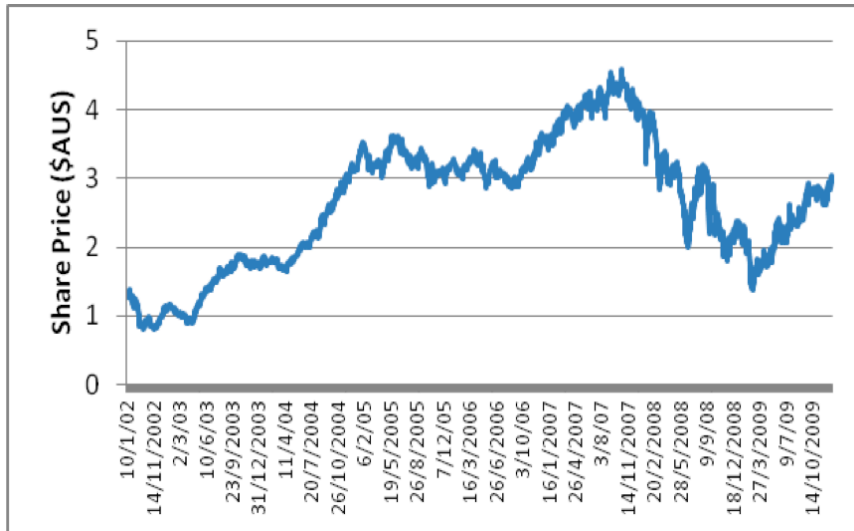


Figure A3: Sydney Airport Historical Share Price
 Source: Datastream

APPENDIX 6: Commerce Amendment Bill 2008

While the various consultation pricing rounds continued for Airports and Airlines, the market situation in other regulated industries in NZ such as electricity and gas pipelines, had deteriorated to such an extent that the Commerce Commission initiated an inquiry into price controlling these industries. The Board of Airline Representatives NZ and Air NZ also lobbied to have Airports included in this inquiry to move them towards the same regime as the other regulated industries. During this process, it was made apparent to the Commerce Commission that it operated a very blunt, binary-type regulatory instrument, which used two options, either no regulation, or price control. Instead the Commission moved to introduce a regulatory device with a range of options to choose from. This led to the formation of four categories of regulatory control ranging from information disclosure at the lowest end of control to negotiated arbitrate, generalised control and specific control (Commerce Commission 2009).

The latest Commerce Commission Review initiated in 2008, carried out in a similar fashion to the 1998 inquiry, was split into two parts, with the first part focusing on Part IV of the Commerce Act, to decide whether the airports needed to be price controlled. This initial review subsequently found that the airports did not need to be price controlled, but concluded that the current information disclosure regime was deficient and needed to be improved. From the four levels of regulatory control at the Commission's disposal, the lowest form, information disclosure was selected by the Commission for Auckland Airport (Commerce Commission 2009).

The second part of the review has thus investigated the objectives of an information disclosure regime and determined the specific information that needs to be disclosed. In particular, regard has been given to the methodologies used to calculate airline charges at airports. Ultimately, the purpose of the information disclosure regime is to determine whether any stakeholders are being unfairly treated and so the inquiry has sought to establish input pricing methodologies that form a yardstick to measure against, when analysing the pricing structure of airports. The information proposed in the regime to be disclosed includes the method of valuation of assets, how depreciation is calculated, and how the costs, which are shared between the regulated monopoly side of the business and the commercial side are allocated. The great failing of the prior regime was that there was no clarity on these issues. Without a clear accepted benchmark from the regulator's perspective, it was difficult to form an opinion on whether the methods used were right or not (Interview 2010d).

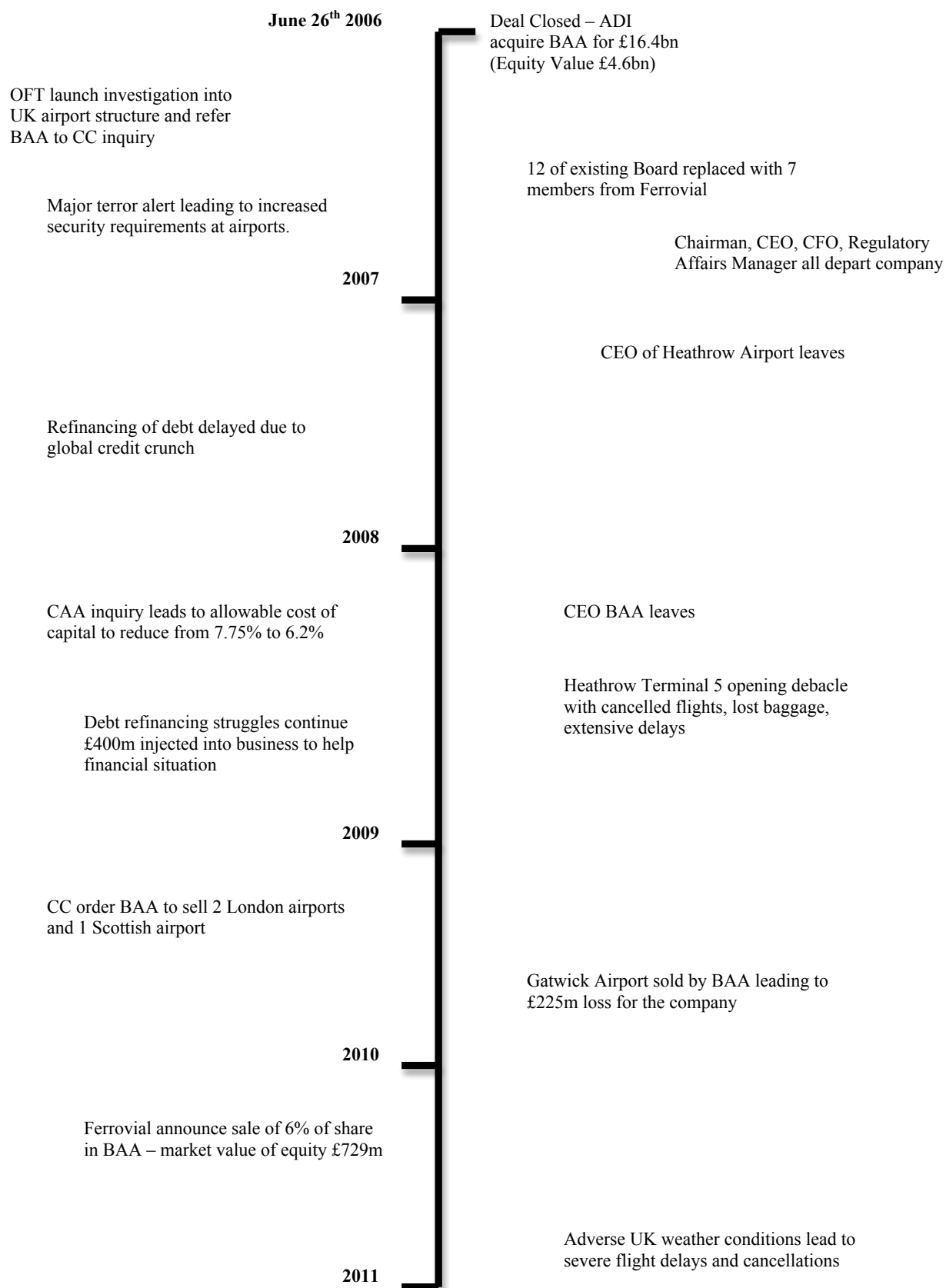
After a number of submissions, the final determination paper for the information disclosure of airport services was released on 22 December 2010. While airports are still not compelled by law to conform to the input pricing methodologies, the information that is disclosed can be reviewed against the benchmark measures to see whether the airports are exploiting their market power or not.

The final outcome of the information disclosure regime has been seen as a step in the right direction for the regulatory control of airports in NZ, but, in the eyes of the Airline representative bodies, falls short of what they believe to be a fair outcome. The Board of Airlines Representatives were at least hoping for a negotiated arbitrate regime which would have meant that after the consultation process, any remaining differences could be resolved by the Commerce Commission's arbitrator using the

Commission's principles as a guideline. Other airline representatives feel that the latest regime falls well short of the desired result, believing that some form of de-facto price control is required on the regulated side of the business.

A key implication from the latest Commission review is that there is still likely to be subjectivity involved in the setting of airline charges. As airports enter into future consultations over the next airline pricing round they will be faced with the decision to follow the Commerce Commission's information disclosure principles or seek to rely on the Airport Authorities Act and set charges as they see fit. While the uncertainty has been reduced with the introduction of a yardstick for pricing methodologies, there is still considerable scope for airlines and airports to be at loggerheads over the subject. Airports have the ability to push the boundary and continue to set prices based on re-valued assets, not treating it as income, extracting as much value as they can, relying on the government to take another ten years to change the regime. The prevailing disputable situation for airport pricing at Auckland seems to have transpired because of an underlying lack of political will to enforce objective pricing controls by the government, at the time of privatisation of the airport in 1998.

APPENDIX 7: Timeline of Events Post ADI Acquisition of BAA



APPENDIX 8: Pension Fund Interviewee Characteristics⁴⁴

Pension Fund 1

Assets Under Management: £250 million
Industry: Tertiary Institution Staff Pension Scheme
Location of Offices: Oxford

Pension Fund 2

Assets Under Management: £6 billion
Industry: Government Superannuation
Location of Offices: Auckland

Pension Fund 3

Assets Under Management: £31 billion
Industry: Municipal Employees Retirement Fund
Location of Offices: Toronto (Head Office), London

Pension Fund 4

Assets Under Management: £16 billion
Industry: Tertiary Education Sector Employees
Location of Offices: Melbourne

Pension Fund 5

Assets Under Management: £94 billion
Industry: Government Pension Plan
Location of Offices: Toronto (Head Office), London, Hong Kong

Pension Fund 6

Assets Under Management: £17 billion
Industry: Railways
Location of Offices: London

Pension Fund 7

Assets Under Management: £31 billion
Industry: Tertiary Education Sector Employees
Location of Offices: London

⁴⁴ Assets Under Management approximated as at September 2010

APPENDIX 9: Infrastructure Investor Interview Questions

What is the overall position of the fund? What are the aims and how does it distribute its benefits? DB or DC?

What is the fund's liabilities? Is it purely focused on rate of return?

What are the principles that determine asset allocation of the fund? Have the principles for asset allocation changed/been altered recently? What are likely changes in the future? How has infrastructure been placed?

How does the fund go about selecting assets to invest into? Does it have a full internal capacity? To what extent does the fund use external service providers? Why would the fund go outside the institution for investing in infrastructure?

What is the time horizon that the asset class is judged?

What is it that the infrastructure opportunity provides?

As a long-term investor, what are the key considerations that need to be taken into account in the investment analysis process?

Do you carry out your own risk analysis process on the assets that your infrastructure manager invests into? What risks do you associate with infrastructure investments?

How do you incorporate these risks into the investment analysis process? How can such risks be materialised in the investment process and what tools are used?

'The best infrastructure is someone else's infrastructure' – How does this statement hold for the fund? How are the issues treated at the investment level, board level or committee level?

Can you provide an example of an investment into an infrastructure asset that has performed well and an example of an asset that has not performed very well? What are the key distinguishing factors between the two investments? What can be said of the respective investment processes?

APPENDIX 10: Investment Consultant Client Questionnaire

1. What is the size of your fund – assets under management? Is the scheme DB or DC?
2. What is the structural form of the investment process for your fund? Does the investment committee act independently of the trustees/employer organisation?
3. Do you have any full time staff dedicated to the investment process of the fund? Are there any staff specifically dedicated to infrastructure investing?
4. Did you consider investing into infrastructure on your own accord or were you advised by an investment consultant?
5. Did you use an investment consultant for investing in other asset classes prior to investing into infrastructure?
6. What is your percentage allocation to infrastructure? How did you come up with the allocation?
7. Do you invest into an unlisted infrastructure fund through a specialist infrastructure fund manager? Why did you select your current infrastructure fund manager over others?
8. Have you considered other vehicles for investing into infrastructure (listed, debt)?
9. In your opinion, how important is the role of an investment consultant for pension funds making an investment into the infrastructure asset class?
10. Have you encountered any conflicts of interest or had any concerns when dealing with consultants for infrastructure investments?

APPENDIX 11: Fund Manager Selection Procedure

In order to assess infrastructure managers, a rating number from 1 (being the worst) to 4 (being the best) was applied to a given set of assessment criteria. All managers are rated according to the same criteria although certain asset classes may focus on a particular criterion over others. The assessment criteria of managers consists of six key areas: business, organisation and staff, investment process, risk management, performance, other – systems, client servicing and performance fees. An overall rating is then deduced for the manager. Business refers to the characteristics of the manager that affect its ability to carry out long-term infrastructure investments such as whether it is part of a large organisation or small firm, is it long established with a substantial past history and track record, whether the firm has an international presence and whether potential conflicts of interest may arise with other parts of the organisation such as a client for one division of the company may be a competitor for the infrastructure manager. Organisation and staff refers to the experience of the manager for infrastructure equity investments, rather than just advisory or experience with structuring debt financing for infrastructure deals. The size, remuneration and mix of skills within the team are analysed in detail for this criterion. Aspects of the investment process that are assessed include sourcing of deals, due-diligence, proactive management of asset (once acquired) and size of equity share in assets. For risk management, the consultant assesses the manager's due diligence process in identifying, mitigating and managing the key risks to an infrastructure project. It is also determined whether the manager has controls for the number, type, size and geographical location of investments as well as whether 'factor' risks such as war, global recession, natural disasters are taken into account. The performance of fund managers is looked at with the key issues of investigation including: how have assets purchased before the credit crisis performed, whether past performance has affected the types of assets currently being purchased, the extent to which leverage is used to generate returns, whether individuals responsible for the past record are still in place. The final assessment criterion is the 'other' category, which looks at the effect of performance fees on the net return to investors, the administrative systems of the manager as well as the day-to-day client services of the manager.

An overall rating score from 1-4 for a manager is achieved having appraised each of the different criteria. To establish the overall rating, each criterion is not assigned a fixed weight but instead each case is considered individually. A manager who achieves a score of 4 would be highly regarded and appear on most short lists for a new appointment. At the bottom end of the scale a fund manager with a score of 1 would not be recommended by the consultant as there would be serious concerns over this appointment.

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