

**Funding and financing urban infrastructure: a
UK-US comparison**

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Abstract

This thesis examines how urban infrastructure is funded and financed in cities in the United Kingdom and the United States. The thesis brings together the diverse and disconnected literatures on infrastructure, capital investment and urban development and creates a framework for understanding the changing landscape of infrastructure finance. Drawing on primary empirical research, this framework is then used to examine the funding and financing of infrastructure in the cities of Manchester, Newcastle and Sheffield in the UK and Buffalo, NY, Chicago, IL, and Stockton, CA in the US. The objectives of the empirical analysis are: to explain the types of funding and financing being used within the case study cities and to identify emergent trends; to understand the multiscalar factors driving the adoption and use of those practices; to analyse the key mechanisms, processes and systems that are implicit in a range of capital investment strategies; and to explain the implications of the ways in which infrastructure is funded and financed for urban development within the case study cities.

This thesis argues that the practices used for funding and financing infrastructure in cities are becoming increasingly financialised, and that this is having transformative implications for the urban environment. As such, the thesis makes four main contributions; first, it demonstrates how the process of financialisation is changing the ways in which infrastructure is funded and financed; second, it shows that financialisation is changing the politics of infrastructure and fuelling a process of reterritorialisation but, at the same time, that the state continues to have a major role in the funding and financing of infrastructure; third, it contends that the financialisation of capital investment is encouraged by instances of fiscal stress, and yet that it can also catalyse overaccumulation and cause further fiscal crisis; and fourth, it suggests that increasingly financialised models of infrastructure investment are reinforcing patterns of uneven development and causing an intensification in the process of urban splintering.

More broadly, this research begins to address a gap in the literature on financialisation, which, to date, has been criticised for lacking sufficiently in-depth and fine-grained analyses of financial actors, markets and systems. In particular, the empirical evidence and comparative case study analysis illustrates that financialisation is not an overpowering and all-consuming behemoth but a highly variable process that is negotiated, managed and regulated in different ways in different geographical contexts.

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Chapter 1: Introduction

Infrastructure is a central part of the modern economy. It enables the movement of people from one place to another; it underpins trade and commerce; it makes up the built environment of our towns and cities; it enables technological advancement; and it provides the foundations from which society develops and evolves:

‘Infrastructures are at the very heart of economic and social development. They provide the foundations for virtually all modern-day economic activity, constitute a major economic sector in their own right, and contribute importantly to raising living standards and the quality of life’ (OECD, 2006a: 14).

In addition to performing a direct function (for example, a bridge enabling a car to cross a river), infrastructure plays a broader role as an agent of progress in the contemporary world. According to the World Bank (2011), for example, infrastructure is a fundamental component of global development:

‘Infrastructure can be a vector of change in addressing some of the most systemic development challenges of today’s world: social stability, rapid urbanization, climate change adaptation and mitigation and natural disasters’ (World Bank, 2011: iv).

Perhaps most significantly, infrastructure is widely regarded as a cornerstone of economic growth and development. Not only is infrastructure an ‘indispensable input in an economy’s production’, but also, there is a growing body of evidence to suggest that investing in infrastructure enhances economic ‘output’ (IMF, 2014: 78).

The link between levels of infrastructure investment and economic productivity is not new. In a seminal paper in 1989, for instance, Aschauer noted that between 1973 and 1985 there was a correlation between the productivity declines experienced by countries such as Japan and the United States and their respective levels of public capital expenditure (Aschauer, 1989). Although these conclusions are disputable (see Gramlich, 1994), it appears as if the underinvestment identified by Aschauer has continued, and has grown into a major global economic challenge. The World Economic Forum (2014: 3), for instance, suggests that there is a ‘shortfall in global infrastructure debt and equity investment [of] at least US\$ 1 trillion per year’, while the World Bank (2011) maintains that the ‘infrastructure gap’ in low and middle-income countries alone currently stands at US\$1 trillion.

Following Aschauer, contemporary analysis indicates that the growing infrastructure gap and continuing investment shortfalls are likely to have a negative effect on global economic

growth and productivity. According to a major engineering association, for example, the UK's Gross Domestic Product (GDP) could have been 5% per year higher between 2000 and 2010 were it not for the country's 'significant infrastructure deficit' (CECA, 2013: 6-10). Similarly, in the US, if levels of infrastructure investment are not improved between 2012 and 2020, there will be a cumulative cost to the US economy of \$3.1 trillion in GDP and \$1.1 trillion in total trade (ASCE, 2013: 5).

While the poor state of infrastructure in the US and UK is undoubtedly due to a 'legacy of historic under-investment' (see HM Treasury, 2013a: 13), the need for more infrastructure investment has arguably only hit home in a period of crisis and severe economic underperformance. Indeed, the advent of sub-prime mortgage crisis in 2007, an event which triggered one of most severe and tumultuous periods of financial and economic crisis of the modern era, arguably signalled the beginning of what might be called a *new infrastructural paradigm*. Since 2007, the phrase 'infrastructure investment' has become synonymous with economic prosperity: infrastructure has come to symbolise a beacon of recovery, a pillar of growth and an essential component of economic competitiveness for all forms of territorial unit. In particular, it is through its renowned ability to create jobs, stimulate growth and enhance economic competitiveness that infrastructure has been presented a potential 'spatial fix' to contemporary urban and economic crisis (Hall and Jonas, 2014: 15).

Alongside the emergence of a new a new infrastructural paradigm, a key question for policymakers, voters, businesses and investors alike has been how new and improved infrastructure can be paid for and who should bear the cost. This question, of how infrastructure can be *funded* and *financed* is the focus for this thesis. As shall be elaborated in Section 1.2, funding refers to how the cost of the infrastructure is actually borne, whereas financing refers to the financial arrangements that enable the costs to be met as they are incurred.

Perhaps most importantly, the increasing demand for more infrastructure investment has coincided with traditional models of funding and financing becoming increasingly out-dated and unavailable. Arguably, the same context of financial and economic crisis, which has resulted in widespread *fiscal stress* – defined as the worsening of a governmental entity's financial condition (Hendrick, 2011: 22) – has been central to the increasing difficulties of funding and financing infrastructure. At the local level in particular, floundering tax receipts have compounded the burden of spending cuts being passed down from higher levels of government as the politics of crisis and austerity unfold (Kirkpatrick and Smith, 2011; Peck, 2012). Thus the presentation of a dilemma: at a time when infrastructure investment is

arguably more important than ever, governments are in an especially weak position to undertake such investment.

While the Vice President of the EIB, Plutarchos Sakellaris, points to the ‘double-need of fiscal consolidation on the one hand and infrastructure renewal and upgrading on the other’ (Sakellaris, 2010: 5) and the CBI (2012: 4) notes that the ‘challenge lies in securing funding for infrastructure at a time of austerity’, one report’s suggestion that ‘a dark cloud of sovereign debt looms over future publicly funded infrastructure’ (PwC, 2011a) paints a more ominous picture.

As a result of the increasing strain on public finances, traditional approaches to funding (such as direct taxation and public grants) and financing (such as the use of project revenues on a ‘pay-as-you-go’ basis), have been unable to meet the levels of investment needed to close the infrastructure gap and to achieve the elusive spatial fix. It is in the climate of economic and fiscal crisis, then, that the search for new and innovative models of funding and financing infrastructure has begun in earnest.

In what follows, this thesis seeks to analyse and explain the changing landscape of infrastructure investment. This Chapter introduces the core themes and arguments of the thesis, highlights the gap in the existing literature that this research seeks to address, outlines the methodological and theoretical frameworks that are employed throughout the research, and provides an overview of the structure of the thesis.

1.1 The contested category of infrastructure: towards a definition

In order to address the processes of funding and financing infrastructure, producing a conclusive definition infrastructure would seem to be an essential task. Given the highly contested nature of infrastructure, however, perhaps a more appropriate objective is to outline concretely what is meant by infrastructure in the context of this study.

Arguably, the most definitive characteristic of infrastructure is its multifarious and highly disputed nature. According to Weber and Alfen (2010: 7), the term ‘infrastructure’ was first used to describe ‘military assets such as caserns and airfields’ (Weber and Alfen, 2010: 7). However, as infrastructure has evolved as a category, its meaning has been stretched and subdivided to incorporate a huge range of different conceptions, including ‘hard’ infrastructure – more recently branded ‘economic’ infrastructure – which consists of ‘energy, transport, digital communication, flood protection, water and waste management’ (HM Treasury, 2010a: 5), ‘soft’ or ‘social’ infrastructure, which describes the systems that support

community cohesion and societal progress, such as such as ‘police, education, medical or legal services’ (Vickerman, 1990: 7), and ‘green’ infrastructure which supports and protects the environment (Marshall, 2013: 4).

Neoclassical economists have traditionally preferred the term ‘public good’ or ‘collective consumption good’ (see Samuelson, 1954: 387-9), implying that infrastructure is defined by public capital investment made in response to market failures. In addition, this school of thought asserts that infrastructures are ‘natural monopolies’ (O’Neill, 2010; also see Sharkey, 1982) and possess the properties of ‘non-excludability’ and ‘non-rivalry’ in their consumption (Deneulin and Townsend, 2007: 20). However, through the ‘unravelling’ of natural monopolies (Graham and Marvin, 2001: 199) and the emergent processes of privatisation and financialisation, these neoclassical understandings of infrastructure are becoming increasingly redundant – in the contemporary economy, infrastructure can neither be broadly characterised as ‘public’ nor as exempt of competition. Nevertheless, the notion that infrastructure is a ‘sunk cost’ (Clark and Wrigley, 1995: 211) and requires significant public capital investment is still highly relevant (for example, see OECD, 2012a).

In its contemporary context, infrastructure has developed multiple meanings that are shaped by an unbounded web of discourse and perception. Indeed, its position in time and space are integral to its precise calculation.

For some, infrastructure is defined by its *physical manifestations*, so that infrastructure means ‘roads, gas and electricity supply, water supply, drainage and sewer systems, bridges, harbors and river transportation systems, slaughterhouses, irrigation systems, and marketplaces’ (Hansen, 1965: 151).

For others, infrastructure is defined by the function it performs and the service that it delivers: for example, infrastructure is ‘an *enabler* of the supply chains and divisions of labour needed for expanding markets’ (O’Neill, 2013: 444; emphasis added). Such a reading is both in line with the neoclassical growth model, which suggests that infrastructure plays a role in maximizing productivity (Arrow and Kurz, 1970), and with Marxist thought, which interprets infrastructure as facilitating production, consumption, capital accumulation and as a solution to ‘overaccumulation’ – as it enables capital and labour surpluses to be ‘absorbed by temporal displacement’ during periods of crisis (Harvey, 1985a: 26).

Further still, infrastructure may be understood by its transferability between different categories, and its ability to transcend both the material and abstract worlds: for instance, rather than being defined by its physical manifestations, infrastructure can instead be understood as a financial asset or security which ‘represents a high-quality, long-term,

income-oriented investment generating stable returns, with an upside potential, relatively uncorrelated with equities or business cycle fluctuations, but positively correlated with inflation' (Solomon, 2009: 5). Indeed, in the contemporary economy, infrastructure has become to be understood as something that is tradable, exchangeable, fungible and liquid.

Rather than defining infrastructure by its distinctiveness as a concept or form, it is perhaps more appropriate to define infrastructure by its *relational* characteristics: that is, viewing infrastructure as part of a network or system in which one item of infrastructure cannot exist in isolation:

'[I]nfrastructure [is] the physical assets and processes of the *inter-related* systems that provide the resources and services essential to sustain or enhance economic growth and quality of life at a range of scales' (Dawson, 2013: 2, emphasis added).

Although this research focuses on the funding and financing of urban infrastructure and, therefore, adopts a definition of infrastructure that prioritises the urban scale, acknowledging that infrastructure has emerged in a multiscale and interconnected system (or 'system of systems') is crucial for understanding the whole array of factors that might shape or drive the funding and financing of infrastructure in the contemporary global economy.

Taking into account the wide range of definitions from an array of different disciplines presented above, then, this research defines infrastructure as *the interrelated physical components of the urban environment requiring significant capital investment, which have multiple transferable meanings and representations, and which enable economic growth and capitalist development*. More practically, the focus in this research is on infrastructure that is created to support or stimulate urban development and economic growth, such as a transportation system or a city-centre regeneration scheme.

1.2 An introduction to the funding and financing of infrastructure

Understanding how infrastructure is *funded* and *financed* is a central objective of this research. As such, it is essential to dedicate some space to explaining what is meant by the terms 'funding' and 'financing'.

According to (Maxwell-Jackson, 2013: 5), the terms 'funding' and 'financing' are 'fundamentally different' when used in the context of infrastructure investment. While 'funding' describes the process of 'paying for the infrastructure over time', 'financing' describes the process of 'meeting the upfront costs of construction' (ibid.).

Such a definition appears to be generally accepted across the literature, especially in practitioner reports and publications. For example, according to the Australian Financial Services Council and Ernst and Young (2011):

‘...[t]he funding of infrastructure [is] defined as the allocation of ultimate cash flows that support the construction and operation of infrastructure. The financing of infrastructure [is] defined as selecting the immediate source of cash that will physically develop the assets with the repayment of this investment over the life of the asset. Funding is the revenue stream that repays the financing’ (Australian Financial Services Council and Ernst and Young, 2011: 6).

In summary, funding is taken here to mean *the sources of income that defray infrastructure costs over time*, whereas financing is understood as *the financial arrangements that enable the costs of a project to be met as they are incurred*.

In the current policy and practitioner discourse, a precise definition of the origin of sources of funding and financing is perhaps more elusive, especially in terms of whether an item of infrastructure is *publically* or *privately* funded and/or financed.

Vander Ploeg (2011: 41) argues that there are only two possible sources of funding for infrastructure: ‘taxation’ and ‘user fees’. This is echoed in a report by PwC (2013: 12) in which it is suggested that funding for infrastructure can either be obtained ‘[t]hrough users paying a charge for the use of the infrastructure’ or ‘[t]hrough Government spending’. As such, it appears as if a distinction exists between *public* funding (government spending/taxation) and *private* funding (user fees/project-generated revenues). In reality, however, this distinction is not always clear. Take the Private Finance Initiative (PFI) as an example: although the ‘private’ in PFI directly refers to the way in which an infrastructure project is ‘financed’ (typically PFI schemes are ‘funded’ by mortgage-style payments from government (Leyshon and Thrift, 2007)), complex accounting standards provide room for interpretation and have led to PFI being classed as privately funded infrastructure by some (for example, see CECA, 2013: 9).

An equally simple distinction could be made between forms of financing. According to Vander Ploeg (2011: 41), financing is either achieved on a ‘pay-as-you-go’ basis (that is, infrastructure costs are met as revenues arrive) or through ‘debt finance’ (that is, borrowing in order to meet the costs of infrastructure before repaying lenders using future revenues). Again, however, this simple binary definition arguably fails to capture the complexity and variation of infrastructure financing. In fact, it is maintained here that there are multiple forms financing, many of which cannot be defined as exclusively *public* or *private*.

Figure 1.1 presents a framework through which infrastructure funding and financing can be understood. The Figure differentiates between funding and financing and also indicates whether types of funding and financing can be considered as public, private, or both.

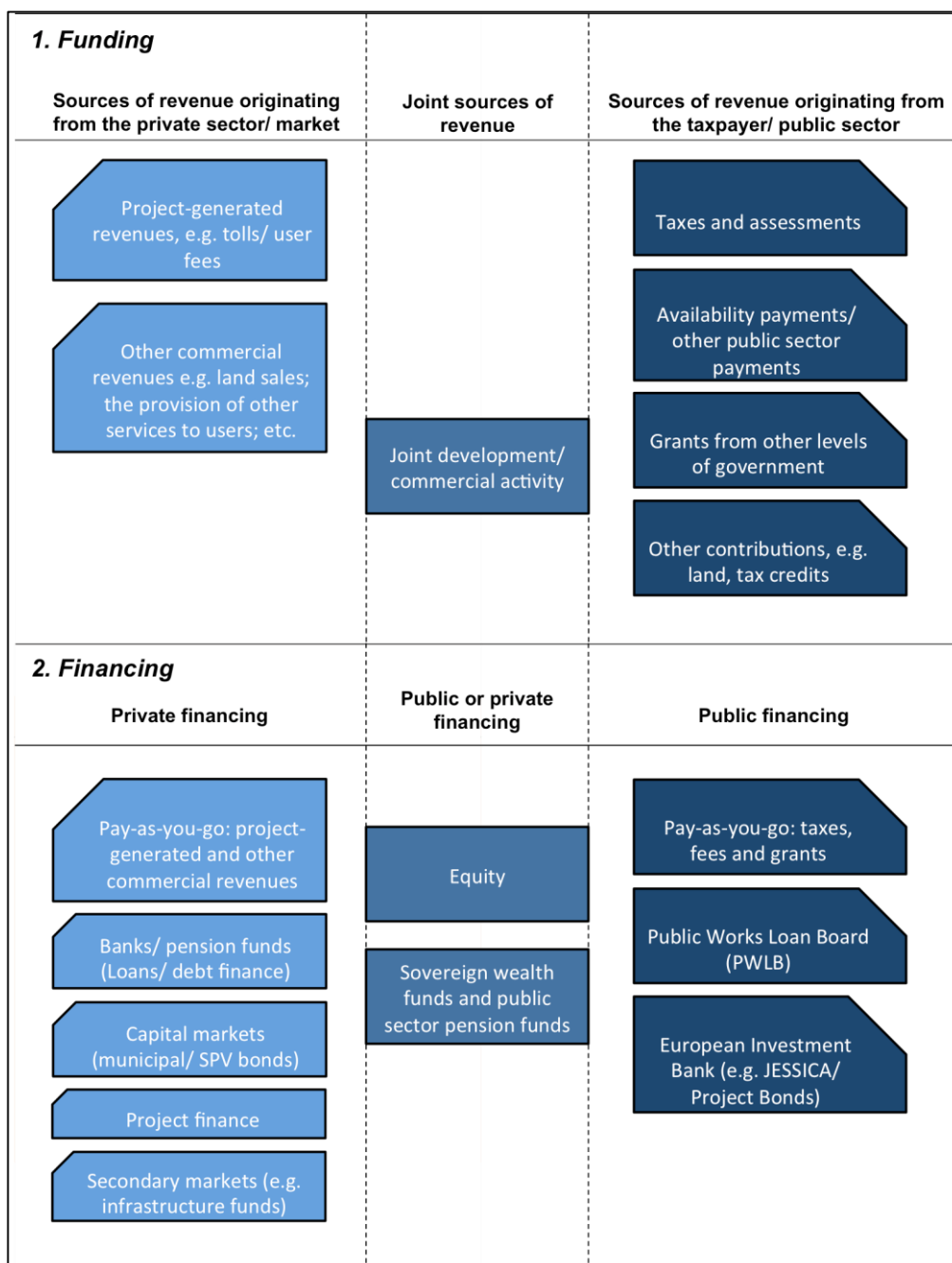


Figure 1.1 An illustration of infrastructure funding and financing

Source: Author's own.

Private funding sources include project-generated revenues (such as user fees) and other commercial revenues (such as land sales or advertising revenue), while public funding sources comprise taxes and assessments, public sector availability payments, grants, and other government contributions. In some instances, it is possible for funding to be generated from

public and private sources simultaneously, such as in instances of joint development where factors such as public ownership can actually add value to an otherwise privately funded project.

In terms of financing, as exhibited in Figure 1.1, private sources include project-generated or commercial revenues as they arrive (pay-as-you-go); conventional debt finance through banks and other institutions (such as loans); bonds that are issued through the capital markets by either a public entity or special purpose vehicle (SPV); hybrid packages of project finance; and indirect finance through the secondary markets. Public sources of financing include taxes, fees and grants as they arrive; specialist public sector lending vehicles (such as the Public Works Loan Board in the UK); and other forms of hybrid investment (such as through the European Investment Bank (EIB)). Equity investment can be public or private. In addition, some forms of public financing are increasingly being delivered through private forms, such as sovereign wealth funds or public sector pension funds.

It is important to interpret the sources of funding and financing outlined in Figure 1.1 as a series of over-arching categories, rather than a comprehensive list, as the potential number of variations within each category is almost infinite. Indeed, a key objective of this thesis is to explore and begin to make sense of the complexity of the ways in which infrastructure investments take place beyond these broad categorisations.

Nevertheless, this thesis will suggest that the ways in which urban infrastructure projects are being funded and financed can broadly be regarded as undergoing a process of transformation. Traditional sources of funding, such as direct taxation, government grants and user charges, are being replaced by novel and alternative sources, such as the additional value created by an infrastructure item that is capturable in a range of monetary forms. In addition, traditional forms of financing, such as ‘pay-as-you-go’ tax, grants, project-generated revenues and plain vanilla debt issuances (that is, simple issuances requiring minimal financial engineering), are being replaced by more innovative and complex forms of financing, such as bespoke public-private partnership arrangements (involving complex legal structures such as special purpose vehicles) or securitisation transactions (which involve packaging debt that has been issued against future revenue streams into tradable parcels – see 2.1.2 for further explanation).

Such transformation, it is argued, can be described as a process of ‘financialisation’. Financialisation is a concept that describes the increasing influence of financial processes and systems in economic and political life (Pike and Pollard, 2010), and, in particular, the emergence of a more intense form of capitalism which constantly seeks to accelerate the

circulation and accumulation of capital in order to produce greater than ever profit and reward (Aalbers, 2008).

Financialisation must be understood as bound up in – yet distinct from – the process of neoliberalisation, which can be defined as the prevailing process of ‘market-driven social and spatial transformation’ (Brenner and Theodore, 2005: 102). Like financialisation, neoliberalisation is articulated in an infinite range of unique and geographically specific ways (Peck and Tickell, 2002), and underpins a more contradictory and crisis-prone form of capitalism. However, whereas neoliberalisation is typically considered to have emerged as a new form of capitalist development in the second half of the 20th Century, in which a political alliance emerged (typified by the dominant global influence of Reaganism and Thatcherism) that promoted market integration, actively encouraged the expansion of structures of accumulation and consumption, and set in place an ‘exclusionary and hierarchical’ system of social relations (Gill, 1995), financialisation can be viewed as a more recent consequence of the proliferation of financial technologies (such as securitisation and derivatisation) which has transformed the financial sector from an important enabler of industrial production into a self-sustaining and hyper-productive tool for capital accumulation (Boyer, 2000; Duménil and Lévy, 2004; Bryan and Rafferty, 2006). Importantly, though, the increasing influence of financial markets, their intermediaries and processes can be viewed as ‘enabled’ by neoliberalisation: specifically, ‘neoliberalism [has] released the constraints against it’ (Kotz, 2011: 15).

1.3 Outlining the framework of research: a UK-US comparison

The objective of this research is to undertake an in-depth and fine-grained analysis of the funding and financing of urban infrastructure in the United States (US) and the United Kingdom (UK). The comparative dimension is a crucial part of this approach, providing a rich source of empirical material on which key conceptual and theoretical arguments and contributions are based. For the comparative element, the research focuses on six case study cities (three from each country), which have been chosen using a robust methodological framework (Chapter 3). The ‘city’ is chosen as the unit of analysis (instead of possible alternative, such as specific infrastructure projects or specific funding mechanisms) because it enables an understanding to be developed of how the context and characteristics of a particular place drive, shape or make possible certain models of capital investment.

In the US, the selected case study cities are Buffalo (State of New York), Chicago (State of Illinois) and Stockton (State of California). In the UK, the selected cities are Manchester, Newcastle and Sheffield. These cities have all been chosen as ‘critical cases’ which have the potential to make significant conceptual and theoretical contributions (Flyvbjerg, 2006; Barnes et al., 2007). In particular, the cities were chosen according to their ability to address and answer the research questions that are presented at the end of Chapter 2.

The case study material used throughout the thesis has been obtained from over one hundred semi-structured interviews with local stakeholders and a careful reading of key primary and secondary documents. The methodological opportunities and challenges of this approach are discussed in more detail in Section 3.3. Importantly, in contrast to what could be called positivist ‘like-for-like’ comparisons, which seek to identify the similarities and differences between case studies and before categorising the case studies according to a pre-established theoretical model, this research adopts a ‘relational’ approach to comparison in which the understanding of one case study helps to shape and inform the understanding of another (Ward, 2010b), thus helping to develop new conceptual and theoretical insights.

1.4 Key conceptual and theoretical contributions

This research, which explores the funding and financing of urban infrastructure, aims to contribute towards a better understanding of the interaction between finance and urban development and, in doing so, seeks to address a series of gaps in the existing literature.

Just as the global financial crisis has positioned infrastructure at the forefront of contemporary political strategy, it is also unquestionable that the crisis has catalysed the emergence of new political, economic and academic approaches to finance and the global financial system. In particular, the global financial crisis has fuelled the spread of a geographical approach to finance, which interprets the global financial system as highly variegated, embedded in place, and decidedly uneven (*inter alia* French et al., 2009, 2011; Lee et al., 2009; Pike and Pollard, 2010). Such an approach builds upon an earlier body of work on the geographies of finance pioneered by the likes of Clark (1993, 2005), Leyshon and Thrift (1996, 1997), Martin (1999), Mason and Harrison (2002), Pike (2006) and Pollard (1998, 2003), which, in turn, had its roots in the reinvigorated Marxist political economy that emerged in the 1980s and 1990s and that conveyed finance capital as a key driver of an uneven and crisis-prone form of capitalism (for example, Boyer, 1990; Cerny, 1993; Harvey, 1973, 1982, 1985a, 1985b; Harvey and Chatterjee, 1973).

Despite what is evidently a rich intellectual heritage, contemporary geographical approaches have arguably failed to influence the understanding of financial systems and processes within mainstream economic and political discourses (Engelen and Faulconbridge, 2009; Muellerleile et al., 2014). In part, it is the underdeveloped nature of the concept of ‘financialisation’ (see Section 2.1), a potentially transformative analytical tool, that has confined geographical accounts of finance to spaces of heterodoxy.

Whilst acknowledging its potential theoretical significance, Christophers (2012) bemoans the lack of any significant conceptual or empirical interrogation of financialisation:

‘In all manner of different accounts of contemporary political economy and of, not least, its recurrent crises, capitalism’s financialisation is typically envisioned less as a contestable hypothesis requiring empirical substantiation, and more as something axiomatic, a taken-for-granted of social-scientific understanding: established and beyond dispute... [H]owever, the accumulated body of analytical (as opposed to anecdotal) evidence for ‘actually-existing’ financialisation is, for such a shibboleth of contemporary scholarship, remarkably and curiously thin’ (Christophers, 2012: 272).

This view is also shared by French et al. (2011: 809) who maintain that there are too many ‘generic accounts of financialization’ which do not focus enough ‘on the specificities of new financial values and technologies’, and by Pike and Pollard (2010: 31) who point to a ‘relative dearth of empirical work’ that engages with the topic of financialisation.

In addition, although one of the concept’s key attributes is arguably its ability to draw attention to the highly uneven spatialities of financial processes and systems (French et al., 2011; Pike and Pollard, 2010), Weber (2010) suggests that insufficient attention has been given to understanding the effects of financialisation at the local and urban scales, especially in terms of analysing how place-based actors and institutions negotiate multiscale financial process and what implications this has for local and urban development:

‘With the exception of a few recent analyses (Hackworth 2007; Ranney 2002), we know little about the politics of financialization at the local level... [M]ore conventional accounts of urban governance, emphasizing regimes, power, and formal legal arrangements, can assist critical geographers in their studies of the place-based articulations of global finance’ (Weber, 2010: 270-1).

In order to address this shortcoming, this thesis focuses on the interplay between finance and urban infrastructure, taking into account key local factors, such as local political agendas, the financial condition of local governments, and the restructuring of local institutions, as well as being sensitive to broader political-economic factors, such as the evolution of the

national regulatory landscape. In doing so, the thesis also follows Pike and Pollard's (2010: 38) call to tackle head on the apparent tensions between territorially 'bounded' entities (such as an item of infrastructure or a governing institution) and territorially 'unbounded' flows and circulations (especially including flows of investment capital).

In addition to enhancing the conceptualisation of financialisation as a highly variegated, multiscalar and at times contradictory process, this thesis also seeks to address the empirical void highlighted by Pike and Pollard (2010). In particular, by undertaking an empirically-driven and fine-grained analysis of the funding and financing of urban infrastructure, this research aims to go beyond a 'generic' account of financialisation (French et al., 2011: 809) and to draw attention to the 'complex processes of transformation' that constitute and result from the process of financialisation (van der Zwan, 2014: 120).

Although the concept of financialisation arguably emerged from political-economic roots (see above), Pantich and Konings (2009) suggest that the role of the state has been somewhat underemphasised – if not ignored – in contemporary debates:

'Of course it has become commonplace to assert that states and markets should not be seen as really counter-posed; but such claims have tended to remain rather perfunctory, and most research has remained guided by the notion that financial expansion has been accompanied by the attenuation of the state' (Pantich and Konings, 2009: 68).

In response to the neglected role of the state, this research heeds the call to adopt 'a fuller engagement with political economy approaches to money' (Hall, 2013: 286-7). A key argument of this thesis, for example, is that, in contrast to accounts of the increasing privatisation of infrastructure (e.g. Whitfield, 2010), the state actually plays a larger than ever role in funding and financing infrastructure, and, as such, is entering new and untested arenas of financial calculation and risk taking, with potentially significant implications for its territoriality. Accordingly, then, this research also links the topic of financialisation with a 'broader analysis of state power and network relationships' (Ashton et al., 2014: 13).

This analysis also has important implications for our understanding of the process of financialisation in relation to neoliberalisation, as well as other processes such as commodification, marketisation and privatisation. Whilst financialisation has emerged in the context of a multiscalar reconstitution of state-economy relations in which market-based regulatory arrangements are strongly promoted (Brenner and Theodore, 2005), financialisation can be regarded as distinct from the process of neoliberalisation. Although financialisation is also a strategy of the state's enduring territorial 'struggle' (see Castells, 1996; Brenner, 2001), it is specifically focused on utilising finance capital and financial technologies

(e.g. securitisation and derivatisation) to accelerate the circulation of capital while simultaneously aiming to disperse, transfer and even extinguish the risks typically associated with such circulation (Aalbers, 2008; Clark et al., 2009). Similarly, although privatisation and commodification provide new channels through which finance can penetrate into previously inaccessible spheres (e.g. the privatisation of infrastructure has enabled the securitisation of revenues from previously state-owned infrastructure monopolies) (Allen and Pryke, 2013), and thus have been important in the emergence of financialisation, financialisation uniquely describes the complex and spatially differentiated ways in which finance capital is increasingly taking advantage of these and a plethora of other such opportunities.

The transition from the global financial crisis to the sovereign debt crisis that followed the unprecedented government bailouts of distressed financial institutions (French and Leyshon, 2010; Lapavistas et al., 2010; Peck, 2013) reinforces the notion that the state and its fortunes are bound up in the process of financialisation. Despite the clear link between the meltdown of financial markets and the emergence of fiscal crises across multiple levels of government, there has been very little conceptual engagement with fiscal stress, its relation to flows of finance, and its implications for urban development. Whilst a body of work on the politics of austerity is emerging (e.g. Peck, 2012; Schäfer and Streeck, 2013), alongside more mainstream debates about the economic (il)logic of austerity (Dymski, 2013), it is arguable that there has been insufficient coverage of how the process of financialisation might pose a risk for the *financial condition* of governments – defined as the extent to which a governmental entity can meet its financial and service obligations (Hendrick, 2011: 18) – and, in turn, how fiscally stressed governments negotiate financialisation going forward.

Of course, there are some exceptions to the general lack of crossover between ideas of financialisation and fiscal stress. These include: Kirkpatrick and Smith's (2011) analysis of the challenges for municipal investment and growth agendas in crisis-riddled cities, in which a focus is placed on the emerging conflicts between bondholders and municipal employees; Davidson and Ward's (2014) account of the dire fiscal implications of an overtly speculative form of urban development in pre-crisis Californian cities; Peck's (2013: 17) discussion of the proliferation of 'risky experiments in fiscal entrepreneurialism' as part of an 'increasingly speculative, debt-leveraged and risk-prone' model of urban development in fiscally stressed American cities; and, Hall and Jonas's (2014: 2) examination of a 'speculative spatial fix' to urban infrastructure in the bankrupt city of Detroit. Nevertheless, an explicit attempt to combine fiscal stress and financialisation in a coherent theoretical framework has yet to emerge. As such, this thesis seeks to build on this nascent body of research, and, crucially, to

begin to construct a framework through which financialisation and fiscal stress can be understood *in tandem*.

A final area in which this thesis seeks to develop new conceptual and theoretical insights is in improving existing understandings of how the funding and financing of infrastructure might affect the quality and form of social and economic development within cities. Notably, the research draws on Graham and Marvin's (2001) conceptualisation of 'splintering urbanism', in which the unbundling, segmentation and privatisation of infrastructure leads to a highly uneven provision of networked infrastructures. Specifically, an attempt is made to link the concept of splintering urbanism to political-economic approaches that emphasise the uneven and sometimes destructive nature of the circulation of capital through the built environment (see Harvey, 1985a). In particular, O'Neill's (2013) suggestion that the segmentation and unbundling of infrastructure has been a key driver of the financialisation of infrastructure provides the context from which to question whether the process of financialisation might serve to *intensify* splintering urbanism. By merging Graham and Marvin's concept of 'splintering urbanism' with a political-economic approach to financialisation, which positions financialisation as an agent of the *acceleration* of capital circulation (with increasingly uneven and destructive implications), this thesis seeks to improve and refine the concept of splintering urbanism while also crystallising the value of adopting a political-economic approach to financialisation.

1.5 Structure of the thesis

The thesis is structured into seven further chapters. In Chapter 2, a critical analysis of the literatures relevant to the funding and financing of urban infrastructure is presented. The chapter begins by reviewing the literature on 'financialisation', before developing a political-economic approach that positions the state as a key actor within contemporary financialised capitalism. The role of the state is further explored in Section 2.2, in which the effects of financialisation upon urban development and governance are analysed using the concept of 'reterritorialisation'. Section 2.3 examines the fiscal challenges facing governments at all levels, assesses the impacts of fiscal stress on the ways in which infrastructure is funded and financed, and questions the implications of more financialised models of investment for the future financial condition of urban governments. Beyond the fiscal effects of infrastructure investment, Section 2.4 explores the potentially splintering implications of financialisation for the broader urban environment. In the final section of the literature review (Section 2.5), an analytical framework is proposed and the main research questions outlined.

Chapter 3 explores the methodological challenges of undertaking international comparative research and attempts to build a robust methodological framework. In particular, the chapter follows Ward (2010a) in making a case for a more ‘relational’ approach to comparative research, as well as outlining the justification for the choice of case studies and methods used in the research. The chapter concludes with a concise depiction of the methodological framework.

In Chapter 4, the case studies are contextualised through an exploration of their characteristics and economic geographies in order to gain a sense of the factors that might influence the ways in which infrastructure is funded and financed within each city. Section 4.1 focuses on the US case studies: it discusses the American system of intergovernmental relations, reflects on the importance of the municipal bond markets for public finance in the US, and details some key features of each US case study city. Section 4.2 outlines the key characteristics of each UK case study city, sets the case studies within the context of a highly centralised system of government and governance, and introduces the prospect of a new round of reterritorialisation through the (partial) devolution of financing powers to English cities.

Chapters 5, 6 and 7 are where the main body of the empirical case study analysis takes place, with every case study being referred to in some form in all three chapters. This approach is adopted instead of undertaking the empirical analysis in six case-specific chapters. Such an approach would encourage an overly descriptive interaction with the case study material and could result in an under-developed analysis that also lacks continuity between chapters. By contrast, the aim of spreading the empirical analysis over three thematically designed chapters is to ensure that the study remains as analytical as possible, and to enable the key themes and arguments to flow throughout.

Chapter 5 provides evidence that the funding and financing of urban infrastructure is becoming financialised. The Chapter emphasises the geographical variation of financialisation, exploring the evolution of infrastructure investment strategies in Manchester that prioritise financial returns on the one hand (Section 5.2.1), and demonstrating that traditional forms of less financialised investment are still important in Buffalo, NY, on the other (Section 5.1.2). The chapter also undertakes an in-depth analysis of tax increment financing (TIF) in the cities of Chicago, Newcastle, Sheffield and Stockton, illustrating how the apparent level of financialisation is dependent on a cocktail of place-specific factors. To conclude the chapter, Section 5.3 reflects on the extent and nature of the financialisation of

infrastructure investment across the different case study cities and argues for a more refined, nuanced and geographically sensitive conceptualisation of the process of financialisation.

Chapter 6 examines more closely the interaction between financialisation, the state and fiscal crisis. In particular, it questions whether the challenges of fiscal stress and the need for infrastructure investment are causing the state to undergo a process of reterritorialisation. Drawing on the case studies of Chicago and Buffalo, Sections 6.1.1 and 6.1.2 develop the concept of ‘fiscalisation’ in order to examine the fiscal and territorial impacts of financialised infrastructure investment strategies that are deployed in times of fiscal stress. In order to develop this inquiry, Section 6.1.3 provides a fine-grained analysis of the fortunes of Stockton, illustrating how the combination of fiscalisation and speculative urbanism sent the City of Stockton into bankruptcy, and how the city continues to be vulnerable to the forces of systemic competition and bound up in a form of State-driven reterritorialisation. The remainder of the Chapter explores the process of reterritorialisation that is occurring in the UK in response to challenges of engaging in financialised investment practices under a centralist framework. All three UK case studies are drawn on in order to examine the unfolding process of decentralisation, the emergence of ‘City Deals’, the creation of new city-regional institutions, and the impact of these processes on the funding and financing of infrastructure.

In Chapter 7, the aim is to analyse the implications of the shift towards more financialised forms of funding and financing infrastructure, especially for urban development and the wider urban environment. Sections 7.1.1 and 7.1.2 analyses the geographies of risk and return in Sheffield and Manchester, question the ability of the private sector to fund and finance infrastructure in underperforming economies and examine the extent to which the state takes on new risks when engaging in financialised investment practices. This argument is developed in Section 7.2.1 in the context of the City of Chicago’s notorious programme of selling off public infrastructure assets to private investors on long-term leases. Sections 7.1.3 and 7.2.2 provide further analysis of the splintering implications of financialisation, suggesting that attempts to accelerate the circulation of capital through the built environment in Buffalo and Newcastle have led to an intensification of the process of ‘creative destruction’. Finally, the Chapter turns to the bankrupt City of Stockton and questions the ways in which Stockton’s bankruptcy has seemingly rewarded the capital markets at the expense of the employees, retirees and citizens of Stockton.

Chapter 8 presents the conclusions of the research, focusing on answering the research questions, crystallising the key arguments of the thesis and reflecting on how conceptual and theoretical understandings could be developed and improved as a result.

Chapter 2: The geographies of capital investment and infrastructure finance

This thesis aims to explain how the infrastructure is funded and financed, what is driving a transformation in the funding and financing of infrastructure, and what implications evolving models of investment have for urban development, urban governance, the financial condition of governing entities, and for the broader urban environment. This chapter provides a review of the literature that engages with these issues.

The chapter aims to draw out a set of core themes from the literature in order to create a framework for the analysis of the funding and financing of infrastructure in the United Kingdom and the United States. This framework is split into four main sections that guide the principle arguments within this thesis; first, the geographies of financialisation and the financialisation of infrastructure; second, the role of the state in infrastructure provision and the financialisation of capital investment; third; infrastructure investment and the financial condition; and fourth, the financialisation of infrastructure and the intensification of urban splintering. Crucially, the analytical framework creates the foundations for addressing the core research questions of this study, which are presented at the end of this chapter.

2.1 The financialisation of infrastructure and urban development

The ‘growing influence of capital markets, their intermediaries, and processes in contemporary economic and political life’, known as the process of *financialisation* (Pike and Pollard, 2010: 29), is a central feature of the contemporary global economy. Of the definitions cited by French et al. (2011) in a recent review of financialisation, central themes include the ‘increasing role’ (Epstein, 2005: 3) and the ‘growing and systemic power’ of finance in the global economy (Blackburn, 2006: 39), as well as the trend towards a financially driven ‘pattern of accumulation’ (Krippner, 2005: 174) which is shaped by ‘the logic and imperatives of interest-bearing capital’ (Fine, 2010: 99).

At an analytical level, it is also an essential concept for understanding the financial system. In particular, as a ‘profoundly spatial phenomenon’ (French et al., 2011: 800), the concept of financialisation facilitates a geographical exploration into the global economy and financial system. The spatially sensitive reading of financialisation adopted by contemporary theorists has its roots in more traditional approaches (for a review see French et al., 2011; Lapavistas and Powell, 2013). First, the concept is heavily influenced by Marxist conceptions of the

financial system as capable of providing (temporary) solutions to crisis in the world of productive accumulation, whilst enabling a class of financial elites to further enhance their power and (temporarily) stabilise their hegemonic position (Dumenil and Levy, 2004; Harvey 1982, 1985b; Lapavitsas, 2013). Second, and related, it has been shaped by the search of regulation theorists to explain how capital accumulation is stabilised in its social context by a dominant regime (see Aglietta 1979; Boyer, 1990), the latest of which is portrayed as a financial ‘mode of social regulation’ (Aglietta and Breton, 2001; Becker et al., 2010; Boyer, 2000). And third, parallels can be drawn between financialisation and Hilferding’s proclamation of a new of financial epoch – later transposed by Keynes in his articulation of monetary policy as a mediator in ‘the class struggle between capital and labour’ (Kennedy, 2013: 152).

2.1.1 The geographies of financialisation

Geographers have sought to understand the rise of a finance-driven economy by analysing the hyper-mobility of capital (Clark, 2005; Epstein, 2009); the reworking of ‘management objectives’ (Williams, 2000: 6); finance and the firm (Pollard, 2003); the increasing influence shareholder value (Froud et al., 2000, 2006; Pike, 2006); the impact of financialisation upon everyday life (Martin, 2002; Langely, 2008); the heightened crisis-prone tendencies of financialised capitalism (Leyshon, 2004); and the geographical causes and implications of the global financial crisis (Aalbers, 2009a, 2009b; French et al., 2009; Lee et al., 2009; Martin, 2011).

Despite the growing body of work addressing the previously neglected theme of finance within geography (see Martin, 1999; Pollard, 2003), Christophers (2012: 272), posits that the concept of financialisation is ‘anaemic’ and lacking in empirical foundations and explanatory clout. It could also be argued that financialisation theorists fail to engage, to a sufficient extent, with the burgeoning literatures from other disciplines, which provide focused and in-depth coverage of financial markets, systems and processes. Equally, the concept of financialisation, as articulated in the geographical literature, has had relatively little penetration beyond the remits of geography and sociology (see Engelen, 2012). Whilst the financial crisis in particular has increased the interest in finance within the geographical discipline, commentary and analysis from prominent economists (for example Shiller, 2008; Krugman, 2009) has arguably been far more influential in shaping perceptions of the financial crisis and the role of finance in the contemporary economy.

Financialisation, however, is a treasured concept amongst geographers because of its ability to provide a critical understanding of the global financial system and to emphasise the importance of scale, place and geographical unevenness. Nevertheless, French et al. (2011) argue, that its key strengths are underexploited in geographical research:

‘...while it is unquestionable that work in this field has been highly significant, generating rich, critical and innovative insights into the workings of contemporary financialized capitalism,... work on financialization has been insufficiently attentive to: the role of space and place; the geography of money and finance; and earlier work in the Marxist and international political-economy tradition that effectively focused on the problem of financialization before the neologism was coined and mobilized’ (French et al., 2011: 800).

Furthermore, they maintain that there are too many ‘generic accounts of financialization’ which do not focus enough ‘on the specificities of new financial values and technologies’ (French et al., 2011: 809). How, then, can a geographical reading of financial systems and their processes become more meaningful? The next section delivers a critique of conventional understandings of financialisation to create a concept that is more adept at analysing and explaining the transformation of contemporary urban economies.

2.1.2 Securitisation, capital switching and the transformation of capital accumulation

Perhaps the most theoretically productive accounts of financialisation can be found in the analysis of the process of securitisation, which – counter to the critique presented by French et al. (2011) – is strongly advancing the political-economy tradition and providing critical insights into the implications of financialisation for the capitalist system. In particular, the process of securitisation has emerged as a key theme for analysis in the wake of the chaos of the global financial crisis (Aalbers, 2009b; French et al., 2009; Wainwright, 2009).

Specifically, securitisation – the issuance of debt against future revenue streams and the packaging of such into tradable parcels – allows funds to be raised at a lower cost than through traditional debt or equity channels (Rosenthal and Ocampo, 1988; Schwarcz, 1994). This is facilitated by the processes of isolation, pooling and tranching, which enable risk to be divided up, shared or transferred (DeMarzo, 2005; Kravitt, 2007; Schwarcz, 1994; Wainwright, 2009). Problematically, these processes can also distort risk, create contradictory investment products, heighten systemic vulnerability to crisis, encourage regulatory arbitrage, and exploit the underlying fund raisers whom securitisation was initially designed to serve

(Acharya and Richardson, 2009; Fligstein and Goldstein, 2010; Froud, 2003; MacKenzie, 2012).

Because securitisation enables an increasing proportion of economic assets and income streams to be rendered tradable on the financial markets, its proliferation has been hugely significant for the increasing size and influence of the financial system in relation to other sectors of the global economy. Whilst this remains a central theme of analysis for geographers, it is the ability of securitisation to distort and manipulate circuits of capital accumulation that provides the greatest opportunity for enhancing the analytical and explanatory power of financialisation.

Drawing on Marx, via Harvey (1982, 1985b), and through an analysis of securitisation, Aalbers (2008: 148) characterises financialisation as ‘capital switching from the primary, secondary or tertiary circuit to the quaternary circuit of capital’. This reading suggests that financialisation provides a solution to the accumulation of surplus capital in either the primary (industrial), secondary (infrastructure and the built environment), or tertiary (science, technology and soft infrastructure) circuits, by allowing surplus capital to be transferred to the quaternary circuit (the financial system). Financialisation, then, creates a (temporary) fix to the crisis of overaccumulation by opening up new financial spaces into which surplus capital can flow. Not only does financialisation ‘rewrite the rules of capital accumulation’, but it also decouples the financial system from the other sectors of the economy and transforms it into ‘an investment channel in its own right’ (Aalbers, 2008: 150). Crucially, by facilitating capital switching, the process of financialisation actively enables and encourages overaccumulation, and thus intensifies the crisis-prone nature of capitalism (also see Jessop, 2013; Gotham, 2009).

Aalbers’ reading of financialisation as capital switching no doubt lends to the explanatory power of the concept. However, as the primary, secondary and tertiary circuits of capital become increasingly influenced by financial markets, the nature of those circuits fundamentally changes. So whilst ‘for Marx, capitalist commodity production was always-already monetized and dependent on credit-debt relations’ (Jessop, 2013: 49), the process of financialisation (when conceived as the ‘growing influence of capital markets, their intermediaries and processes’ (Pike and Pollard, 2010: 29)) has caused the primary, secondary and tertiary circuits to become increasingly interconnected with the quaternary circuit and, as a result, the barriers between them have been broken down. In other words, the primary, secondary and tertiary circuits are becoming *financialised*.

For instance, traditional manufacturing industries, such as the automotive industry, are increasingly deriving profits from providing financial services that enable consumers to purchase their manufactures (Froud et al., 2010). In addition, the built environment is as much about mortgages, mortgage-backed securities and a vast range of other financial products as it is about bricks and mortar (Gotham, 2012). Indeed, ‘the large multinationals that dominate the world economy have [themselves] become ‘financialised’ Lapavitsas and Powell, 2013: 363).

As the primary, secondary, and tertiary circuits begin to replicate features of the quaternary circuit, and there is a merging together and a dismantling of the boundaries between them, arguably their individual categorisation becomes increasingly meaningless. Furthermore, as the various circuits become more financialised, the opportunities for capital *switching* actually decrease and, therefore, further limit the possibilities for surplus capital absorption and crisis prevention. This critique extends the somewhat limited analysis of circuits of capital presented as distinctly separate, which lacks relevance in an increasingly financialised world.

An important difference exists between the argument presented here and that of Lapavitsas and Powell (2013). They argue that the quaternary circuit does not absorb surplus capital and is unable to prevent crisis because finance is separate, distinct and autonomous:

[Financialisation] does not represent the escape of capital to the sphere of finance in search of (possibly speculative) higher profits, *not least because the sphere of finance has its own internal logic and cannot act simply as a refuge for capital abandoning production* (Lapavitsas and Powell, 2013: 362-3; emphasis added).

In contrast, here, it is argued that finance is integrated with – and integral to – industry (primary circuit), the built environment (secondary circuit) and social infrastructure (tertiary circuit). Financialisation, then, is not about the *separation* of finance and the economy, but about *transformation*; the transition from an economy driven by capital-labour relations to an economy driven by the imperative of finance. Indeed, ‘capital itself is breaking down these distinctions both conceptually and in reality’ (Bryan and Rafferty, 2013: 135).

2.1.3 The financialisation of infrastructure

The process of financialisation and the proliferation of financial technologies are arguably enhancing the efficiency of the relationship between cities and financial markets (Corpataux and Crevoisier, 2005). Crucially, the processes of ‘asset creation, valuation, and securitization’ serve to open up aspects of the urban environment that were previously closed to global

flows of finance (Weber, 2010: 270). That is, ‘assets once thought to be valued only for their uses (infrastructure, pensions, and tax revenues) [can be] converted into securities and traded at a distance’ (ibid: 257). Through securitisation, for example, it is possible to calculate specific sources of value that might exist in pieces of infrastructure in the future and then to extract that potential value and render it concrete as capital in the present. This enables investors to accelerate capital accumulation and profit generation and enables cities to tap in to new sources of previously unavailable finance, transform infrastructure from a sunk cost into a productive resource, and convert infrastructure projects into revolving funds that stimulate additional investment in the urban landscape (Dornan, 2002).

The increasing ability of infrastructure to act as a conduit for capital accumulation, however, has been dependent on a fundamental transition in the organisation and delivery of infrastructure, defined by a ‘widespread retreat from collectivised, integrated and ‘bundled’ ways of managing urban infrastructure’ that had been dominant features of the post-war model of infrastructure provision (known as the ‘modern infrastructural ideal’) and the emergence of a more segmented, privatised and competitive infrastructural economy (Graham and Marvin, 2001: 95). This on-going transition is referred to by Graham and Marvin (2001) as the ‘unbundling’ of infrastructure.

The processes of segmentation, privatisation and unbundling have enabled infrastructures to be packaged into categories defined by value, risk profile and potential returns on investment. This, in turn, has facilitated what O’Neill (2013) terms the *financialisation of infrastructure*. Rather than being a sprawling web of interconnected systems and processes, infrastructure can now exist in distinct and measurable parcels, which can be separated and placed into a framework of financial calculation. In such a calculative framework, the ‘specific infrastructure sector or supply characteristics of the physical infrastructure assets’ become almost irrelevant, while the ‘specific risk-return profiles’ of the parcels of infrastructure at hand take centre stage (Weber and Alfen, 2010: 7).

As an example, Allen and Pryke (2013) demonstrate how household water systems have become financialised:

‘[Water systems that produce] guaranteed revenue streams over time can be securitised, that is, turned into a tradable financial product, broken up into separate earnings packages, assigned a risk profile and sold onto investors seeking long-term real returns. Crucially, it is not the asset itself that is sold on but the performance of the asset that, in the case of household water bills, is their anticipated ability to pay inflation plus revenues over the long term’ (Allen and Pryke, 2013: 422).

The increasing ability to assign *value* to individualised and geographically confined infrastructure assets and, more specifically, to their revenue generation ability has created unprecedented opportunities for investing in infrastructure. In parallel, it has encouraged a wide range of actors, from diverse origins, to become involved in infrastructure investment. Institutional investors, such as pension funds, mutual funds, insurance companies, and hedge funds, for example, are all striving to gain competitive advantages by expanding their portfolio of ‘alternative’ assets, either through direct investments in infrastructure companies, through investments in listed infrastructure funds, or through equity-style investments – usually in unlisted funds (Inderst, 2010: 74).

Table 2.1: Ranking of alternative asset managers: total assets by asset class

Position	Name of parent organisation	Main country of domicile	Total assets under management (USD million)	Asset Class
1	Macquarie Group	Australia	94,845.70	Direct Infrastructure Funds
2	Bridgewater Associates	United States	84,042.00	Direct Hedge Funds
3	CBRE Global Investors	United States	80,000.00	Direct Real Estate Funds
4	BlackRock	United Kingdom	74,000.00	Direct Commodities Funds
5	Goldman Sachs & Co.	United States	68,000.00	Direct Private Equity Funds
6	AXA Real Estate	France	65,453.46	Direct Real Estate Funds
7	Brookfield Asset Management	Canada	65,163.00	Direct Real Estate Funds
8	UBS Global Asset Management	United Kingdom	65,036.61	Direct Real Estate Funds
9	Blackstone Capital Partners	United States	57,090.00	Direct Private Equity Funds
10	TPG Capital	United States	54,526.00	Direct Private Equity Funds

Source: Towers Watson, 2013: 18.

Most notable has been the rise of the Macquarie Group from relative obscurity to champion of global infrastructure investment. Now the world’s largest alternative asset manager (see Table 2.1), Macquarie’s pioneering approach has revolutionised infrastructure investment

and positioned infrastructure as a viable alternative to other asset classes such as bonds and equities (Solomon, 2009). Specifically, Macquarie’s model is built on: the sheer number of funds managed, giving them global access to capital and flexibility to meet the needs of a diverse range of clients and investors; the diversity of geographical and sectorial coverage of investments; the long-term ownership and control of infrastructure assets; and, the ability – through intricate financial engineering techniques – to charge fees for managing the assets under their control and to tap into revenues generated by the asset itself whilst minimising the group’s exposure to risk (Allen and Pryke, 2013; Jeffries and Stillwell, 2006; Solomon, 2009; Torrance, 2008).

The need for financial institutions to diversify their investment portfolios has been fundamental to the rise of infrastructure as an asset class: any particular item of infrastructure occupies a unique geographical location, time horizon, and expected return on investment, all of which can be compared in relation to other asset classes, such as equities or fixed-income securities (see Figure 2.1). Although infrastructure must meet the desired risk-adjusted returns of investors, it also meets investors’ demand for an ‘alternative’ asset class that delivers both sanctuary and untapped profitability (see Newell and Peng, 2008; Torrance, 2008).

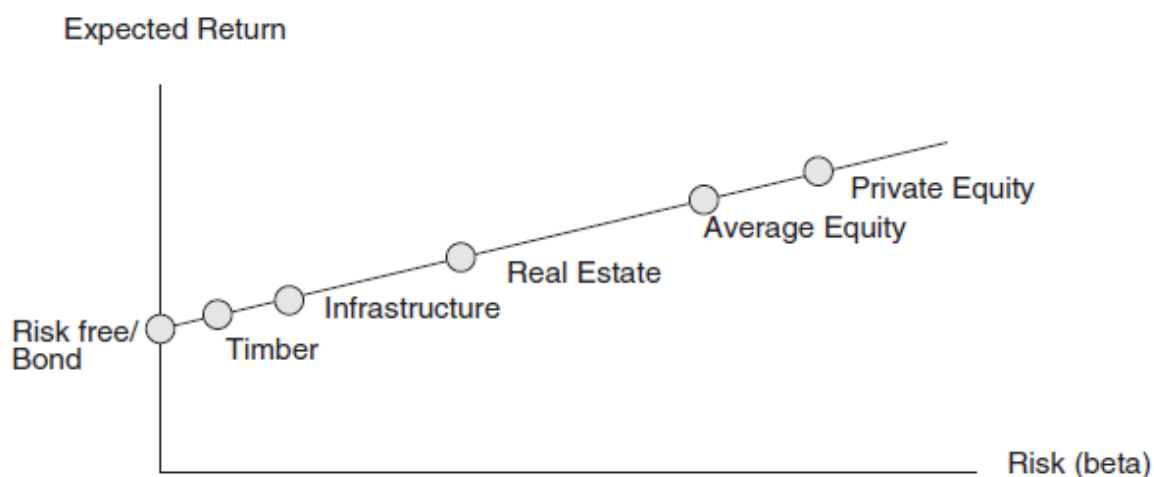


Figure 2.1: Comparing the risk and return of different asset classes

Source: Torrance, 2009a: 813.

The processes of unbundling, segmentation and privatisation that have occurred as part of the collapse of the modern infrastructural ideal, have created the conditions in which

infrastructure can be categorised, valued according to a particular framework of financial calculation, securitised, and then traded in the global financial markets. At the same time, some of infrastructure's attributes are proving to be particularly resilient, such as their quasi-monopoly, integrated and networked characteristics (O'Neill, 2013), and, as such, serve to provide assurance that calculated sources of revenue generation will remain durable, accessible and predictable.

2.1.4 The financialisation of public policy and capital investment

It is not just financial markets and institutional investors that are driving the financialisation of infrastructure. Infrastructure is only useful for institutional investors as far as it matches a very particular set of requirements: it is clear that where these criteria are not met, there is still a need for infrastructure investment from elsewhere. As a result, the state is forced to resume its traditional role of funding and delivering infrastructure in order to support its citizens and drive economic growth.

The state performs a vital role in creating markets and in generating the conditions in which financialisation has emerged (Fligstein, 1996). As the state has adapted and changed in order to best pursue its self-interests in an anarchical world, the way it provides infrastructure has also changed. The transformation of the state and the changing ways it funds, finances, delivers and operates infrastructure, however, has received insufficient coverage in the financialisation literature.

In particular, the reading of the financialisation presented by O'Neill (2013) and Allen and Pryke (2013) is largely missing an interrogation into the continuing role of the state as a primary provider and funder of infrastructure. Whilst O'Neill (2013: 445) acknowledges that the financialisation of infrastructure is 'entirely dependent on state recognition and protection... as a distinct form of property, and [on] state maintenance of a regulatory environment', and Allen and Pryke (2013: 435) suggest that the financialisation of infrastructure is discursively produced as 'postpolitical' by the state, questions as to the changing nature of the provision of infrastructure by the state are largely ignored. Indeed, the dominant contemporary narrative is one of state retrenchment, privatisation and the increasing influence of financial markets over the state (Marshall, 2014; Raco, 2013; Whitfield, 2010). However, it is possible to challenge this narrative and, instead, to view the state, in its various guises, as still fundamentally important to the ultimate provision and delivery of infrastructure.

In a ground-breaking paper, Weber (2010: 252) develops an intriguing argument that local governments in the US ‘have come to rely heavily on financial markets... for the provision of standard public services’. Importantly, however, rather than emphasising the overbearing might of financial markets, Weber (2010: 256) characterises the process of financialisation as the ‘growing integration’ between the state and the financial system. Indeed, her contribution implies that the financialisation of infrastructure is, in part, driven by a transformation in the ideologies, practices and expressions of the state. In addition to the unbundling and segmentation of networked infrastructures, then, the financialisation of infrastructure can also be viewed as part of a bottom-up process of innovation, entrepreneurial policy-making and changing attitudes to risk across the multiple formations of the state. For example:

‘Local governments moved beyond simply financing collective infrastructure and doing so with general obligation bonds, backed by their full faith and credit. Instead, cities and, increasingly, special authorities extended credit to privately owned development projects with nonguaranteed debt, such as revenue bonds... Municipalities added new, risk-laden instruments to their debt portfolios, including variable rate debt, interest rate swaps, auction bonds, and derivatives – often with disastrous effects’ (Weber, 2010: 256).

As such, the financialisation of infrastructure can be seen emerging alongside, and as part of, an increasing sense of urban entrepreneurialism and more entrepreneurial forms of local and urban governance (see Harvey, 1989; Jessop, 1998). Perhaps, even, the current transition can be described as the *financialisation of capital investment, public policy and the state* (see Weber, 2010: 252, 270). In a study of municipal finance, for instance, Hackworth (2007: 26) argues that local governments are ‘increasingly expected to behave as businesses’ and, as a result, that ‘local governments are more keenly pressured to produce tax revenue generators than before’ – a claim that is explored in more detail below. In addition to fulfilling the role of market creation, which plays a vital role in facilitating the proliferation of financialised capitalism (Fligstein, 1996), then, the state is undergoing a continuous process remoulding, reorienting, and reforming in order to *manage* and *exploit* the intensification of financial flows.

Perhaps the central feature of the financialisation of public policy is the rise of innovative and entrepreneurial methods of making capital investments, financing infrastructure and stimulating urban redevelopment. Drawing on the case study of Chicago, Illinois, Weber (2010: 254) argues that the City of Chicago ‘has created new opportunities for policy financialization through its use of a powerful redevelopment incentive, Tax Increment Financing (TIF)’. TIF involves the securitisation of incremental property taxes in order to

raise funds for up-front investment in infrastructure, or for compensating developers for making this up-front investment (Strickland, 2013; Weber, 2010; Weber et al., 2003, 2007).

Table 2.2: Key characteristics of the financialised investment practices

1	The growing involvement of financial actors or intermediaries.
2	An increasing exposure of cities to – or dependence on – financial markets.
3	The increasing use of financial technologies, such as securitisation.
4	A reliance on a framework of financial calculation to predict, model and speculate against the future.
5	A transformation in the purpose, function, values and objectives of government, which are being brought in line with those of financial actors and institutions.
6	An increase in public sector indebtedness and risk taking.
7	The transformation of infrastructure from a physical and productive component of the urban environment into a financial asset defined by risk and return.
8	The increasing control over infrastructure by yield-seeking surplus capital.
9	The transformation of infrastructure into an engine for economic growth and tax base expansion.
10	The highly geographically uneven ability to engage successfully – if at all – in funding or financing infrastructure.

Source: Author's own

Crucially, the characteristics used to describe the financialisation of infrastructure (see discussion above) are increasingly exhibited in such models of capital investment (Table 2.2). That is, in order to stimulate economic growth (or accelerate capital accumulation), public capital investment *packages* the urban landscape and its infrastructures and places them into a framework of financial calculation. As a result, the geographically defined parcels of the urban environment – and, most importantly, their potential ability to generate revenues and taxation – are assigned a value according to particular risk-return criteria, and can then be securitised and traded in the global financial markets. In short governments are beginning to engage in what might be called *financialised investment practices* (Table 2.2).

Unsurprisingly, there is a close relationship between the financialisation of infrastructure and the financialisation of capital investment. Indeed, the rise of TIF in Chicago is closely aligned with the extensive unbundling and privatisation of infrastructure that has occurred within the city. Rather than bypass the state, these processes have been explicitly driven forward by the neoliberal regimes led by Mayor Daly and, more recently, Mayor Emmanuel, which have pursued the unique and ambitious ‘Chicago Model’ of privatisation (Weber, 2010; Ashton et al., 2012; Farmer, forthcoming). While the Chicago case might not be typical, since it is in the vanguard, it is illustrative of the changing nature of capital investment, and demonstrates the ability of cities (and the state more broadly) to accelerate urban development in an increasingly unbundled and segmented urban environment.

2.2 State reterritorialisation and the governance of capital investment

According to Adam Smith ([1776] 2012: 707-730; also see O’Neill, 2013) the state, as a sovereign entity in the Westphalian system, has legitimised its authority by performing three fundamental ‘duties’; first, protecting society from invasion and its associated violence; second, protecting society from crime, injustice and oppression; and third, establishing public institutions and constructing public works which, by their nature, are beyond the capabilities of private enterprise to provide. The state, therefore, has been built, both literally and figuratively, on providing core infrastructures for enabling economic, social, cultural and political progress.

However, the role of the state in funding and financing of infrastructure has not been constant by any means. Rather, as the state has negotiated the crisis-prone nature of capitalism in all of its ‘variegated’ forms (Peck and Theodore, 2007), its involvement in the provision of infrastructure has varied hugely across time and space. For example, the evolution of the ‘modern infrastructural ideal’ and the nationalisation of networked infrastructures (Section 2.1.3) occurred in a spatio-temporal context defined by industrialisation, urbanisation and war. Prior to the turn of nationalisation, however, a more segmented and localised landscape of state infrastructure provision existed, where local units of government ‘had a clear interest in the provision of infrastructure in order to secure a framework for development’ in the absence of a broader and more integrated national strategy (Ennis, 2003: 3).

While the state’s role in the provision of infrastructure has constantly adapted to the changing requirements of capitalist development, the form, function and territoriality of the state has

also undergone significant changes. In particular, this interpretation draws on draws on the concept of ‘reterritorialisation’ (Brenner, 1999, 2004a, 2004b), which implies a constant – albeit highly politicised – adaptation of the state in response to the unique challenges presented by the recurring crises of capitalism. This section explores the role of the state and, in particular, its response to contemporary urban crisis. Crucially, it is argued that the current transformation in the funding and financing of infrastructure – driven by the process of financialisation – is coinciding with profound changes in the form, function and territoriality of the state.

2.2.1 Positioning the state at the centre of analysis

Public capital investment is becoming financialised, is beginning to incorporate technologies like securitisation and is becoming increasingly dependent on generating returns on investment (Weber 2010; Strickland, 2013). In the literature, however, there is a lack of engagement with the drivers and implications of this transformation. In particular, the role of the state in determining the changing nature of capital investment is noticeably under-theorised. Furthermore, questions such as ‘How is the financialisation of capital investment shaped by the multiscale relations of the state?’, ‘What are the implications of financialisation for the structure, form and durability of the state?’ and ‘How is capital investment governed in urban jurisdictions?’ remain largely unaddressed. In contrast, the processes of unbundling and segmentation that have characterised the financialisation of infrastructure and the collapse of the modern infrastructural ideal have received considerable attention (Allen and Pryke, 2013; O’Neil, 2013).

The relationship between the state, the financialisation of infrastructure and the financialisation of capital investment is worthy of interrogation because financialisation has created new spaces of state activity, initiated fresh power struggles between multiple levels of government, redefined urban governance and politics, connected cities to a wide range of financial actors, intermediaries and markets, and set in motion a series of changes in the territoriality of urban space. *In tandem*, the funding and financing of infrastructure is beginning to take place through novel actors and institutions, at new spatial scales, and in a myriad of new, innovative and improvised ways.

Moreover, the financialisation of capital investment can be linked with broader processes that have characterised state transformation in recent years. For instance, the transition towards financialised models of capital investment can be viewed as part of the state’s effort to enhance its position in an increasingly competitive and neoliberalised world, in which the

state is in a constant search to find spatio-temporal fixes to the persistent and increasingly potent crises of capitalism (see Peck and Tickell, 2002; Brenner et al., 2010). As the pressure for cities to compete intensifies and the recurrent crises in capitalism become more severe, the demand for investment in the built environment – which is predicated on the ability of capital investment to create jobs and economic growth – surpasses the limits of conventional investment models and necessitates that city governments devise ever more entrepreneurial investment solutions.

The argument that the financialisation of capital investment is implicated in the transformation of urban governance, and in the transformation of the state more broadly, fits into the argument that a process of ‘market-driven social and spatial transformation’ (Brenner and Theodore, 2005: 102) is encouraging the marketisation of the core functions of government and thus enabling capital accumulation to occur through the provision of public infrastructure and the delivery of local services (Crouch et al., 2001). The financialisation of capital investment is the logical progression for the neoliberal state which has actively sought to privatise public services and facilities in order to manage public sector debt, generate private sector efficiencies, and to become ‘lean and mean’ (Mirander and Lerner, 1995: 193; Crouch et al., 2001; Fuller and Geddes, 2008).

2.2.2 The state and its strategies of financialisation and urban redevelopment

Drawing on Lefebvre, Poulantzas and Castells, Brenner (2001) argues that cities (or ‘the urban’) can be regarded as a terrain of struggle, in which a variety of social movements collide, evolve and fight for control over socio-political relations. According to Brenner, the state plays a fundamental role in mediating this process of struggle. Specifically –adopting Lefebvre’s reading of the state as a ‘hyperproductivist politico-institutional ensemble’ – Brenner (ibid: 791) asserts that the role of the state is to assist and underpin the expansion of production and capital accumulation, a project which is achieved through the active development and deployment of strategies of retrenchment, spatial reconfiguration and uneven development. Importantly, whereas historically these strategies may have been understood as the pursuit of a singular central state force, Brenner (2004: 4) articulates a ‘more polycentric, multiscalar, and non-isomorphic configuration of statehood’ and state strategy.

Building on this analysis, then, the state can be regarded as a fundamental participant within the process of financialisation, and as actively pursuing strategies of financialisation and urban redevelopment to further its own interests and achieve its hyperproductivist objectives

at a range of spatial scales. To a very real extent, the boundaries are blurred between the state's strategies of neoliberalisation and its strategies of financialisation: both entail the creation of conditions in which hypermobile transnational capital can transcend territorial boundaries, enabling production to take place where conditions are most favourable, where the international division of labour can most effectively be exploited, and where costly mechanisms of wealth redistribution can be avoided. For example, the privatisation of state assets is central to the process of neoliberalisation and the reconfiguration of the state itself (Harvey, 2005), but it is also a key prerequisite for the transformation of the built environment into an asset that can be bought, parcelled up and traded by investors – referred to by O'Neill (2013) as the 'financialisation of infrastructure'. Similarly, institutional rescaling, which is a central tenet of the process of neoliberalisation (Brenner, 2004; Boudreau et al., 2007), is also fundamental to the state's ability to organise and manipulate financial flows (for example through the creation of combined city-regional investment funds – see Section 6.2.2 and 7.2.1).

However, the ways in which the neoliberal state seeks to promote its interests in an increasingly competitive world have been have undoubtedly evolved and progressed in tandem with the emergence of the process of financialisation.

At the national level, the state facilitates the proliferation of financialisation by 'eliminating capital controls, regulatory stop valves, statutes governing bank activity and impediments to unrestrained innovation' (Pacewicz, 2012: 4; also see Carruthers and Kim, 2011), and takes advantage of financialisation by regulating the reproduction of labour through monetary policy decisions (Bryan et al, 2009).

At a more multiscalar geography, strategies of financialisation enable the state to defer moments of crisis by securitising anticipated future revenues and using them in the present to plug its own budget gaps or sure up local accumulation regimes that are teetering on the brink of collapse (Weber, 2010; French et al, 2011), thus creating a more favourable political environment by shifting the burden of taxation onto future generations (Farmer, 2013).

Securitisation also enables individual state entities to engage in what Davidson and Ward (2014: 84) term 'speculative urbanism' in order to maximise their competitiveness, engender political support, and maximise opportunities for tax base expansion and revenue creation. The debt-based and risk-laden development strategies that Davidson and Ward describe can certainly be viewed as an extension of the entrepreneurial state strategies that initially gathered momentum under neoliberalisation (Harvey, 1989; Jessop and Sum, 2000;

MacLeod, 2002), but which have been harnessed, refined and augmented through financialisation.

Central to the pursuit of faster economic growth through neo-Keynesian interventions has been the (perceived) ability of states to forecast, manage, transfer and even exploit risk (Martin et al, 2008; Weber, 2010). Financial innovations such as long-term lease agreements, complex project finance arrangements, infrastructure trusts and public-private partnerships are all tools through which the state – at a range of spatial scales and institutional forms – has attempted to shift risk to other market participants, albeit only partially and sometimes unsuccessfully (Ashton et al, 2014; Froud, 2003; Kirkpatrick and Smith, 2011).

Perhaps most critically, in its attempt to negotiate neoliberal capitalist relations, the state actively pursues strategies of restructuring, rescaling and – as is detailed in section 2.2.5 – reterritorialisation. These processes describe the state's constant adaptation and mutation in form and function in response to the changing socio-economic landscape. For example, in an increasingly neoliberal city, Ward (2003: 116) highlights the 'qualitative shift in the state's role' that is required for it to engage in a form of 'entrepreneurial urbanism' that is necessary for it to survive in an increasingly competitive national and global economy. Indeed, rather than being something that is 'naturally occurring', state restructuring can be regarded as 'a sustained political project' which is 'explicitly concerned' with prioritizing the state's self-interests through, for example, 'normalizing and naturalizing conditions such as free trade, flexible labor, public-sector austerity, and low inflation' (Peck, 2001: 447).

It is increasingly apparent, then, that the state's strategies for mediating the terrain of struggle we define as the city, must not only be understood in the context of neoliberalisation, but also be regarded as bound up in, and articulated through, the process of financialisation. By extension – far from the conception that the role of the state is somehow diminished by the process of financialisation (O'Brien, 1992) – it is argued here that the state is an active agent of financialisation that constantly seeks to harness financial markets, technologies and processes to aid its reconfiguration, growth and competitiveness in a turbulent and uncertain world.

2.2.3 Power politics: financial elites, local coalitions and the changing scalarity of urban governance

The politics of infrastructure is influenced by the fluidity and variability of legislative change, shifting discourses, intense inter-urban and inter-jurisdictional competition, the influence of

business-led growth coalitions, and the increasingly privatised form of infrastructure provision and finance (Altschuler and Luberoff, 2003; Coutard et al., 2005; Crain and Oakley, 1995). The financialisation of capital investment, therefore, can be seen as driven forward by ‘a curious mix’ of class and political interests across multiple spatial scales (see Harvey 1985b: 146).

Whilst acknowledging the place-specific nature of local knowledge, inter-firm and inter-sectoral networks, and the investment and accumulation of capital (Cox and Jonas, 1993), capital investment strategies are also influenced by a broader series of structural, multiscalar and variegated forces. The attempts of cities to harness increased decision-making and financing powers, for instance, are bound up in an amalgamation of local and distinctly territorial neoliberal interests (see Stone, 1989; Trench, 2007), but are also shaped by global flows of capital and regulated within broader multiscalar systems of governance.

At first glance, it appears as if the successful deployment of financialised models of capital investment is neatly aligned with the interests of the local neoliberal elite. Typically, local elites stand to benefit from public capital investments: they are the owners of the assets that appreciate in value and the collectors of the revenue streams that might be generated (Chien and Gordon, 2008; Cox and Mair, 1988). In a sense, then, innovative financing practices exploit the ‘symbiosis’ between investors and the local political elite (Coq-Huelva, 2013: 13) by explicitly aiming to accelerate the appreciation in the value of assets owned by local elites and thus helping them to maximise profits. As a result, the process of financialisation can be regarded as strengthening and reinforcing the regimes of accumulation and modes of production that enable local elites to dominate urban space (see Boyer and Durand, 1997; Harvey, 1985a).

There is a very real sense, for example, that governments across all levels are looking outwards for investment, policy ideas and comparative benchmarks (Brady et al., 2005; Cox, 2004; Jones and Ward, 2002) from which they can construct narratives of legitimacy that support the project of financialisation. The incessant drive for economic development through entrepreneurial mechanisms that generate returns on investment has encouraged local policy elites to short circuit the process of innovation by copying quick-fix and off-the-shelf policy ideas from elsewhere (Peck, 2002). In particular, urban redevelopment ‘models’ such as ‘business improvement districts’ and ‘tax increment financing’ have been implemented across the globe – albeit in truncated and mutated fashions (Ward, 2006; 2010; 2012). As a result, local elites can engage in a form of what might be called *fast financialisation*,

which enables them to channel their surplus capital into the built environment, giving them opportunities for both capital accumulation and fixing urban crisis.

However, by wiring cities into financial markets and connecting them to global flows of capital, it can also be argued that the process of financialisation enables extra-local actors to penetrate urban governance systems and to invade the city's decision-making apparatus (Torrance; 2008), thus threatening conventional urban hierarchies and fragmenting the classic urban regime. Indeed, by drawing on neo-Gramscian and regulationist insights (Jessop et al., 1999; MacLeod and Goodwin, 1999), it is possible to view the emergent global financial elite as a 'hegemonic bloc' whose power and influence is shaping the development practices of cities and their governments. Because investors value liquidity and invest on the basis of a return on capital at a particular point of exit or maturity (Theurillat and Crevoisier, 2009), there is a possibility that the urban environment could be 'milked' by an ultra-mobile financial elite. Then, having *extracted* as much value as possible, investors can sell off their assets in order to pursue more productive assets elsewhere, potentially causing the devaluation of local assets and thus damaging the interests of local elites (see Samo and Taylora, 1999; Harvey, 1985b).

Rather than development strategies being confined to a territorially bounded urban regime, then, infrastructure politics can be viewed as 'simultaneously territorialized at a local scale and... engaged with a wide array of interests at wider subnational, national and international scales' (Phelps and Wood, 2006: 508). In sum, it appears that cities and their economic futures are precariously positioned in an increasingly complex and multiscalar politics, which plays out through the interdependent relationship between local and financial elites.

2.2.4 Financialisation, multiscalar interdependencies and systemic competition

The increasing use of debt for funding and financing infrastructure projects has meant that the state is constantly interacting with financial markets. In the US, for instance, cities that issue municipal bonds actively encourage 'financial market penetration' into the public sector (Weber, 2010: 252). When purchased by financial institutions and other financial actors, municipal bonds can then be traded in the global financial system on a 'secondary market' (Madura, 2011: 154), thus connecting the municipal authority and its sources of revenue with financial market processes across the globe. As a result, cities are now subject to 'the heightened risk, uncertainty, and volatility' of the global financial system (Pike and Pollard, 2010: 31).

The current crisis afflicting cities, their employees and inhabitants has reinforced the notion that the process of financialisation is affecting all aspects of economy and society (see Langley, 2008). Financialised investment practices expose the networks of social and political institutions to a highly influential and yet seemingly distant set of competitive forces and relationships. That is, taxpayers and public employees, and their livelihoods and life opportunities, are entangled in a mesh of ‘structural’ or ‘systemic’ competition (Jessop, 2000; Jessop and Sum, 2000) which reaches throughout and beyond the economic system into a ‘tissue of supporting, sector-specific and specialized institutions’ (Malecki, 2004: 1104).

In the context of financialisation, where cities are constantly dismantled, packaged and traded, the urban landscape is becoming an asset and developing a set of universally comparable financial attributes, such as price, yield and maturity (see Martin et al., 2008). As a result, the urban environment and its component parts can be compared against an infinite number of other securities traded in the financial system. Crucially, the ability to *compare* the urban environment with an infinite number of other financial assets also puts the urban environment in competition with these other assets:

‘By ‘dismantling’ assets into tradable attributes, the focus shifts from the particularity of the asset itself to the universality of its attributes. The effect is to intensify competition (across space and time) for the attributes of this asset, with direct ramifications for the asset itself.’ (Martin et al., 2008: 126).

For example, when undertaking a debt issuance for the purpose of investing in infrastructure, both the issuing entity (e.g. a city council) and the infrastructure at hand are at the centre of a complex web of competitive forces and bargaining relationships.

First, the debt-issuing city is in competition with other cities also seeking to attract investment: a comparably weaker credit rating (established by financial institutions or rating agencies) may lead to a higher cost of borrowing. Second, cities are in a series of complex and competitive bargaining arrangements with other levels of government as they scramble for capital within the confines of their regulatory system. This is best exhibited by the unrelenting search of fiscally stressed governments for ways to ‘circumvent’ restrictions on local capital investment, for instance by creating special district governments in order to evade State-imposed debt limitations (Sbragia, 1996: 9). And third, lenders or bondholders (which could be institutional investors, other governmental entities or households) are competing to gain the highest possible risk-adjusted returns.

Crucially, such competitive relations are intensified by the process of financialisation. The financialisation of capital investment is creating closer connections and interdependencies

between cities, their governments and the financial markets. When a municipality issues debt to engage in a financialised financing practice, it enters a complex global network where individual investment decisions are measured against an infinite number of other possibilities. Competition is not only inter-jurisdictional or intergovernmental, but also between municipalities and any other issuer, and between a global set of issuers and investors. In fact, the competition is *systemic*.

2.2.5 Urban reterritorialisation and the financialisation of capital investment

The financialisation of capital investment has transformative implications for urban territoriality and governance. Through financialisation, for instance, cities are becoming more connected with extra-local actors and intermediaries and more interdependent with financial markets. The connections between cities and financial actors are, to a certain extent, ‘transversal’ (Jessop and Sum, 2000: 2293). That is, they occur outside of typical scalar hierarchies that define urban governance: global capital market participants forge direct relationships with municipalities in urban jurisdictions.

In addition to exposing urban governance systems to new influential and potentially disruptive extra-local forces, the financialisation of capital investment also serves to challenge the administrative boundaries of cities and to reposition city governments within their respective national system of intergovernmental relations. In the US for example, the imperative to issue debt to finance new infrastructure projects has led to the creation of new special district governments which are able to circumvent debt limitations (Sbragia, 1996). Although this process facilitates capital investment, it also profoundly changes the balance of territorial relations within urban space, and eventually leads to the fragmentation of urban government.

Far from being a smooth and unidirectional process, however, the changing nature of urban governance and territoriality associated with the financialisation of capital investment is part of a deeply contested and multi-directional process (Swyngedouw, 1997; Jessop, 1997). In the UK, for example, a consequence of the financialisation of capital investment is that sub-national units of government have intensified their negotiation with other scales of government for legislation to be enacted that will enhance their power, capacity to innovate, and ability to securitise their built environments (Strickland, 2013). The devolution of commercial property tax revenues in the UK provides a fine example (*ibid.*). Furthermore, in order to maximise the potential for acquiring new financing powers, and to maintain their fiscal and regulatory control and relational power (see Jonas, 2013), local authorities are

attempting to ‘upscale’, forging collaborative links with other local authorities, and seeking approval from the central government to create statutory Combined Authorities.

The financialisation of capital investment, therefore, can be regarded as simultaneously fuelling the processes of urban fragmentation, inter-jurisdictional and systemic competition, inter-jurisdictional collaboration and a whole series of multiscale power struggles. Jessop and Sum (2000: 2294) use the term ‘glurbanisation’ to illustrate how the process of urban development can be intimately linked with a whole range of governmental, market and non-market processes and participants at multiple spatial scales. However, it is arguable that the explanatory power of the term ‘glurbanisation’, is limited by its binary representation of connections between the ‘urban’ and the ‘global’. As a result, the term ‘*reterritorialisation*’ is favoured here (see Brenner, 1997, 1999, 2004a, 2004b; Brenner and Theodore, 2002).

According to Brenner (1999: 431) – who draws on earlier works by Lefebvre (1976a, 1976b, 1977, 1978) and Harvey (1982, 1985c) – *reterritorialisation* describes the ‘reconfiguration and re-scaling of forms of territorial organisation such as cities and states’. Indeed, Brenner (1998, 2004a, 2004b) suggests that state power is constantly being ‘rearticulated and *reterritorialized*’ as the state struggles to enhance its interests in a competitive world. Whereas the term ‘*territorialisation*’ would be used to describe the emergence of a territorial form and the unidirectional journey that led to its creation, the term ‘*reterritorialisation*’ helps to identify and explain the constant processes of destruction and creation, evolution and reinvention, negotiation and contestation that occur across time, space and a multiplicity of scales to create what might (temporarily) be identified as a territory.

Reterritorialisation, then, encompasses the notion that the territoriality of cities is being constantly redefined as they interact with actors, institutions and governments at multiple spatial scales, create new relations, connections and interdependencies:

‘[The] recurrent dynamic of de- and *reterritorialisation* has been organised through a wide range of scalar configurations, each produced through the intermeshing of urban networks and state territorial structures that together constitute a relatively fixed geographical infrastructure for each historical round of capitalist expansion. Therefore, as capital is restructured during periods of sustained economic crisis, the scale-configurations upon which it is grounded are likewise reorganised to create a new geographical scaffolding for a new wave of capitalist growth’ (Brenner, 1999: 434).

Arguably, the very survival of capitalism is dependent on the continual ‘[re]production of historically specific institutional landscapes’ (Brenner and Theodore, 2002: 354) around which spatio-temporal fixes are configured during periods of crisis (Peck and Tickell, 1994).

Conceptualising the state’s power as persistent, albeit in new and often uncertain forms, has profound implications for understanding the financialisation of infrastructure. Whereas other accounts of the financialisation of infrastructure suggest that the traditional role of the state in providing infrastructure is being eroded by highly mobile global finance capital, it is argued here that the role of the state as a provider of infrastructure is merely being rearticulated and reterritorialised.

2.3 The fiscalisation of urban development

Fiscal stress is severely hampering development and economic growth across cities. The landscape of fiscal stress has developed over a long period of public debt accumulation caused by continuous growth of public spending in relation to public income generation, a process legitimised by the Keynesian assertion that public expenditure is fundamental to economic stability (Streeck and Mertens, 2013). Indeed, national economies have become structurally indebted as a result of decreasing economic growth rates, growing resistance to taxation, and the rise of structural unemployment (Figure 2.2). In both the UK and the US, the recession triggered by the global financial crisis of 2008 has intensified the levels of fiscal stress experienced across all levels of government and, in particular, has driven the least resilient cities towards fiscal crisis.

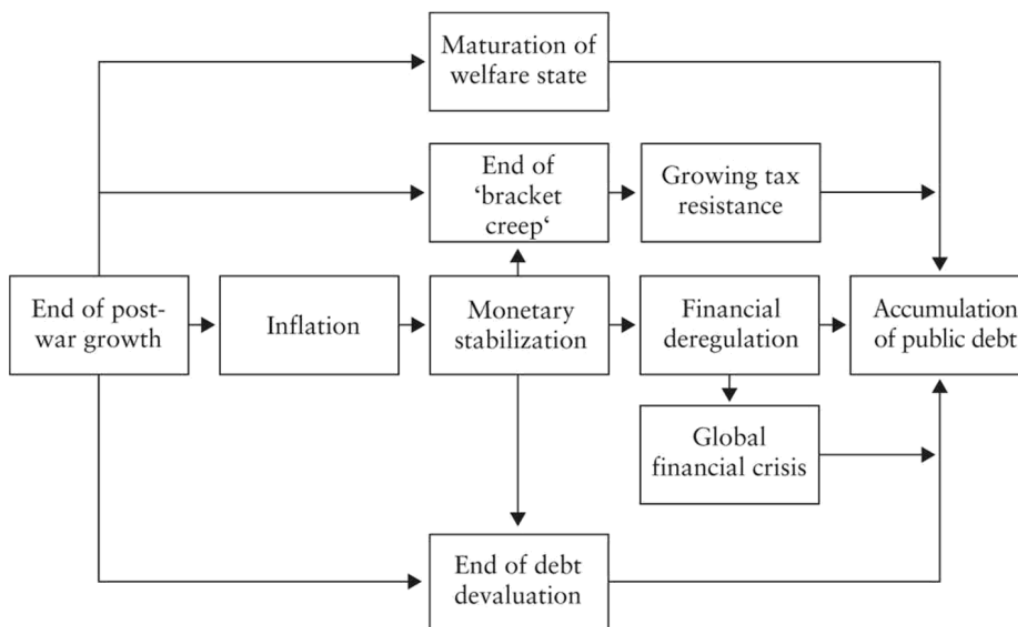


Figure 2.2: The causes of fiscal crisis

Source: Schäfer and Streeck, 2013.

2.3.1 Fiscal crisis and the urbanisation of austerity

The worsening financial condition of city governments is a troubling but all too apparent characteristic of cities in the post-financial crisis era:

‘Municipalities around the country now face sharply declining revenues and acute fiscal distress. Even ‘strong-market’ cities find themselves hampered by declining credit ratings and restricted access to financial markets. Resulting capital shortfalls have forced officials to take draconian measures: eliminating ‘non-essential’ programs and services, cutting municipal employment rolls, indefinitely postponing development projects and even declaring bankruptcy. The prospects for urban growth coalitions have radically dimmed’ (Kirkpatrick and Smith, 2011: 477).

Fiscal stress and crisis are driving profound changes in the nature and scope of government and causing governments across all spatial scales to re-assess and alter their everyday functions. Crucially, the pressure to bring budgets under control is further encouraging the development of entrepreneurial strategies for saving money, which include cutting jobs and services, and accelerating the privatisation of service delivery and infrastructure provision. A consequence of these entrepreneurial saving strategies is that the socio-economic foundations of cities and localities, such as core welfare systems, social programmes, and municipal services, are being ripped out. In addition to the effects of the continued and deepening unbundling, segmentation and privatisation of infrastructure, then, these transformations are posing challenges to the legitimacy and underlying purpose of local government.

Perhaps the most notable implication of the global financial crisis has been the dramatic increase in government debt levels across the developed world (see Figure 2.3). Kitson et al. (2011) suggest that the timely increase in government debt has been due to the increased cost of welfare, rising global commodity prices (and thus inflation), the huge expense of bailing out troubled financial institutions and the implementation of quantitative easing. That is, fiscal stress, at least at the national level, is a result of a considered response to the collapse of global economic and financial markets (Primo Braga and Vincelette, 2011).

Although seemingly distant from the balance sheets of local governments, the sovereign debt crisis – and its knock-on policy implications at the national level – has placed increased

pressure on faltering local economies and intensified the shift towards highly uneven landscapes of urban development (Martin, 2011; Kitson et al., 2011).

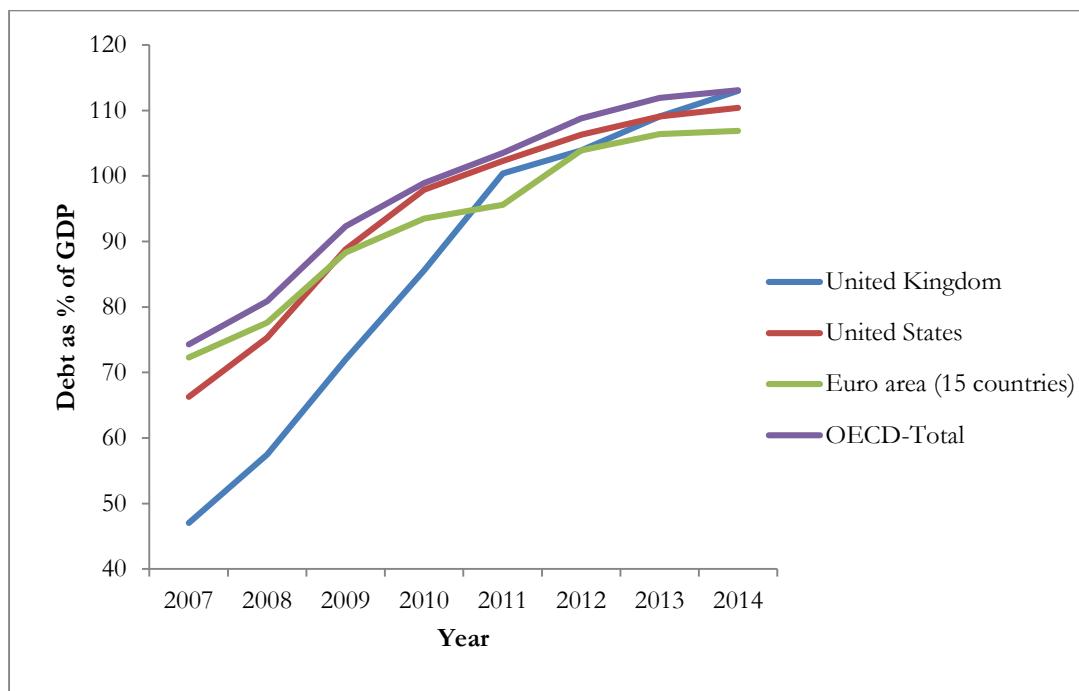


Figure 2.3: General government gross financial liabilities as a percentage of GDP

Source: Adapted from OECD, 2013a.

Peck (2012) argues that fiscal crisis has been pushed down to the local level as supra-local governments have sought to minimise their responsibilities and bring their liabilities into line with their now substantially reduced resources. A direct implication of the sovereign debt crisis, then, has been the *urbanisation of austerity*, a process which symbolises the continued propagation and intensification of the variegated and contradictory force of neoliberalisation (see Table 2.3). As a result, it is cities and localities that are bearing the brunt of the fiscal crisis. In the UK, for instance, central government has announced £81 billion of cuts in local authority spending over a four-year period from 2010 (Lowndes and Pratchett, 2012: 23; HM Treasury, 2010b). Similarly, in the US, there has been a reduction of approximately 500,000 local government jobs between August 2008 and August 2013 as a result of cost saving initiatives and spending cuts (Pagano and McFarland, 2013). Although they face similar pressures of austerity urbanism, US municipalities are also implicated in the reduction of revenue sources under their own jurisdiction such as property, sales and income taxes, which are (to varying degrees) generated and retained at the local level.

In contrast to perceptions of austerity as a rational and objective response to crisis, Peck (2012; also see Peck et al., 2009) argues that austerity is highly political; that is, the discourse of austerity – and the subsequent animations of fiscal stress – is enmeshed in a series of underlying power struggles, vested interests and political constructions that are designed to achieve a set of very particular outcomes (Clarke and Newman, 2012; Posner and Sommerfield, 2012). Austerity politics, then, can be seen as ‘reflective of neoliberal governance, as catering to elite interests and as particularly detrimental to the poor’ (Lobao and Adua, 2011: 420). It is important to recognise, however, that fiscal stress is far from a top-down process. Local socio-institutional context and evolutionary economic geographies are crucial to understanding the variegated landscape of fiscal crisis (see Skidmore and Scorsone, 2011).

The embodiment and augmentation of neoliberalisation through austerity is particularly pertinent as it continues to foster the process of state reterritorialisation as part of the search of that elusive spatio-temporal fix. As such, in the context of austerity urbanism, and amplified by the continued rollout of neoliberalism, there are huge pressures for cities to streamline, innovate and enhance their relational competitiveness. The scene is set, therefore, for the intensification of intergovernmental competition, the continuation of competitive rescaling and an escalation in the ‘politics of circumvention’ (Sbragia, 1996: 5).

Table 2.3: Austerity Urbanism: a review

The urbanization of neoliberal austerity	Destructive creativity	Austerity amplifies creative destruction; the project of neoliberalisation accelerates the retreat of the welfare state, and inhibits equitable development and social redistribution.
	Deficit politics	Implementation of ‘starve the beast’ tactics. The interests of the political elite are protected, while broader social interests and related services are sidelined.
	Devolved risk	Budget cuts are devolved, further hampering local governments and compounding local economic crises.

The ‘extreme economy’ of austerity urbanism	Leaner local states	Public sector job cuts, with amplified implications for underperforming areas that rely heavily on public sector employment.
	Rollback redux	Continued and deepened retrenchment of the state.
	Fire-sale privatization	Public sector assets and their associated revenue streams are sold to the highest bidder in order to plug holes in government balance sheets.
	Placebo dependency	The responsibility of local governments increases, while resources decline. This further strengthens their dependency on neoliberal alternatives to public sector service provision.
	Risk-shifting rationalities	The risks and costs of service delivery is passed down to the local level and then, where possible, dispensed of entirely.
	Tournament financing	Increased competition for funding, enhancing the power of supra- and extra-local funders. Entrepreneurial funding is incentivised.
	Austerity governance	Fiscal stress continues to drive organisational change and state restructuring.

Source: Adapted from Peck, 2012: 631-49.

2.3.2 Fiscal stress, austerity and deficit reduction: constraining the financialisation of capital investment?

The logical expectation is that governments reduce levels of capital investment during periods of fiscal stress and deficit reduction. This can be anticipated because capital expenditure has negative impacts on public sector indebtedness and places budgets under further strain in the short and medium term. As a result, in parallel with the evolution of structural deficits in western economies, there has been a consistent decline in levels of public sector capital investment (Streeck and Mertens, 2011). In an attempt to regain economic competitiveness, improve performance and stimulate growth in a post-crisis landscape, however, governments at multiple levels have positioned renewed investment in up-to-date and high-performance infrastructure as an essential investment priority. The wide array of national, regional and city-level infrastructure plans that have been devised in recent months

(for example see HM Treasury and Infrastructure UK, 2011; Department of the Treasury and the Council of Economic Advisors, 2012) are testament to the faith placed in what can be regarded as a neo-Keynesian response to economic crisis. Indeed, the prevailing narrative is one that positions public capital investment as essential to enhancing 'general social advantage' (Keynes [1935] 2008: 137).

Pursuing an ambitious strategy of capital investment in a period of low economic growth seems reasonable. When low economic growth is combined with an intense period of fiscal stress, however, an immediate contradiction becomes apparent: there is no money available to initiate the sorts of large-scale programmes of capital investment that are required to reinvigorate the economy. In cities in both the UK and the US, increasing levels of fiscal stress are cutting off traditional sources of capital and muting the state's ability to fulfil the role of making large-scale capital investments.

In particular, a lack of available grant funding and the sharp decline in income streams from assets and investments, in combination with weaker tax revenues (Chernick et al., 2011; Lutz et al., 2011; Pagano and McFarland, 2013), are stifling the ability of governments to invest in infrastructure (Jonas et al., 2013; Skidmore and Scorsone, 2011).

In response, city governments are aspiring for more autonomy and greater decision-making capabilities, as well as becoming more entrepreneurial and innovative in designing solutions to tap into previously inaccessible sources of capital or to develop new sources of revenue. In parallel, the climate of fiscal stress and austerity provides an incentive for local governments to pursue new rounds of privatisation, outsourcing and innovation (Peck, 2012) aimed at reorganising scarce resources and generating efficiencies in the provision and delivery of local public services. Together, these pressures, for example, have been important in driving the financialisation of public policy and capital investment in Chicago and beyond:

'Fiscal crises and interest in neoliberal policy fixes around the world have spurred an interest in TIF, which is in the process of being exported to countries such as the United Kingdom and Australia' (Weber, 2010: 254).

Widespread fiscal stress, then, can be regarded as a key driver of the financialisation of the funding and financing of infrastructure.

The urge to incentivise privatisation and to drive an agenda of financialisation is particularly strong in a context of fiscal crisis because of the ability of financialised investment practices to 'engineer' investments and overcome challenges such as the debt limitations that accompany deficit reduction strategies. For instance, debt can be placed off a public sector

balance sheet by using the technology of securitisation (see Cowley and Cummins, 2005; English and Guthrie, 2003).

Debt limitations, which are often difficult to comply with during periods of fiscal stress, can also be bypassed through innovations in debt financing. In the US, for instance, cities have issued increasing amounts of ‘revenue bonds’ which, unlike ‘general obligation bonds’, do not require voter approval and which are not limited by ‘state-enforced debt ceilings’ (Leigland, 1995: 145). Revenue bonds also align with the inclination of infrastructure privatisation strategies to remove the burden of investment away from the *city* and the general *taxpayer*, and towards the *special purpose district* and the *user* (Kirkpatrick and Smith, 2011).

Kirkpatrick and Smith (2011) suggest, in part, that this pursuit of a financialised fix to the fiscal stress rests on the interests of a local capitalist elite. Indeed, as Eisenschitz and Gough (1996: 441; emphasis in original) point out, ‘*neo-Keynesian initiatives actually help neo-liberalism better to achieve its professed aims... [and] have internalized some neo-liberal themes*’. As such, it appears that infrastructure politics and the financialisation of capital investment are immersed in a wash of multiscalar, yet territorially embedded, elite neoliberal interests.

Fiscal crisis, then, can be regarded as a key factor in aligning the traditional Keynesian policies (which hold societal advancement and economic growth at their core) with the process of neoliberalisation. It is this alignment that creates a space for the emergence of financialised investment practices and for the financialisation of capital investment. Crucially, the evolution and proliferation of debt-based and speculative financing practices – which bypass regulatory limitations and stretch the boundaries of conventional borrowing arrangements – has profound implications for the future financial condition of local government and for the future sustainability of cities.

2.3.3 Infrastructure, capital investment and the financial condition

In a system where a government depends on taxes and revenues raised within an individual territorial unit (whether locally, regionally or nationally) in order to balance its budget, securing the sources of those taxes and revenues and ensuring their continued existence and growth into the future becomes of the upmost importance. In many instances, in order to achieve this, consistent capital investment is an absolute necessity, because it creates and supports essential revenue-generating and taxable assets. Fiscal health, then, which has historically been as a pre-requisite of capital investment (although the financialisation of capital investment makes fiscal health increasingly irrelevant for investing in infrastructure),

also becomes a key objective of such investment. State investment in infrastructure, therefore, can be regarded as a form of fiscal ‘instrument’ or ‘stimulus’ (Crain and Oakley, 1995; Leeper et al., 2010; LaPlante, 2012). So, in instances of fiscal stress, such as the contemporary crisis in contemporary government, infrastructure investment makes absolute sense; not only is it possible to invest in infrastructure thanks to innovative and financialised investment practices, but such investment can also, in and of itself, bring about fiscal stability.

Problematically, and this is a crucial point, using financialised investment practices to create fiscal stability is a contradictory endeavour because of the innately speculative and crisis-prone tendencies of these practices (Weber, 2010). Regardless of the complexity or sophistication of the financial engineering that occurs, financialised models of capital investment are speculative by nature; it is *the ability to derive capital from uncertain sources of value* that defines them.

Hackworth (2007: 25) notes a further contradiction in the creation of financialised or circumventive investment vehicles:

‘[The] desire to achieve “autonomy” (in a non-relational sense) from government has undermined municipal autonomy (relationally defined) vis-à-vis the rating agencies. Borrowing money to cover expenditures previously dealt with at the federal or state level comes with consequences, albeit different ones than those imposed by state governments [such as debt limitations]’ (Hackworth, 2007: 25).

In addition to being crisis-prone at the level of a specific debt issuance or capital investment, therefore, the rescaling and reterritorialisation of the state – driven by the search for spatio-temporal and institutional fixes to fiscal and economic crisis – is making cities increasingly reliant on the apparatus of the global financial system. As a result, cities and financial markets are becoming progressively interdependent, placing cities more and more at risk of systemic financial crises.

2.3.4 The fiscalisation of urban development and the prioritisation of returns on investment

In order to meet political and economic objectives within the constraints of the limited financial resources available, governments are beginning to prioritise urban development projects that generate new sources of revenue and taxation over those that align with other policy objectives. According to LeRoy (2008: 5-6), the prioritisation of revenue-generating development projects in the US has its origins in the ‘chronic budget squeezes’ experienced

by local governments – perhaps most notably in California – which in turn emerged out of a gradual reduction in intergovernmental transfers and a ‘revolt’ against perceived over-taxation. In combination, as Lewis (2001) suggests, these factors have encouraged municipalities to consider new and alternative sources of revenue, and, in particular, to attempt to generate income from their urban development activities:

‘Increasingly sophisticated deals between retail developers and city redevelopment agencies are being negotiated, with developers seeking infrastructure improvements and other inducements and cities seeking assurance that their enhanced revenue stream will outweigh such investments’ (Lewis, 2001: 25).

The pursuit of fiscally beneficial revenues from urban development projects can be described as *the fiscalisation of urban development*. The term ‘fiscalisation’ was first employed by Misczynski (1986) in an analysis of the impacts of Proposition 13 – an item of Californian legislation that limits municipalities’ property tax revenues (see Section 6.1.3). Misczynski’s (1986) suggestion is that Proposition 13 has triggered an explosion in the pursuit of retail-led developments that enable municipalities to tap into new sources of sales tax and thus to compensate for the reduction in property tax receipts (also see Chapman, 2008; Lewis, 2001; Schafran, 2013; Wassmer, 2002). Specifically, Misczynski (1986) refers to the ‘fiscalization of land use’, which, according to Wassmer (2002: 1308; also see Kotin and Peiser, 1997) ‘implies that the system of local public finance exerts an influence on local land-use decisions’.

Despite the attraction of fiscalised development strategies, the ability of municipalities to invest in the initial infrastructure and site preparation work that might enable development remains a constraint to their implementation. This is especially true in the climate of fiscal stress that has reinforced the position of fiscalisation as a primary strategic objective. The challenges fiscal stress and economic crisis, therefore, sit directly opposed to the potential rewards of pursuing a strategy of fiscalisation. Crucially, this tension can be regarded as ‘engendering’ what Chapman (2008: 551) calls ‘public finance creativity’. Indeed, Chapman (*ibid.*) lists 17 innovative ‘techniques’ for funding and financing infrastructure – many of which are drawn upon in this thesis – that have emerged, in part, due to the fiscal challenges faced by municipalities and their resulting desire to manufacture new sources of income.

Whilst innovative techniques have the potential to overcome the immediate budgetary constraints that inhibit capital investment, they nevertheless provide solutions that are often premised on a dangerous cocktail of indebtedness and speculation. Also drawing on the example of California, Davidson and Ward (2014) suggest that the tension between fiscal stress and the fiscalisation agenda has produced a form of ‘speculative urbanism’:

‘Cities have had to indulge in ever more risky forms of *speculative urbanism*, understood here as the ways in which cities speculate on future economic growth by borrowing against predicted future revenue streams to make this growth more likely... in an age where the scope for Californian cities to increase revenues was increasingly constrained, they turned to speculative mechanisms in order to generate funds for both local services and discretionary spending... the speculative component of this neo-liberalising of cities left many of them horribly exposed to the vagaries of the financial and housing markets’ (Davidson and Ward, 2014: 84-5, emphasis in original).

Furthermore, because the developments that have the potential to generate new revenues are limited, innovative investment models can only be implemented in areas with a high-growth potential and, ultimately, where they are ‘needed least’ (LeRoy, 2008: 6). Consequently, the geography of fiscalisation is a highly uneven and inequitable one.

Although fiscalisation could be regarded first and foremost as a Californian process, it is possible to contend that – despite its practical and conceptual origins – fiscalisation is a process that has begun to emerge in a much broader geographical context that is defined by the need to invest in infrastructure, the fiscal constraints to investment, and the need to create financial returns and fiscal benefits from the investment itself. For instance, it is arguable that there is a more widespread transformation in the nature and purpose of the governing entities, which are increasingly developing the characteristics of an investor as they move towards strategies of urban development that are underpinned by the mantra of returns on investment (Sbragia, 1996: 44-7).

Similarly, the process of fiscalisation is bound up in what is undoubtedly a widespread sense of competition between cities and other territorial jurisdictions that has become increasingly evident in the neoliberal era (Chien and Gordon, 2008; Harvey, 1989; Jessop and Sum, 2000; Malecki, 2004; MacLeod, 2011). Although the concept of inter-territorial competition is well referenced, an explanation of *why* territorial jurisdictions compete is arguably lacking. Of course, there is a need to compete for investment to secure employment and an acceptable level of wellbeing for citizens. Nevertheless, the development of a place and the wellbeing of its citizens are not part of a ‘competitive’ zero-sum game: over time, a place can become less competitive in relation to other places at the same time as its citizens become wealthier and better off. Arguably, a more comprehensive understanding of the competitive nature of contemporary capitalist development can be developed using the concept of fiscalisation. Indeed, through the lens of the fiscalisation of urban development, it becomes evident that inter-jurisdictional competition is increasingly driven by the motivation of a governing entity

to expand its tax base, to generate new revenue streams, and ultimately to secure sources of income that will ensure its own survival.

First apparent in California, the fiscalisation of urban development is occurring on a much wider basis in response to the prospect of persistent budgetary challenges and fiscal stress for city governments over the medium to long term. Although infrastructure and development projects have the potential to create new sources of income, the already challenging fiscal environment means that city authorities are being forced to use more innovative, speculative and *financialised* models of investment. As well as fuelling potentially a potentially fragmentary process of inter-urban and inter-jurisdictional competition an uneven process, then, fiscalisation can be a risky and at times contradictory fix to fiscal and economic crisis, thus posing a threat to future urban development and the fiscal stability of urban governments.

2.4 The intensification of ‘Splintering Urbanism’ through financialisation

The concept of ‘unbundling’ is used by Graham and Marvin (2001) to explain the shift away from heavily regulated, master-planned and monopolistic infrastructures towards a set of deregulated, privatised and segmented infrastructures, made possible by the proliferation of technological innovations and new delivery mechanisms. In particular, unbundling has also underpinned what O’Neill (2013) terms the *financialisation of infrastructure* (2.1.3).

However, Graham and Marvin (2001) also contend that the process of unbundling has ‘splintering’ implications for the urban environment. For example, while facilitating the development of competitive infrastructure markets, the processes of unbundling and segmentation have incentivised market actors to concentrate their activities in the sectors, spaces and places of most value. As a result, networked infrastructures concentrate around ‘spaces of seduction’ where services can satisfy the insatiable demand of urban elites and upper income groups for high-quality networked services (Graham and Marvin, 2001: 220). Simultaneously, lower-income, minority and vulnerable groups are marginalised in the competitive marketplace as network infrastructures bypass what Graham and Marvin (*ibid.*) refer to as ‘network ghettos’.

Drawing both on O’Neill and on Graham and Marvin, this section contends that the emergence of financialised investment practices – and financialisation more broadly – is *intensifying the process of urban splintering*.

Although the splintering urbanism thesis clearly highlights the significant impact of the major transformations that have taken place in infrastructure planning and provision, it arguably overemphasises the impacts of the design, quality and geographical distribution of physical infrastructure, without giving sufficient attention to the forces being enacted upon the city by the unbundling process itself. Indeed, the standardised or universalised quality and distribution of infrastructure alone would not alleviate urban fragmentation (Coutard, 2008; MacKillop and Boudreau, 2008). Whereas Graham and Marvin (2001) largely attribute urban splintering to the uneven provision of networked infrastructures following the collapse of the modern infrastructural ideal, it is equally important to analyse the uneven pattern of the flows of finance into the urban environment, and to examine the implications of financialisation for the quality and durability of the urban environment and, more broadly, for urban territoriality.

The works by Allen and Pryke (2013) and O’Neil (2013), for instance, demonstrate that the financialisation of infrastructure, facilitated by this unbundling process, has redefined the geographies of value extraction and distribution and, in doing so, has enabled shareholders and financial intermediaries to profit at the expense of households.

This thesis takes up the argument that the growing influence of financial markets, their intermediaries and processes, are not only having transformative implications for cities and their urban environments, but also that these transformations contribute to urban splintering. As the process of financialisation continues to transform capital investment and reshape the political economy of infrastructure, then, the city becomes increasingly at risk of suffering a splintered and fragmented future.

2.4.1 The geographies of risk and return: the uneven opportunities for financialised capital investment

Risk is commonly defined as an ‘event’ which has a range of ‘well-defined probabilities on possible outcomes’ (LeRoy and Signell, 1987: 395). In particular, risk is approached – in theory and practice – as something that can be calculated and managed (Power, 2007). A classic approach risk management, for instance, is through portfolio diversification (Hagermann and Hebb, 2009). Some financial intermediaries, however, go beyond this probabilistic dealing of risk, and instead are use their risk calculation and management expertise to exploit and profit from the existence of risk. For example:

‘Macquarie Bank, and financial services institutions like it, inscribe risk onto an infrastructure item by bringing risk into previously or otherwise reasonably certain futures. They take infrastructure from a relatively stable operational world and insert it into the risk taking world of finance... To Macquarie Bank, risk is not something to be mitigated, or eliminated. Rather, it is something to be inscribed as a quality of an infrastructure product; something to be steeped into Macquarie Bank’s organizational form, its culture and performance metrics; and something to be embraced by the bank’s highly skilled young international workforce’ (O’Neill, 2009: 172-4).

Indeed, it is arguable that the expansion and growing influence of the financial markets as a whole has been premised on the process of ‘derivatization’, in which tradable securities, measured and valued in terms of risk, are separated from their underlying assets and then structured and shifted in order to maximise profit generation (Bryan and Rafferty, 2006; Martin et al., 2008). Drawing on Martin et al. (2008), O’Neill (2009) demonstrates that a single ‘event’ (or asset) can simultaneously have multiple risk characteristics: that is, in an instant, it can be made ‘more or less risky’ according to the way it is structured, shifted, portrayed and perceived.

Perhaps less well theorised than the calculation, management and exploitation of risk, is the geography of risk. In a volume edited and contributed to by geographers, entitled ‘Managing Financial Risks’ (Clark et al., 2009), it is somewhat surprising to see such a limited attempt to conceptualise how the location or spatiality of an ‘event’ or asset affects the risk characteristics of that ‘event’ or asset. The exception is Wójcik’s (2009) analysis of the role of geographical proximity between investor and company stocks and shares in shaping the risk perception of those stocks and shares. In contrast, invaluable insights into how risk is shaped by place and space can be found, for instance, in analyses of venture capital investment, mortgage lending and foreign direct investment.

For example, Klagge and Martin (2005: 404) demonstrate that the level of risk associated with a particular venture capital investment varies according to the proximity of the venture capitalist to their client firm, and, in turn, to the vitality of the investment community with a region or city-region. In short, Klagge and Martin (2005) highlight that the risk of investing in early stage small and medium sized enterprises varies geographically according to the mix of financial institutions and financial infrastructures within a particular place. Aalbers (2005), on the other hand, illustrates that areas perceived to be high risk for mortgage lending (because of the socioeconomic characteristics of the inhabitants of that area) are ‘redlined’ to codify this risk, thus implying that the varying characteristics of place have direct implications for the levels of risk associated with investment and mortgage lending. Similarly,

according to Buckley et al. (2007; also see World Economic Forum, 2014), the risks for a firm engaged in outward direct investment include factors such as the political and institutional stability of the investment location, the availability and supply of natural resources, and the size and geographical proximity of the host market, all of which can be regarded as geographical factors.

Typically, the risk of investing in urban infrastructure is codified and broken down into a variety of categories. In any one infrastructure project, these might include: 'due diligence risk'; 'governance risk'; 'regulatory risk'; 'development risk'; 'construction risk'; 'operational risk'; 'demand risk'; 'revenue risk'; 'contract and concession design risks'; and 'financing and refinancing risk' (see AMP Capital, 2013: 6-10; Weber and Alfen, 2010). Importantly, each one of these risks has a geographical component. For an investment in a toll bridge, for example, 'demand risk' is likely to be informed by a range of factors, including the ability of potential users to use other roads to complete the same journey; the availability and cost of other modes of transportation within the city; the position of the road in relation to business activity and commuter patterns in the city; etc.

For a public sector investor, such as a city government, risk is also defined by the infrastructure item's long-term prospects of tax generation, its ability to bring down the cost of other infrastructure and services within the city, and even by its ability to generate social and environmental benefits. Again, within these risks, the local urban geography plays a key role. Central factors in determining the infrastructure item's future tax revenue generation capacity, for instance, include the vitality of the local property and commercial development market, the availability of commercial finance for developers, and the levels of growth in the local economy more broadly.

Given the very geographical nature of risk, a key question emerges as to the ability of city governments in underperforming economies, where investment risk is likely to be higher, to engage in financialised models of investment that are also innately speculative and risky. Therefore, a particular dilemma exists for governments in weaker economic areas: whilst they are most in need of generating economic growth and creating jobs through neo-Keynesian stimuli such as large scale public sector investments in infrastructure, the prospect of generating sufficient returns from a debt-based investment in infrastructure is lower than in more buoyant economic areas where increases in commercial revenue and tax income are more assured. It appears, then, that the search for returns on investment and accelerated capital circulation at the heart of processes like securitisation, which can unlock future revenue streams and bring forward infrastructure investment, is more challenging in

peripheral and underperforming places, where the risk of speculative investment is augmented by weak economic growth prospects and low levels of asset value appreciation (Strickland, 2013). Private sector investors are also likely to shun the risk of investing in such areas, placing an even greater pressure on the public sector to intervene and deliver.

The inherent variation of financial flows into and between places has direct ramifications for uneven capitalist development. Indeed, financialisation ‘clearly has the potential to exacerbate unevenness across individuals, social groups, and organizations in space and place’ (Pike and Pollard, 2010: 34). Ultimately, the challenge for city governments is to find ways of investing in their own urban environment, irrespective of its perceived risk characteristics. Importantly, however, financialised models of capital investment do not necessarily give city governments the ability to control, manage and exploit risk to ensure that the outcome of investment is a favourable one. Indeed, the lack of flexibility in terms where and how they invest means that, arguably, city governments’ engagement with risk is very different to the likes of Macquarie Bank: rather than risk management and exploitation, it is defined (to a greater or lesser degree) by risk *taking*.

Indeed, there is an apparent mismatch between city governments, which have little option but to hope for the best investment deal to land on their doorstep, and financial intermediaries, which can scour the globe to find the best projects to suit their investment objectives. For example, the privatisation of infrastructure through long-term lease agreements has revealed that even where risks are apparently transferred to the private sector (in order for these risks to be managed and exploited), there is also a simultaneous ‘increase [in] the exposure of the City’s financial capacity to the risks inherent in global capital markets’ (Ashton et al., 2014: 11; also see Farmer, forthcoming).

2.4.2 Revolving funds as creative destruction? An acceleration of capital circulation through the built environment

The physical characteristics of infrastructure mean that it is literally fixed to- and embedded in the urban landscape. This fixity has traditionally posed problems for investment in infrastructure both new and old. In particular, the challenge is that the built environment, itself, is illiquid. Consequently, once an investment has been made, there are limited opportunities for exit. The illiquidity and fixity of infrastructure has been key to understanding infrastructure investments as ‘sunk costs’, or, in other words, ‘costs that cannot easily be recouped or salvaged if the economic atmosphere deteriorates’ (Guasch, 2004: ix).

While the built environment can be a valuable destination for surplus capital, particularly during periods of crisis or overaccumulation (see above), its physical embeddedness and tradable illiquidity simultaneously provide a barrier to capital circulation and accumulation:

‘The accumulation process experiences uncomfortable friction when capital (ie “value in motion”) is trapped in steel beams and concrete’ (Weber, 2002: 519).

Without intervention, the value of an investment in infrastructure or real estate can only be realized by collecting taxes, fees, rent or other revenues over the lifetime of the asset (Morales, 2009). For investors and capitalists, however, such revenues may be either insufficient, prone to devaluation, or both. If the built environment is to play a role in the acceleration of capital circulation and accumulation, then, the barriers of fixity must somehow be overcome.

A potential solution to this problem can be found in the value of the future built environment: if the value of rents and sales in the future built environment are greater than those of the present, an incentive is created for investors, developers and governments to eradicate the present built environment, making way for the future, and thus creating new opportunities for capital accumulation (Weber, 2002). As a result, the desire to overcome the ‘friction’ of the built environment leads to what Harvey (1985a: 27) – drawing on Schumpeter – calls ‘creative destruction’. In essence, creative destruction describes the creation of new opportunities for capital accumulation through demolition (destruction) and development (creation).

In the confined space of the city, a logical prerequisite of capturing future value is that the old, inefficient and out-dated built environment must first be destroyed. While substantial modifications to existing stock are possible, they can be prohibitively expensive and inefficient. A more favourable approach is to demolish and rebuild.

Through the eradication of invaluable historic facades and architectural features, demolition in itself can be a destructive and splintering process. However, the negative implications of ‘destruction’ can be far more widespread. Potential consequences of creative destruction include: the ‘[f]ragmentation of urban identities’ (Moulaert et al., 2005: 58); the exclusion of communities from the planning process and the abandonment of community values (Brenner et al., 2013); the displacement of traditional (working class) neighbourhoods (ibid.) and their replacement by select powerful, wealthy and privileged ones (Swyngedouw et al., 2005); the temporary or permanent loss of jobs or displacement of employment (Moulaert et al., 2005); and the ‘erosion of democratic decision-making’ (ibid.: 58).

Rather than being a unique characteristic of any particular city, Harvey (1985a) suggests that 'creative destruction' is an inherent process of capitalism. This assertion is verified by Page (1999) in an analysis of New York in the 1940s:

'The upheavals of Manhattan were not the result of dramatic, isolated natural disasters or government sponsored urban renewal projects but rather were necessary episodes in the process of capitalist urbanization' (Page, 1999: 2).

It is also reinforced by creative destruction's uneven and temperamental nature:

'Capital circulates through the built environment in a dynamic and erratic fashion. At various points in its circulation, the built environment is junked, abandoned, destroyed, and selectively reconstructed. The physical shells of aging industrial orders may sit dormant for decades before being cleared for a new high-tech "campus," while efficiencies near the central business district come down efficiently to be reborn as luxury condominiums within a year' (Weber, 2002: 520-1).

Crucially, the emergence of *financialised* form of capitalism is fuelling an intensification in the process of urban churn. In particular, the financialisation of infrastructure and capital investment have created opportunities for the acceleration creative destruction. The ability to package and trade (or securitise) the future value of the urban environment, for instance, serves to break down the fixed and illiquid characteristics of land, infrastructure and property. Indeed, through financialisation, the build environment is becoming more efficient at attracting, storing, and recycling surplus capital.

On one hand, the intensification of creative destruction is partly attributable to the increasing penetration of global flows of hypermobile capital into the built environment. The ability of institutional investors to purchase revenue streams of infrastructure items that have been dismantled, packaged and securitised, for instance, is a key catalyst in the production and reproduction of the built environment. On the other hand, the local state is also active in the promotion of creative destruction, justifying programmes of demolition, reconstruction and regeneration by contrasting the current presence of 'blight and obsolescence' with the potential for jobs, growth, productivity and vivacity in the future (Weber, 2002: 520). The proliferation of state-led revolving infrastructure funds, which explicitly aim to recycle capital through the urban landscape as quickly and efficiently as possible, is symptomatic of the shift towards the acceleration of creative destruction.

Although this acceleration potentially creates new opportunities for job creation and economic growth, it could also exacerbate the negative implications of destruction's damaging tendencies. Furthermore, the destabilisation of historically fixed, illiquid and crisis-

resistant components of the urban environment has potential negative implications for the sustainability of the city and the stability of its governing institutions, its capitalist class, and its inhabitants at large.

2.4.3 Interdependence in financial markets: raising the prospects of crisis and bankruptcy?

The perception that participants within the global financial markets are distanced by their geographical separation is a fallacy defined by what that Pani and Holman (2013: 1) term 'fictitious distance'. Rather than distance creating a degree of insulation from geographically isolated events, financial markets forge deep connections and interdependencies between market participants around the globe.

Because of the systemic interconnections and interdependencies between municipalities and the financial markets, a crisis in a seemingly distant sphere of the financial system can radically impact the ability of municipalities to issue and service debt. During the global financial crisis of 2008, the interest rates on municipal bonds were drastically impacted by the collapse in the creditworthiness of the underlying bond insurers (or 'monolines') (Weinstein, 2009). Although, traditionally, monolines have only insured bonds, they have more recently diversified into a wide range of sectors. Indeed, the drop in the credit ratings of monolines was caused by their over-exposure to 'riskier activities' in sectors other than municipal bonds, which included practices such as 'guaranteeing complex structured credit products' like collateralised debt obligations (tradable parcels of debt which has been issued against multiple revenue streams from multiple assets) (Crouhy et al., 2008: 89). Although these structured products accounted for only 30% of business in the sector, they were 'hugely leveraged' and had a direct negative impact on the insurance companies' credit ratings (Roberts and Jones 2009: 862). Crucially, the loss of creditworthiness was passed onto all other assets that were also underwritten by the monolines, which, of course, included municipal bonds.

The downgrade in 2008 of three major bond insurance companies, Financial Guaranty Insurance Company (FGIC), the Municipal Bond Insurance Association (MBIA) and the American Municipal Bond Assurance Corporation (AMBAC), had a significant impact on the risk premiums of bonds insured by these companies, as well as having a contagious impact on the risk premiums of bonds insured by companies that had not experienced a downgrade, such as Assured Guaranty Municipal Corporation (Brune and Liu, 2011). The significance of the turmoil in the bond insurance sector is illustrated by the fact that, for a

period of time, the yields on uninsured municipal bonds actually fell below the yields on insured bonds (Bergstresser et al., 2010). That is, investors and credit rating agencies perceived insured bonds to be more risky than uninsured bonds. Consequently, the cost for municipalities of issuing new debt rose substantially. In turn, the number of bond issuances declined and, in 2010, insured bonds made up only 10% of the newly issued bonds on the market (Madura, 2011: 155).

The systemic nature of the interdependencies between financial market participants was made even more apparent when FGIC, the insurance company, suspended payments to claimants (due to an inability to pay), triggering \$1 billion of credit default swaps (Bullock, 2009). As a result, the financial institutions that had written these derivative contracts were also harmed by the troubled insurance sector.

The collapse of the monolines and city bond ratings during the global financial crisis demonstrates that threats to the financial condition of city governments and, therefore, potential causes of urban splintering and crisis, can originate from unexpected and unforeseen places. As cities forge more intimate links with financial markets, either through the pursuit of financialised programmes of capital investment or by inviting global investors to buy up their built environment, the levels of systemic interdependence continues to grow. The challenge for cities, therefore, is not only to acknowledge the 'fictitious' nature of the distance between them and the financial markets, but also to build the prospect of exogenous and systemic crises into their risk-taking and risk management approaches.

2.5 Funding and financing infrastructure: an analytical framework

The aim of this Chapter has been to critically analyse the literature that contributes to current understandings of how infrastructure is funded and financed, and to develop an analytical framework that provides the foundations for the rest of the study. This section reflects on the core arguments of the literature review, uses them to guide the study's primary research questions, and crystallises the analytical framework.

The principal argument of this chapter is that the ways in which infrastructure are funded and financed are undergoing a process of transformation, with significant implications for urban development, urban governance and the financial condition of the state. This argument rests on four key assertions: first, there is a financialisation of the funding and financing of infrastructure; second, the financialisation of infrastructure and capital investment is fuelling urban reterritorialisation and the transformation of the state; third, the

emergence of financialised models of investment is catalysed by fiscal crisis and innately linked to the fiscalisation of urban development; and, fourth, the process of financialisation is causing the intensification of urban splintering. These four sub-arguments underpin the approach taken in this thesis to the analysis of the funding and financing of infrastructure in the US and UK. Crucially, it is these arguments – drawn from the literature – that shape the research questions and analytical framework.

The financialisation of infrastructure and capital investment

Financial markets and their intermediaries and processes are becoming increasingly influential in the global economy. The rise of this process of financialisation can be seen as part of the continuous search for the acceleration of capital accumulation within capitalism and for a fix to the contemporary economic and fiscal crisis in cities. The unbundling, segmentation and privatisation of infrastructure has created opportunities for financial markets to penetrate the previously untapped profitability of infrastructure networks, and enabled financial institutions to package, value, securitise and trade infrastructure assets with potentially transformative implications for the urban landscape. At the same time, however, the state continues to play a central role in the funding and financing of infrastructure, albeit in a more entrepreneurial than ever before. Although there are some core characteristics of the financialisation of infrastructure investment, such as high levels of debt and the speculation of future revenue generation, the process of financialisation is place-specific and highly uneven.

Research question 1: How is infrastructure funded and financed in cities in the UK and the US? And to what extent are these processes being financialised?

This question targets the core research subject – the funding and financing of urban infrastructure – and provides the foundations from which the other questions can be posed. In particular, its emphasis is on the potential variety of funding and financing practices utilised in British and American cities, and the possibility that different models of investment in a range of different cities will exhibit varying levels of financialisation. Indeed, the purpose of this question is to interrogate the specific ways in which infrastructure investments are designed, implemented and managed within the unique geographical context of each case study city.

Urban reterritorialisation and the transformation of the state

Whilst the state remains a central actor in the funding and financing of infrastructure, it is also undergoing a continuous process of restructuring, rescaling and reterritorialisation as it seeks to respond to the challenges of urban development that have spawned from the global financial and economic crisis and as it develops more innovative and entrepreneurial models of capital investment. Issuing debt in order to finance an infrastructure project, for instance, forges new interdependencies with financial markets and thus exposes urban governance systems to the influence of extra-local actors and financial intermediaries. Furthermore, in avoiding the obstacles to issuing debt or to utilising other financial technologies, the organisation and structure of governmental entities comes under pressure to adapt and change. Crucially, this process of reterritorialisation is multidirectional, in that it can simultaneously take the form of inter-jurisdictional collaboration and fragmentation, or devolution and centralisation, and, as with the process of financialisation is uneven and place-dependent.

Research question 2: What is the role of the state in funding and financing infrastructure? Is this role changing? And, if so, what are the implications for the organisation of the state?

This question identifies that the state's role in funding and financing infrastructure is contested and potentially uncertain in face of the unbundling, segmentation and financialisation of infrastructure. In particular, the question asks whether the state – in all of its various iterations – still has a role to play in the funding and financing of infrastructure, how that role might be changing and how the state might be forced to adapt, rescale and restructure accordingly. In the context of what is acknowledged to be a variegated system of capitalism, a key focus of this question is on how the state responds to the unique challenges of infrastructure investment in different spatio-temporal circumstances.

Fiscal crisis and the fiscalisation of urban development

Governments at multiple levels within the US and the UK are suffering from increased levels of fiscal stress. In particular, urban governments have felt the squeeze in the wake of the Great Recession as funding cuts have been passed down from higher levels of government and local sources of income have dried up. However, it is precisely within this fiscally challenging environment that city governments are developing entrepreneurial models of infrastructure investment, which allow them to overcome the current scarcity of funds by

tapping into future revenues generated through development projects. While the ability to generate a return is an essential component of a financialised model of investment (in order to service debt), an infrastructure project that creates a financial return could also provide a valuable long-term source of income for a governmental entity. Crucially, this potential synergy between infrastructure investment and fiscal rewards has encouraged urban governments to pursue increasingly fiscalised models of urban development (those designed to prioritise financial returns over other strategic objectives). The fiscalisation of urban development, however, is an innately speculative process, which has the potential to cause new bouts of fiscal crisis and which serves to amplify inter-urban and inter-jurisdictional competition.

Research question 3: Why are fiscally stressed governments investing infrastructure? How is fiscal stress causing changes in the way that infrastructure is financed and funded, and with what implications?

The worsening financial condition of governmental entities is undoubtedly placing a strain on traditional funding and financing practices. This question, then, aims to assess the extent to which fiscal stress is fuelling the emergence of more entrepreneurial and financialised models of investment within the case study cities chosen in this research. Furthermore, it opens up the debate as to whether urban governments regard infrastructure as a fiscal instrument that might have positive implications for long-term financial stability, and whether financialised models of investment might actually present a risk to the financial sustainability of governments.

Financialisation and the intensification of urban splintering

The processes of unbundling, segmentation and privatisation have created new opportunities for investors across the globe to tap into the revenues generated by urban infrastructure. As these revenues have increasingly been securitised and traded in the financial markets, infrastructure has developed into a significant asset class, albeit defined by a complex and uneven geography of risk and return. Although the financialisation of infrastructure has created opportunities for infrastructure development and private investment often seems to align with the objectives and fiscal constraints of governments, the privatised infrastructure landscape is fraught with risks and potential costs for governments, users and the broader urban environment. In particular, the acceleration in the circulation of capital through the urban environment that defines the financialisation of infrastructure appears to be intensifying the processes of creative destruction and urban splintering.

Research question 4: To what extent does the financialisation of infrastructure and capital investment have splintering implications for cities and the process of urban development?

This question focuses on how different models of funding and financing infrastructure affects urban development and the broader urban environment. Often, pursuing financialised models of infrastructure investment seems to be an attractive option for governments and investors alike – the public sector can save money while the private sector generates profit. However, the financialisation of infrastructure is not always a win-win situation and can put cities at risk of costly and destructive outcomes. Within each of the case study cities, examining the consequences of particular models of infrastructure investment sheds light on the circumstances in which models of funding and financing infrastructure can have potentially hazardous implications.

Chapter 3: A methodology for the study of capital investment

At the core of this thesis is the comparative dimension between the United States and the United Kingdom. This chapter justifies the use of international comparative cases and outlines a methodological framework for the research.

In defining comparisons, it is acknowledged that there are some common traits of comparative study, such as the identification of similarities and differences between chosen cases. That said, both the definition and practice of comparative research is highly varied and contested. As such, this chapter attempts to explain and justify the particular approach to comparative research adopted in this research.

A particular emphasis is placed throughout the chapter on the importance of grounding a methodological framework in the theory that drives the research. As a result, the chapter makes frequent references to concepts developed in Chapter 2 and, in particular, to the research questions outlined in Section 2.5. In addition to making an explicit link between theory and methodology, the chapter also argues that researching infrastructure investment has potential implications for infrastructure investment *in practice*. Not only does this research contribute towards creating discursive representations and understandings of the funding and financing of infrastructure, but it is also implicated in a process of policy transfer and mutation (Section 3.1.1).

Having acknowledged the interconnected nature of comparative research, the chapter makes a case for a *relational* form of comparison, in which the understanding of one comparator case study informs and enhances the understanding of another. Arguably, understanding cities in relation to one another creates a stronger foundation from which to advance conceptual and theoretical insights.

A substantial portion of this chapter is dedicated to explaining how case studies were chosen for this research and to justifying their selection. The chapter discusses the nature of the case study itself and asks the question: ‘what is the unit of analysis that is being compared?’ Although the possibility of using individual *infrastructure projects* or specific *funding mechanisms* is discussed, the *city* is chosen as the unit of comparison. This is justified by the huge influence of the contextual specificities within a city that influence both the type of infrastructure project and the way in which it is funded and financed.

Section 3.2.2 is perhaps the most important part of the chapter as it outlines and justifies the approach to selecting case study cities. Because the methodology is driven by the theoretical insights developed in Chapter 2, the argument is made that the cities should reflect *critical* or

extreme cases which have the potential to challenge existing theory and to develop new and improved conceptualisations of the funding and financing of infrastructure. The next sections (Section 3.2.3 and 3.2.4) focus on the case study selection process itself.

Having constructed a comparative framework, the Chapter then turns to the method of primary research itself. In keeping with the search for depth and richness of material, a qualitative and intensive research strategy is adopted, which is largely based on semi-structured interviews. Documentary analysis is also used to complement and refine the data generated in the semi-structured interviews, although there is no attempt to engage specifically in either discourse or content analysis.

Finally, the chapter presents an illustrated summary of the methodological framework.

3.1 Theorising the research process: towards a framework for comparative study

There are some consistent characteristics that appear to be shared by most comparative studies. At a broad level, there is a sense of looking for similarities and differences between cases that then provide a basis for enhanced understanding of the subject (Keating 1991; Mossberger, 2009; Ragin, 1987; Ward, 2010a, 2010b). More specifically, comparative study can illuminate how different objects of study – or variables – ‘work differently in a variety of settings’ (Kantor and Savitch, 2005: 135), and can identify the ‘causal relationships’ between these variables (Pierre, 2005: 447). Again, the purpose is to use comparative study to ‘make sense’ of the inevitable variety on display and to use these empirical insights to improve explanatory models (Pickervance, 1995: 36).

According to Ward (2010b), the purpose of comparative study is to use empirical observations from a range of related objects of study to inform and develop improved theoretical and conceptual understandings:

{[To compare] means to examine more than one event, object, outcome or process with a view to discovering the similarities and/or differences between them. Comparative studies share a commitment to describing, explaining and developing theories about sociocultural phenomena as they occur in and across social units (cities, groups, regions, nations, societies, tribes)’ (Ward, 2010b: 473).

Comparative analysis, then, has the potential to ground theory in a set of tangible historical examples, thus strengthening theory and rendering it less abstract (Abu-Lughod, 1999). At

the same time, comparative research increases the geographical reach of a project, enabling a wider set of geographical imaginations to influence the formation of concepts and theories (Larner and Le Heron, 2002), and providing a greater depth and sophistication of theoretical insight.

However, the method of comparison is contested both conceptually and practically. The definition of comparative study provided by Ward (2010a) necessarily highlights the potential obstacles and methodological challenges that a researcher might face during comparative research. For instance, the challenges of how to choose the events, objects, outcomes, processes, cities, groups, nations or societies that will be incorporated into an empirical analysis are particularly evident. As McCann and Ward (2012: 49) admit, the framework for embarking on comparative study is, to some extent, a mere 'conceptual point', as the chosen subjects and units of analysis depend on the theoretical and ideological underpinnings of the researcher. At the same time, however, the conceptual starting point inevitably shapes the entire dynamic and trajectory of the research. As such the researcher's theoretical underpinnings are treated here as the most crucial aspect of the comparative research design, are emphasized throughout the design process, and are explicitly attributed as the main driver of the choices shaping the methodological and empirical framework.

3.1.1 Comparative urbanisms and the theory-practice nexus

The theoretical underpinnings of comparative research are especially significant in geographical research, which by its very nature seeks to understand a subject according to its unique (and comparable) position in time and space. Nowhere is this more pronounced than in the field of urban geography, in which theorists constantly use comparisons as a frame of reference for measuring, analysing and evaluating aspects of the urban condition. Indeed, it can be argued that urban development is increasingly conducted in a comparative context (Peck, 2003).

However, it is not only our understanding of cities that is consistently informed by comparative benchmarks. Comparative analysis, for example, can be regarded as both an implicit and explicit driver of the actions taken and decisions made by urban policy makers (Denters and Mossberger, 2006; Pierre, 2005), and therefore is a key determinant of how urban development plays out on the ground. In urban policy, comparative cases are unambiguously used as performance benchmarks or deployed as examples of best practice. Comparative study, therefore, is tightly linked to the idea that fortunes in one city can be improved by the transfer of ideas, innovations and experiences from an unlimited number

of other places (Denters and Mossberger, 2006; Sipe et al., 2011). Clearly, then, academic comparative research can also be bound up in the processes of policy mobility, transfer and mutation (see Jonas and Ward, 2002; McCann, 2011; McCann and Ward, 2011, 2012; Peck and Theodore, 2010), particularly when the topic is relevant to policy makers.

As a result, the presuppositions, discursive representations and narratives that enable the researcher to construct, legitimise and justify a comparative empirical framework also influence the actual process of urban development. Crucially, not only does the subject of comparative research help to shape theoretical understandings, but theoretical understandings also influence and shape the process of urban development and the urban condition. This is the theory-practice nexus, and it must be acknowledged in the context of this research.

3.1.2 Framing a comparative study: linking theoretical and methodological frameworks

Urban research is now ‘an intrinsically comparative field’ (Robinson, 2011: 2), concerned primarily with how one city shapes up against another across a range of theoretical and empirical indicators. The lack of consistent attempts to recognise, critique or rewire this field has led McFarlane (2010) to put forward a number of key questions that should be considered by an urban theorist when embarking on a comparative study:

‘how [do we] define the *spatial identification* of the city itself and of the wider (urban, economic, political) system of which it forms part? In more general terms: how do we identify the spatial unit to be compared?... what contextual factors matter most?... what are the ramifications of globalization for urban processes, urban networks, and urban categories?... how does comparison address local-global dialectics, and how can the scope of comparison be delineated?’ (McFarlane, 2010: 731).

These questions are posed in order to kick-start the (often undervalued) processes of reflexive practice and self-criticism, as well as to challenge the ‘inevitability’ of a comparative case study (see McFarlane, 2010; Robinson, 2011).

In light of McFarlane’s questions, key questions arise for this research: in trying to understand the funding and financing of infrastructure, why undertake an international comparison? And if so, how should that comparison be designed and conducted?

The methodology presented in this chapter is aligned with – and informed by – the theoretical framework developed in Chapter 2. Given the theoretical foundations on which

this research is based, an international comparison seems well placed to meet the research aims and objectives, and more broadly to address key gaps in both theoretical understandings and empirical evidence.

In particular, an international comparative approach would appear to be a highly relevant methodological approach in light of the inherent spatial diversity of the process of financialisation (French et al., 2011). Furthermore, because financialisation penetrates economies at multiple spatial scales, exerting the influence of powerful global financial flows upon places – albeit unevenly (Pike and Pollard, 2010), an empirical approach that seeks to compare across, between and ‘through’ nations, cities and their intersecting spatial networks (see McCann and Ward, 2012) is both salient and appropriate. A core critique of the literature on financialisation is that it provides too many ‘generic accounts’ (French et al., 2011: 809) and, as such, that there is a lack of *fine-grained* analyses that engage with the complexity, heterogeneity and geographical unevenness of financialisation. An international comparison enables a more refined and nuanced understanding of the funding and financing of urban infrastructure to be developed and, in doing so, addresses a key gap in the financialisation literature.

In *international* comparative research, it could be suggested that the national scale becomes the primary arena of analysis. However, while the national scale remains important and provides a point of reference for which geographical spaces are included and excluded from this research, the argument made in Chapter 2 is that the funding and financing of urban infrastructure is influenced by processes and systems operating at multiple spatial scales. This *multiscalar* approach is vital if the objective of generating a fine-grained and nuanced understanding of financialisation is to be achieved.

3.1.3 International comparative framework: from like-for-like to relational comparisons

The field of urban development, whilst having some notable examples of comparative work (Cento Bull and Jones, 2006; DiGaetano and Klemanski, 1993; Fainstein, 2001; Sellers, 2002; Sellers and Kwak, 2011), has tended to neglect the comparative dimension of empirical research, particularly at an international level (Kantor and Savitch, 2005). In the portion of comparative studies that do exist, there is a tendency to compare one city against one or a number of other cities in a ‘like-for-like’ format. In order to ground these like-for-like comparisons of cities in theory, the favoured approach is to adopt a particular theory of ‘the city’ and to examine the extent to which the case studies meet the criteria set out by the

relevant theoretical framework. In light of the fit (or disconnect) between theory and city, reflections are made about the ‘key traits’ of the case studies (Kantor and Savitch, 2005: 136). Following this procedure, then, a theoretically informed like-for-like – city-against-city – comparison is made. Reflections are also made about the ability of the city-theory to explain and analyse urban development and politics across cities more generally (see Figure 3.1). Urban regime analyses, for instance, have often been characterised by this approach (e.g. DiGaetano and Klemanski, 1993; DiGaetano and Lawless, 1999; Harding, 1997; Sellers, 2002).

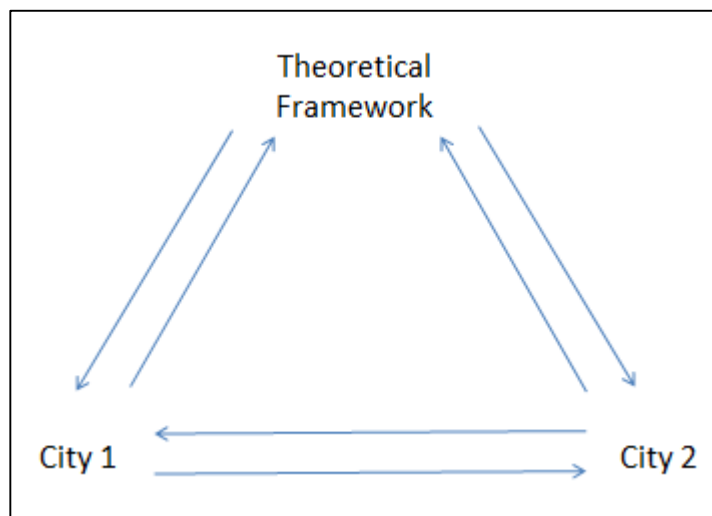


Figure 3.1: A diagram illustrating a theoretically informed like-for-like comparison of two cities

Source: Author's illustration.

Using a like-for-like comparative framework, focusing on the key traits of cities and measuring them against a particular theory, can lead to a narrow, constrained and one-dimensional study: this positivist approach can be likened to ‘scoring’ cities against a particular theoretical framework before comparing the scores. In no way does this allow for a researcher’s understanding of city ‘a’ to inform or improve their understanding of city ‘b’, or to enhance the theoretical richness of their subject.

An alternative approach to comparative urban research is to focus on a set of multiscale processes and systems, which could be used to enable city ‘a’ to be understood *in relation* to city ‘b’ (see Figure 3.2). While undertaking a relational comparison reflects the wider concern for a relational ‘turn’ to geography (Amin, 2007; Bathelt and Glücker, 2003; Massey, 2004;

Yeung, 2005), it also brings a new dimension to knowledge creation through empirical research:

[A] relational comparative approach to the comparison of cities [recognizes] both the territorial and the relational histories and geographies that are behind their production and (re)production. This means understanding 'cities' differently from the way they have been theorized in past comparative urban studies. Stressing interconnected trajectories – how different cities are implicated in each other's past, present and future – moves us away from searching for similarities and differences between two mutually exclusive contexts and instead towards relational comparisons that uses different cities to pose questions of one another' (Ward, 2010a: 480).

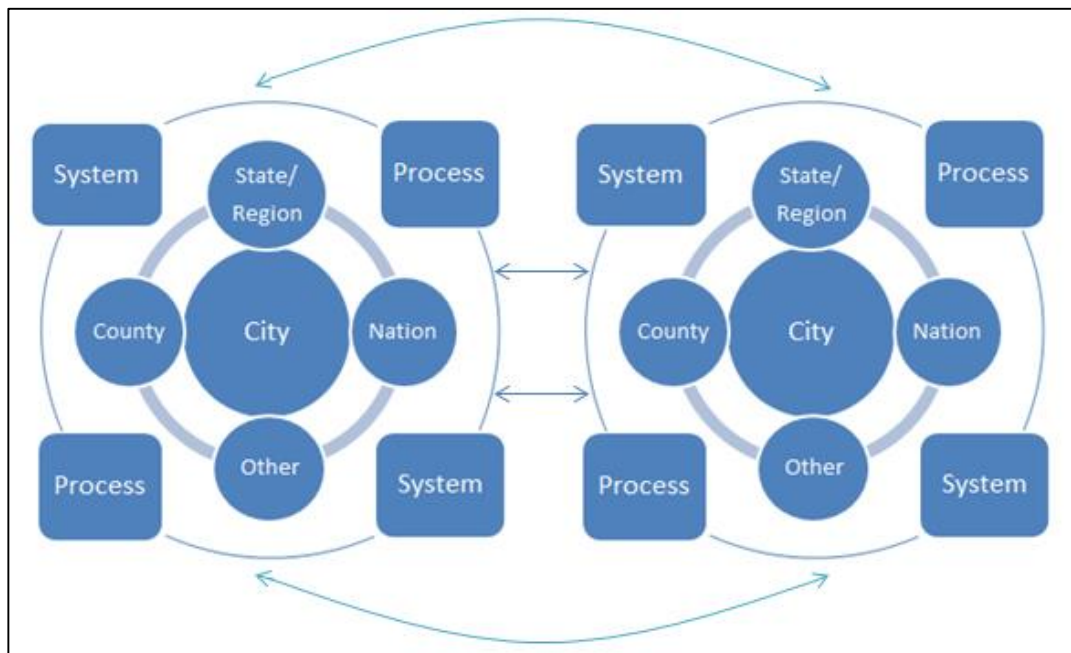


Figure 3.2: An illustration of a relational comparison between two cities

Source: Author's illustration.

As a result, how any particular city is understood is explicitly impacted by the knowledges, discourses and understandings derived from other case studies, helping to create a more complex and sophisticated conceptualisation of the urban condition (Ward, 2010a; McCann and Ward; 2011, 2012). This research adopts a relational approach specifically in order to harness the analytical and explanatory richness that it enables.

3.2 Defining case study parameters: the case study selection process

Three strands of information stand out as particularly central to a research project which aims to understand the apparent transformation that is occurring within infrastructure funding and financing:

1. the *drivers* of investment practices;
2. the *mechanics* of funding and financing instruments or mechanisms;
3. and, the *implications* of their adoption and implementation.

The approach to analysing these strands is informed by the literature review in Chapter 2, and is ultimately crystallised in the main research questions (see Section 2.5). These questions interrogate the following themes:

- The financialisation of infrastructure and capital investment practices;
- The role of the state in funding and financing infrastructure and the subsequent evolution of the state form;
- The relationship between the fiscal stress and the funding and financing of infrastructure;
- The potentially splintering, fragmentary, and uneven implications for urban development.

The methods used in this research have been explicitly designed to aid the interrogation of these themes and to do so through a particular lens that is shaped by and grounded in the academic literature, with the objective of contributing towards an improved conceptualisation and theorisation of the funding and financing of infrastructure.

Accordingly, the four themes that are crystallised in the research questions provide the foundations of the methodological approach to this research. Indeed, these themes serve as the primary drivers of the decision to undertake comparative international research and form the basis of the case study selection process.

3.2.1 The unit of comparison: cities, infrastructure projects or funding mechanisms?

The first stage of developing a comparative framework is to decide upon the unit of comparison. Barnes et al. (2007: 4-17) recall the evolution of the modern methodology, illustrating how various units of analysis – including (amongst others) the industrial sector, the locality, the institution, the ‘cross-scalar, globalizing network’, the region, the ‘cluster’,

and the experience (e.g. of gender or race) – drift in and out of the geographical consciousness with the ebb and flow of theoretical and empirical moments, turns, paradigms. Whatever the eventual unit of analysis, key to the legitimisation of any of these approaches is their relevance to and grounding in the broader theorisation of the subject matter at hand: that is, a clear and open ontological and epistemological position (Graham et al., 2010).

Here, Chapters 1 and 2 produce an interpretation of the world in which infrastructure is funded and financed as complex, political, multiscalar, and place-specific. Because of the innate complexity of analysing infrastructure investment, and the uniqueness of any one funding and financing package, it seems essential to ground this study in the contextual specificities of ‘place’ that produce this uniqueness and complexity. While the processes and systems that influence the funding and financing of urban infrastructure are undeniably multiscalar, they converge at the urban scale, thus making *the city* a seemingly ideal unit of analysis. As a result, the city is adopted as the unit of analysis in the comparative framework of this research.

Particularly notable alternative approaches could include focusing instead on specific funding mechanisms or specific infrastructure projects. However, for the purpose of this research, comparing specific types of infrastructure projects, such as tram systems or brownfield clean-up programmes, or comparing specific investment models, such as tax increment financing or revolving infrastructure funds, would arguably be too narrow. Whilst this approach would open up the possibility of generating useful insights for policymakers and practitioners, the danger is that the research outputs become overly descriptive and list-like. Furthermore, in trying to explain the variations or similarities of the ways in which (for example) tram projects are funded or (for example) revolving infrastructure funds are structured, the analysis would quickly begin to draw on a range of place-specific factors, such as the existing institutional capacities, funding powers, governance systems, economic geographies and infrastructural needs of the city at hand.

3.2.2 The problem of selecting cities: towards ‘critical cases’

There are multiple different ways of choosing case study cities to use as the focus of a research project. Flyvbjerg (2006) argues that there are two main types of selection technique, which in turn can be broken down further into six sub-categories. As illustrated in Table 3.1, case studies can be selected either randomly, or specifically according to expectations about their information content.

‘Random’ selections can be made either by collecting a ‘representative sample’ from a population at random, or by using a ‘stratified’ sampling technique in order to tailor a random sample to a specific set of criteria (Flyvbjerg, 2006: 230).

By contrast, ‘information-oriented’ selections can be made based on a preconceived idea of what information might be obtained through a particular case study. Using this method, deciding which case studies to select is dependent (to a certain extent) on the type of information that the researcher wants to obtain. According to Flyvbjerg (2006: 230), there are four types of case study that could be chosen through information-oriented selection techniques: ‘extreme’ or ‘deviant’ cases; ‘maximum variation’ cases; ‘critical’ cases; and ‘paradigmatic’ cases. However, Flyvbjerg (2006: 233) also maintains that ‘the various strategies of selection are not necessarily mutually exclusive’.

Table 3.1: Strategies for the selection of samples and cases

Type of Selection	Purpose
A. Random selection	To avoid systematic biases in the sample. The sample’s size is decisive for generalization.
1. Random sample	To achieve a representative sample that allows for generalization for the entire population.
2. Stratified sample	To generalize for specially selected subgroups within the population.
B. Information-oriented selection	To maximize the utility of information from small samples and single cases. Cases are selected on the basis of expectations about their information content.
1. Extreme/deviant cases	To obtain information on unusual cases, which can be especially problematic or especially good in a more closely defined sense.
2. Maximum variation cases	To obtain information about the significance of various circumstances for case process and outcome (e.g., three to four cases that are very different on one dimension: size, form of organization, location, budget).

3. Critical cases	To achieve information that permits logical deductions of the type, “If this is (not) valid for this case, then it applies to all (no) cases.”
4. Paradigmatic cases	To develop a metaphor or establish a school for the domain that the case concerns.

Source: Flyvbjerg, 2006: 230.

As discussed above, this research explicitly aims to interrogate the themes set out in the literature review and crystallised in the research questions. It is crucial, then, that the case studies that form basis of the empirical and comparative dimension of this study are selected based on their ability to challenge existing conceptualisations of financialisation, of the role of the state in funding and financing infrastructure, of the relationship between the fiscal stress and infrastructure investment, and of splintering urbanism, and to develop new or more refined understandings of these issues. Consequently, the case studies for this research have been selected using *information-oriented* techniques.

Using information-oriented selection means that some characteristics of cities that might be considered more important for a stratified sampling technique, such as the size, population, gross domestic product per capita, or gross expenditure on infrastructure, are not used as key determinants of case study selection in this research.

Instead, the selection of cities for comparison in this research is based on an expectation of how far certain cities could make an important contribution to the way in which the key themes of this research are understood, and, therefore, how far they could help to improve the way in which the funding and financing of infrastructure is theorised.

As Flyvbjerg (2006) acknowledges, it is difficult to know precisely whether a particular case is ‘critical’, ‘extreme’ or ‘paradigmatic’ prior to undertaking the research itself. In general, however, the cases in this study were chosen because they are potentially ‘capable of generating new theoretical insights, rather than merely illustrating extant theory claims’, which Barnes et al. (2007: 10) suggest is a key feature of the ‘critical’ case. In an analysis of the economic geographies of brands and branding, for example, Pike (2013: 328) selects Burberry as a ‘critical case’ in order to challenge a particular conceptualisation of geographical association.

The reason that critical or extreme cases enable what is arguably a more advanced, fine-grained and in-depth theorisation of a particular subject is that they have the potential to

‘clarify the deeper causes behind a given problem and its consequences’, rather than merely describing ‘the symptoms of the problem and how frequently they occur’ – the latter of which is a characteristic of random and stratified sampling techniques (Flyvbjerg, 2006: 229).

Inevitably, there are some fairly substantial challenges to undertaking comparative research using critical cases. Firstly, there is a danger that they become what Barnes et al. (2007: 10) describe as a ‘quick and dirty study’, in which the processes of conceptualisation and theorisation are based on a relatively random series of chance observations. Secondly, there is the issue of ‘verification bias’, in which the processes of case selection and theorisation become circular, while the empirical evidence merely serves to reinforce the researcher’s ‘preconceived notions’ (Flyvbjerg, 2006: 234). Thirdly, there is the challenge of actually comparing a series of critical cases: the reason for choosing each case might be radically different, thus making it difficult to engage in the traditional comparative practice of looking for similarities and differences in the behaviour of a selection of variables.

Dealing with these challenges in turn, this study attempts to avoid a ‘quick and dirty’ approach to case study research by creating an extensively considered, self-critical and ‘reflexive’ methodology (see Longhurst, 2010: 108). Section 3.1.1, for example, explicitly sets out the position of this research as bound up in a complex nexus of theory and practice, while the introduction to Section 3.2 explicitly acknowledges that the methodology is grounded in – and driven by – a particular reading of the existing literature.

The issue of ‘verification bias’ is a particularly interesting one, especially because this research is so explicit about its methodology originating from a series of ‘preconceived notions’ (see Flyvbjerg, 2006) derived from a particular interpretation of the literature. In a ‘positivist’ approach to research, this acknowledgement might be regarded as compromising the ‘objectivity’ of the research (see Kitchin and Tate, 2013: 8-25), and therefore as unacceptable. Here, however, the idea that the research findings might be generated from preconceived notions is accepted as part of a knowledge production process that is ‘situated within the beliefs and values of the researcher’ (ibid: 24). This approach is consistent with a growing body of geographical research that emphasises an openness to researcher ‘positionality’ (Nayak and Jeffrey, 2013: 142).

Finally, an attempt to address the challenge of comparing a series of critical cases is made through the adoption of a *relational* approach to comparison (see Section 3.1.3). Rather than holding a series of independent variables constant across cases and exploring the changing nature of a series of dependent variables, the relational approach to this study enables the research to be in-depth and ‘intensive’ in each case study city (see Herod and Parker, 2010:

67), the observations, analysis and conceptualisations of which can then be used to inform understandings across all case study cities. This is not to say that all case study cities will be considered to be the same, but rather that each case study will be understood in relation to the others. Although there may well be instances where direct comparative statements (for example, concerning similarities and differences) can be made about two or more case studies, this is not an explicit objective of this research.

UK	US	Assessment
		X – Suitable for an in-depth qualitative analysis of place-specific phenomenon, but less useful for understanding spatial variation.
		X – Enables in-depth research, whilst adding a comparative dimension. Little exposure to the wider potential range of funding and financing practices.
		X – Enables a more multiscalar comparative analysis (e.g. 2 US cities in different states). In-depth studies, with a limited frame of reference for comparison.
		✓ – Ideal balance between depth and breadth of research, enabling a qualitative analysis of a range of processes, their interaction with place, and uneven geographical impact.
		X – Qualitative research is impractical. Ability to understand underlying drivers and impacts of funding and financing practices is challenging.

Figure 3.3: Explanation of number of case study cities selected

Source: Author's own

Having decided the unit of analysis and the type of city that should be selected (i.e. a critical case), a decision must be made about the number of cities chosen as part of the comparative framework. Figure 3.3 provides an explanation of how this choice was made in this study. The result is a selection of six cities (three from each comparator country), which provides an ideal balance between the depth and breadth of research, enabling a qualitative analysis of a range of processes to be undertaken, whilst also enabling the analysis to demonstrate the variable interaction of these processes with a range of places, and for their uneven geographical impacts to be explored and understood.

3.2.3 Justifying the US-UK international comparison

Comparing how infrastructure is funded and financed between two nation-states, the UK and the US, is at the heart of this research and, as such, must be justified accordingly. Of particular importance to this choice of comparison are: the historical patterns of Anglo-American policy transfer and learning; the rise of an Anglo-American ‘model’ of funding and financing infrastructure; a response to the critique of often Anglo-American-centric interpretations of financialisation; and, a response to the issue of comparative research that focuses on the ‘usual suspects’ of the UK and the US.

Arguably, it would be challenging to analyse the funding and financing of infrastructure in the UK while refraining from making multiple references to the US, both with respect to specific mechanisms, and in terms of the broader models of practicing and conceptualising economic development that are evident in its cities and policy-making institutions. Indeed, it seems almost impossible to avoid analysing the UK’s infrastructure landscape *in relation* to the US.

A key reason for the seemingly tight connection between infrastructure funding and financing in the UK and the US is the extent to which policy makers and practitioners in the UK are explicitly learning from the American strategies for funding and financing infrastructure. In particular, this has been exhibited by the emergence of tax increment financing in the UK, the US model for which has been digested in bite-sized chunks over a period of approximately 15 years since Lord Rogers’ Urban Task Force report in 1999, developing slowly through a number of various iterations, such as Local Authority Business Growth Incentives (LABGIs), until reaching its present form (Ward, 2012a, 2012b; also see Squires and Lord, 2012) which arguably still reflects a conflation between English local government finance and the form of TIF used in the US (see Chapter 5).

Whilst policy transfer has been evident from the US to the UK, then, it is arguable that the liberalisation and privatisation of infrastructure was first experimented with in the UK, with marketisation and the use of ‘P3s’ (public-private partnerships) emerging later in the US as a consequence of a similar form of policy diffusion (Farmer, 2013)

In addition to such explicit (albeit incomplete) transfers of policy where ‘the very logic of policy design has been disembedded from one national context and re-embedded in the other’ (Jonas and Ward, 2002: 377), a broader and more ‘superficial transfer of policy ideas’ has also occurred between the US and the UK in areas such as welfare reform and urban

governance (*ibid.*). Most recently, the more devolved and decentralised model of urban governance in the US has provided fuel for academics, practitioners and policy makers in the UK to consider new models of devolved governance, the introduction of new financial powers at the local level, and even a transition towards a form of fiscal federalism (*inter alia* see Blick and Jones, 2010; City Growth Commission, 2014; Gregory and Dawber, 2012; London Finance Commission, 2013; Symons, 2011; Trench, 2013). Admittedly, the American system has not provided the only frame of reference for this debate: other federal states such as Canada and Australia also frequently provide points of reference, while the referendum for independence in Scotland certainly brought the issue of devolution to centre stage.

A further justification for the focus on the US and the UK in this research is the extent to which the process of financialisation is evident both in their economies at large and, more specifically, in terms of the ways in which infrastructure is funded and financed. The work of Langley (2004, 2007, 2008), for instance, has demonstrated that the UK and the US are experiencing a unique and arguably more extreme version of financialisation than anywhere else. Of course, when making this justification, care must be taken not to frame financialisation as something that is innately ‘Anglo-American’ or that manifests as a homogenous process across the UK and US (Brenner et al., 2010; French et al., 2011; van der Zwan, 2014). Here, while the presence of some ubiquitous form of ‘Anglo-American’ financialisation is not considered to be a justification for the choice of the UK and US as comparator countries, the complex and variegated ways in which financialisation plays out across the UK and the US certainly provides some degree of justification for selecting these countries.

The importance of UK and the US as reference points in a study about financialisation is illustrated in Figure 3.4. Arguably the UK and the US are in the vanguard of the process of financialisation, both in terms of the financialisation of infrastructure, public policy and capital investment, and in terms of the dominance of their respective global financial centres (New York and London). Given the focus on the process of financialisation within this thesis, the US and the UK seem logical choices – in contrast to other possible comparator countries, such as Sweden or Germany, which exhibit lower levels of financialisation throughout their economies.

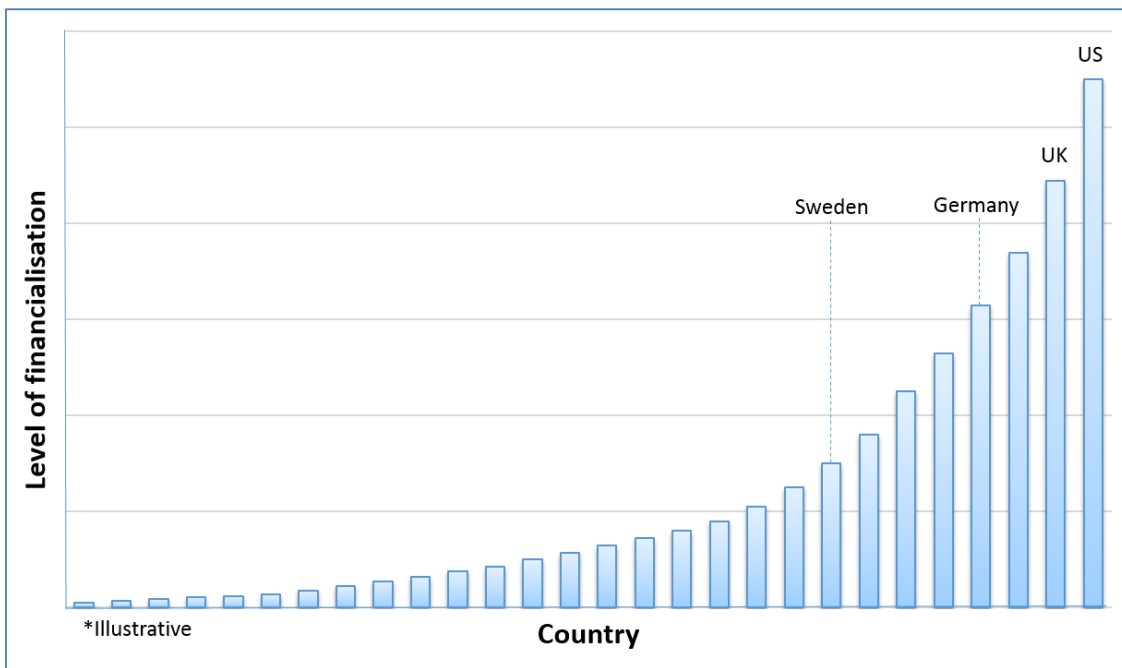


Figure 3.4: A spectrum of financialisation with the US and UK in the vanguard

Source: Author's own.

Perhaps the most common critique of comparisons between the UK and the US is their narrow scope and tendency towards Anglo-American-centrism (Kantor and Savitch, 3005; Lees, 2012; Pollard et al., 2011; Robinson, 2011). Lees (2012: 167), for instance, argues that countries like the US and UK have become the ‘usual suspects’ in comparative urban research and that contemporary geographical discourse should be informed by a much broader range of empirical and comparative evidence.

Although this is unquestionably a valid critique, Lees (2012: 167) openly admits that engaging in a more diverse form comparison, which might include cases from across the global North and global South, would very often entail ‘formulating a postcolonial programme of research’, which in itself is problematic. Whilst proponents of this agenda acknowledge that postcolonial research requires the utmost reflexivity – as is oozed in bundles by the likes of Jazeel and McFarlane (2007; 2010) – there is seldom any sense of acceptance that the role of the Westerner/Northerner/[insert other social constructs of human groupings] should be more passive in allowing the global South to research itself and to enable its researchers to provide ‘us’ with the conceptual and theoretical tools to understand it. Lees’ (2012) critique fails to address the call from Morse et al. (2002: 15) to create pragmatic solutions to the issue

of positionality during the research process rather than just acknowledging it ‘post hoc’, and as a result, although insightful, seems somewhat hollow.

Whilst it is clear that automatically reverting to researching the ‘usual suspects’ remains problematic, automatically reverting to researching the ‘other’/the ‘unusual’/the ‘exotic’/the ‘under researched’ is equally fraught with contradiction: indeed, British and American researchers must not ignore the ‘*limits* of [their] own Anglo-American cultural and linguistic reach’ (Barnes et al., 2007: 3, emphasis added).

It appears, then, that perhaps the most important task in the process case selection is for a researcher to be true to and consistent with their (self-perceived) positionality and their epistemological, conceptual and theoretical roots.

3.2.4 The city selection process

As part of the UK-US comparison, this research analyses six ‘critical cases’ (see above), which include Manchester, Newcastle and Sheffield in the UK and Buffalo, NY, Chicago, IL and Stockton, CA in the US. The incorporation of each case study in the comparative framework can be justified by the case’s potential ability to provide unique and invaluable insights into the ways in which infrastructure is funded and financed and, perhaps more importantly, the ways in which it can be conceptualised, theorised and understood. Indeed, the choice of case study cities is determined to a significant extent by the underlying theoretical framework.

Although the selection process for cities in the UK and cities in the US is slightly different (as a result of large differences in the scale and number of cities between the two nations), all of the cities are chosen because they meet specific criteria relating to key themes within this research.

Table 3.2 shows how the cities of Manchester, Newcastle and Sheffield were selected from England’s eight ‘Core Cities’ according to three key criteria:

1. The utilisation of innovative funding and financing mechanisms for infrastructure investment;
2. Evidence of multilevel governance arrangements within the city region;
3. Evidence of local authority budget cuts and potential future fiscal stress.

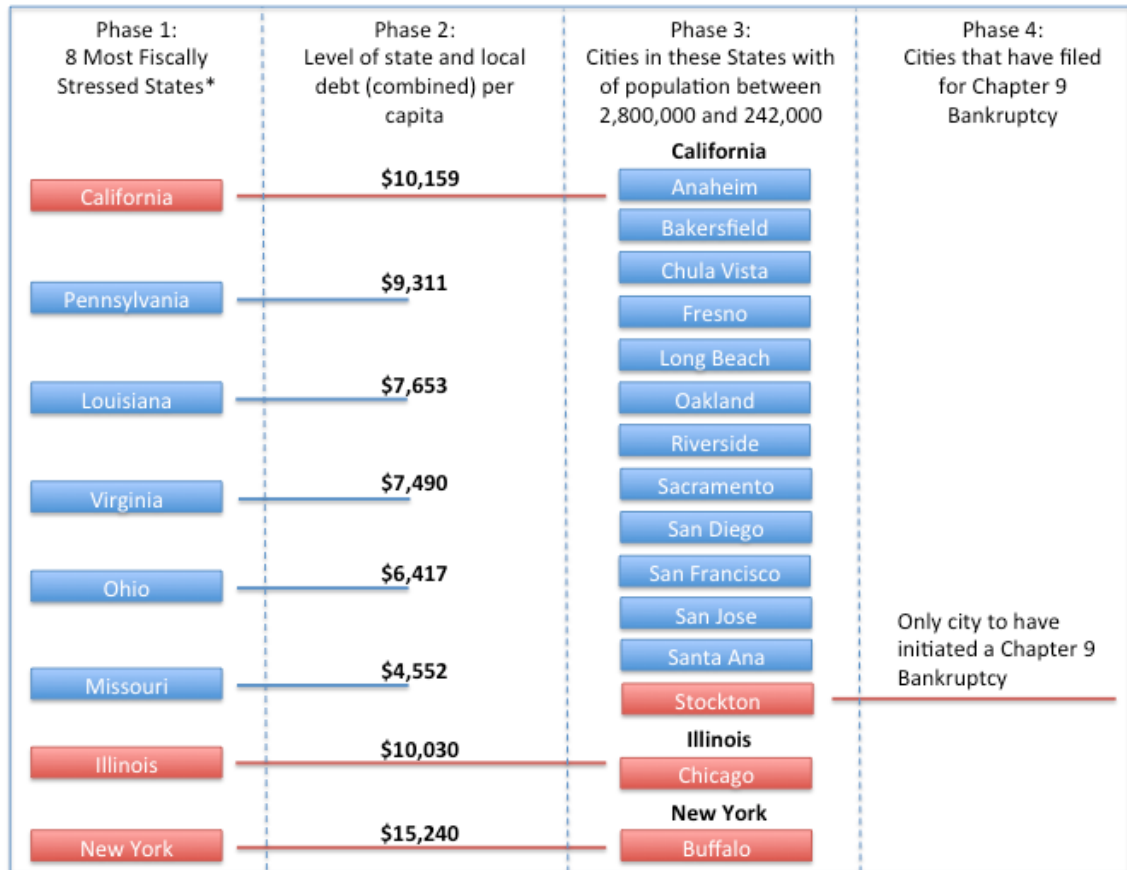
A score was attributed to each city depending on its alignment with these criteria.

Table 3.2: Selection of UK cities

City	Selection Criteria	Description	Score	Total
Birmingham	Innovative funding and financing	None	0	2
	Multilevel governance arrangements	Greater Birmingham and Solihull LEP	1	
	Local authority cuts	£166.18 per person (2010-11 to 2012-13 combined)	1	
Bristol	Innovative funding and financing	None	0	2
	Multilevel governance arrangements	West of England LEP	1	
	Local authority cuts	£61.50 per person (2010-11 to 2012-13 combined)	1	
Leeds	Innovative funding and financing	None	0	2
	Multilevel governance arrangements	Leeds LEP and West Yorkshire Combined Authority	2	
	Local authority cuts	£81.43 per person (2010-11 to 2012-13 combined)	0	
Liverpool	Innovative funding and financing	None	0	3
	Multilevel governance arrangements	Liverpool Local Enterprise Partnership	1	
	Local authority cuts	£252.45 per person (2010-11 to 2012-13 combined)	2	
Manchester	Innovative funding and financing	First UK city to utilise an 'Earn Back'	1	4
	Multilevel governance arrangements	Greater Manchester Combined Authority and LEP	2	
	Local authority cuts	£209.96 per person (2010-11 to 2012-13 combined)	1	
Newcastle	Innovative funding and financing	Tax increment financing	1	5
	Multilevel governance arrangements	NewcastleGateshead, the North East Combined Authority and LEP	3	
	Local authority cuts	£162.09 per person (2010-11 to 2012-13 combined)	1	
Nottingham	Innovative funding and financing	Tax increment financing	1	3
	Multilevel governance arrangements	D2N2 LEP	1	
	Local authority cuts	£158.35 per person (2010-11 to 2012-13 combined)	1	
Sheffield	Innovative funding and financing	Tax increment financing	1	

	Multilevel governance arrangements	Sheffield City Region LEP and Combined Authority	2	4
	Local authority cuts	£139.57 per person (2010-11 to 2012-13 combined)	1	

Source: *The Guardian*, 2012; *Marlow* 2012; *Pike and O'Brien*, 2014.



*Calculated using a Fiscal Stress Score based on a composite index calculated using 8 separate variables (see Eucalitto, 2012; *Governing the States and Localities*, 2012; *Maciag*, 2012; *Peck*, 2013): Top 5 indebted states; 5 worst aggregated pension fund ratios; A municipal bankruptcy filing within the state since 2010; Across the board state spending cuts; Targeted state spending cuts; Reorganisation of government agencies within the state; The state has undertaken recent privatisation measures; The state has made reductions in aid to localities.

Figure 3.5: Selection of US cities

Sources: *Governing the States and Localities*, 2012; *Tax Foundation*, 2007; *US Census Bureau*, 2012.

In the case of the US, the city selection process was necessarily different given the huge geographical variation across all 50 states and single federal district. As a result, it is necessary to narrow down the number of state territories, and then select appropriate cities. Because the author had limited pre-existing knowledge about the use of financialised investment practices in the US on a state-by-state or city-by-city basis, a more quantifiable measure – fiscal stress (also a key focus of this thesis) – was used to select first states and then cities.

Figure 3.5 illustrates how the cities of Buffalo, Chicago and Stockton were chosen, using four key criteria:

- Phase 1: Most fiscally stressed states;
- Phase 2: Highest level of level of state and local debt (combined) per capita;
- Phase 3: Cities in these States with of population between 2,800,000 and 242,000 (this range is informed by the population of the chosen UK cities);
- Phase 4: Cities that have filed for Chapter 9 Bankruptcy.

Each of these criteria was used as a filtering tool, leading to the selection of a city at either phase 3 or phase 4.

In light of the literature review provided in Chapter 2 and the resultant theoretical framework that is crystallised in Section 2.5, the key themes that have guided the choice of case study city include:

- The ways in which infrastructure is funded and financed within the city;
- The ways in which the city is governed;
- The financial condition of the city's governing institutions and the broader fiscal environment.

Taking each theme in turn, then, the remainder of this section attempts to further reinforce the justification for the selection of each case study city.

3.2.4.1 The ways in which infrastructure is funded and financed within the city

A key contention made in Chapter 2 is that the funding and financing of infrastructure is becoming financialised (albeit to different extents in different places). In selecting the case study cities, then, it was essential that some of the cities clearly exhibited the use of financialised investment practices.

Chicago, which has been the focus of other research into the funding and financing of infrastructure (see Ashton, et al., 2014; Farmer, forthcoming; Weber, 2010), is arguably in the vanguard of this process of financialisation. For example, the City of Chicago has 167 separate tax increment financing (TIF) districts (City of Chicago, 2014a); it has engaged in multiple long-term leases of infrastructure assets (worth over \$3.5 billion in total), including the Chicago Skyway, the city's parking meters, and parking garages (Ashton et al., 2014; Civic

Federation, 2013); and, it is home to the Chicago Infrastructure Trust, America's first city-level infrastructure trust (Ruthhart, 2014).

A range of financialised investment practices have also been used in Stockton. In contrast to Chicago, however, which seems to be leading the way in terms of risk calculation, management and exploitation, Stockton has arguably engaged in a more uncertain and speculative model of funding and financing its urban infrastructure (Section 5.1.3). Indeed, Stockton's development boom in the early 2000s was facilitated by the extensive use of 'redevelopment' and the roll out of the 'lease-out-lease-back' financing model (US Bankruptcy Court, 2013a). At the time of the subprime crisis in 2007-8 the City of Stockton had accumulated hundreds of millions of dollars of debt from engaging in these kinds of mechanisms (City of Stockton, 2012a).

Although Buffalo's use of explicitly financialised investment practices has historically been quite low, it perhaps provides an avenue for challenging the 'inevitability' of the emergence of financialised infrastructure investment practices in a relatively devolved system of urban governance, in which the municipality is emerging from a period of fiscal stress. Thus, Buffalo, which attracts a large portion of its infrastructure funding from the State of New York (for example, see BUDC, 2013; ECIDA, 2011), can potentially serve as an example of an alternative approach to funding and financing infrastructure.

In Sheffield, Newcastle and Manchester there are signs of an increasing interaction with and use of financialised investment practices. Whereas Newcastle and Sheffield were two of only three cities given powers to undertake TIF in the first phase of 'City Deals' in the UK (the other city being Nottingham) (see HM Government, 2012; Marlow, 2012; Pike and O'Brien, 2014), the Greater Manchester Combined Authority negotiated a unique agreement to develop an 'Earn Back' scheme, a model of investment that involves speculative borrowing against future increases in economic growth (Section 6.2.3). Although the process of financialisation is arguably more historically entrenched in the American cities like Chicago, all three English cities provide excellent cases for illustrating how the emergent process of financialisation is being negotiated in a contemporary context.

3.2.4.2 The ways in which the city is governed

The next stage of case study selection involves examining possible or actual changes, advances or innovations in urban systems of governance, reflecting the process of reterritorialisation. Importantly, these systems of governance have a considerable role to play

in the decision-making process regarding how urban development and infrastructure is funded and financed.

Newcastle has experienced a range of innovations in governance in recent years, which has influenced the ways in which infrastructure investment takes place with its territorial confines. For instance, Newcastle City Council has formed a unique partnership with Gateshead Council, which has provided the institutional foundations from which the City Council launched its City Deal negotiations and from which it has planned its Accelerated Development Zone (Newcastle City Council, Gateshead Council and PwC, 2011). The system of governance within Newcastle has undergone further changes in recent years with the formation of the North East Local Enterprise Partnership (LEP) in 2011 (HM Treasury, 2011) and the creation of the North East Combined Authority in May 2014 (HM Government, 2014).

In a similar vein, the system of governance in Manchester has undergone a period of transition, especially since 2010. Building on a history of city-regional collaboration and transport investment, the Greater Manchester Combined Authority, formed in 2011, has begun to play an increasingly significant role in shaping the ways in which infrastructure is funded and financed within the city-region (Section 6.2.3). The process of reterritorialisation has also been particularly evident in Sheffield with the formation of the Sheffield City Region LEP and The Sheffield City Region Combined Authority. Understanding how these complex yet relatively rapid changes in urban governance have unfolded and are bound up in the evolution of new models of infrastructure investment is a key part of this study.

Like the English cities, the cities of Buffalo, Chicago and Stockton also provide examples of systems of urban governance that are both highly complex and changeable. For example, according to World Business Chicago (WBC, 2012: 33), the Chicago metropolitan region is governed by over 1,700 separate entities (WBC, 2012: 33), with new special purpose governments being formed (and others being dissolved) on a regular basis. Indeed, the State of Illinois signed House Bill 5785 into law in August 2014 with the specific objective of reducing the number of local governments in the State (CMAP, 2014). A similarly contested process of reterritorialisation is taking place in Buffalo as municipalities have sought to avoid State debt limitations through the formation of special districts (Section 6.1.2; also see Sbragia, 1996).

The system of urban governance in Stockton has undergone a rapid period of change as the City has filed for bankruptcy, leaving decisions about Stockton's future in the hands of a federal judge presiding over a myriad of highly divergent financial interests (Sections 6.1.3

and 7.2.3). At the same time, the dissolution of the Redevelopment Agencies by the State of California has created a further dimension to the reterritorialisation of Stockton, with further implications for the ability of the city government to invest in infrastructure.

3.2.4.3 The financial condition of the city's governing institutions and the broader fiscal environment

Section 2.3 argues that the financial condition of a city's governing entities is a key determinant of the way in which infrastructure is funded and financed. This claim is extended and elaborated in Chapter 6, which especially emphasises the role of fiscal stress in instigating more competitive, speculative and financialised models of infrastructure investment.

In 2014, although the City of Chicago had recently experienced a modest fiscal recovery, its Corporate Fund deficit was still \$339 million. Rather than continue to fall, its deficit is expected to rise to just under \$1 billion by 2015. In addition to a growing deficit, the City has more than \$19 billion of unfunded pension liabilities, placing it on the verge of a 'severe pension funding crisis' (Civic Federation, 2013: 9). Other fiscal problems include growing long-term liabilities, a high bonded debt burden and a reliance on the use of 'one-time revenue sources' (ibid.: 10-11). Chicago's credit rating has been downgraded by the major rating agencies in line with the City's apparently worsening financial condition (Marois and Jones, 2013).

The City of Buffalo's financial condition has generally improved since 2003, the year in which the Buffalo Fiscal Stability Authority was created by the State of New York to control the City's financial operations. This improvement is reflected in the City's general obligation bond credit rating, which increased from Baa3 in 2003 to A1 in 2012 (BFSA, 2013). An illustration of the City's improving financial condition is the reduction in the proportion of its constitutional taxing limit from a peak of 92% in 2007 to 70.3% in 2013 (DiNapoli, 2014). Despite these improvements, the City is still very dependent on grants from the State of New York: State aid made up 38.8% of the City of Buffalo's revenue in 2012, and has grown at an average rate of 4.8% per year since 2002. This makes the city vulnerable to State-led funding cuts. Furthermore, the City had \$626.2 million of outstanding debt at the end of 2012, and, despite recent increases in State aid, the available general fund balance has decreased from \$113.5 million in 2008 to \$30.5 million in 2012 (DiNapoli, 2014). The Buffalo Fiscal Stability Authority (BFSA) has provided warnings about a further reduction of the general fund balance in future and suggests that the City, in its latest four year financial plan, has overestimated some sources of revenue such as grants from the State of New York

(which are forecast to fall in real terms), while underestimating some expenditure requirements, such as health insurance payments, police and fire service costs (BFSA, 2013).

Stockton is the most fiscally stressed City of the American case studies, having filed for bankruptcy in 2012 (Sections 4.1.3.3, 6.1.3, 7.2.3). As such, Stockton arguably represents a ‘critical’ or ‘extreme’ case that can inform and refine the contemporary theorisation of the relationship between fiscal stress, financialisation, the funding and financing of infrastructure.

In the UK, cuts in grant funding have had a significant impact on the ability of local authorities to engage in traditional models of infrastructure funding and financing, and arguably have thus stimulated the adoption of more innovative or financialised models of infrastructure investment. Table 3.3 shows the combined cuts per person for Manchester, Newcastle and Sheffield between 2010-11 and 2014-15, illustrating that all three councils are facing substantial fiscal pressures.

Table 3.3: Government Cuts in Manchester, Newcastle and Sheffield

City	Government Cuts per Person (by local authority 2010-11 to 2014-15 combined)
Manchester	£284.34
Newcastle	£217.96
Sheffield	£198.47

Source: Butler, 2013.

Between 2013 and 2016, Newcastle City Council will make £100m in cuts in order to balance its budget (Newcastle City Council, 2013a: 9), placing the Council under increasing levels of fiscal stress and squeezing its service delivery capabilities. Furthermore, as part of these cuts, there will be a reduction in the number of full-time equivalents by up to 1,320 posts (ibid.).

Over the same timeframe, the central government’s funding contribution to Sheffield City Council will have declined by 50% (Sheffield City Council, 2014a). According to the Council, Sheffield has suffered from ‘some of the hardest cuts nationally’ with total government cuts of £238 million (Sheffield City Council, 2014b). Like Newcastle City Council, Sheffield City Council is simultaneously faced with budget cuts and increasing cost and demand for services

(for example, the Council highlights adult and social care and children's social care as one key area of cost increases), which will compound the current sense of fiscal stress (Sheffield City Council, 2014a).

Manchester City Council has made £170 million of savings in 2011/12 and 2012/13, £40 million in 2013/14 and plans to make a further £100 million of cuts between 2015/16 and 2016/17 (Manchester City Council, 2013: 25). Combined with the increasing costs of services such as waste disposal and transport, these 'savings' have placed pressure on the budgets of the Council's directorates and has caused the Council to instigate a 'radical programme of public service reform' (ibid: 5).

3.3 The method of research: collecting and analysing data

Semi-structured interviews comprised the main method of primary research used in this study. Interview data was also supplemented by an analysis of primary and secondary documentary sources, which enabled a more accurate and precise understanding of case study material to be developed. This section explains, analyses and justifies the adoption of these research methods.

3.3.1 Semi-structured interviews: an intensive and qualitative method

This research adopts an approach to data collection that is largely 'intensive' and 'qualitative'. Intensive research typically focuses on 'a single or small number of case studies with the maximum amount of detail' (Clifford et al., 2010: 11) and enables the researcher to develop a 'thick description' of 'conceptually important' issues (Curtis et al., 2000: 1003). Qualitative research is compatible with an intensive research design because it can be used to develop what might be considered a higher level of 'depth, richness and understanding' than quantitative approaches which utilise techniques such as mathematical modelling and statistical analysis in order to develop narratives of factors such as 'statistical representativeness' (Clifford et al., 2010: 5-9).

While quantitative methods are an important part of geographical research (Crang, 2005; Thrift, 2000), and can produce the sort of 'evidence' demanded by policymakers and practitioners (Clark, 1998), qualitative methods bring existing knowledge into question (Latour, 1993; Powers, 2007) and are thus fundamentally important for developing conceptual and theoretical understandings of the funding and financing of infrastructure.

According to Hughes (1999: 364), for example, qualitative and intensive research has the potential to ‘recognize’ and ‘break down’ dominant metanarratives and ‘replace’ them with more nuanced and fine-grained understandings – a key aim of this research with respect to the concept of *financialisation*.

There is a range of options for conducting qualitative and intensive data collection and analysis, including techniques such as ethnographies, participant observation, visual methodologies, interviews and focus groups. Here, semi-structured interviews, which can be especially useful for drawing out the complexity and ambiguity of the research subject (Schoenberger, 1991), comprised the main body qualitative primary research.

According to Longhurst (2010: 104), an interview is a form of ‘verbal interchange’, in which the interviewer attempts to ‘elicit information’ through a discussion with a person who has agreed to participate in the research. Semi-structured interviews use a set of pre-determined yet flexible ‘*content-focused*’ questions (Dunn, 2000: 61, emphasis in original). In particular, the flexibility of semi-structured interviews has proven to be crucial in this research: it enabled the questions to concentrate more on the interviewee’s area of expertise, which often became apparent throughout the interview; it allowed the topic of conversation to flow into areas that had previously not been considered by the researcher; and, it promoted what Crang (2005: 227) terms the ‘coconstruction’ of knowledge, in which the interviewee was able to make genuine contributions to the way in which the topics of research were framed, understood, analysed, conceptualised and even theorised.

Most interviews conducted for the purpose of this research were with individuals, although a number of interviews took place with more than one participant, reaching up to five interviewees in some instances. In interviews that involved more than one participant, the interview was led by the researcher and took the form of boardroom-style discussion. These larger interviews cannot be regarded as ‘focus groups’ in the sense that, in a focus group, the researcher typically plays a ‘non-directive’ facilitator role, and the group usually comprises of six or more participants (Longhurst, 2010: 120).

In over one hundred interviews, this research targeted a variety interview subjects, such as policymakers, lawyers, finance professionals, academics and a range of other actors. A full list is displayed in Appendix 1. A broad range of interview respondents enables a wide variety of views to be captured, helps to piece together key stories and narratives, and yet also ensures that peripheral discourses and opinions are also introduced into the analysis (Weiss, 1994), thus facilitating a deeper and richer analysis of the subject (Kelly and Olds, 2007). Although the majority of actors interviewed for could be referred to as ‘elites’ (Hughes, 1999:

365), who typically have a ‘disproportionately high influence’ over the research subject at hand (see Pierce, 2008: 119), it is perhaps inappropriate to assume that the same relationship existing between the researcher and the interviewee across over a hundred interviews.

3.3.2 Analysis of documents and accounts

In an overview of using documents as sources of data, Silverman (2000: 128) asserts that textual analysis is concerned with understanding ‘the process through which texts depict ‘reality’’. Such an approach suggests that documentary analysis typically involves practices such as discourse analysis and deconstruction (e.g. Foucault, 1979; Evans, 1991), techniques which can certainly be useful for problematising meta-narratives and reconceptualising current understandings, and, therefore, which could serve to complement semi-structured interviews.

Specifically, this research draws on the analysis of policy documents and public accounts, legal transcripts and legislation, newspapers, specialist journals and magazines, and a range of other commercial documents and sources. These sources are used to access published data, strategic statements, and official analysis that can be used to refine and enhance the evidence base created through semi-structured interviews. Although this study does not explicitly attempt any form of discourse analysis, it is useful to be aware of the provenance of the document at hand in order to contextualise and bring meaning to any statements the document makes or any data it portrays.

Whilst a distinction can be made between *primary documents*, which are ‘eye-witness accounts’ (Mogalakwe, 2006: 222) that are created ‘at the time of occurrence of the event’ (Taylor et al., 2008: 115) such as letters, diaries, biographies and official documents, and *secondary documents*, which are compiled at arms-length from a range of other sources and documents (Bailey, 1994; Taylor et al., 2008), the documents drawn upon in this study arguably represent a combination of the two.

Ultimately, having been guided by the interview material, the objective of using documentary analysis is to ensure that aspects of the case study examples, such as the amount of money invested in a particular infrastructure project, or the way in which a specific funding mechanism functions, are conveyed in the most precise and accurate manner possible. Whilst it is assumed, then, that there is some degree of ‘fact’ conveyed in these documents, it is also important to recognise that such a document may be selective in its presentation of information and certainly subjective in the way in which this information is delivered as part

of a message or narrative (Bryman, 2012). Importantly, this research does not attempt to undertake ‘content analysis’, described by Guthrie et al. (2004: 287) as ‘codifying qualitative and quantitative information [contained in official documents such as annual reports] into pre-defined categories in order to derive patterns in the presentation and reporting of information’.

3.4 Concluding remarks: outlining a methodological framework

The objective of this Chapter has been to explain and justify the methodology used in this research. Crucially, the adopted methodological framework (Table 3.4) is a product of the conceptual and theoretical framework developed in Chapter 2.

Table 3.4: Methodological Framework

Component of Methodology	Methodological Approach					
Theoretical Framework	Financialisation	Reterritorialisation	Fiscal Stress	Splintering Urbanism		
Type of Comparison	Relational					
Comparator Countries	United States			United Kingdom		
Unit of Analysis	City					
Type of Case	Critical/Extreme					
Case Study Cities	Buffalo	Chicago	Stockton	Manchester	Newcastle	Sheffield
Method of Research	Semi-Structured Interviews			Documentary Analysis		

Source: Author's own.

Whilst the identification and analysis of possible alternative methodological approaches is necessarily limited by the space available, the Chapter has attempted to substantiate the

methodological choices in relation to alternatives where possible and has sought to respond to the most notable and relevant critiques of the approach adopted here.

Chapter 4: Contextualising capital investment in the United Kingdom and the United States of America

The purpose of this chapter is to explore the spatial and temporal factors that shape how infrastructure is funded and financed. The chapter analyses the multiscale political and economic systems in which methods of capital investment develop and evolve and, in so doing, contextualises the financialisation of capital investment and locates the transformations in the funding and financing of infrastructure.

In order to understand the rise of financialised investment practices for urban infrastructure, it is essential to place the city within its respective national and subnational setting. The ability of a city to fund and finance its own infrastructure is highly variable and depends on the city's political, economic and fiscal status, as well as its relationship with a complex and multiscale assortment of other territories and their relevant institutional, organisational and regulatory components.

This chapter seeks to provide a concise description of the six case study cities that are examined in this research (Buffalo, New York, Chicago, Illinois and Stockton, California in the US and Manchester, Newcastle and Sheffield in the UK) and an analysis of their respective geographical contexts. Whilst the objective of the chapter is to demonstrate how a fine-grained analysis is essential for developing readings of the financialisation of infrastructure and capital investment, the broader political economy in which the case study cities are positioned also remains crucial.

The chapter is split into two main sections. First, it analyses the American city, places it within a federal system of government, develops an understanding of intergovernmental relations, and examines the implications for funding and financing infrastructure within the three American case studies. Second, it analyses the English city, discusses its relationship with central government and its position within a union state, and evaluates the effects of this system of governance on the funding and financing of infrastructure within the study's three British cases.

4.1 Federalism, fiscal relations and the autonomous American city?

The United States of America is a federalist state, in which there is a 'division of sovereignty between [provincial] state and national governments' (Winthrop, 1976: 93). Although federalism enables a substantial degree of autonomy over capital investment strategies to be

held at various subnational levels, it is also defined by inter-territorial dependency, which means that subnational decisions are implicated in a broader framework of intergovernmental relations (Elazar, 1998).

4.1.1 How autonomous is the American city?

A key objective of federalism is to maximise political involvement in the system, which can be accomplished by giving increased control to local governments (Elazar, 1998). It is to be expected, therefore, that city and local governments in the US have more power and autonomy than their counterparts in other national systems of government, and thus more flexibility in how they fund and finance infrastructure.

One of the most influential features of federalism for the purpose of capital investment is the division of fiscal sovereignty between the American states:

‘Virtually all of the distinguishable characteristics of political federalism imply limits on the central government’s ability to regulate the fiscal activities of provinces... [T]he expenditure autonomy of the provinces [is] generally protected by the constitution... [and the] constituent units in federations have greater independent access to various forms of deficit finance than local governments in unitary systems’ (Rodden, 2006: 97).

As a result, in the US, it is the states that have the ‘power of the purse’ (ibid.). The ability of subnational governments to control their own fiscal affairs, however, is fraught with contradictions and perverse incentives. Rodden (2006), for example, notes that the powerful territorial interests of the States, alongside the absence of common interests across national voters, undermine the prospect of subnational fiscal discipline: in short, powerful subnational interests can persuade federal government to bail out States in times of fiscal crisis (Eyraud and Lusinyan, 2013). Indeed, in the US, the strongest incentive for States to manage their budgets responsibly is actually the prospect of penalisation by lenders in the capital markets (Sbragia, 1996, 2010).

The fiscal sovereignty enjoyed by States in the US has important implications for the cities and other subnational entities contained within their boundaries. In the US, local governments are defined as ‘creatures of the state’ as codified by Judge Dillon at the Iowa Supreme Court in 1868 (Williams, 1986: 149), and are certainly not miniature federal provinces within the borders of the State.

Local autonomy can be measured against the possession of two primary powers: ‘initiation’ (the ability to take any particular action); and, ‘immunity’ (protection from the influence or

involvement of higher tiers of state) (Clark, 1984: 198-9). Traditionally, local governments in the US have very little of either power, as Dillon's judgement expressively illustrates:

'Municipal corporations owe their origin to, and derive their powers and rights wholly from, the [State] legislature. It breathes into them the breath of life, without which they cannot exist. As it creates, so it may destroy. If it may destroy, it may abridge and control. Unless there is some constitutional limitation on the right, the legislature might, by a single act... sweep from existence all of the municipal corporations of the state, and the corporations could not prevent it. We know no limitation on this right so far as the corporations themselves are concerned. They are, so to phrase it, the mere tenants at will of the legislature' (Dillon, cited in Elazar, 1998: 44).

According to a report by the Brookings Institution, Dillon's rule is effective in 39 American States (Richardson et al., 2003). However, a significant number of cities across a wide range of American States have been granted 'home rule' powers, which provide cities with the ability to initiate actions regarding local affairs without influence from the State, although the powers are still conveyed to home rule cities *by the State* (Clark, 1984). As a result, even in home rule cities, 'the state government still retains significant control over the city's fiscal policy choices' (Fuchs, 1992: 180).

4.1.2 Fiscal federalism, mandates and budget constraints

Fiscal federalism is a 'framework for the assignment of functions to different levels of government and the appropriate fiscal instruments for carrying out these functions' (Oates, 1999: 1121). Primarily, fiscal federalism represents an approach to the 'tax assignment problem', which addresses the sources of revenue available to subnational governments (McLure and Martinez-Vazquez, 2000: 2). Although the American States are not federations in their own right, fiscal federalism has come to describe the decisions made by the State legislatures concerning the balance of State-local revenue and expenditure (as well as the relationship between the federal government and the States).

Whilst the federal and State governments share 'concurrent' borrowing and taxation powers according to the US Constitution (Grant, 1991: 263), local governments are granted these powers by their State. States 'regulate what kinds of taxes may be imposed, maximum levels of taxation and debt, and what kinds of borrowing may occur' (Stonecash, 1998: 75).

Restrictions placed on levels of indebtedness and taxation are codified in the form of 'mandates', which also include obligations for local governments to perform certain

functions or deliver certain services (Fuchs, 1992; Stonecash, 1998). States, therefore, place service delivery obligations on local governments, while controlling their ability to generate revenue (such as taxation) and limiting their borrowing capacity.

Whereas States (solely) experience fiscal regulation by the capital markets, local governments in the US are (also) regulated by a series of hard budget constraints imposed by their State. Hard budget constraints require that ‘subnational governments bear the full financial consequences of their policy decisions, so that they cannot spend beyond their means’ (Weingast, 2009: 281). Ultimately, hard budget constraints represent a commitment from higher tiers of government to refrain from bailing out local and city governments, affecting levels of local autonomy and making local governments absolutely reliant on their pre-defined sources of revenue when funding infrastructure.

For American cities, then, making capital investments depends on a series of intergovernmental relations as defined under the umbrella of fiscal federalism. Intergovernmental fiscal relations impact the ability of cities to collect, retain and determine particular revenue streams (such as income tax, property tax and sales tax), raise debt, and prioritise various service provision and capital investment strategies. Crucially, fiscal and strategic agility are highly variable both within and between States and amongst the multitude of overlapping jurisdictions that create the American federal mosaic.

4.1.3 Contextualising the American cases

The variation in funding and financing infrastructure across cities in the US becomes evident throughout Chapters 5-8. Here, the objective is to shed some light on the three chosen American case study cities (Figure 4.1) and draw attention to the specificities of place that might determine how infrastructure is funded and financed.

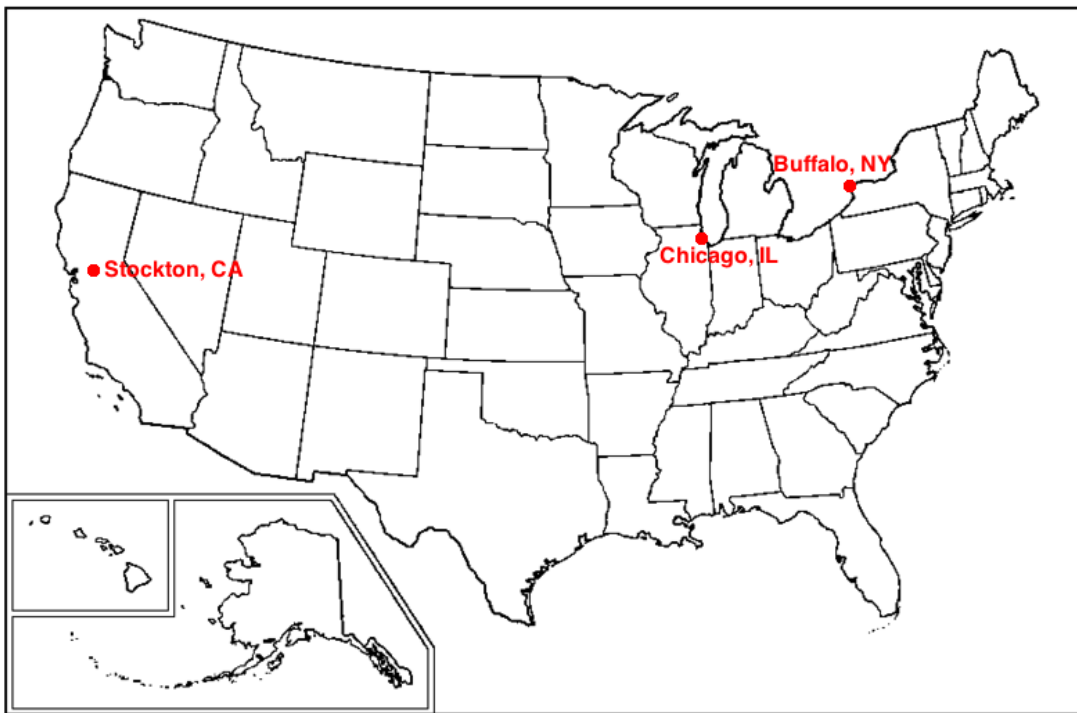


Figure 4.1: A map of the United States showing Buffalo, Chicago and Stockton

Source: Adapted from Wikimedia Commons©.

4.1.3.1 Buffalo, New York: industrial decline and tax base suburbanization

Buffalo is the urban core of the Buffalo-Niagara Falls Metropolitan Statistical Area, a city-region located within the “Golden Horseshoe” region of North America, which stretches from Toronto in Canada, across to Niagara Falls, and to Rochester in Western New York (City of Buffalo, 2006). Today, the city of Buffalo has a population of 259,384 (US Census Bureau, 2012a), under half of its population in 1950, is the third poorest city in the US with a population of over 250,000, and is the country’s 6th most segregated city (Burney, 2012). Indeed, since the assassination of President McKinley in 1901, the ‘Queen City’ has been on a turbulent journey characterised by industrial decline, depopulation and economic and fiscal instability.

In the early 20th Century, Buffalo was home to thriving steel, auto, grain, lumber, chemical and railroad industries, which blossomed in no small part due to the city’s location on a trade route from the grain fields of the Midwest to the Eastern Seaboard. Although the painful process of deindustrialisation began in earnest after the Second World War, there were indications of instability and uncertainty in the city’s industrial base as early as 1908 when Lackawanna Steel posted a loss only four years after massive investments in its Buffalo

operations, which included 6 open-hearth blast furnaces, a ship canal and a series of railroad tracks (Goldman, 2007).

Between 1970 and 1984, in the midst of its industrial crisis, Buffalo lost approximately 70,000 jobs in steel and its related industries (Dillaway, 2006: 30-37), a trend which continued until the end of the Millennium (Figure 4.2). At the same time, the city was leaking population; both suburbanisation and structural migration from the Rustbelt in the North East and Midwest to the Sunbelt in the South contributed to the hollowing-out of Buffalo's urban core (Figure 4.3).

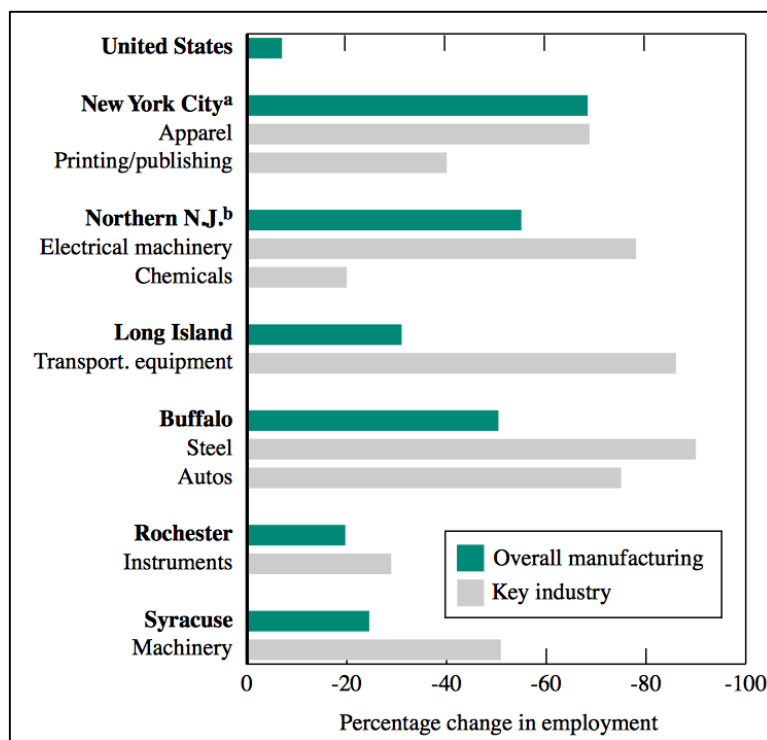


Figure 4.2: Percentage decline in manufacturing employment: New York-New Jersey Metro Areas and their key industries, 1969-99

Source: Bram and Anderson, 2001: 4.

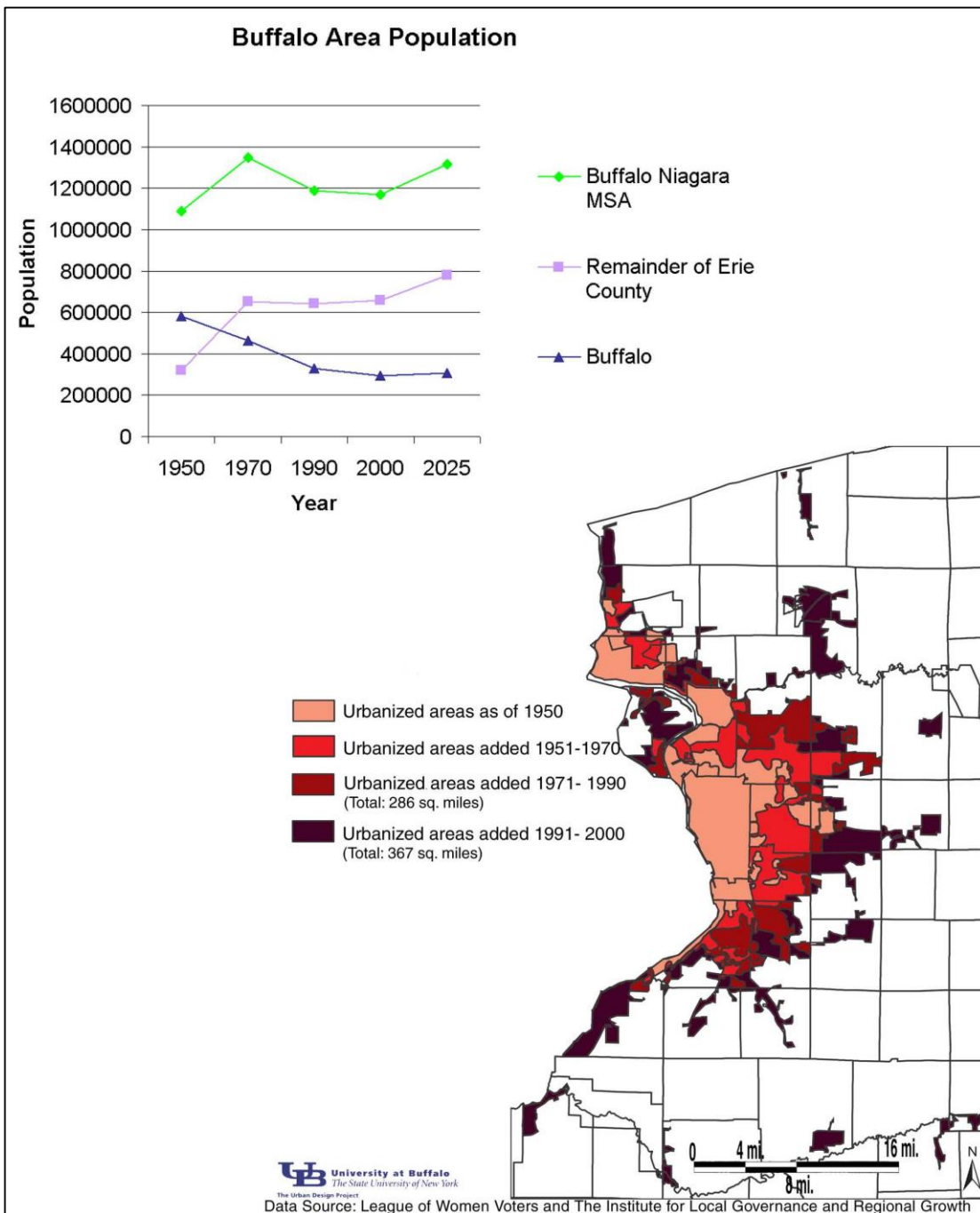


Figure 4.3: Suburbanisation and population decline in Buffalo

Source: City of Buffalo, 2006.

In 1971, in an attempt to respond to its faltering economy, the city’s government (‘City of Buffalo’) implemented the Wallace-McHarg Plan (Goldman, 2007), continuing the tradition – since Joseph Ellicott’s initial radial street plan in 1804 (City of Buffalo, 2006) – of structured urban planning. Rather than revitalise Buffalo’s urban core, however, the Plan (and those that succeeded it) carved up the city with expressways, parking lots and a poorly designed and underfunded rapid transit system, reinforcing the patterns of suburbanisation, racial

segregation and wealth polarisation that still characterise the city. The dominance of elite interests in Buffalo, often at the expense of equitable and inclusive development, is a reflection of its ‘strong mayor-council form of government... [in which] the mayor and council exercise significant authority over city affairs’ (Kraus, 2004a: 486; also see Kraus, 2004b).

The flow of public funds into regeneration projects from both the City and the State of New York – through programmes such as Urban Development Action Grants (Green, 1991: 372) – has done little but fuel the destruction of Buffalo’s historic streetscapes and its functionality as a commercial hub: the central business district in ‘downtown’ has become vacated by all but a few heavily subsidised companies and those who had a finger in the redevelopment pie (Dillaway, 2006).

While Buffalo’s core rots, its tax base has plummeted, and, as a result, the City has been forced to initiate a painful process of retrenchment, cutting services and jobs (Greer et al., 2007). Buffalo’s hollowed out core and dilapidate tax-base – a product of industrial decline on one hand, and poorly conceived urban plans and public sector investments on the other – makes the City highly dependent on funding from the State of New York and limits the City’s ability to initiate infrastructure projects that might stimulate economic growth and competitiveness.

4.1.3.2 Chicago, Illinois: machine politics, fragmentation and an imminent fiscal crisis?

The Chicago metropolitan region is the third biggest city-region in the United States with a population of just under 10 million people and a gross regional product (GRP) of \$500 billion per year (WBC, 2012: 2). It has a broad economic base (see Figure 4.4) and is a global financial hub, considered to be home to the world’s leading derivative exchange (Olson, 2010). Yet it is a highly fragmented city-region; the metropolitan region spans the States of Illinois (where 90% of the population live), Wisconsin (2%) and Indiana (8%) (OECD, 2012b: 17) and is made up of 14 counties which contain a total of 1,723 units of government (WBC, 2012: 33).

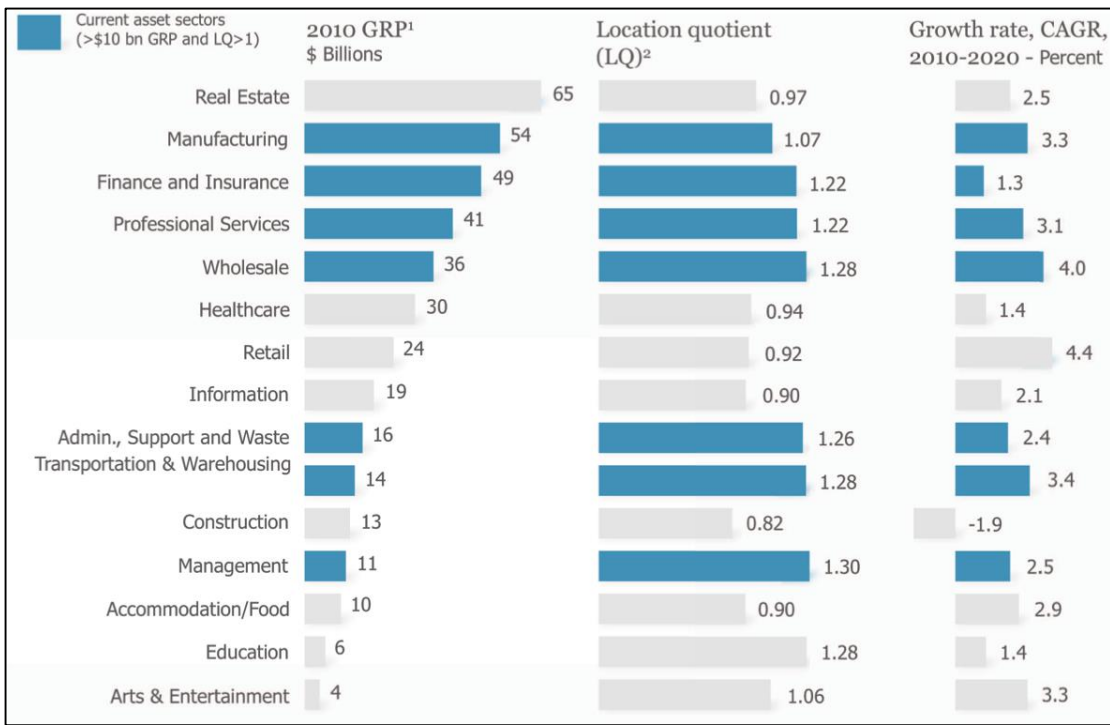


Figure 4.4: Chicago's top asset sectors in 2010

Source: WCB, 2012: 18.

Despite the potential for conflict and instability across the region's colossal and vastly complex system of government, the City of Chicago has largely exhibited stability and cohesion in recent history; Richard, J. Daley was Mayor for 21 years between 1955 and 1976, and, after a short period of volatility, his son Richard M. Daley served as Mayor for 22 years before the current Mayor, Rahm Emmanuel, was elected in 2011 (Green and Holli, 2013).

This stability, in part, can be attributed to Chicago's 'well-oiled Democratic political machine,' characterised by a 'resurgent neoclientelism' which preserves the interests of the city's economic and political elites (Sites, 2012: 2584-5). Problematically, the neoliberal machine has reinforced distinctive patterns of social, political and racial exclusion and created divisions that compound Chicago's fragmented appearance (ibid.). For example, during the peak of the recent economic crisis, the unemployment rate for black Chicagoans, historically concentrated in the city's South Side (Pattillo, 2007), was four times higher than that of whites (OECD, 2012b: 20).

In addition, whilst the city's stable and prolonged governance regimes were championed for their ability to maintain Chicago's fiscal health (Fuchs, 1992), Rahm Emmanuel pointed to a 'structural problem' in the City's budget (Huffington Post, 2011; Civic Federation, 2010). As Figure 4.5 illustrates, although the City's budget deficit has been reduced from \$654 million

in financial year (FY) 2011 to \$339 million in FY 2014, the Corporate Fund deficit is expected to rise further to just under \$1 billion by 2015, causing rating agencies to downgrade the City’s debt (Marois and Jones, 2013). The City also faces a ‘severe pension funding crisis’ with \$19.8 billion of unfunded liabilities and a funded ratio well below the generally accepted 80% level in two of its four funds in FY 2012 (Civic Federation, 2013: 9).

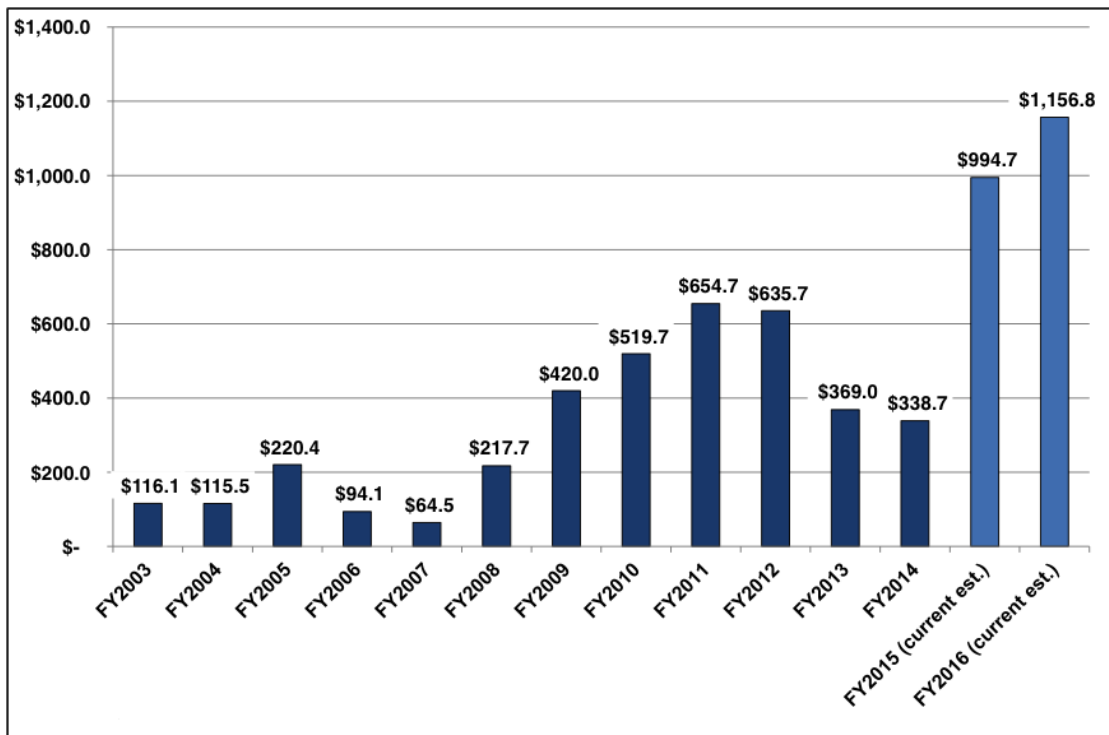


Figure 4.5: City of Chicago Budget Gaps: FY2003-FY2016 (in \$ millions)

Source: Civic Federation, 2013: 24.

In addition to Chicago’s fiscal troubles, the city’s transport infrastructure is struggling to keep pace with urban sprawl; only 24% of jobs across the metropolitan region can be accessed by public transport in under an hour and a half (WBC, 2012: 31). As a result, infrastructure investment is regarded by its main planning organisation as a crucial strategic priority (CMAP, 2010).

long-term programme of capital investment, Chicago’s economic vitality and size give the City an invaluable source of revenue generation and tax base growth. In particular, this has facilitated its extensive use of tax increment financing (Figure 4.6), explored in more detail in Chapter 5. However, the continued isolation of development projects in geographically confined and institutionally separate special districts, and the particularities of Chicago’s regime politics, have the potential to generate further fragmentation, splintering and fiscal stress.

4.1.3.3 Stockton, California: boom, bust and bankruptcy

Until 2007, Stockton was perhaps best known for being located 83 miles east of the San Francisco Bay Area and 40 miles south of Sacramento: alongside the rich agricultural tradition of the Central Valley and the city’s heritage as an inland port and manufacturing centre, its location within commuting range of the Bay Area had been key to the city’s identity (see City of Stockton, 2007).

In the late 1990s, under pressure to act as a source of relief from the Bay Area’s stifling property prices, Stockton’s housing market began to gather momentum and, by the turn of the Millennium, was booming. However, by mid 2007, as the subprime crisis unravelled across California (see Glasgow et al., 2012), it was clear that Stockton had been experiencing a housing bubble of epic proportions. From their peak in 2006 to their low in the depths of economic crisis in 2009, median house prices fell by \$283,000 (see Figure 4.7 – although some sources suggest a greater shift), with unimagined consequences for the city and its residents.



Figure 4.7: Median sales price of all properties in Stockton, CA, 2000-2013

Source: Trulia, 2013.

At the start of FY2012, the City of Stockton had \$26 million unpaid obligations (City of Stockton, 2013a: a-10) and thus was 'generally not paying its debts as they become due' (US Code, 11, 1, § 101). In June 2012, it filed for bankruptcy protection under Chapter 9 of the United States Bankruptcy Code (City of Stockton, 2012a). The City simply didn't have the funds to meet its obligations including debt payments, retiree pension and healthcare benefits, and its payroll. In April 2013, the bankruptcy filing was approved by the US Bankruptcy Court, Eastern District of California, Sacramento Division.

The housing crash destroyed Stockton's tax base, which had been underpinned by growth in property and sales tax revenues – in 2007 they made up a combined total of 43.1% of its revenues (City of Stockton, 2007: 5) – rendering the City insolvent. In Judge Klein's testament, he describes that:

'Stockton was ground zero for subprime mortgages... Property tax revenues, sales tax revenues and other public revenues, characteristics of a functioning local economy... had plummeted. For example, the sales tax revenue declined from \$47 million in fiscal year 2006, to \$32.7 million in fiscal year 2010' (US Bankruptcy Court, 2013b).

Whilst filing for bankruptcy can seem like a technocratic process confined to the inner walls of a courtroom, the realities of fiscal crisis have been damaging for Stockton's inhabitants, compounding the consequences of the housing crash and ensuing recession. For example, the unemployment rate rocketed from 6.3% in October 2006 to 18.7% in January 2011 (US Bureau of Labour Statistics, 2013). Furthermore, crime rates have increased dramatically; although Stockton's historically high homicide rate reached an all time low in 2008, it spiked thereafter up to 71 homicides in 2012, a trend which correlates with cuts to police services (City of Stockton, 2013b).

Stockton's ability to invest in infrastructure has also been drastically affected. Its bond ratings have fallen across the major three rating agencies (Standard and Poor's, Moody's and Fitch) and, although it is technically possible for a municipality to obtain credit during bankruptcy, the City is no longer in a position to issue debt. Instead, according to the City's 'Pendency Plan', part of the bankruptcy restructuring process, the City will make \$22.5 million in reductions to creditors and retirees in FY2013-14, in addition to the \$26 million made in FY2012-13 (City of Stockton, 2013a). These cuts have also affected the City's ability to invest in infrastructure. For example, the 2012-17 Capital Improvement Program is only 0.08% funded by the City's General Fund (City of Stockton, 2012b).

4.2 The United Kingdom, the ‘English Question’ and the dominance of the centre

Whereas the American polity is defined by the Constitution adopted in 1787 at Philadelphia, the polity of Britain is – by comparison – distinctly unscripted. Despite acts of devolution under New Labour from 1997 onwards, such as the creation of National Assemblies in Ireland and Wales, the formation of a devolved parliament in Scotland, and the referendum on Scottish independence in September 2014, the United Kingdom remains a ‘union state’ (Tomaney, 2000). England, which is home to all three British case studies examined in this research, continues to be characterised by a heavily centralised system of government.

Nevertheless, the growing sense of polycentrism across the wider United Kingdom has led to a re-examination of how England is governed, causing the ‘English question’ to resurface (Pike and Tomaney, 2009: 22). As such, the ability of cities in England to determine their own futures, initiate strategic decisions, and, thus, to meet their capital investment requirements with locally generated solutions, continues to be a persistent issue of debate, negotiation and contestation.

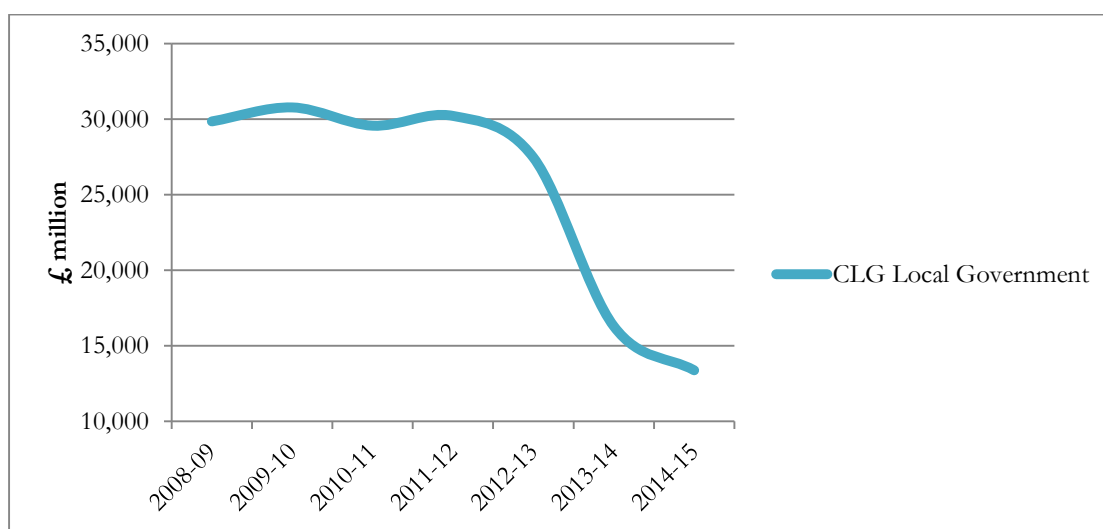
4.2.1 To devolve, or not to devolve?

Just as in the US, local government in England is ‘creature’ of the state (although this refers to the nation-state, England, rather than the provincial States of the US) (Sullivan et al., 2004: 245). Cities in England, however, have little or no opportunity to acquire powers equivalent to those conveyed to American cities through ‘home rule’. That said, recently negotiated ‘City Deals’, discussed in more detail below, are perhaps an indication that the current English government is prepared to formally devolve city powers on a case by case basis (Pike et al., 2013), resembling the negotiation process used to determine home rule or ‘charter city’ legislation in the American States.

Nevertheless, the autonomy of English subnational units of government remains extremely limited. Not only do subnational governments have little immunity from the involvement of the centre, but also – in spite of a series of legislative changes – there are considerable restrictions on their powers of initiation (see Clark, 1984). Indeed, the necessary authorisation and approval of local government action by central government is one of

England's 'fundamental territorial principles' (Burch and Holiday, 1993: 31). This appears to be the case even after the Localism Act of 2011 (Jones and Stewart, 2012).

In fact, for England, the measures of devolution described above are more accurately depicted as changes in resource allocation and procedural administration. For instance, there is very little in the Localism Act, including the 'general power of competence', that genuinely enhances local government powers of 'initiation'. This is illustrated by the need for City Deals to act as clarification of specific city 'powers' for funding and financing infrastructure. The 'immunity' of local governments has also been questioned during waves of centrally imposed funding cuts (Figure 4.8), which, in reality, are having a destructive impact on local authorities (Lowndes and Pratchett, 2012) and are inhibiting capital investment.



Note: Includes Non-domestic rate payments/Revenue Support Grant; Neighbourhood renewal fund; PFI special grant; LA business growth incentive scheme; and, Other.

Figure 4.8: Department for Communities and Local Government grants for local government in England, 2008-09 to 2014-15

Source: HM Treasury, 2013b: 91.

The principal source of tension in England is that whilst local autonomy is desirable (to expand the scope, influence, and legitimacy of local government), the redistributive mechanisms of the current centralised state provide a form of insurance to local authorities, which, for the majority, would be harmful to relinquish. Local authorities in the UK, for instance, have evolved in a system where central government grants can account for up to 75 percent of their income (Schmuecker and Woods, 2011: 41); traditionally, even local forms

of taxation have been ‘collected by local authorities and remitted to central government for redistribution according to a centrally determined formula’ (Convery, 2006: 325).

In order to incentivise infrastructure investment and local economic development, the Local Government Finance Act (2012) enabled local authorities to retain 50% of Non-Domestic Rates (NDRs or ‘business rates’) generated within their area (see Section 6.2.1). While the traditional formula grant system has been riddled with debates of (un)fairness (underperforming economies are viewed as under-resourced by the formula (Schmuecker and Woods, 2011) whereas net contributors are regarded as having their growth ‘equalised away’ (Lyons, 2006: 318)), the partial localisation of business rates has caused further malcontent, as it could act to intensify spatial disparities despite a complex system of ‘resets’ and ‘safety nets’ (DCLG, 2013a: 3; House of Commons, 2011).

4.2.2 Grants, taxation and prudential borrowing

In the UK, central government grants are crucial for local authorities to be able to balance their budgets and fund capital expenditure (Figure 4.9). This is significant because it means that central government can control the amount and nature of local government expenditure. The majority of intergovernmental transfers received by local authorities in England are ‘hypothecated’ (that is, dedicated for a specific purpose with specific conditions attached) (see Wilkinson, 1994). Amongst a complex array of grant structures, a key distinction is made between ‘Supported Capital Expenditure (Capital Grant)’ – which must be used for the creation or improvement of tangible fixed assets – and ‘Supported Capital Expenditure (Revenue)’ – which must be used for functions such as supporting debt interest payments. Not only do grants have limited applications, therefore, but they are also subject to change. In response to what is effectively a sovereign debt crisis, grants to local authorities have decreased markedly (see Figure 4.8), creating fiscal distress in localities across England.

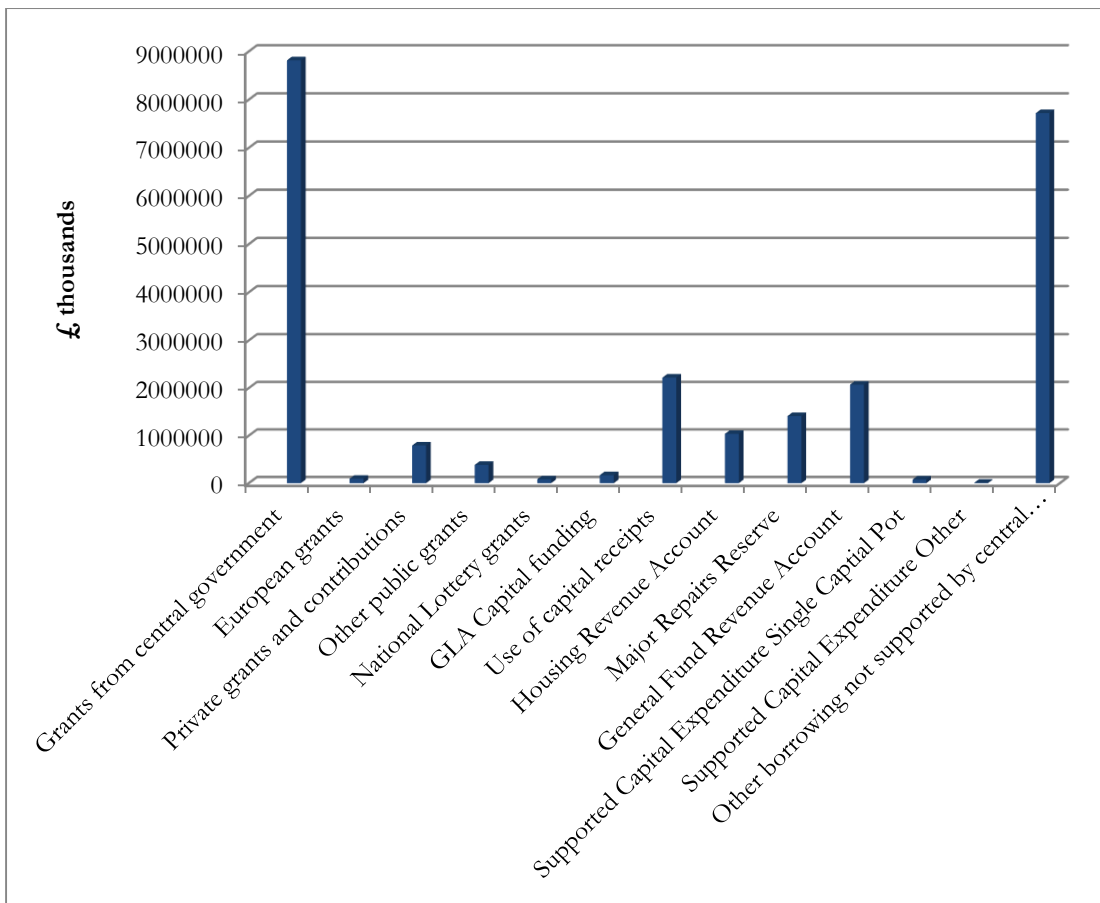
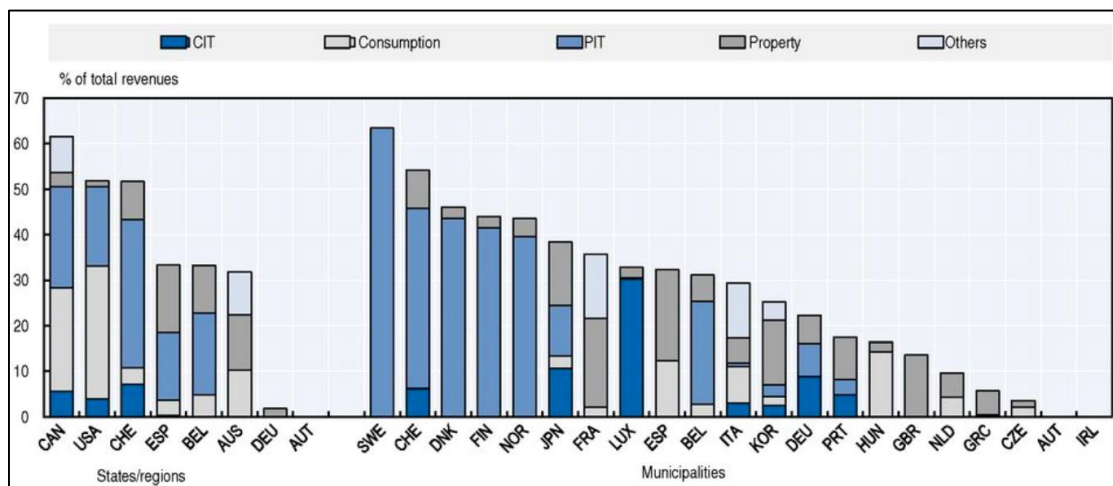


Figure 4.9: Sources of funding for local authority capital expenditure in England 2013-14

Source: Adapted from DCLG, 2013b.

A key reason that central government grants are so dominant in providing funding for local capital expenditure is that local authorities in England have very limited powers of taxation – especially when compared with subnational governments in other countries (see Figures 4.10 and 4.11). At present, local authorities only have access to receipts from Council Tax (a tax on residential property) and 50% of Non-Domestic Rates (a tax on commercial property). All other forms of taxation, such as Value Added Tax (VAT) and Corporation Tax, are remitted to central government alone. Indeed, the dominance of central government over the system of local taxation, and the subsequent inability of local governments in England to levy new taxes or set the rate of taxation, is a significant constraint to generating sources of revenue for capital investment.



Note: CIT = corporate income tax, PIT = personal income taxes, GBR = Great Britain.

Figure 4.10: International comparison of sub-central autonomous taxes as a percentage of total sub-central government revenue, 2009

Source: *Blöchliger and Pinero-Campos, 2013: 83.*

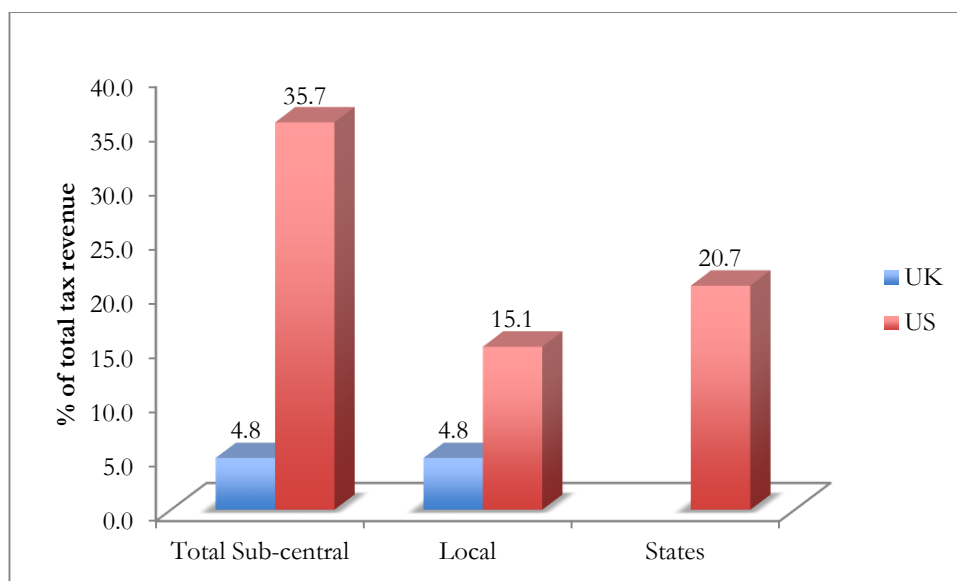


Figure 4.11: Sub-central tax revenue in the UK and US as a percentage of total tax revenue, 2008

Source: *Adapted from OECD, 2013b.*

Local authorities in England can engage in self-financed expenditure, and, in principle, there is no upper limit to the amount that local authorities can borrow:

‘Local authorities, provided they can service debt themselves, may now borrow up to a level that they calculate they can afford’ (Wilson and Game, 2011: 210).

However, there are a series of conditions that closely regulate local authority borrowing in practice. For instance, borrowing must conform to the Prudential Code. Components of the prudential framework include debt levels, revenue sources, and other capital expenditure and financing requirements (CIPFA, 2013). Local authorities are also encouraged to consider financial, legal, economic and social implications of their borrowing (ibid.).

Furthermore, when engaging in debt-finance, local authorities typically borrow from the Public Works Loan Board (PWLB), part of the United Kingdom's Debt Management Office. This is because the interest rates on PWLB debt, which are determined by the price at which UK Treasury Gilts trade, as well as the lending strategy of HM Treasury, are lower than those offered in the market. So, although there are no regulations explicitly preventing localities issuing municipal bonds, the monopoly of the PWLB ensures that there is no active municipal bond market in the UK (Symons, 2011). In sum, it is ultimately central government that dictates levels of borrowing for capital investment in England.

4.2.3 Contextualising the English cases

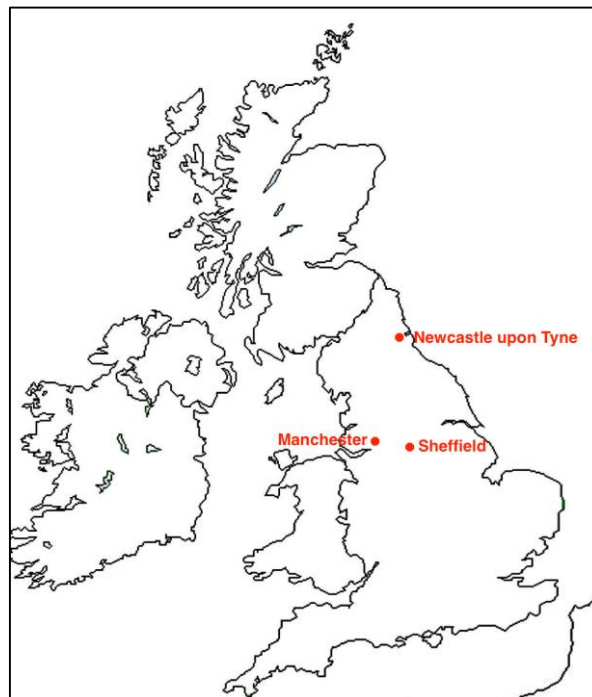


Figure 4.12: A map of the United Kingdom showing Manchester, Newcastle upon Tyne and Sheffield

Source: Adapted from Google©.

The geographies of capital investment in the UK are complex and highly varied. England, in particular, is characterised as a strongly centralised state, whose central government currently maintains a contradictory agenda of devolution and central control. This section turns to the chosen English case study cities (Figure 4.12) and provides an overview of the factors that shape capital investment within their specific contexts.

4.2.3.1 Manchester: Americanisation in the North West?

Located in the North West of England, Manchester is a city with a population of just over 500,000 (Manchester City Council, 2012). Perhaps most important to the city's contemporary identity is its location within the Greater Manchester City Region, an area with a total population of approximately 3.2 million (MIER, 2009), which incorporates Bury, Bolton, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan.

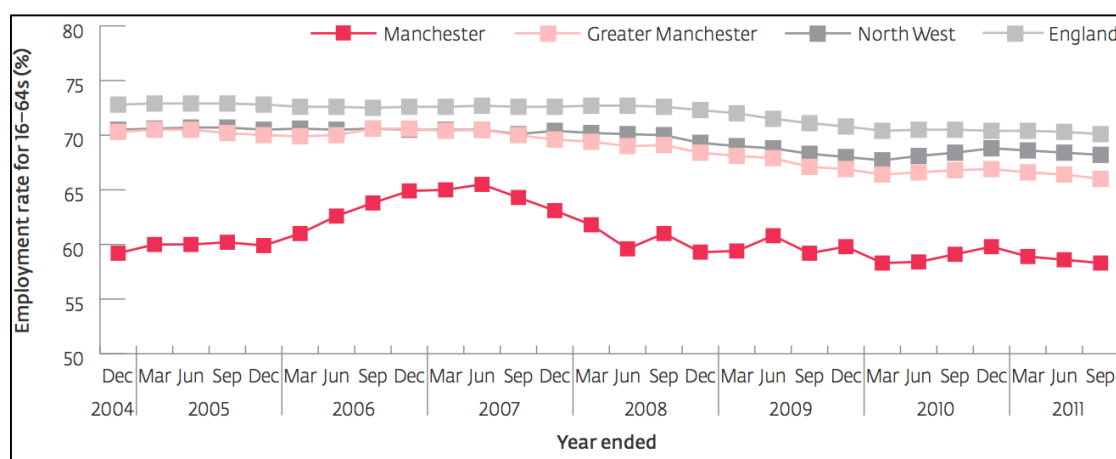


Figure 4.13: Employment rates for 16-64s in Manchester, Greater Manchester the North West and England, 2004-2011

Source: Manchester City Council, 2012: 52.

Since the rapid process of urbanisation that accompanied the city's cotton textile boom in the early 19th Century (Dicken, 2002), Manchester, the world's industrial pioneer, has been an image of tension and contradiction. Whereas the wealth generated during the industrial period was starkly juxtaposed with widespread squalor and paucity, the prosperity of contemporary post-industrial renaissance Manchester is set against persistent unemployment (Figure 4.13), social exclusion and neighbourhood inequality (Figure 4.14) (also see Herd and Patterson 2002; Mellor, 2002).

Nevertheless, there has historically been a substantial degree of collaboration between the boroughs of Greater Manchester, evolving in part through the formation of institutions like Association of Greater Manchester Authorities (AGMA). In April 2011, the region was formally recognised as a territorial entity with the creation of the UK's first statutory combined authority, Greater Manchester Combined Authority (GMCA), which has since reinforced (Greater) Manchester's reputation as a hub of innovative policymaking (see Quilley, 2002).

Although Manchester's city-regional space is perceived as key to its economic fortunes, a footnote to the introduction of the Manchester Independent Economic Review illustrates that it is also a source of confusion and potential contestation:

'Exactly what the term "Manchester" refers to is a point of discussion. We use it, as well as the term "Manchester City Region" and "MCR", to refer loosely to the Manchester City Region, unless otherwise indicated. We also sometimes talk about MCR as a "region" and the "city"' (MIER, 2009: 6).

Whilst this may seem a definitional point, much of Manchester's economic revival is framed as regional in form and origin. Provided that its success continues, the 'ambiguous' institutional geography of Manchester (Peck and Ward, 2002: 15) is likely to remain unchallenged. Indeed, the creation of GMCA affirms the primacy of a dual system, where local governments exert authority at both local and city-regional levels. Nevertheless, if economic or financial conditions deteriorate, the intricate system of governance could be a source of conflict and fragmentation, giving rise to difficult questions of responsibility and accountability. Even in a pre-GMCA landscape, Peck and Ward (2002) suggest that:

'[Manchester risks becoming] an increasingly 'Americanised' city: economic and social polarisation will have become perversely underwritten by a set of policies which effectively legitimate the transfer of funds from social safety-net programmes into the subsidisation of speculative accumulation, zero-sum competition and middle class consumption' (Peck and Ward, 2002: 7-8).

However, for a time at least, the formation of a statutory city-regional institution, the GMCA, has created significant opportunities for increasing levels of capital investment in Manchester. Not only do GMCA and its parallel regional transport body, Transport for Greater Manchester (TfGM), have access to a pool of funds from the city-region's 10 boroughs, but they have also developed a stronger base from which to negotiate and bargain with central government for more resource and autonomy.

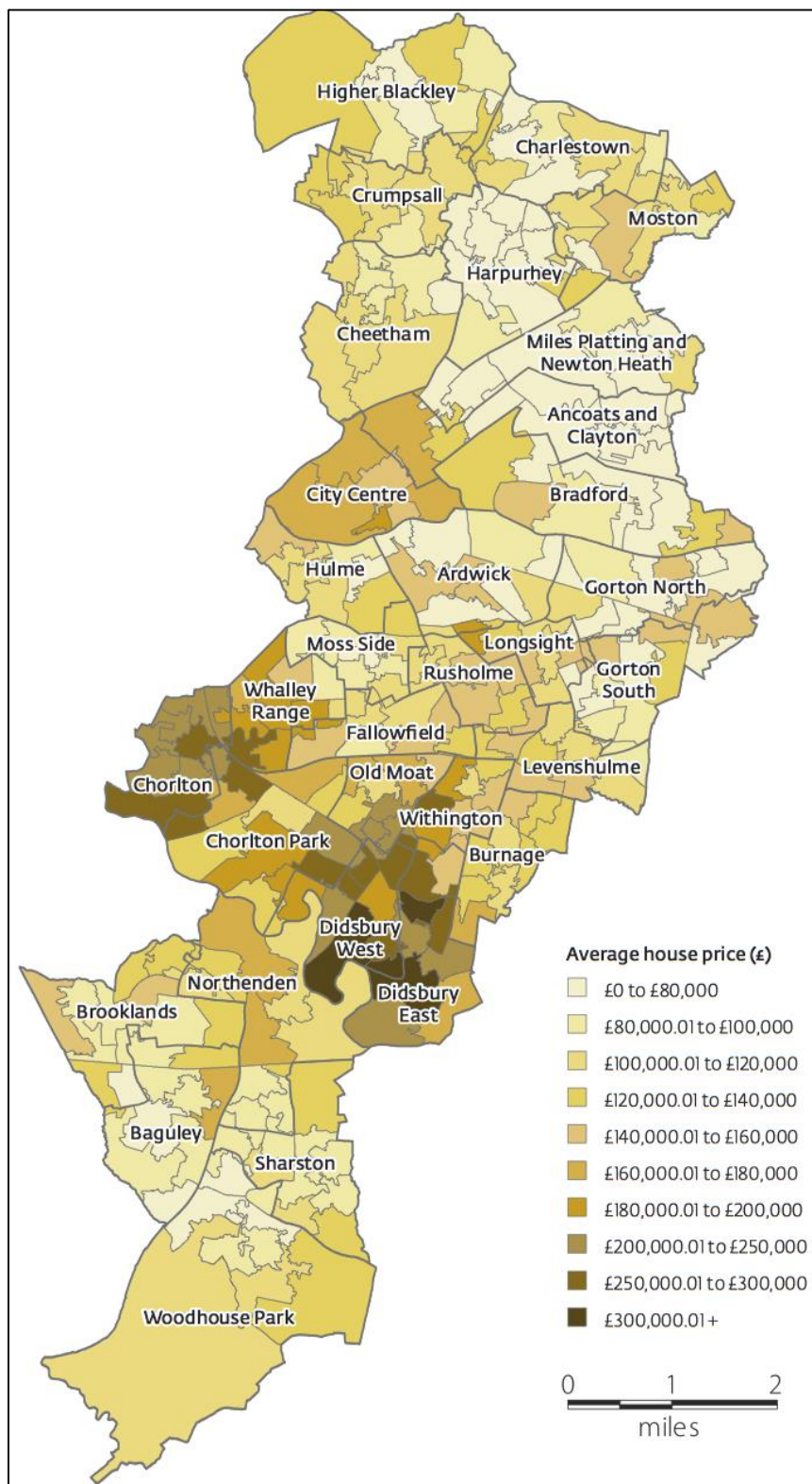


Figure 4.14: Average terraced property prices in Manchester by ward, 2011

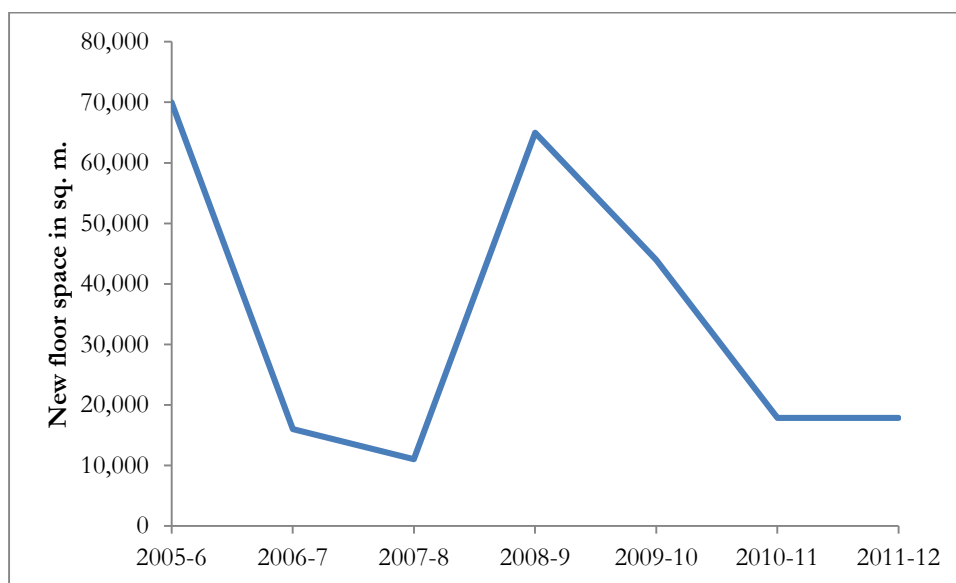
Source: Manchester City Council, 2012: 95.

4.2.3.2 Newcastle upon Tyne: in search of a new institutional and infrastructural fix?

With a population of just 279,092 (Newcastle City Council, 2013b: 30), Newcastle upon Tyne is a modest-sized city located in the North East of England. Along with the rest of North

East, Newcastle experienced an extensive and painful process of deindustrialisation during the 20th Century, as the closure of coalmines, shipyards and other centres of industrial activity led to a prolonged period of low economic growth and high levels of unemployment (Tomaney et al., 1999; Power and Mumford, 1999).

Towards the end of the 20th Century, Newcastle emerged as a ‘post-industrial’ city (Byrne 2002: 279), characterised by service sector growth (most notably in the financial services industry through the rise of Northern Rock), a successful higher education sector, cultural industries and the evolution of an embryonic knowledge-based economy (Comunian, 2011; Dawley et al., 2012; Hudson, 2011). Its rejuvenation, however, has been temporary, unstable and incomplete. In addition to attracting landmark inward investments, the city has been at the sharp-end of branch plant disinvestment (Dawley, 2013; Pike, 2005). Furthermore, the collapse of Northern Rock in 2007, at the start of the global financial crisis, is telling of the persistent vulnerability of the city to global economic change and periodic exogenous shocks (Dawley et al., 2012).



Note: Years 2010-11 and 2011-12 represent an average floor space per year developed between 2010-12.

Figure 4.15: Amount of new floor space (sq. m.) developed for employment in Newcastle 2005-12

Source: Adapted from Newcastle City Council, 2013b: 21.

Although some areas of Newcastle’s economy have been relatively resilient to the recent global economic crisis, such as its exporting industries – the city-region was the only area in

England to record a trade surplus of goods in 2011 and 2012 (NELEP, 2013: 6) – other sectors, such as regeneration and development, continue to be characterised by volatility and uncertainty (see Figure 4.15). Furthermore, Newcastle remains particularly reliant on the public sector for both employment and capital investment (Strickland, 2013), even relative to other urban centres within the ‘public sector region’ that is the North East (Table 4.1; also see Dawley et al., 2012; Mason and Pierrakis, 2011).

Table 4.1: Ratio of private to public sector employment in Newcastle, Middleborough and Sunderland

City	Private sector employment 2011	Public sector employment 2011	Ratio of private to public sector employment 2011
Newcastle	254,100	130,000	2
Middlesbrough	119,200	61,100	2
Sunderland	80,400	35,600	2.3
Great Britain	20,293,100	7,472,000	2.7

Source: Centre for Cities, 2013.

Newcastle presents particular challenges for capital investment. Not only does the North East of England historically attract low levels of private sector investment (Mason and Harrison, 2002; Klagge and Martin, 2005), but it also suffers from low levels of growth in key sectors that might make public sector investment in infrastructure more challenging than elsewhere. During periods of growth, the property values in the North East tend to grow more slowly than in other regions, while during periods of recession, property values are prone to deeper and more prolonged declines (ONS, 2013).

According to the OECD (2006b: 12), Newcastle is the core of a city-region with a population of approximately 1.6 million. The geography of the city-region is reflected in the administrative boundaries of the newly formed North East Local Enterprise Partnership and Combined Authority, which both incorporate Durham, Gateshead, Newcastle, North Tyneside, Northumberland, South Tyneside and Sunderland (LA7, 2013).

Yet, Newcastle's position within the city-region is subject to contestation. The region can be viewed as 'bi-polar'; that is, underpinned by two competing urban cores, one in NewcastleGateshead, and the other in Sunderland (Shaw and Greenhalgh, 2010: 466). Furthermore, the governance of broader North East, once shaped by the regional development strategies of the RDA, One North East, has effectively been split in two by the creation of two north-eastern LEPs; the North East LEP and Tees Valley Unlimited (Shaw and Robinson, 2012). The result is a melting pot of competing and overlapping institutions within the Newcastle City Region, a situation that has the potential to generate political divisions and inhibit investment in infrastructure.

4.2.3.3 Sheffield: local resistance, corporate partnership and the challenges of entrepreneurialism

Sheffield is located in South Yorkshire, at the confluence of the resource-rich valleys of the Don and the Sheaf. Like Manchester and Newcastle, contemporary policy discourse has positioned Sheffield at the heart of a vibrant functional economic area, a city-region which includes Barnsley, Chesterfield, Doncaster and Rotherham. However, the construction of the Sheffield City Region (SCR) is taking place against a backdrop of intra-regional and inter-jurisdictional competition and rivalry (Gore and Fothergill, 2007; Herrschel and Newman, 2013). Whilst a Combined Authority is being planned for the city-region, there remain historically entrenched challenges for developing an inclusive and cooperative system of governance within SCR (Marlow, 2013).

In contrast to those in other industrialising cities in the UK in the 19th Century, the industrialists of Sheffield are accused to have 'lacked the entrepreneurial spirit of 'modern' capitalism' (Mollona, 2009: 6). Indeed, the relationship in Sheffield between the pursuit of entrepreneurialism on the one hand, and the advancement of social cohesion and equitable growth on the other hand has been precarious and finely balanced over time, with significant implications for the city's development and success.

Sheffield's steel industry underwent an intense period of transition and restructuring over a 20 year period from when the British steel industry was nationalised in 1967 to the early 1980s when economic crisis, transitions in the global steel industry, and the Thatcher Government's policies of privatisation and rationalisation combined to devastate the steel makers, cutlers, forgers, blacksmiths and toolmakers of Sheffield (ibid.).

The decline of the steel industry generated huge challenges for Sheffield; in 1986, for example, the rate of unemployment reached over 16% (Henneberry, 1995: 169). During this period of decline, Sheffield City Council attempted to combat Thatcher's neoliberalism by adopting a radical left wing approach to local policymaking, and framing economic crisis as a product of central government policy (Digaetano and Lawless, 1999). Despite an ambition to foster 'the production of socially useful goods in democratically controlled organizations' (ibid.: 565), the City Council's radical stance has given Sheffield an enduring reputation for being 'anti-business' (Syed, 1990).

Yet, it was actually between 1986 and 1996, in a less radicalised Sheffield, that the city's inevitable industrial decline transformed into post-industrial panic; in September 1990, Meadowhall shopping centre opened just 3 miles from the city centre, decimating a large portion of the city centre's fragile retail offer (Henneberry, 1995: 169); in 1991, Sheffield hosted the World Student Games (WSG), which failed to attract private sector investment and left Sheffield City Council with a painful debt burden (Dabinett and Ramsden, 1999: 169); and, between 1994 and 1995 the city completed the construction of the South Yorkshire Supertram, a light rail system, which had a 'negligible effect on development' at huge public expense (Lawless and Gore, 1999: 535).

On reflection, the shift from socialism to entrepreneurialism in Sheffield – or as Digaetano and Lawless (1999: 566) prefer, the 'regime shift from social reform managerialism to progrowth corporatism' – can actually be regarded as the source of unsustainable rounds of public-private investment, from which the hollowed-out city centre is still trying to recover, and for which the city is still making stifling debt repayments (Sheffield City Council, 2010). In addition, while these investments have generated some opportunities for job creation and wealth generation, Sheffield is still characterised by high levels of inequality, for example with many residents suffering from 'low pay, long hours or pervasive job insecurity' (Sheffield First, 2013: 6).

4.3 Concluding remarks: acknowledging the unique geographies of infrastructure investment in the UK and the US

Using a multiscalar approach that focuses on national, regional and local geographies, this chapter has attempted to outline some of the principle factors that might determine the ways in which infrastructure is funded and financed within the case study cities. Although each infrastructure project uses a funding and financing mechanism that is in some way bespoke,

the spatial context in which an infrastructure project is set can significantly influence the ways in which it is funded and financed. As such, funding and financing mechanisms developed within any one place tend to share common features and characteristics.

For example, American municipalities have a far wider range of available taxation options and therefore a greater access to local sources of funding than English local authorities (although State legislation and the need for voter approval often present obstacles to raising funds through direct taxation). American municipalities also have more opportunity to adopt debt-based models of investment, because they have access to a sophisticated capital market, although, once again, levels of indebtedness are also regulated by State legislatures.

Whilst grants and intergovernmental transfers play a relatively minor role in the US, central government grants have traditionally been a key source of infrastructure investment in the UK. However, the quantity of grant funding has been in decline in the UK, particularly since the financial crisis of 2008, providing significant challenges for local capital investment. Furthermore, despite the emergence of initiatives to devolve more powers to localities that could enable local governments to tap into local sources of funding, infrastructure investment in the UK is still very much controlled by HM Treasury and central government.

Despite the shared characteristics between places within broad overarching national frameworks, there is undoubtedly a huge degree of variation in the funding and financing of infrastructure, both between different places and for different types of infrastructure. In the following chapters, this thesis attempts to draw on the case studies that have been introduced here in order to develop a more fine-grained and nuanced understanding of infrastructure investment and its financialisation.

Chapter 5: The financialisation of the funding and financing of infrastructure in the UK and the US

The objective of this chapter is to further develop the arguments made in Chapter 2 that infrastructure is being funded and financed in increasingly financialised ways. In particular, the chapter seeks to provide empirical evidence of the financialisation of urban infrastructure by drawing on primary research undertaken in Chicago, Buffalo and Stockton in the US and in Manchester, Newcastle and Sheffield in the UK.

Although there is evidence of a transition towards more financialised models of funding and financing infrastructure, the extent to which any individual investment displays characteristics of financialisation (e.g. see Table 2.2) varies between and within case study cities. As a result, a key component of the argument presented in this chapter is that the pervasiveness and potency of financialisation changes between places and over time, and that the funding and financing of infrastructure is influenced by the specificities of a particular place, such as its regulatory, socio-institutional, political and economic context.

This chapter is structured into two further sections. First, the chapter examines the geographies of financialisation in the context of the funding and financing of infrastructure in the US. This section engages with case study material from Chicago and, with a specific focus on tax increment financing (TIF), illustrates how the process of securitisation and financial engineering can create new opportunities for infrastructure investment, whilst presenting a series of new risks and potential costs. This argument is extended through an analysis of Buffalo and Stockton, two cities which both present unique approaches to investing in infrastructure, and which serve to illustrate the highly variegated nature of financialisation and its implications.

The second section draws on the case studies of Manchester, Newcastle and Sheffield to examine the evidence of the financialisation of infrastructure investment in the UK. All three cases exhibit some form of financialisation, the exact nature of which is shaped by the unique economic geography and institutional make up of the city. The Manchester example demonstrates how financialisation presents opportunities for city governments to invest in infrastructure in a way that is more commercial than was previously possible. Through an examination of TIF in Newcastle and Sheffield, the chapter demonstrates that governments in more underperforming and peripheral locations face a dilemma whereby their intervention through infrastructure investment is more important than in places with a ready stream of private funding and financing, but that it is also associated with a greater degree of risk and

uncertainty. To conclude, the chapter reflects on the nature of infrastructure investment within each case study city, and suggests how this might inform a more refined and sophisticated understanding of the process of financialisation.

5.1 The variegated geographies of infrastructure investment in the US

Investing in core urban infrastructure is becoming an increasingly important policy response as cities across the US suffer from stagnant growth and declining economic competitiveness and their governing institutions face a shrinking supply of tax receipts and growing budgetary woes. As outlined in Chapter 4, the specific challenges facing America's cities are hugely variable, underpinned by their highly diverse social, political and economic geographies. Nevertheless, the ambition to invest in infrastructure and the need to do so in a way that temporarily nullifies the prevailing fiscal crisis is a commonly held and standout feature.

In combination with the pressing need to address economic underperformance, the current climate of austerity has created a breeding ground for the use of more innovative, entrepreneurial and financialised practices for funding and financing infrastructure. Crucially, however, the specific funding and financing practices adopted by municipal governments are shaped by a wide range of factors, such as institutional configuration, intergovernmental relationships and legislative constraints, that are unique to any one city.

This section examines how infrastructure is funded and financed in Chicago, IL, Buffalo, NY and Stockton, CA, and demonstrates how the process of financialisation is shaping infrastructure investment practices in different ways across the US. In particular, it examines the variable capabilities of city governments to intercept and engineer financial flows, and demonstrates how the potential rewards of engaging in financialised funding and financing practices must be weighed against the potentially augmented risks and costs of a more speculative form of urban development.

5.1.1 'The only game in town': tax increment financing in Chicago, Illinois

A key challenge for policymakers is the question of how to retain value from infrastructure investment. Being able to codify the otherwise abstract societal and economic benefits of infrastructure investment is vital for bringing forward investment proposals that might otherwise be fraught with political difficulties. In particular, the ability to capture the financial and economic value of infrastructure investment, for example through commercial revenues

or taxation income, means that large infrastructure projects can be readily funded and financed. Indeed, innovation in a range of *value capture mechanisms* has made it possible to harness the future value generated by an item of infrastructure and to use this value to finance initial upfront investments. However, the process of securitisation at the heart of value capture mechanisms also makes these forms of investment highly risky, speculative and financialised.

Value capture mechanisms play a central role in facilitating infrastructure investment in Chicago. The primary value capture mechanism used by the city's government ('the City of Chicago', or 'the City') is TIF, although special assessment districts are also used. For the year ending in December 2009 (the last available data), Chicago had 167 operating TIF districts (City of Chicago, 2014a). One interviewee from the City maintained that '[i]n Chicago's case, there is no other source of funding for projects' (Author's interview, Project Manager, municipal authority, 2012).

The way that value capture mechanisms are used in Chicago varies across the city and depends on the size, type and location of development, its commercial vitality, the actors involved, and the other funding streams available to both the city and the development itself. As a result, the extent to which value capture forms part of a *financialised* investment practice is highly variable within the city. That said, some of TIF's definitive features, such as the issuance of bonds or notes, the calculation of future tax or special assessment revenues and the securitisation of those revenues – which make TIF innately 'speculative' (Weber, 2010: 269) – remain largely consistent throughout the city's TIF districts.

Figure 5.1 illustrates the basic principles of TIF, and helps describe how TIF is practiced in Chicago. In essence, future tax receipts generated by an uplift in property values within the TIF district (which occurs as a result of a new development) are borrowed against and used to make the initial investment in the same development.

In Chicago, TIF is guided by the Tax Increment Allocation Redevelopment Act (65 ILCS 5/11-74.4-3) of the State of Illinois. This legislation enables municipalities in the State to borrow against future increases in property taxes, sales taxes or utility taxes. It also stress that addressing 'blight' is a prerequisite of TIF, and that development would not be forthcoming 'but for' the use of TIF.

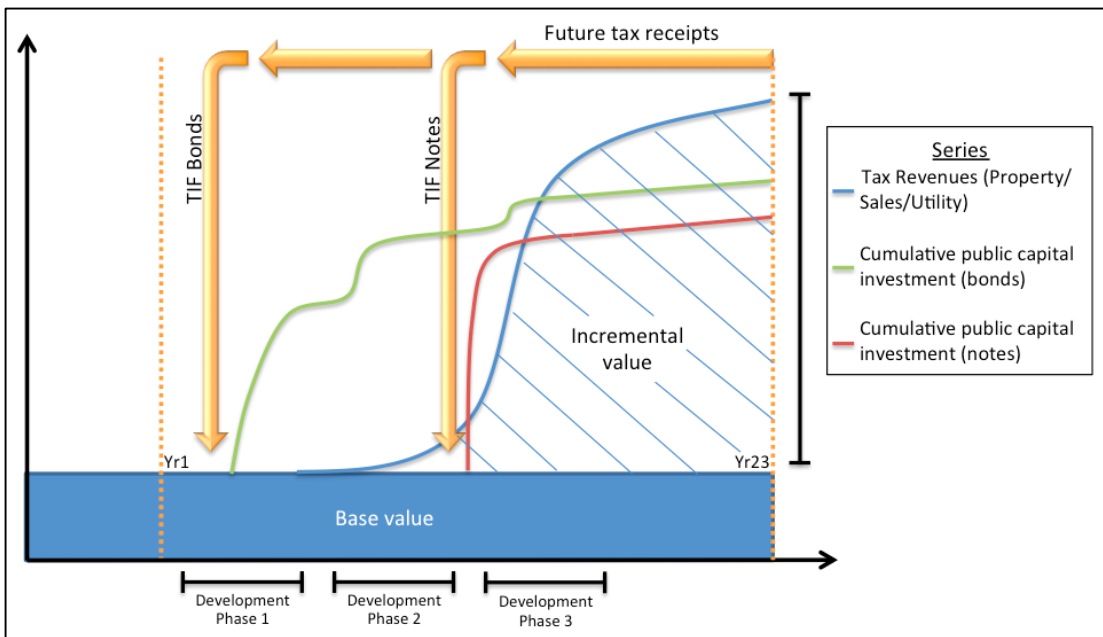


Figure 5.1: A schematic diagram of tax increment financing in Chicago

Source: Author's illustration.

In the traditional model of TIF, a municipality would issue ‘general obligation bonds’ (GO bonds) or ‘TIF revenue bonds’ against the future tax increment in order to front-fund infrastructure and development. When using GO TIF bonds, the municipality is on the hook if sufficient tax increment fails to materialise. When using revenue bonds, the City’s general fund would be insulated from this risk, but the City may be exposed to some additional costs, especially if the project collapsed at an early stage. In Chicago, however, in order to avoid assuming construction and development risk by issuing bonds to finance the scheme, the City typically issues notes to the developer only after certain preconditions or development landmarks have been met:

‘It’s not too frequent that we would give any kind of cash payment before completion... we generally don’t issue notes until a project is complete... the construction risk, 90% of the time, is not on us... We generally don’t absorb any construction risk. Occasionally you do have a situation, in an older TIF where you might have some sort of payment-to-closing to reimburse somebody for land acquisition. We can’t disperse funds until they’ve actually incurred TIF-eligible costs. We’re pretty strict about that here... If we give funds at closing, it’s usually to reimburse somebody for land acquisition, or previous infrastructure costs’ (Author’s interview, Project Manager, municipal authority, 2012).

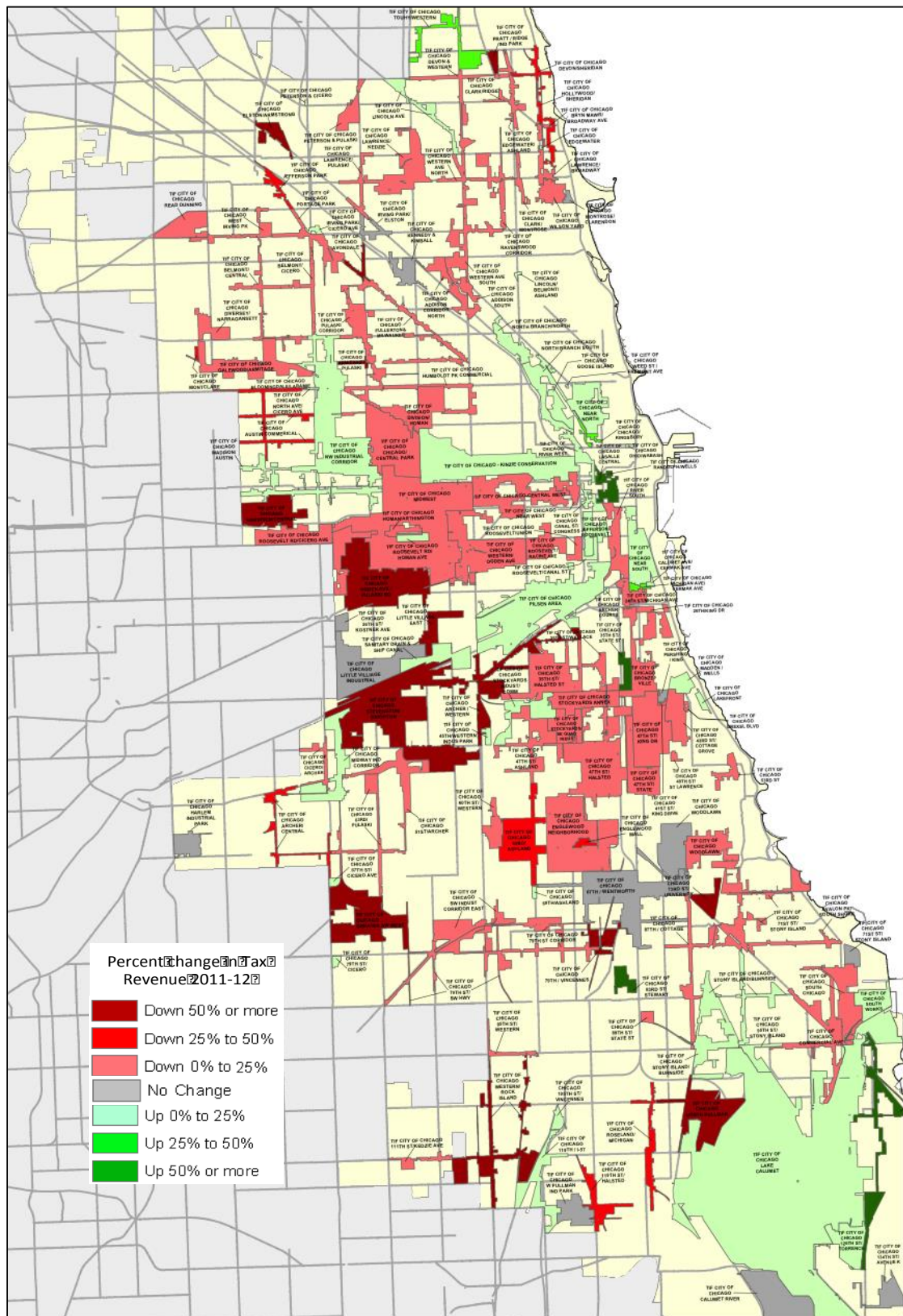


Figure 5.2: Percentage change in tax revenue for Chicago tax increment financing districts from FY2011 to FY2012

Source: Orr, 2013: 6.

By delaying the issuance of notes – which may themselves be ‘bonded-out’ (refinanced) at a later date – it can be argued that the City of Chicago takes a relatively risk-averse approach to TIF. Indeed, when using notes to finance a scheme, the initial uplift in property values, sales volumes or utility usage, is generated by upfront private sector investment and commercial development.

For the City, by entering at a later stage, there is less risk that the development will not be completed, more certainty over the calculations of future incremental revenues, and a higher chance that debt will be serviced in advance of the 23-year scheme limit. In an economic climate where a large proportion of TIF districts are suffering from negative percent changes in tax revenue (see Figure 5.2), being able to minimise risk is crucial for the City.

The typical risk position occupied by the City, then, suggests that TIF is not as speculative or financialised as it might at first appear.

However, even when the City of Chicago uses notes instead of bonds to finance the development within a TIF district, the practice of TIF retains core elements of financialisation. This point can be illustrated by examining the note issuance process in more detail.

Pieces of the notes issued by the City, called ‘certificates of participation,’ (COPs) may be bought, packaged and sold by an investment bank on behalf of the developer(s) to other investors:

‘...we will buy or package the bonds or the notes that result from TIF to bring money to the table for the developer...’ (Author’s interview Managing Director, international investment bank, 2012).

Although notes are usually issued to compensate a developer after the completion of certain development objectives, the City can use COPs to help channel finance into the development and its infrastructure upfront:

‘[The City] will issue the note prior to completion and then private investors or institutional investors will purchase pieces of that note, called certificates of participation. So they will effectively front-fund a proportion of the project and then when the project is complete and actually generating tax increment, those notes are then repaid with the tax increment’ (Author’s interview, Project Manager, municipal authority, 2012).

For example, the City of Chicago is using \$15million in TIF notes and a TIF loan in order to finance a development project called ‘Shops and Lofts at 47,’ which is located within the

43rd Street/Cottage Grove TIF district in the middle of the historic yet largely impoverished Bronzeville neighbourhood on the South Side of Chicago. In this instance, COPs are being used because of the higher risk of developing in Bronzeville, an area with low growth potential, and due to the associated higher costs of finance for the developer.

‘So the way [the developers] get the money up front, is they will go to a bank, in this case to JP Morgan, and say “Would you consider lending against this future stream of tax coming? We don’t have it now, but it’s coming.” Then the bank will do its due diligence, and if it feels comfortable it will fund it... So, the money comes from a bank, up front. It will be repaid over the estimated life of that TIF. The money does not come from the government. It comes from the private sector, and then it’s repaid with tax as the taxes start to increase’ (Author’s interview, Project Manager, federal development agency, 2012).

Even though this method of investment uses future tax receipts as the source of funding, it is low risk for the City of Chicago: the developer services the debt, while the City has ‘no obligation to pay principle and interest’ on the COPs (Moody’s Investors Service, 2013a):

‘If they never build the project and they don’t generate [any tax increment], then we’re not really on the hook’ (Author’s interview, Project Manager, municipal authority, 2012).

Indeed, the Redevelopment Agreements that codify these deals state that the developer ‘is obligated to pay principal and interest on the certificates’ (Moody’s Investors Service, 2013a).

Although the process of issuing TIF notes reduces some risks for the City in a project’s construction phase, the less risky TIF schemes do seem to take on other tones of financialisation. For instance, the process of marketing and selling COPs requires an investment bank to structure the deal, brings capital markets to the centre of the financing process, and exposes the development scheme to the logic and calculative frameworks of the credit rating agencies (although, of course, some of these characteristics would also define a bond issuance).

In addition, the viability of this less risky form of TIF is potentially limited. Firstly, this is because there is no legal obligation for the City to actually make TIF revenues available to the developer, which the developer needs to make repayments to the COP holders. This might occur if the development failed to generate a sufficient tax increment, or if the City directed the TIF revenues elsewhere due to other fiscal pressures. According to the rating agency Moody’s, Chicago’s falling GO credit rating and recent history of missed payments make non-payment on COPs a realistic possibility (ibid.). Crucially, from a technical

perspective, the '[f]ailure of the city to pay [the developer with TIF revenues]... would not constitute a default on the COPs', a realisation that has led to the downgrading of the Fullerton/Milwaukee COPs by Moody's from Baa1 to Baa3 in November 2013 (Moody's Investors Service, 2013a). Secondly, in areas of the Chicago where commercial development is less viable, developers – and the investors that purchase the COPs – may be unwilling to take the development and valuation risk required. That said, the example of Shops and Lofts at 47 shows that TIF notes and COPs can be an effective financing tool even in some of the most adverse areas of the city.

5.1.2 The persistence of redistributive State and federal grants in Buffalo, New York

Buffalo provides an example of how traditional mechanisms, such as redistributive grants, continue to be used to fund and finance infrastructure. In particular, the Buffalo case serves to highlight that the mobilisation of financialised investment practices is not uniform, and that expressions of financialisation vary hugely across time and space.

The extent to which infrastructure projects in Buffalo can be funded and financed in financialised ways is primarily limited by the low levels of vitality within the city's economy. In particular, the depressed property market means that speculative models of investment, requiring increases in tax revenues or commercial income, are largely unworkable. The municipality (the 'City of Buffalo', or the 'City') is also restricted in terms of the levels of debt it can issue to invest in infrastructure. Although most cities in the US have some form of State-imposed debt limitation, the City of Buffalo is restricted to issuing a mere \$20 million of bonds per year, and is closely monitored by the Buffalo Fiscal Stability Authority, which has maintained oversight of the City's finances since it entered fiscal crisis in 2003.

As a result, the delivery and development of infrastructure in Buffalo is dependent, to a significant extent, on State and federal funds:

'There is a significant amount [of investment] that is leveraged from State and Federal resources. It is competitive grants at times, but also organised through our Metropolitan Planning Organisation, called the Greater Buffalo Niagara Regional Transportation Council... Our bonding capacity is very limited in the City – it's under £20million at this point in time annually... Private investment makes up 2-3% of the overall pot' (Author's interview, Executive Director of the Office of Strategic Planning, municipal authority, 2013).

The City of Buffalo's infrastructure investment strategy, then, does not appear to be premised on speculative investments or revolving funds. Nevertheless, being dependent on State and federal grants also has its drawbacks and uncertainties. In particular, State and federal fiscal consolidation since the global financial crisis has temporarily limited the flow of grants to Buffalo, forcing the City to be more selective and innovative in terms of its use of grant funding. Indeed, examples such as the Buffalo Lakeside Commerce Park (BLCP) illustrate that infrastructure projects are being funded and financed through a complex set of arrangements that have the hallmarks of traditional grant programmes, but with an entrepreneurial twist.

The BLCP is located on the site of the former Hanna Steel Plant on the south side of Buffalo. The site is part of the South Buffalo Brownfield Opportunity Area (BOA), a State-designated brownfield site that is eligible for particular State funds, and has received up to \$30 million of investment from a range of sources, including from New York State, Erie County, the City of Buffalo and National Grid, which have been used to conduct environmental cleanup and site preparation, and to fund the construction of road and utility infrastructure (BUDC, 2012).

Not only is the site located within an underperforming and peripheral urban area, but it is littered with relics of its industrial past, including four blast furnaces, which make it an extremely challenging and costly site for development. As a result, the flow of capital into the site has merely been drip-fed over a period of over 15 years. The first funding for the site came through New York State's Clean Air/Clean Water Bond Fund in 1996.

'Up until that time no one was touching these brownfields and there was no funding available. No one wanted to touch them. But this was a huge piece of property that wasn't generating any taxes. So the State of New York came up with a programme, where the State would provide 75% of the allowable costs for an assessment and cleanup programme and the City would supply the other 25%... It was later refined in 2001 that the State would pay 90% of the allowable costs' (Author's interview, Environmental Engineer, municipal authority, 2013).

Grant funds from the state, in addition to a small portion of self-financed expenditure on behalf of the City government, then, were essential for the initial infrastructure works on the site. Since 2001, however, the site has also been able to take advantage of tax credits from New York State's Brownfield Cleanup Program: whilst the BLCP therefore remains underpinned by State funding, these tax credits have enabled private financing to be injected into the scheme and for elements of the scheme to take on a more commercial edge.

In addition to these sources of State funding, Buffalo Urban Development Corporation (BUDC), which owns the BCLP site, and Erie County Industrial Development Agency (ECIDA) have developed an innovative Payment in Lieu of Taxes (PILOT) model to fund infrastructure at BCLP:

‘We have a fund called the Buffalo Brownfield Redevelopment Fund, which helped us with our infrastructure costs... It is a form of tax increment financing (TIF). In New York State, the authorising legislation for TIF is flawed: it has never actually been done. We have a backdoor way of doing it where we provide a company with a tax abatement. That company makes a payment in lieu of taxes to ECIDA. Some of their taxes get abated and a portion of it goes back to the City and the County. We have an agreement with the City and the County that we share some of the taxes that they would normally receive. We then put that money into a fund, which we use to help with improvements. For instance, we used funds from that to upgrade a pump station for sanitary sewer works. We have now completed all of the infrastructure at Buffalo Lakeside Commerce Park, so are looking to use the fund to invest in other brownfields across Buffalo... It’s not a revolving fund. We use the money for capital: we’re not lending the money out, so it doesn’t come back. It is revolving to a certain extent, because we can generate revenue when we sell land’ (Author’s interview, Vice President, development agency, 2013)

Crucially, the PILOT model used at BCLP is different from TIF (see below) because it doesn’t depend on the generation of uncertain future property taxes:

‘It’s not speculative: once there is a project, you calculate what the assessment is, take it, and then you can bond out based upon a project that’s already in place’ (Author’s interview, Regional Development Specialist, development agency and chamber of commerce, 2013).

Despite the purported lack of speculation at the heart of the BCLP PILOT scheme, the model used resembles a somewhat entrepreneurial manipulation of the traditional tax abatement tool. Furthermore, whilst the PILOT model may not explicitly emulate the same financialised characteristics of funding mechanisms used in Chicago, there is nevertheless a subliminal emphasis on revenue generation and tax base maximisation.

Although the challenging fiscal and economic environment in Buffalo has restricted the city’s governing institutions from explicitly pursuing speculative investment practices that require high levels of revenue generation and asset value appreciation, this challenging environment is simultaneously placing pressure on traditional sources of funding, such as grants from the State of New York, and thus stimulating a more innovative and entrepreneurial approach to

securing and utilising these funds. What appears to be constraining the financialisation of the funding and financing of infrastructure in Buffalo, then, rather than a lack of capacity, innovation or entrepreneurialism in its governing institutions, is primarily the city's economic and geographical characteristics.

5.1.3 Arena bonds and leasebacks in Stockton, CA: the redevelopment of Stockton Events Center

In California, the term 'redevelopment' is used to describe development activities undertaken by Redevelopment Agencies, primarily through the use of a mechanism akin to TIF. A Redevelopment Agency is a sub-entity of a city or county and has its own territory that overlaps with that of the city or county government (California Health and Safety Code, § 33120).

Although the Redevelopment Agencies have recently been dissolved by the State of California (see Chapter 6), this section attempts to interrogate the ways that redevelopment was used to fund and finance infrastructure and urban development projects in Stockton in the years preceding dissolution. Crucially, analysing the historic practices of infrastructure investment in Stockton exposes the extent and nature of the speculative urbanism that has been fundamental to the City's demise.

Whereupon a Redevelopment Agency exists, it obtains a share of any incremental property taxes within its defined territory, which enables it to engage in what is effectively TIF:

‘...the levied taxes each year in excess of [the property tax baseline] shall be allocated to... the redevelopment agency to pay the principal of and interest on loans, moneys advanced to, or indebtedness... incurred by the redevelopment agency to finance or refinance... the redevelopment project’ (California Health and Safety Code, § 33670, b).

Outside of Redevelopment Areas, it far more difficult for Californian cities to engage in TIF-like financing arrangements. Importantly, Redevelopment Agencies have the ability to issue debt without voter approval, and so are presented with a unique opportunity to engage in speculative debt-driven development:

‘Redevelopment Agencies could issue debt without the vote of the people. In California, our constitution really limits the ability of governmental entities to issue debt without voter approval. Redevelopment Agencies were one of those that could issue without a

lot of requirements' (Author's interview, Director, department of the State of California, 2013).

In 2004, Stockton was experiencing a demographic and economic boom. In order to keep pace with the city's expansion and to ensure that Stockton's residents could benefit from the city's growth, the municipality (the 'City of Stockton' or 'City') and its partner organisation, the Redevelopment Agency of the City of Stockton (the 'Redevelopment Agency'), were embarking on a strategy to regenerate the city centre, create jobs and enhance the city's cultural and recreational offer.

At the core of this strategy was the Stockton Events Center project. The project included a 12000-capacity arena (the 'Stockton Arena'), a 5000-capacity baseball stadium ('Banner Island Ballpark'), a 180-room hotel, a 600-space car park and 60,000 square feet of retail space. Crucially, the site for the project, a 640-acre brownfield site on the northern bank of McLeod Lake in downtown Stockton, was located within a redevelopment area called the West End Urban Renewal Project No. 1 Redevelopment Area. The ability to utilise TIF underpinned the project's viability, and meant that the Events Center project aligned perfectly with the prospect of tax base expansion and enhancing Stockton's competitiveness.

In March 2004, the Redevelopment Agency issued \$47 million of revenue bonds ('Arena Bonds') in order to finance the Stockton Arena project and to invest in site preparation activities, such as demolition, soil remediation and removal, grading, street improvements, and the installation of gas, electrical and drainage infrastructure. In addition, in June 2004, the Stockton Public Financing Authority (a partnership between the City the Redevelopment Agency) issued \$32.8 million of lease revenue bonds ('Parking Bonds') to finance three parking garages, one of which was the Stockton Events Center Parking Structure. Far from being vanilla bond issuances, the Arena Bonds and Parking Bonds relied on complicated financial engineering and highly financialised mechanisms to generate the revenues needed to enable the Redevelopment Agency and the Financing Authority to service the debt.

The Arena Bonds had two dedicated revenue streams. First, a lease agreement between the City and the Redevelopment Agency provided revenues to the Redevelopment Agency in the form of semi-annual rental payments from the City. The City (the owner of the Arena) leased the Arena to the Redevelopment Agency for a maximum of 55 years for the sum of \$1 (referred to as the 'lease out'). The Redevelopment Agency then leased the Arena back to the City for the same period but for a total sum which now stands at \$74,503,547 to be paid in semi-annual instalments (the 'lease back'). Second, the retail and hotel components of the

redevelopment area were expected to generate incremental property tax revenues that could be retained by the Redevelopment Agency and used for debt service.

Whilst the two revenue streams are completely separate, they nevertheless work together (a) to reduce the cost of debt for the Redevelopment Agency (the bond issuer) and (b) to reduce the cost of developing the Arena for the City.

To elaborate, the semi-annual rental payments (as stipulated in the lease), which are backed by the City's General Fund, help to de-risk the TIF revenues (which by their very nature are relatively uncertain) and therefore help to reduce the cost of debt for the Redevelopment Agency. The ultimate objective, however, is to use TIF revenues to pay for as much of the development as possible. Indeed, in theory, if sufficient TIF revenues are retained by the Redevelopment Agency, the City does not need to pay a single dollar of rent. In short, in an ideal situation, the City gets a free Arena and the Redevelopment Agency's cost of debt is reduced by the City's covenant.

Clearly, combining a 'lease-out-lease-back' model and a TIF model makes for a highly financialised financing practice. Not only does it involve speculating on uncertain future property tax revenues, but it also creates financial value through the lease arrangement (in the form of rental payments) where there is actually very little productive value being created. Arguably, the lease-out-lease-back model merely shifts capital around in order to create the *appearance* that there is a genuine revenue stream being created:

'It is clear to me that some cities were using that RDA money as a 'slush fund'. You know, moving chequers around the board' (Author's interview, Chief Executive Officer, investment management firm, 2013).

The Parking Bonds were financed using a similar structure 'lease-out-lease-back' model. In fact, this model was rolled out across Stockton and used for further projects led by the City including: the Stewart/Eberhardt Building and the adjacent parking facility; the Office Building at 400 East Main Street; three fire stations; the City's Main Police Facility; the Maya Angelou Southeast Branch Library; Oak Park; the Van Buskirk Golf Course; and the Swenson Golf Course.

Since the advent of the subprime crisis, the City has defaulted on its lease payments for the parking schemes and, as part of its bankruptcy adjustment plan, is also in default on lease payments for Oak Park, the golf courses, and the Office Building at 400 East Main Street (US Bankruptcy Court, 2013c). While the defaults on lease payments did not cause the City to make a Chapter 9 bankruptcy filing and, for the most part, are merely part of the

restructuring process that was triggered by bankruptcy, the bonds issued on the back of these leases certainly contributed to the City's structural over-indebtedness that made it so vulnerable to fiscal crisis.

The City has also entered into a period of forbearance on its lease payments for the Arena and has been forced to draw up an amended payment schedule. Worryingly, the Event Center's retail space remains largely empty:

'The idea was that the ground floor of the parking garage, which is in between the Arena and the Ballpark, would become a hub for retail or restaurants. Well, that hasn't happened...'*(Author's interview, Chief Executive Officer, local business improvement district, 2013).*

As a result, the prospect of TIF revenues being able to service a substantial portion of the Arena Bonds is limited. Consequently, the City will be forced to make up the shortfall using its lease payments. In essence, the cost of servicing the Arena Bonds is likely to fall on the City in spite of the amended payment arrangements.

The ability and willingness to use financialised models of investment so extensively is indicative of the prevailing political discourse in Stockton in the years preceding the subprime crisis of 2007-8. Indeed, the Stockton Events Center case provides an example of neoliberal urban development in full swing. Whilst Stockton's use of redevelopment illustrates the ability of financialised investment practices to create value and unlock developments, it also substantiates the claim made above that there are perils of engaging in what Davidson and Ward (2014: 82) term 'speculative urbanism'. Uncertain future revenue streams, which were tapped into through both TIF and 'lease-out-lease-back' arrangements, formed the foundations of Stockton's urban development strategy. The subprime crisis would soon demonstrate that these foundations – and the systemic over-indebtedness that they created – were hugely vulnerable to collapse.

5.2 Towards a financialised landscape of infrastructure investment in the UK?

As is emphasised in Chapter 2, public sector capital investment continues to underpin the construction, delivery, operation and maintenance of infrastructure, despite the processes of segmentation, unbundling and privatisation that are transforming the nature and function of infrastructure. Yet, the process of capital investment is changing, as governments move away from traditional models of funding and financing, towards more financialised models that

prioritise generating returns on investment and, crucially, that are premised on the ability to securitise or capture future sources of revenue. Through these more financialised investment practices, upfront investment in infrastructure becomes possible even in times of fiscal stress and crisis, and thus facilitates the much sought-after neo-Keynesian infrastructural fix.

In the UK, however, the transition from traditional forms of infrastructure investment towards the use of financialised investment practices is partial and geographically uneven. In some instances, local governments are becoming increasingly entrepreneurial and taking on the characteristics of a financial intermediary by making investment decisions on a commercial or performance-driven basis. The Manchester example below, for instance, demonstrates how Manchester's governing institutions are beginning to favour investment packages that stimulate as much asset value appreciation and revenue generation as possible, so that they can become self-funding and even generate surplus capital that can be reinvested into the built environment.

However, for infrastructure projects that have no obvious revenue-generating capacity or that are situated within an underperforming economic area, it may not be possible to successfully implement the mechanisms of securitisation or value capture that Manchester's revolving funds depend on, thus providing an obstacle to the adoption of financialised investment practices. Indeed, the case studies of Sheffield and Newcastle demonstrate that where asset value appreciation and commercial revenue generation opportunities are limited, more innovative and entrepreneurial models of investment can be difficult to deliver and can create excess levels of risk for the public sector.

5.2.1 Capital investment in Manchester: from City Council to Investment Bank plc?

The approach to infrastructure investment being taken forward by Manchester City Council is illustrative of the transition towards the use of a more financialised set of investment practices. In particular, rather than merely acting as a local distributor of central government funds, as councils may have done in the past, Manchester City Council is pursuing a series of innovative and entrepreneurial financing models that either enable the Council to invest its own capital to fund revenue-generating infrastructure and development projects, or that utilise grant funds to initiate locally controlled revolving investment platforms:

'We have moved away from a grant-based model. The whole premise of our suite of funds is to recycle (whether that's through debt or equity)... That's the big shift that we've seen' (Author's interview, Head of Finance, metropolitan borough council, 2013).

The advantage of a revolving (or recycling) fund is that a single allocation of capital, used to fund an initial item of infrastructure, can, over time, provide revenues back to the City Council, which, in turn, can be reinvested into more projects. In theory, there is no limit to the number of times an initial allocation of capital can be recycled back into the urban landscape.

The practice of repeatedly recycling capital through the urban landscape is fundamentally a financialised one. First, it can be equated to a strategy that aims to accelerate the circulation (and accumulation) of capital: the quicker and more efficiently a fund revolves, the more that infrastructure can be invested in over time. Second, it demands that the function of the infrastructure, first and foremost, is to provide a return on investment, which surpasses the need to fulfil a broader socio-economic purpose. Third, and related, it excludes infrastructure that cannot generate returns on investment, but that might provide significant benefit to the population. Fourth, the strategy of the Council or other public sector body, and the skillset of its employees, evolves to replicate those of a financial intermediary:

‘I don’t think we’re every going to quite be a Barclays Capital... we’re never going to be that far towards a bank... but our commercial skillset, in terms of being able to analyse financials and talk through a business plan, is an area that we’ve tried to strengthen... recognising the need for more of this type of work rather than the traditional grant-led models’ (Author’s interview, Head of Finance, metropolitan borough council, 2013).

The approach taken by Manchester and, more specifically, by the Greater Manchester Combined Authority, is encapsulated in the Greater Manchester Strategic Investment Framework. Its mission statement is:

‘...[to use] public sector funding in an investment capacity wherever possible, so that returns can be reinvested into future projects. Based on the short-term pipeline, this would provide scope to reinvest the same £1 of public funding, up to three times in a decade’ (GMCA, 2012: 10-11).

Whilst the emphasis on recycling capital is undeniable, it would be an oversimplification to suggest that returns on investment are the only force driving policy and strategy within Manchester City Council and Greater Manchester. According to the City Council, the purpose of investing in infrastructure is to create economic growth (which they measure as ‘Gross Value Added’ (GVA)) and, more specifically, to create jobs:

‘Our investment policy is driven by GVA growth and the belief that Greater Manchester is generally quite a deprived area... The view is that growth in jobs and getting people into employment is the way to improve the overall lot of the people of Greater

Manchester... So I think, in itself, that's the end that we're aiming at... Growing the revenue base is fairly incidental... Our infrastructure and investment strategy is about generating jobs – and better jobs' (Author's interview, City Treasurer, metropolitan borough council, and Treasurer, combined authority, 2013).

The suggestion that revolving investment programmes can lead to job creation implies that there is a positive correlation between levels of infrastructure investment and employment. Although there is evidence to support such a hypothesis (Aschauer, 1989; Demetriades and Mamuneas, 2000), it is limited and widely disputed (Cadot et al., 2006; Gramlich, 1994; Straub, 2008). Manchester's investment strategy also implies that infrastructure that generates a return on investment can efficiently deliver job creation. This inference is equally contestable.

In practice, job creation and returns on investment are lumped together as if a correlation between the two is inevitable, providing a muddled justification for the growing use of revolving funds, whilst normalising the intensification of the financialisation of Manchester's suite of funds. This process is exhibited in three examples in particular.

1. The North West Evergreen Fund

The North West Evergreen Fund is an infrastructure and commercial property investment fund run in partnership by 16 local authorities in Greater Manchester, Cumbria, Cheshire and Lancashire, and managed by CBRE, a specialist property investment advisory firm. It combines local authority investment with investment from the Homes and Communities Agency (HCA) and the EU in the form of European Regional Development Funding (ERDF) and Joint European Support for Sustainable Investment in City Areas (JESSICA). The fund aims to invest in infrastructure and property on a commercial basis, providing returns for the stakeholders:

'It started out on a mezzanine/debt start basis, because the hypothesis was that the banks weren't lending in that space and this was a good way of filling that gap and keeping development going' (Author's interview, Head of Finance, metropolitan borough council, 2013).

In addition to fulfilling the role of an unadulterated investment fund, the North West Evergreen Fund has been issued a 'state aid notification', which means it has the ability to provide capital to worthy developments on a non-competitive basis: 'sub commercial debt and equity [can] be provided where certain conditions and requirements are met' (NWELP,

2009: 3). Although this provides a certain amount of flexibility regarding where investments are made – helping to maximise objectives like job creation – the entire funding package (which may include aspects of grant funding, such as ERDF) still needs to generate a return.

2. Manchester City Council Capital Fund

Manchester City Council's Capital Fund is comprised of surplus Council revenues, which are used 'to fund revenue contributions to major capital schemes' (Manchester City Council, 2011: 98). In effect, it acts like the Council's own investment fund, and can be used to invest in a wide range of programmes, including infrastructure and development:

'...the pre-cursor of [the Capital Fund] funded the Commonwealth Games Stadium, which is now Manchester City Football Club's home. We've leased that to them for 250 years, so we get an income stream off that... We bought out private sector and other districts from Manchester Central (the conference centre) in 2005 [where we] invested £28 million. We own it through a series of funding companies which we've partly funded through equity investment and partly through loan investment... We are developing a new arts centre on First Street and, again, that's underpinned by this sort of funding mechanism' (Author's interview, City Treasurer, metropolitan borough council, and Treasurer, combined authority, 2013).

By acting as the Council's quasi investment banking arm, the Capital Fund supports and facilitates the generation of financial returns through infrastructure investment. In particular, by providing a channel through which surplus revenue can flow into further infrastructure and development projects, it lubricates the revolving fund machine.

3. Manchester Airport and the Stansted Airport venture

Manchester Airport is one of the 24 Enterprise Zones (EZs) in England. Its purpose is to stimulate inward investment by providing benefits to businesses such as discounted Non-Domestic Rates (NDRs) worth up to £275,000. As part of the EZ arrangements, the Greater Manchester Combined Authority can retain 100% of the business rates over 25 years to facilitate further infrastructure investment and development within the EZ and across Greater Manchester. The airport is also a commercial venture by Manchester City Council, which owns 55%, and the other boroughs of Greater Manchester, which own 45% between them, providing with returns in the form of dividends.

In order to enhance and de-risk the revenue stream provided by Manchester Airport, Manchester City Council embarked on a growth strategy to acquire another airport:

‘We initially bid for Gatwick and didn’t win, but we more recently bid for, and won, Stansted. BAA sold it. To enable us to make that purchase, we had to bring in a private sector partner as an equal within the airport group. So, IFM, which is an Australian pension fund, or fund of funds, are an equal partner in that to the City Council [both own 36.5%], with the district councils being the minority shareholders [owning the remaining 27%]’ (Author’s interview, City Treasurer, metropolitan borough council, and Treasurer, combined authority, 2013).

Entering a joint venture with an Australian investment fund in order to purchase an infrastructure asset located 200 miles outside of Manchester, is a clear indication of the intention of Manchester City Council to commercialise its infrastructure investment strategy. This case also provides evidence that financialised investment practices are implicated in a changing model of local government, as local authorities innovate and expand their activities in search of competitiveness.

The shift away from traditional models of capital investment, such as the allocation of centrally distributed grant funds, towards models where investments require financial returns to be delivered by an item of infrastructure is symbolic of the broader transition that defines the funding and financing of infrastructure. In particular, the investment practices used in Manchester prioritise the recycling of capital into – and through – the urban environment. This transforms infrastructure from a physical component of the city into a financial asset defined by risk and return, and increases the opportunities for yield-seeking surplus capital to find refuge in the urban landscape. As part of this process, the city becomes a vehicle for the acceleration of capital circulation, fundamentally altering the values and objectives of the city’s governing entity, and placing the urban environment at risk of creative destruction and, ultimately, a crisis of overaccumulation.

5.2.2 New kid on the block: tax increment financing in Newcastle upon Tyne

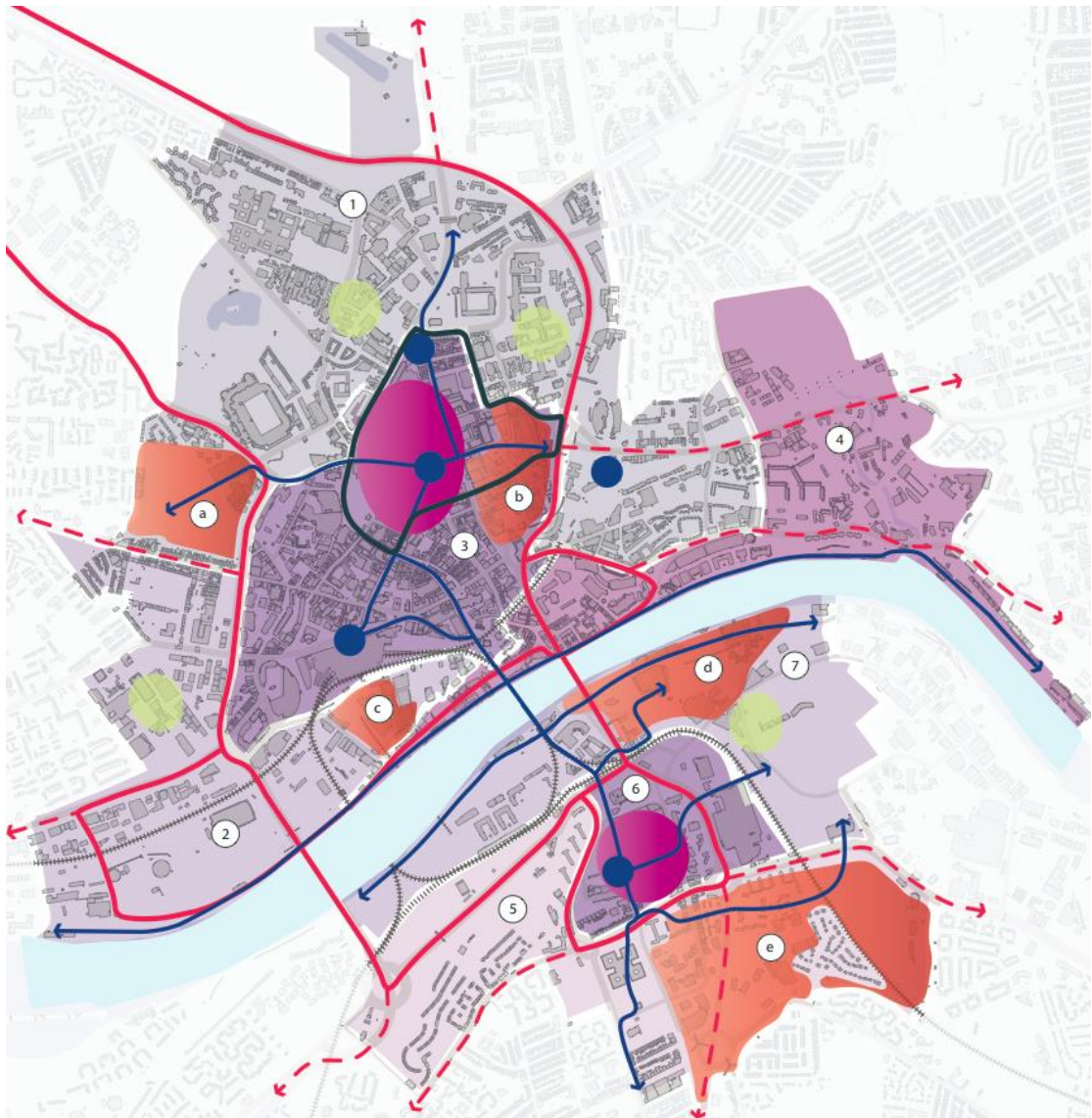
The opportunity to engage in TIF in the UK has emerged far more recently than in the US, where it is an established financing mechanism in most States. There is little doubt that the idea of TIF has diffused to the UK from the US, a process that has been encouraged by active policy learning (Ward, 2012a, 2012b).

Although transfer to the UK was initially limited, the prospect of using TIF to reinvigorate underperforming cities – which had previously been constrained by the shackles of a highly centralist system – has catalysed the adoption of enabling legislation since the global financial crisis, and has fuelled the ambitions of local authorities to adopt this financing mechanism. Indeed, both Newcastle City Council and Sheffield City Council (Section 5.2.3) have been explicitly granted the ability to engage in TIF through the City Deal process (Chapter 6), which has the potential to generate some invaluable investment in infrastructure.

The model of TIF pursued by Newcastle is fundamentally different to the model(s) used by the City of Chicago.

Firstly, Newcastle only has a single district, in contrast to the 167 currently operating in Chicago. In Newcastle, the TIF district covers four separate sites (Figure 5.3) and requires £187 million of infrastructure improvements.

Secondly, the funding sources and financing mechanisms vary substantially. Whereas the City of Chicago has the opportunity to borrow against future property tax, sales tax and utility tax, Newcastle is only able to borrow against future Non-Domestic Rates (NDRs or ‘business rates’). It is important to note that NDRs are set according to the ‘rateable value’ of commercial property (only), which is set by the Valuation Office Agency (VOA) according to the property’s *rental* value (see Section 6.2.1), whereas in Chicago, property tax is linked to *property* value across both residential and commercial uses.



Sub Area	Key Site	
① Civic	Ⓐ Science Central	● Primary Shopping Area
② Discovery	Ⓑ East Pilgrim Street	— Urban Core Distributor Route
③ Newcastle Central	Ⓒ Stephenson Quarter	⚡ Major Transport Routes
④ Quayside and Ouseburn	Ⓓ Gateshead Quays	— Bus Loop
⑤ Southern Gateway	Ⓔ The Exemplar Neighbourhood	➡ Primary Pedestrian Routes
⑥ Gateshead Central		● Universities and Colleges
⑦ Quays and Baltic		● Metro Station

Figure 5.3: NewcastleGateshead Urban Core Spatial Strategy and Accelerated Development Zone

Source: Gateshead Council and Newcastle City Council, 2013: 40.

Furthermore, the funding for TIF in the UK has been ‘allocated’ by HM Treasury. That is not to say that Newcastle City Council will receive a traditional grant, but, instead, that it has

been 'permitted' to borrow against £92 million of future NDR receipts (HM Government, 2012: 15-19). Crucially, TIF allows Newcastle City Council to retain 100% of future NDR income within the 25-year life of the district, whereas under conventional arrangements, local authorities only retain 50% of NDR income – the other 50% goes back to central government for redistribution according to need. As with the Chicago model, the funding source can be eventually traced back to the local tax base. However, Newcastle City Council is being explicitly *granted* permission to access a portion of their local tax base that would typically be retained by the centre. In effect, then, TIF in the UK could indeed be regarded as a 'hybrid' form of grant.

Like in Chicago, the model of TIF adopted by Newcastle City Council is underpinned by debt finance. In contrast to Chicago, however, Newcastle City Council is financing its interventions through public sector debt obtained from the Public Works Loan Board (PWLB), an arm of the UK Government's Debt Management Office. Typically, it is cheaper and more flexible for local authorities to borrow from the PWLB than from the markets (e.g. by issuing bonds):

[The PWLB] is a relatively cheap way of getting funds... the interest rates are particularly advantageous at this present point in time. The actual arrangement costs are almost negligible, in contrast to bonds which have quite a high legal costs associated with securing the money. PWLB is also hugely flexible in terms of the funding source... If I wanted to borrow something today, I would be on the phone tomorrow to the PWLB and we'd have it in our bank by Wednesday, at minimal transaction costs: just a few thousand pounds. It's instantaneous' (Author's interview, Director of Finance and Resources, metropolitan borough council, 2012).

The third, and perhaps most significant difference between TIF in Chicago and the model of TIF used by Newcastle is the level of risk assumed by the local authority. In Chicago, instruments such as 'TIF notes' and 'certificates of participation' enable the City to stimulate development whilst transferring as much risk as possible to the private developers and financiers. In contrast, the use of TIF by Newcastle City Council is an explicit attempt to take the development and construction risk away from the private sector in order to enhance viability and to deliver upfront investment in infrastructure and site preparation. In short, in Newcastle's TIFs, the local authority defrays the infrastructure and development costs upfront, whereas, in Chicago, these costs are defrayed by the private sector alongside the support of the municipality.

For example, Newcastle City Council struck a deal to purchase land in the Stephenson Quarter to help the developer service its bank loan, before providing a £15 million

mezzanine finance loan to complete the funding package for a hotel on the site. The Council has also taken a non-occupational lease on 35,000 square feet of office and car parking space and, thus, has ‘basically guaranteed the rent’ for the development.

The need for Newcastle City Council to intervene in the Stephenson Quarter is illustrative of the broader challenge facing city governments in underperforming city-regional economies when attempting to stimulate jobs and growth through infrastructure investment. Not only are public sector interventions more important in cities like Newcastle, due to the lack of available sources of private funding and financing, but also the risks inherent in such public interventions are greater than they would be in more buoyant economic geographies. This dichotomy between risk and reward is prevalent across financial markets and is exploited by financial institutions seeking a home for their yield-bearing capital. However, when viewed in the context of urban policymaking, this dichotomy poses some very difficult questions of governing institutions, a theme which is explored further in the Sheffield case below.

5.2.3 Unlocking development or undermining stability: managing the risks of tax increment financing in Sheffield

The key challenge for local authorities in the UK appears to be stimulating economic development through infrastructure investment without overexposing themselves to risk. When examining how TIF is practiced in Chicago, the City is able to maintain a relatively risk-free position. By contrast, in Newcastle, the local authority appears to have taken on a substantial degree of risk due to the lower levels of demand and the lack of alternative funding sources to defray the upfront cost of essential supporting infrastructure. Sheffield’s tax increment financing scheme, which is analysed in this section, exhibits similar characteristics to that of Newcastle’s. In particular, the lack of alternative sources of infrastructure funding and the uncertainty around demand for completed units in new developments, factors shaped by Sheffield’s economic geography and position within a highly centralised yet cost-cutting state, is placing pressure on Sheffield City Council to intervene in ways which are both costly and entail a substantial level of risk.

Like Newcastle City Council, Sheffield City Council has a single district each, which covers the New Development District (known as ‘Sevenstones’ or the ‘New Retail Quarter’) (Sheffield City Council, 2013). Whereas Newcastle City Council can undertake up to £92 million of debt-based investment premised on the future generation of TIF revenues,

Sheffield has only been permitted by Central Government to borrow against £33 million of future NDR receipts (HM Government, 2012: 15-19).

One of the underlying driver's behind Sheffield's New Development District is the Council's strategic objective to rebalance the city-region's economy by encouraging the agglomeration of economic activity in the city centre, and in particular the rejuvenation of a waning retail sector that had been badly damaged by the dominance of the creation of the out-of-town shopping centre, Meadowhall (Sheffield City Council, 2007). TIF presents the City Council with an opportunity to channel investment into core urban infrastructure and to create a new path for city-centre development. However, as noted above, in order for a TIF scheme to be successful, a certain level of rateable value growth (and associated tax base growth) is required. Insufficient tax base growth creates a funding gap and an obstacle to timely debt service. Within the context of Sheffield's hollowed out core, there are opportunities for growth in rateable values, but there is also a risk that costly enabling infrastructure will have little impact on market demand for city-centre retail and office development. Crucially, in the case of Sheffield, this risk falls on the shoulders of the public sector, and – more specifically, Sheffield City Council:

{[TIF] requires [Sheffield City Council] to borrow and incur costs in the period before the rate income [or tax increment] starts. It would potentially be heavy costs – several million pounds in financing costs, which when our budget is being cut to the extent that it is, can we afford it? Then there's a question about how much risk we take. Yes, there is a scheme and it may deliver business rates and we may be able to nail it down, but we have to take that risk on future business rates. The TIF tool works because it gives us an opportunity, but [the City Council] is still required to take that risk' (Author's interview, Director of Finance, metropolitan borough council, 2013).

Even though TIF appears to be more financialised in Chicago, because of the City of Chicago's use of bonds, notes, COPs and all the associated financial engineering and calculation, Sheffield City Council is actually assuming more risk by bringing the process of speculation in house. In addition to using future TIF receipts to create development viability, Sheffield City Council is taking further steps to underpin aspects of the New Retail Quarter development, which compounds its high-risk position.

For example, the Council is providing the developer of St Paul's Place with a purchase guarantee if the building cannot be let or sold:

'If [the developer] cannot let that building, we will take it off them at a bottom price. We are quite confident that they will get a better offer than that, so that we won't have

to take up the offer. If we do [purchase the building], then we get a bargain, but crucially, it puts a floor in their risk. So we are a pre-let of last resort. There is a risk to the Council but not much of a risk, because we get the asset, and we're pretty confident we would let it at some point... Of course, we also get the business rate from that building as well' (Author's interview, City Development Manager, metropolitan borough council, 2013).

It is tempting to concede that a greater degree of public sector risk taking is unavoidable in Sheffield in contrast to places like Chicago, due its smaller size, weaker economy, less buoyant property market, smaller tax base and the constraints to local financial innovation imposed by central government.

These are valid points. For instance, Sheffield's New Retail Quarter TIF scheme has been shrouded in uncertainty since Hammerson, the lead developer, walked away from the project in July 2013, citing the need to focus instead on schemes within its portfolio 'which offer the most attractive returns over the medium to long term' (Hammerson, 2013: 8). Indeed, the project is struggling to stack up despite extensive government support which includes the City Council's TIF, the purchase guarantee, additional government grants, and investment from Joint European Support for Sustainable Investment in City Areas (JESSICA) fund:

'[In addition to TIF and our purchase guarantee], there's grant going in there, and potentially our JESSICA fund... So it's taking in effect four public sector interventions just to get one building built' (Author's interview, Strategic Development and Funding Manager, metropolitan borough council, 2013).

Nevertheless, there are areas in Chicago, such as Bronzeville in the South Side of the city, which provide equally challenging development environments. Nevertheless, the City of Chicago, through issuing TIF *notes* (and COPs) rather than *bonds*, manages to maintain a relatively risk averse position. The city of Chicago also mitigates risk by:

1. Breaking up large pieces of land up into smaller TIF districts and funding them separately;
2. Using TIF revenue flexibly – revenue can be taken from a successful TIF district and channelled into an adjacent district that is a) struggling or b) in the early stages of and does not yet have access to a flow of tax increment;
3. Refinancing notes with bonds to reduce interest costs.

Without a similarly sophisticated risk analysis strategy to match their increasingly financialised investment strategies, local authorities in the UK could quickly find themselves on a slippery slope towards over-indebtedness and crisis in the same way that happened in Stockton, CA.

To illustrate hypothetically:

- If a purchase guarantee arrangement is made and a development is completed and but cannot be let, then the salient Council would be forced to purchase the building (which, by definition, is almost impossible to let or re-sell).
- The (empty) development would fail to generate any rental income.
- It would also fail to generate any incremental NDRs, and so the Council would struggle to service the TIF debt.
- The development would also cost money to maintain.
- Where a loan/mezzanine finance arrangement had been made with the developer (as in the Stephenson Quarter of Newcastle), it is possible that the developer might default on debt payments (particularly if they have a broader portfolio of failing developments).
- Indeed, it appears that if one aspect of the development fails, the city could suffer on a number of fronts.

The use of TIF by localities in the UK and US is indicative of the financialisation capital investment. There are, however, key geographical differences in terms of how TIF is practiced between different places. At first sight, TIF appears to be more financialised in Chicago because it used more frequently, it incorporates more financial engineering, and it is more closely linked with the capital markets and the financial market apparatus. But, on closer inspection, the use of financial engineering and sophisticated risk management techniques consistently enables the City of Chicago to effectively monitor and transfer risk. Whilst this does not warrant a call for cities to blindly pursue financial engineering or to maximise the complexity of their financing arrangements (such an approach placed Stockton at the mercy of the subprime crisis), it serves to illustrate that financialisation is not an overpowering behemoth that wreaks destruction wherever it goes. Instead, financialisation can be regarded as a process that, when embraced using a refined and considered approach, can be managed and moulded to facilitate sustainable programmes of capital investment and urban development.

5.3 Concluding remarks: the financialisation of capital investment

The ways in which urban infrastructure projects are being funded and financed is undergoing a process of transformation – described here as the process of financialisation. Indeed, the extension and penetration of the process of financialisation appears to be an underlying

driver of the emergence of a series of investment practices which are increasingly dependent on financial technologies, markets and intermediaries, which prioritise profits and returns on investment, and which require public sector indebtedness and risk taking. That being so, this chapter has also emphasised that financialisation is highly context specific and uneven, and that attempting to understand this process requires a fine-grained and nuanced approach.

In the US, in order to invest in infrastructure, cities must navigate the capital markets and find the most favourable credit ratings and interest rates. Buffalo provides an example of the challenges of this system for a city government operating in the context of a peripheral and underperforming economy. Not only does the City of Buffalo have to contend with the burdens of indebtedness and market regulation, but, crucially, it is limited in its ability to securitise future value increases due to the low levels of economic growth and asset value appreciation in the city. Most importantly, the Buffalo example provides evidence that the financialisation of infrastructure investment is both partial and uneven.

In contrast to Buffalo, Manchester, which has historically been more dependent on redistributive funding mechanisms such as grants from the UK's central government, is pursuing an investment strategy premised on future growth and value creation. Manchester's urban development strategy prioritises the recycling of capital through infrastructure and the built environment, and positions infrastructure as a vehicle for capital accumulation.

A similar approach was also refined by the City of Stockton and the Stockton Redevelopment Agency in the early 2000s, as the City sought to fund and finance infrastructure through complex TIF and lease-out-lease-back arrangements in which the infrastructure would ultimately pay for itself. Whereas the Manchester example exhibits the ability of financialised investment practices to stimulate the acceleration of capital circulation and create productive outcomes, the Stockton example suggests that such an approach is also prone to overaccumulation and crisis.

Chicago's relatively buoyant economy has enabled it to roll out financialised models of funding and financing infrastructure across the city. The securitisation mechanism at the heart of TIF, for example, enables the City of Chicago to capture the future value of its urban landscape and use this value to make initial investments in infrastructure. Whilst this model is also pursued by governments in Newcastle and Sheffield, the Chicago case demonstrates a more sophisticated engagement with financialisation and a more refined approach to risk management. Indeed, the comparative analysis between these cities suggests – in contrast to the majority of literature on financialisation – that financialisation is not an overpowering and all-destroying behemoth, but rather it is a process that, when engaged with in an

intelligent and strategic way, can support productive economic development. Such an analysis represents a significant and empirically-informed contribution the financialisation literature.

Chapter 6: Fiscal stress, infrastructure investment and reterritorialisation

Building on the arguments presented in Chapter 5, this chapter argues that financialised investment practices are emerging in conditions of fiscal stress, and that, in turn, the cocktail of fiscal stress and financialisation is fuelling a process of urban reterritorialisation.

In spite of the harsh realities of budgetary pressures, city governments have been able to generate capital for infrastructure investment by adopting financialised investment practices. Not only has financialisation offered governing entities the prospect of job creation and economic revival, but it has also created new the opportunities for investing in infrastructure that could potentially drag a city out of fiscal crisis.

However, fiscally stressed governments face a number of challenges when attempting to use financialised investment practices. For example, they may be restricted from borrowing due to limits imposed by higher levels of government, or limited in their ability to generate new sources of revenue, such as taxation. Furthermore, in a neoliberal political economy, they face fierce competition for resources and potential future revenues from other cities and municipalities as well as from other governments at the regional (e.g. State) and national levels. In order to overcome these challenges, this chapter contends, city governments have undergone a process of adaptation, evolution and reterritorialisation.

Importantly, just as the fiscal challenges and infrastructure investment requirements are different across the case study cities, the process of reterritorialisation also appears to be heterogeneous.

In the US, in the context of a diverse yet more devolved system of government, the pressures to generate revenues and expand tax bases through financialised infrastructure investments are causing an intensification in the levels of inter-urban and inter-jurisdictional and *systemic* competition. Indeed, sections 6.1.1, 6.1.2 and 6.1.3 illustrate how financialised investment practices facilitate and encourage municipalities in the US to adopt infrastructure investment strategies that are premised on generating fiscal benefits and financial rewards (referred to as ‘the *fiscalisation* of urban development’), and that this process of fiscalisation is at the heart of a wave of speculative urbanism and reterritorialisation.

In the context of a highly centralised state in the UK, the emergence of financialised investment practices and the suggestion that they are best controlled at the local level is driving a process of change in centre-local relations. Section 6.2 argues that whilst local

governments in the UK are pursuing a devolved set of powers that will enable them to utilise financialised investment practices to invest in infrastructure, devolution also threatens the integrity of the UK's redistributive system of taxation, putting cities with an underperforming tax base at risk of further fiscal stress and economic stagnation. In response to the challenges of fiscal stress and the contradictory nature of devolution, the city-region is appearing to be emerging as a challenge to the centre-local relations that have traditionally shaped the UK's capital investment landscape.

6.1 Urban governance and the financialisation of infrastructure investment in the US

The Cities of Chicago, Stockton and Buffalo have all recently undergone, or are currently undergoing, severe periods of fiscal stress and crisis. Not only has investment in infrastructure been especially challenging as a result, but it has also become increasingly important for it to generate a financial return or be fiscally beneficial. In a system of government where fiscal independence is essential, the fierce competition for fiscal returns from infrastructure is causing some cities to evolve and adapt while forcing others into financial ruin.

6.1.1 Fiscal stress, the fiscalisation of urban development and inter-jurisdictional competition in Chicago, IL

A key feature of financialised investment practices is the need to generate return on investment, which is required for servicing debt and ultimately defraying the cost of the infrastructure at hand. Such a return, whether in the form of commercial revenues or taxation receipts, can hugely influence the ability of a municipality to make further capital investments, expand and improve its programme of urban development, and become more powerful in relation to other governmental entities.

It is not uncommon for municipalities and their agencies in the US to justify large-scale public expenditure on infrastructure by citing future benefits to the city in the form of jobs and economic growth. But, in reality, their motivation is far more complex. In Chicago, for example, in addition to enhancing the socio-economic well-being of its citizens, it is clear that the city government (the City of Chicago) derives fiscal benefits and financial rewards by pursuing a capital-intensive programme of urban development:

‘Municipalities, in their endeavour to promote economic development, are very much concerned about what the economic development enterprise does to provide a resource base to the city so that it can continue to provide services... If an economic development initiative enhances employment, it also needs to make a [financial] return’ (Author’s interview, Dean, university department specialising in public administration, 2012).

The relative importance of generating financial returns from infrastructure investment varies depending on the fiscal health of the government at hand. For example, a more fiscally sound municipality will be less dependent on receiving additional revenues from infrastructure, whereas additional receipts from capital investments might be absolutely essential for a fiscally stressed municipality that is struggling to balance its budget. The City of Chicago could be considered as the latter.

According to the Civic Federation (2013: 9-23), there are five ‘critical financial issues’ facing the City of Chicago, all of which signal a ‘pending fiscal crisis’:

1. The City is at risk of being unable to fund its retirement systems into the future. In 2012, the City’s total unfunded liabilities were \$19.8 billion, and have increased by 265% since 2002.
2. The City’s Corporate Fund deficit is anticipated to reach \$1 billion by 2015, growing to \$1.2 billion in 2016. The widening deficit is largely attributable to the increase in statutory pension contributions that the City will have to make.
3. The persistent gap between revenues and annual expenditures have been ignored by the City and temporarily patched up through the use of one-time revenue sources.
4. The City’s total long-term obligations continue to increase. Between 2008 and 2012 they increased by 49% (\$5.4 billion).
5. The City is suffering from over-indebtedness. Its bonded debt burden rose by 66% (\$3.1 billion) between 2003 and 2012.

It is possible that revenues generated from infrastructure and other capital investments could provide a solution – if only partial – to the City’s immanent crisis. For instance, the City of Chicago has proposed to allocate \$30.3 million in ‘TIF surplus and recapture’ in order to close a budget deficit of \$339 million in financial year 2014 (ibid.: 4). Indeed, through practices like TIF, which create and capture of new sources of revenue, infrastructure investment can begin to be mobilised as a strategy for fiscal recovery. In fiscally stressed cities like Chicago, the potential for mechanisms like TIF to deliver fiscal rewards arguably catalyses the search for new and innovative ways of investing in infrastructure, placing a premium on financialised development.

In sum, given the City of Chicago's persistent Corporate Fund deficit, its growing long-term obligations and bonded debt burden, and given its ability to access and implement mechanisms like TIF, it appears that the City is incentivised to tailor its capital investment strategy towards programmes that would explicitly aim to generate financial returns. This strategic prioritisation of financial returns through capital investment can be described as the *fiscalisation* of urban development.

It is important to emphasise that, in the case of Chicago, the fiscalisation of urban development is underpinned and made possible by the emergence of financialised investment practices. For example, through the use of technologies like securitisation, the City of Chicago can capture the future proceeds of an investment and use these proceeds to defray the initial upfront costs of infrastructure and development. Furthermore, because financialised investment practices enable future revenue streams to be securitised, the City does not have to be fiscally healthy to engage in capital investment. On the contrary, as the City of Chicago endures a period of fiscal stress, financialised investment practices provide a rare opportunity to invest in infrastructure. Rather than being forced to roll back capital investment programmes in the face of structural deficit, spiralling obligations, and declining revenues, therefore, the City can issue debt against anticipated future growth in order to raise investment capital for use in revenue-generating projects. In addition to capturing sufficient revenue to meet the upfront costs of an infrastructure project, some infrastructure schemes might generate *surplus* capital, which either could be recycled back into further infrastructure projects or, critically, which could be used to fix budgetary shortfalls and stave off fiscal crisis. In short, *financialised investment practices* enable the process of *fiscalisation* to become a reality in Chicago.

The fiscalisation of urban development, however, is a classic spatio-temporal fix in that it is riddled with contradictions. For example, it encourages governments to adopt a debt-based regime of capital investment, creates a mountain of debt that relies on uncertain future revenue streams for repayment, and, renders cities increasingly vulnerable to crisis (see the Stockton example below). The contradictory nature of fiscalisation also places a strain on the territorial integrity of a city, and creates an environment of intense inter-jurisdictional competition.

Financialised investment practices help transform redundant and tax-poor parts of the urban environment into shovel-ready sites that, crucially, need to attract commercial development and inward investment if they are to generate sufficient returns on investment to both fund the scheme and create a pool of surplus capital. Out-competing rival neighbouring territories

for inward investment is essential for servicing the debt used to finance an initial investment and to generate surplus revenues to feed back into a municipality's budget. As a result, the combination of financialised capital investment and the related fiscalisation of urban development have arguably served to intensify inter-urban and inter-jurisdictional competition.

When considering the impact of fiscalisation on inter-jurisdictional competition in Chicago, it is essential to take into account Chicago's highly fragmented system of governance (see Merk, 2014). Indeed, the wider Chicago metropolitan region is governed by approximately 1,700 governmental entities (WBC, 2012: 33), a product of a complex evolution in intergovernmental and territorial relations (such as the process of suburbanisation, the emergence of unincorporated settlements around the urban fringe, and the evolution of the 'home rule' movement (see Foster, 1997)). Specifically, Merk (2014: 6) points to 'historic city-suburban hostility' (also see Lindstrom, 2010) and to the limits on municipal indebtedness and taxation imposed by the State of Illinois as key explanations for Chicago's extensive governmental fragmentation (these contentions will be analysed in more detail in the case of Buffalo in 6.1.2).

Although the fragmented system of urban governance in Chicago is bound to create competition amongst municipalities for creating the most favourable package of taxes and public goods in order to attract businesses and residents (Tiebout, 1956), governmental fragmentation is not the only driver of inter-jurisdictional competition across the metropolitan region. Indeed, in the case of Chicago, the fiscalisation of urban development – and the financialisation of capital investment that enables it – appears to have intensified the sense of competitiveness between governmental entities.

Crucially, beyond just competing for businesses and residents, governmental entities in Chicago are competing for tax dollars:

'Every municipality wants the biggest [supermarket] around... [and] all that sales tax'
(Author's interview Chief of Staff, regional planning agency, 2012).

In such a hyper-competitive fiscal environment, it is arguable that Chicago's fragmented system of governance becomes *reinforced*, paving the way for an even stronger logic of fiscalisation and competition. Infrastructure investment, facilitated by financialised investment practices, has been a key driver of this process.

6.1.2 Fiscal federalism, circumvention and the governance of capital investment in Buffalo, NY

Not only do financialised investment practices cause the fragmentation of governance *within* American cities, but they also create tensions *between* city and State governments. The cycle of indebtedness and revenue generation fuelled by financialised investment practices creates an incentive across multiple levels of government to increase the volumes of debt and to increase tax revenues (either by expanding the tax base or by raising tax rates) in order to support new issuances.

Cities are explicitly restricted by State legislation from increasing tax rates and increasing their level of indebtedness beyond certain specified limits (Chapter 4). Indeed, States have the power to impose fiscal stress upon cities and to limit their ability to raise funds to invest in infrastructure and urban development, which, in turn, constrains in their ability to stimulate job creation and economic growth.

By creating new ‘special-purpose’ governments, however, municipalities can evade or *circumvent* State legislation (c.f. Sbragia, 1996). Special-purpose entities can deliver services or finance capital improvements by levying new taxes or assessments (which are typically not regulated by the same State legislations that limit City taxation), and by issuing debt that remains off the City’s balance sheet. The transferal of the City’s revenue-raising and debt-service responsibilities to special districts, therefore, alleviates pressure on the City’s budget, and serves as a spatio-temporal fix to fiscal stress. Crucially, the *circumvention* of State-imposed constraints can also generate the required conditions for engaging in financialised investment practices and therefore respond to the needs of urban development and economic growth. An incentive for governing entities to pursue the fragmentation of urban governance, and to drive the process of reterritorialisation, is thereby created.

In Buffalo, NY, the existence of competition between State and local government has become particularly apparent since an initial period of fiscal stress in the early 2000s. Buffalo’s fiscal crisis came after over half a century of deindustrialisation, decline and suburbanisation (Chapter 4), processes which hollowed-out Buffalo’s urban core and devastated the City’s tax base.

Buffalo’s shrinking tax base was problematic because the City could neither afford to make new capital investments, nor maintain existing infrastructures, nor fund the services that it had committed to historically when underpinned by a far stronger tax base. In order to continue funding these things, and avoid fiscal crisis, the City would need to issue more debt

or raise taxes, or both. But, State restrictions prevented the City from taking such steps, sending the City spiralling towards fiscal crisis:

[In 2003], the real problem for Buffalo was that it was getting to its statutory limit for raising taxes and was also reaching its bonding limit. Those bonding and taxing limits are set by the State. [The City of Buffalo] couldn't go into the bond market, and couldn't raise taxes' (Author's interview, Director, corporation of the State of New York, 2013).

The State declined to come to Buffalo's aid, rendering fiscal crisis unavoidable, which in turn led the State of New York to impose a fiscal control board – the Buffalo Fiscal Stability Authority (BFSA) – upon the City.

The BFSA imposed sanctions on the level of debt the city could issue, limiting debt issuances to \$20 million per year and forcing all issuances to be undertaken by the BFSA itself. Tax revenues were also channelled through the BFSA in order to ensure accurate and timely repayment of debt obligations.

By imposing the BFSA in 2003, rather than allowing further taxation or indebtedness, the State of New York was arguably seeking to reinforce the hard budget constraints that maintain the fiscal discipline of its cities, as well as to promote competitiveness within the State's system of taxation and market-preserving fiscal federalism.

Although the BFSA is still in place, it now only functions in an advisory capacity. Nevertheless, the City of Buffalo is once again at risk of enduring significant fiscal stress, with concerns growing about its weakening general fund balance and tax base (see 3.2.4.3).

Indeed, elements of elements of (vertical) competition between the City and the State for tax income and fiscal manoeuvrability are beginning to resurface alongside an intensification in the fiscalisation of urban development and inter-jurisdictional (horizontal) competition between municipalities in the Buffalo city-region.

Importantly, the City of Buffalo is in a weaker position to compete than many of its surrounding suburbs and towns. According to the Amherst Industrial Development Agency (AIDA), for instance, the town of Amherst has grown from accommodating 37,000 jobs in 1980 to over 104,000 jobs today, which equates to approximately 80% of job growth within the entire city-region (AIDA, 2014). Indeed, the economic and fiscal strength of suburbs like Amherst put Buffalo at further risk of depopulation, tax base degradation and long-term fiscal instability.

For a number of reasons, though, Buffalo's current capital investment and service delivery needs are still being met, in spite of the looming fiscal troubles at City Hall. Firstly, since the

implementation of the BFSAs, the City of Buffalo has developed some headroom in its budget and now operates at approximately 60% of its bonding capacity, giving it some flexibility to make new investments in infrastructure and services. Secondly, Buffalo’s infrastructure is supported by a wide range of special district entities, which can operate, maintain and invest in key urban infrastructure, keeping debt off the City’s balance sheet and relieving pressure from its debt and taxation limits.

Indeed, there has been a proliferation of special districts in Erie County and the Buffalo city-region in recent years. In 2004, According to the Office of the New York State Comptroller (2007), there were a total of 939 special districts within Erie County. This has since risen to 1,044 in 2014 (Poloncarz, 2014). Notably, as Table 6.1 shows, a large proportion of these districts are dedicated to infrastructure such as drainage, lighting, sewer and water.

Table 6.1: Special districts in Erie County by type, 2004

Drainage	Fire Protection	Lighting	Park	Refuse and Garbage	Sewer	Water	Other	Total Town Special Districts
144	43	427	3	23	119	143	37	939

Source: Adapted from Office of the New York State Comptroller, 2007.

Not only do special districts play a crucial role in underpinning infrastructure delivery in Erie County and the Buffalo city-region, but they also generate a substantial portion of total municipal revenue (Table 6.2) and, more specifically, property tax income (Table 6.3).

Table 6.2: Special district revenues as a percentage of town revenues in Erie County, 2004

Households	Total Revenues		Total Revenues per Household		Special District Revenues as a Percentage of Town Revenues
	Town wide	Special Districts	Town wide	Special Districts	
242,512	\$443,956,795	\$141,973,308	\$1,831	\$585	32.0%

Source: Adapted from Office of the New York State Comptroller, 2007.

Table 6.3: Average property taxes and assessments per household for town wide vs. special district wide services in Erie County, 2004

Households	Property Taxes and Assessments		Property Taxes and Assessments per Household		Special District Property Taxes and Assessments as a Percent of Town Total
	Town wide	Special Districts	Town wide	Special Districts	
242,512	\$244,737,778	\$102,184,549	\$1,009	\$421	41.80%

Source: Adapted from Office of the New York State Comptroller, 2007.

As an illustration of the importance of special districts as a platform for infrastructure investment in Buffalo, the Buffalo Sewer Authority (BSA) plans to make \$20,505,000 in capital investments between 2012-13 and 2017-18 (BSA, 2013: 3). In order to fund capital improvements, such as treatment plant rehabilitation projects, the installation of storm sewers, and the maintenance of the current sewer network, the BSA can draw on reserve funds, issue bonds or use the proceeds of lease sales (ibid.). Special districts like the BSA help to maintain levels of infrastructure investment in Buffalo while taking the financing challenges away from the City of Buffalo and enabling the City to stay within its taxation and debt allowances. In 2012-13, for instance, the BSA's 'annual sewer rent' equated to an additional property tax levy of \$1.7 per \$1,000 of the assessed valuation of properties within Buffalo (ibid: 17), thus making a significant addition to the total property tax take that can be used for capital investment in Buffalo. Crucially, then, by using special districts to finance infrastructure through debt issuances and to tap into additional sources of taxation, the City of Buffalo is able to *circumvent* State legislation and maintain an acceptable level of capital investment without putting itself at risk of further fiscal stress.

Although the State of New York permits district creation for a limited range of specified purposes (New York Code, 12, §190), the State is beginning to recognise the decreasing control it has over issues such as municipal taxation and indebtedness as a result of the proliferation of special districts and the circumvention of its legislation. In early 2014, as part

of a scheme to freeze and cut property taxes across the State, the Governor of New York State, Andrew Cuomo, proposed to limit special district creation (Precious, 2014).

Governor Cuomo's intended tax reforms can be regarded as a State response to circumvention. Indeed, the reforms demonstrate that changes in urban governance do not only reflect local capital investment requirements and the ambitions of local governments to compete fiscally, but also are part of a process of urban reterritorialisation influenced by governments at multiple spatial scales.

6.1.3 From fiscalisation to bankruptcy: financing infrastructure and the reterritorialisation of Stockton, CA

In Stockton, California, changes in public finance and infrastructure investment have had – and continue to have – direct and profound implications for the city's governance and territoriality. Indeed, both fiscalisation and financialisation combined in Stockton to create a form of speculative urbanism that caused the municipal government to plummet into fiscal crisis and bankruptcy. This section draws on the case of Stockton to illustrate that financialised investment practices support the process of fiscalisation, and provides evidence to support the argument that the intensification of both financialisation and fiscalisation creates a powerful sense of competition – horizontally between jurisdictions for tax base expansion, vertically between different levels of government, and systemically between capital market participants – which, in turn, fuels a highly complex, contested and volatile process of reterritorialisation.

6.1.3.1 Proposition 13: the origins of fiscalisation and the intensification of inter-urban competition in California

In 1978, the State of California passed an amendment called the 'People's Initiative to Limit Property Taxation', otherwise known as Proposition 13 ('Prop 13'). By cutting property taxes down to 1% of the property's sale price, and by limiting the annual growth of property taxes to 2%, Prop 13 drastically reduced and then capped perhaps the most important revenue raising tool for municipalities in the State of California (although property tax is still the largest source of tax revenue for local governments in California (Figure 6.1)).

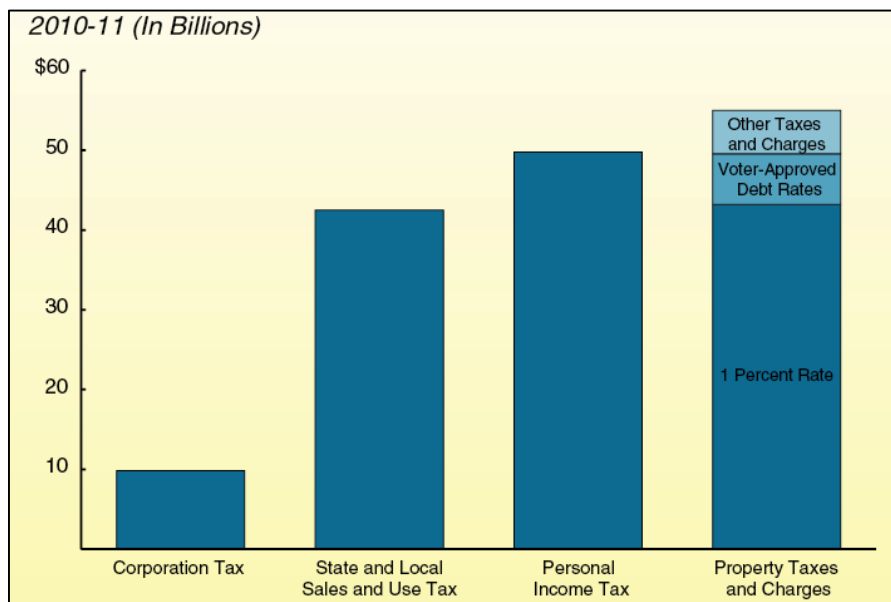


Figure 6.1: Major sources of revenue for State and local governments in California

Source: LAO, 2012a: 17.

To be clear, although Prop 13 was a State initiative, Californian property tax ‘remains within the county in which it is collected and is used exclusively by local governments’ (LAO, 2012a: 5). The share of property tax within any particular county is then distributed between the county government, the municipalities, the school districts and any other eligible districts within the county (Chapman, 1998). The motivation for Prop 13 was to create a more tax-friendly environment for residents and businesses in California and, thus, to enhance California’s competitiveness in relation to other States.

Most importantly, by reducing and limiting a large portion of municipal income, Prop 13 immediately put pressure on the financial condition of municipalities. Indeed, Prop 13 cut the property tax revenues of municipalities in California by over \$6 billion (Chapman, 1998: 3).

The policy responses available to municipalities in light of this reduction in revenues were limited. Municipalities could either streamline their services and consolidate their workforce – a huge political challenge – or prioritise interventions geared towards tax base expansion and revenue generation. In short, municipalities were forced to search for ways to generate fiscal and financial rewards from capital investments. This *fiscalisation* of urban development in California played out in a number of different ways.

Firstly, large urban municipalities were incentivised to expand through the annexation of surrounding territories. Because Prop 13 starved municipal governments of property tax

revenues, municipalities were encouraged to annex more territory and, with it, new sources of property tax. The legacy of Prop 13, then, was to create a fiscal incentive for reterritorialisation. This legacy of fiscalisation has endured: between 2005 and 2010, for instance, 2446.17 acres of land under the jurisdiction of San Joaquin County was incorporated into the City of Stockton, including Northbrook-Elkhorn, Crystal Bay and Sanctuary (SJLAF, 2011: 48).

Secondly, by capping property tax, Prop 13 caused municipalities to become more dependent on other sources of income, most notably sales tax. As such, municipalities sought to incentivise developments that would attract inward investment and produce high levels of sales tax, and so devised strategies to poach tax-generating businesses from other municipalities. Prop 13's focus on limiting municipal property tax receipts induced a specific form of fiscalisation in which inter-jurisdictional competition intensified as cities increasingly pursued retail-led development strategies and related programmes of capital investment.

Thirdly, Prop 13 triggered the re-birth of 'redevelopment' (see Chapter 5). Although Redevelopment Agencies had been in existence since 1945, the advent of Prop 13 provided an added incentive to take advantage of their TIF capabilities. Indeed, it was the ability of the Redevelopment Agencies to engage in financialised investment practices that underpinned the emergent process of fiscalisation and caused a transformation in 'the business of urban governance' in Californian cities like Stockton (Davidson and Ward, 2014: 89). Because TIF channelled 100% of incremental property taxes back to the Redevelopment Agency, higher levels of redevelopment resulted in a reduced amount of property tax leakage to other governmental districts (such as school districts and other municipalities within the county) and, as such, enabled a greater proportion of total property tax take to be retained within the city's limits. Furthermore, the financialised characteristics of TIF enabled future tax receipts to be accessed in advance of their creation, thus mitigating the fiscal pressures and constraints on capital investment imposed by Prop 13.

As a powerful incentive to unlock retail-led commercial development through speculative investments in infrastructure, Prop 13 set the scene for an intensification in competition between jurisdictions for tax base expansion, a contested process of urban reterritorialisation, and future fiscal disaster.

6.1.3.2 From subprime crisis to bankruptcy: questioning the resilience of a fiscal regime of accumulation

Prior to the onset of the subprime crisis in 2007, Stockton had implemented a capital investment programme that included multiple infrastructure and development projects financed using a complex series of hybrid TIF and 'lease-out-lease-back' arrangements between the City and other public agencies (see Chapter 5). In turn, these financialised arrangements underpinned an urban development strategy focused on enhancing the City of Stockton's relative fiscal capacity in relation to other cities and municipalities. As the subprime crisis and the ensuing global financial crisis unravelled, however, it became clear that City's efforts to maximise its competitiveness and enhance its revenue generation capabilities made it vulnerable to collapse and ultimately forced it to declare bankruptcy:

'The City of Stockton, like many other cities, also embarked on an aggressive growth programme of urban renewal... They mistakenly assumed that the bubble would continue to grow forever and never burst, but of course it did, because it always does. If you layer on top of that the incredibly generous post-retirement health benefits and pre-retirement benefits that the City gave away and the post-retirement pension benefits through the CalPERS system, you just have a system that sooner or later is going to implode' (Author's interview, Partner, international law firm, 2013).

During the subprime crisis, the combination of plummeting house prices and growing rates of unemployment (see Chapter 4) resulted in a swath of home foreclosures in Stockton. In 2011, 5.4% of Stockton's housing units had entered foreclosure, the second highest rate in the US (Centre for Responsible Lending, 2012: 1). For the City of Stockton, the housing crisis quickly became a fiscal crisis. The City's tax base, which had been underpinned rapid growth in property values and sales volumes, collapsed:

'People were walking away from their homes because they could no longer afford to live there. So things such as property tax water bills, sewer bills and utility bills were not being paid. Additionally, the City is generating no sales tax revenues, because people aren't shopping in the area where they were once living' (Author's interview, Partner, local law firm, 2013).

Figure 6.2 illustrates the drastic impact of the crisis on the City's property, sales and use tax receipts. In particular, the drop in the more volatile sales and use tax income from \$52,004,000 in 2005-6 to \$34,613,363 in 2009-10 placed an enormous pressure on Stockton's finances.

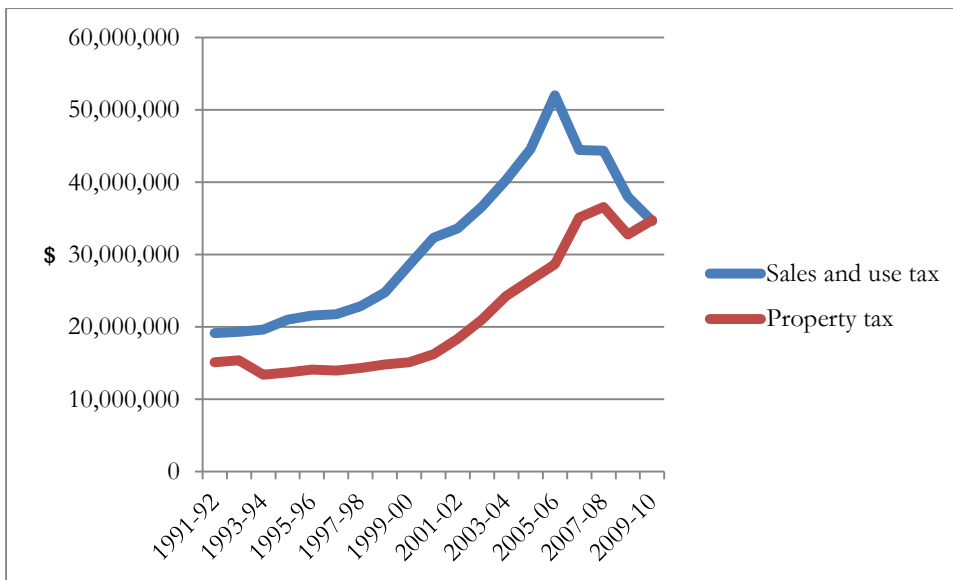


Figure 6.2: City of Stockton property tax and sales and use tax receipts 1991-2010

Source: Adapted from California State Controller, 2012.

Although the drop in revenues was particularly severe in Stockton, the ‘foreclosure crisis’ caused great damage to a vast range of cities across California and the wider United States (Crump et al., 2008). Yet, in the aftermath of the crisis, the level of fiscal stress in Stockton seemed to be disproportionately high. Indeed, there were three key factors that put an additional strain on Stockton’s budget and amplified the effects of the foreclosure crisis.

First, prior to the crisis, the City of Stockton had undertaken a series of debt issuances in order to undertake capital improvements (see Chapter 5) and to enable it to meet its pension liabilities (Table 6.4). Crucially, with the exception of the 2007 pension obligation bonds, Stockton’s debt pile was built upon the desire to enhance the City’s competitiveness through revenue-generating developments – made possible by the speculative practices of redevelopment. Unfortunately for Stockton, as Davidson and Ward (2014: 85) argue with reference to a range of crisis-stricken cities across California, it is now evident that ‘the speculative component of this neo-liberalising of cities left many of them horribly exposed to the vagaries of the financial and housing markets’. The key point is that Stockton’s crisis is not due to the failure of any one investment or individual development project – although the Stockton Event Center and Parking schemes were clearly problematic in their own right (see Section 5.1.3). Instead, Stockton had developed an unsustainable level of debt which, critically, could only be repaid if the future unfolded as the City and its redevelopment arm had predicted and hoped. Ultimately, the widespread dependence on the monetisation of

hopes and aspirations rendered the City of Stockton extremely vulnerable to the falls in revenue that it experienced during the foreclosure crisis.

Table 6.4: Debt issuances by the City of Stockton, 2003-2009

Year of Issuance	Type of Issuance	Purpose of debt issuance/project	Amount (USD)
2003	Certificates of Participation	Hotel Stockton, Mercy Housing, Fremont Park	\$13 million
2004	Redevelopment Agency Revenue Bonds (Arena Bonds)	Stockton Events Center	\$46 million
2004	Lease Revenue Bonds (Parking Bonds)	Parking Garages	\$32 million
2001 (2006)	Lease Revenue Bonds	Essential Services Building ('Stewart/Eberhardt Building')	\$13.5 million
2006	Dept. of Boating & Waterways loan	Marina improvements	\$11 million
2007	Lease Revenue Bonds	New City Hall	\$40 million
2007	Pension Obligation Bonds	Unfunded pension liability	\$125 million
2009	Lease Revenue Bonds	Fire station, police communications center, parks and street improvements.	\$35 million

Source: Adapted from City of Stockton, 2012a: 5-9.

Second, in the years preceding the housing crash, the City of Stockton expanded its workforce and provided employees with attractive compensation packages, which included

an automatic salary escalator, and also provided financial rewards for long-term service and a range of special achievements (City of Stockton, 2012a). In 2011-12, 'employee services' (salaries and benefits) accounted for 76% of Stockton's General Fund budget (Evans et al., 2012: 5). Although the City realised that these arrangements were unsustainable, causing it to declare fiscal emergencies in 2010 and 2011, its attempts to make reforms were contested by key labour unions (Stockton Police Officer Association and Stockton City Employees Association), preventing the City from closing its budget deficit, which in 2012/13 amounted to \$29.5 million.

Third, prior to 2007, the City of Stockton agreed to a string of measures that significantly increased its pension obligations and retiree health insurance commitments (City of Stockton, 2012a). A sudden fall in the value of the City's assets during the subprime crisis created a gap between the expected revenues derived from the city's asset base and their actual value. The emergence of this gap meant that Stockton developed a large unfunded pension liability, which, in 2012, amounted to \$417 million (City of Stockton, 2012a: 5, 37).

It is difficult to single out any one factor that caused fiscal crisis in Stockton. The City's downward spiral towards its bankruptcy filing in June 2012 was fuelled by the confluence of multiple factors including a high rate of unemployment, a foreclosure crisis, a reduction in receipts from property, sales and utility taxes, and an unsustainable package of benefits for City employees and retirees. The mountain of debt that the City had built up, however, was perhaps the most telling factor. At its heart, the City's project of capital investment, which necessitated its large-scale debt issuances, had the objective of enhancing the competitiveness of Stockton in relation to other cities. Underpinning this objective was the process of fiscalisation: the evolution of development strategies aiming to maximise tax base expansion and financial reward. In turn, however, such a fiscalised development strategy was only made possible by the use of financialised financing mechanisms (such as redevelopment) that pertained to capture the predicted future value of the City's investments and bring this value forward in time. Ultimately, these processes unfolded so that at the point of bankruptcy, the City of Stockton was facing a wall of debt underpinned by nothing more than hope and aspiration.

6.1.3.3 The dissolution of California's Redevelopment Agencies: a spatio-temporal fix and a new round of fiscalisation

Stockton, along with other Californian cities, is currently facing a direct challenge from the State of California that compounds its fiscal woes, and that, going forward, severely inhibits its ability to invest in infrastructure and promote urban development.

On the 29th June of 2011, in response to the growing fiscal crisis at the State of California, Jerry Brown, the Governor of the State of California, signed Assembly Bill 26 of the First Extraordinary Session of 2011 ('A.B. 26'), which 'froze and dissolved' all of California's Redevelopment Agencies (Maroon, 2013: 462). The purpose of A.B. 26 was to prevent the State haemorrhaging cash to Californian school districts, whose tax dollars were being taken by Redevelopment Agencies through the process of TIF.

To elaborate, in California, Proposition 98 ('Prop 98') entitles school districts in California to a share of property tax receipts. It also provides that the State will fill the gap when those property tax revenues are insufficient to meet the schools funding needs. For example, if a school district has a budget of \$100 million, and the school district retains \$20 million in property taxes, it will receive \$80 million from the State.

Importantly, the acceleration in the rate of creation of redevelopment districts since Prop 13 meant that an increasing proportion of the growing property tax base of cities was being syphoned off by Redevelopment Agencies. Engaging in TIF entitled the Redevelopment Agencies to 100 percent of incremental property taxes within a redevelopment district. As such, school districts had access to a lower proportion of the total tax take, which ultimately created a financial burden for the State:

'By 2009-10, [Redevelopment Agencies] were receiving over \$5 billion in property taxes annually – a redirection of 12 percent of property tax revenues from general purpose local government use for redevelopment purposes. The State's costs to backfill [school] districts for the property taxes redirected to redevelopment exceeded \$2 billion annually' (LAO, 2012b: 8).

In short, because redevelopment channelled property taxes away from school districts, the State of California appeared to be footing the bill for the infrastructure and development financed by the Redevelopment Agencies – even though the redevelopment projects themselves were funded by new incremental property taxes.

Through the dissolution of the Redevelopment Agencies, cities in California are undergoing a process of urban reterritorialisation. According to A.B. 26, each Redevelopment Agency

has been replaced by a successor agency in order to administrate the unwinding process. In Stockton, the City of Stockton has adopted this role. Each successor agency is allowed to continue to use incremental property taxes (in the Redevelopment Property Tax Trust Fund) to service redevelopment debts pre-dating the 1st January 2011. However, net funds from existing redevelopment assets and surplus redevelopment revenues are not inherited as property by the successor agency and must instead be redirected to ‘other local taxing agencies’ (LAO, 2012b: 9).

Crucially, the dissolution of the Redevelopment Agencies has restructured the local tax base, inhibiting revenues from flowing into infrastructure and urban development, whilst benefiting the State of California financially by relieving pressures on the State’s school system. As such, future tax revenues are being diverted away from the City’s redevelopment arm for the purpose of accommodating a State fiscal recovery.

By dissolving the Redevelopment Agencies and limiting the flow of funds away from school districts, the State of California was able to move some way towards addressing its own fiscal crisis. However, through the dissolution of the Redevelopment Agencies and, by extension, through removal of tax dollars away from cities, the State’s fiscal recovery has, to a significant degree, been at the expense of cities:

At the start of this year, the State of California was insolvent to the tune of \$25billion. Because of belt tightening by the Governor and because of larger than expected revenues, the State may actually be solvent for the first time in quite a while. But it has done so on the back of local government’ (Author’s interview, Partner, international law firm, 2013).

The squeeze of Californian cities like Stockton compounds the levels of fiscal stress at the urban scale and rings chimes with Peck’s (2012; also see Davidson and Ward, 2014) concept of ‘austerity urbanism’:

‘Not only is the State not helping cities that are struggling, because the State is broke too, they are actually grabbing every dime away from the cities that they can get.’ (Author’s interview, Judge, Federal Bankruptcy Court, 2013)

For Stockton, then, the State of California’s fiscal crisis has been spatialised at the urban scale and driven down to the city’s institutions. Not only is austerity urbanism compounding Stockton’s fiscal woes, but it continues to be a prominent driver in a volatile process of reterritorialisation as cities face the prospect of bankruptcy, collapse and the possible dissolution as a territorial entity.

Nevertheless, the fiscalisation of urban development continues uninterrupted in California. Despite the closure of the redevelopment agencies, the State of California plans to reintroduce TIF into cities, but with the caveat that any such programme must also benefit the State. Cities can already use 'Infrastructure Financing Districts' (IFDs), although an attempt to expand their scope ('Senate Bill 1156') was vetoed by Governor Brown because it 'would prevent the state from achieving the General Fund savings assumed in [the State's] budget' (McGreevey, 2012). However, a revised bill – 'Senate Bill 1' – has been introduced, which if passed would give cities the opportunity to create Sustainable Communities Investment Authorities, bodies which would have the power to engage in TIF – but without access to school district property tax revenues.

Viewed as a whole, the Stockton case study establishes a significant link between infrastructure investment, the state's financial condition and the process of reterritorialisation. In particular, the Stockton example has demonstrated that the fiscalisation of urban development (enabled by financialised investment practices such as 'Redevelopment') became a core strategy in a fiscally constrained environment that was underpinned by the Prop 13 property tax reforms. Crucially, this project of fiscalisation, which could also be described as 'speculative urbanism' (Davidson and Ward 2014), left Stockton vulnerable to fiscal crisis and bankruptcy. At the same time, the State of California has adopted an aggressive approach to fixing its own fiscal crisis by dissolving the Redevelopment Agencies and grabbing resources from many of its already wounded cities. Not only has this instigated a new round of reterritorialisation, but it also has the potential to compound the City of Stockton's woes and hamper any attempts to invest in infrastructure going forward.

6.2 The financialisation of infrastructure investment and urban reterritorialisation in the UK

As in the US, the financialisation of the funding and financing of infrastructure is tightly linked to changing patterns of urban governance in the UK. This section demonstrates that cities in the UK face similar pressures of fiscal stress, and are increasingly encouraged to engage in financialised investment practices in order to generate fiscal and financial returns. At the same time, however, there are unique structural factors in the UK, such as the centralist system of government, which result in different responses to fiscal challenges and which spawn different approaches to funding and financing infrastructure.

6.2.1 The shackles of centralism: ‘austerity urbanism’ in Sheffield

Within the UK’s infrastructure funding complex, there is a structural tension between the neoliberal imperative of decentralisation and the national imperatives of centralised control, policy and power. The overwhelming narrative running throughout local government is that the centralist system of government in the UK restricts the evolution of new and innovative mechanisms for funding and financing infrastructure, which ultimately inhibits total levels of infrastructure investment and, by extension, economic growth. This narrative rests on three main assertions. First, local authority budgets are effectively controlled by central government, and depend on the flow of funds from the centre. Second, local authorities have a comparatively small revenue base in relation to central government, and in relation to local governments in the US and elsewhere. Third, although there is no centrally imposed limit on local authority borrowing, the small revenue base of local authorities restricts the amount of borrowing they can engage in whilst continuing to adhere to the Prudential Code. In sum, local authorities are muted in their ability to invest in infrastructure, stimulate economic growth and create jobs because they have not been given the freedom and resources to make such investments.

It is arguable, however, that through reterritorialisation – in the form of restructuring the tax system, devolving financing powers, and giving local authorities the freedom to use financial technologies and instruments – the shackles of centralism could be removed, facilitating greater local authority investment in infrastructure.

Nevertheless, reterritorialisation is fraught with tension and conflict, and, in the UK, an opposing force is provided HM Treasury, the central government’s economic and finance ministry, whose remit is to manage public spending, to direct the UK’s economic policy and to deliver national economic growth (HM Treasury, 2014):

There has always been a fear in the Treasury that if you allow local authorities too much leeway, particularly in terms of borrowing powers, that you’ll undermine macroeconomic policy. That is vastly overstated, but at the moment, when the government is trying to reduce its deficit, it’s quite a powerful argument’ (Author’s interview, Director of Policy, Strategy & Communications, metropolitan borough council, 2012).

Whilst it is indisputable that there is reluctance from the Treasury to decentralise control in areas such as public spending, it is also arguable that local authorities are hesitant about adopting greater levels of autonomy, and have limited capacity to do so. It is crucial,

therefore, that the conflicting forces of centralism and localism are not portrayed in simple binary terms, but rather as complex, multi-agent and multiscalar.

One of the effects of having more local autonomy would be that it could no longer rely on central government handouts – a harsh reality that is one of the cornerstones of the system of fiscal federalism in the US. For Sheffield, this would be a particularly traumatic shift given the extent of its previous reliance on grant funds:

‘I think from the late 90s until 2006 say, we were benefiting from significant funding from the RDA, Yorkshire Forward. We had ‘Objective One Status’ – the highest level of European funding – and we had a dedicated pot of funding specifically for the city centre, as well as funding available for the wider industrial areas. Fundamentally, if you look at the amount invested in that period, which is getting into £160-170 million of public money, the City Council’s share of direct capital contributions was probably below £10 million’ (Author’s interview, Strategic Development and Funding Manager, metropolitan borough council, 2013).

Because Sheffield City Council has grown accustomed to the equalising effect of funding allocations from central and European sources, the prospect relying solely on a local revenue base is almost unpalatable, particularly when that revenue base is currently underperforming in relation to other parts of the UK. Unfortunately, in the face of cuts in government funding, Sheffield has not been afforded the option to continue its reliance on grants from London and Europe.

According to the National Audit Office, between 2010-11 and 2014-15, the ‘real-terms reduction in funding from central government to local authorities’ amounts to £7.6 billion (National Audit Office, 2013: 4). Sheffield City Council has seen a total reduction of 30% in the funding received from central government since 2010-11 (Sheffield City Council, 2014c). This is forecast to increase to 50% by 2015-16 (ibid.). Although the City Council has made £180 million in savings between 2010-11 and 2014-15, it currently has a budget gap of £37 million, which is expected to increase to £80 million by 2015-16 (ibid.).

As a result of these cuts, the whole funding model for Sheffield City Council is being turned upside-down:

‘At some point local authorities will be bankrupt. The biggest driver of spend in local authorities is social care. It’s massive, and is on a huge demographic uplift and going up all the time. At the same time, our grant is being cut... Now, if you think that our capacity for regeneration is in that gap [between revenues and commitments], the money and the capacity we get to deliver economic regeneration is getting massively

squeezed. [The government] is actually massively reducing our capacity to invest in the very things that will deliver the growth' (Author's interview, Director of Finance, metropolitan borough council, 2013).

While Sheffield City Council, along with many other local authorities in the UK, is having its funding cut, the challenge of creating jobs and generating economic growth remains. It is in the face of both fiscal and economic crisis that debates around devolution have emerged.

For HM Treasury, devolving power to local authorities could provide a fix to national fiscal and economic crisis. By creating a system that rewards those local authorities that achieve economic growth, devolution could stimulate a recovery in the UK's gross domestic product (GDP). Furthermore, by making local authorities more dependent on locally raised revenues, it is possible for the Treasury to reduce the outflow of funds to local authorities in order to reduce the national budget deficit. It is in this context, then, that the Treasury is willing to cede a degree of control over public finance.

For city councils like Sheffield, the prospect of increased financial control is attractive because it provides the Council with the 'tools' and 'freedoms' to make capital investments and to pursue a more entrepreneurial, fiscalised and financialised approach to urban development. Crucially, however, greater freedom to finance infrastructure by borrowing and spending as they choose, comes at the expense of the safety net of the redistributive system that has existed hitherto:

'On the one hand [central government] is incentivising us to deliver growth. On the other hand it is taking away our ability to do that, and is working against a lot of the services that authorities need to deliver... The government is driving authorities down to an agenda of having their own money. Basically that massively disadvantages Northern Metropolitan Councils and Core Cities, and it benefits the South East... It's not a level playing field... The danger now is the double whammy of austerity and the loss of [central government] money.' (Author's interview, Director of Finance, metropolitan borough council, 2013).

It is strikingly apparent that devolution is an innately contradictory process: the 'shackles' of centralism that weigh down some local authorities, provide essential supporting mechanisms to others. For local authorities with a growing tax base, greater access to locally generated taxation and greater flexibility over borrowing against future tax income would open up a whole range of opportunities to innovate and engage in financialised investment practices. In contrast, for local authorities like Sheffield City Council, which is burdened by low economic growth and a shrinking tax base, more dependence on locally generated taxation

would be debilitating. Certainly, more devolution would create a highly uneven landscape of infrastructure investment across the UK.

The localisation Non-Domestic Rates (NDRs) is illustrative of the challenges of restructuring a territorially distinct system of taxation in a climate of austerity and economic crisis. By allowing local authorities to retain 50% of NDRs collected within their territory, the new legislation, which came into force in April 2013, aimed to provide an incentive and reward for local authorities with a growing tax base, while protecting local authorities with a shrinking tax base. In short, local authorities have access to a tax base that they can leverage, grow and incorporate into a revolving programme of urban development, whilst at the same time keeping the safety net provided by a redistributive fund made up of from the central share of NDRs.

Nevertheless, the modified NDR system is somewhat of an unsatisfactory compromise. The Institute for Fiscal Studies (see Adam and Miller, 2014: 264) has labelled the system as ‘ill-designed’ because it simultaneously serves to incentivise and discourage development. Furthermore, in the attempt to find a balance between centralism and localism in the NDR system, local authorities have *both* a certain degree of freedom (accompanied by isolation and uncertainty) *and* an element of guaranteed support (accompanied by central control and domination):

‘The government has assumed business rate growth nationally and cut our mainstream grant to code in that national increase. We need to work to get to whatever growth we can, but we have little or no chance of getting to that national increase, so, in effect, we’re automatically being cut more... We’re sat on a dilemma at the moment about trying to [meet our service obligations] using the tools that are available... But, our range of statutory responsibilities frankly don’t fit in to what our taxable base is. The government is going to have to confront that dilemma’ (Author’s interview, Director of Finance, metropolitan borough council, 2013).

The partial localisation of NDRs illustrates the conflicting forces at play in the process of devolution, and in urban reterritorialisation more broadly. Furthermore, it demonstrates that the ability of localities to retain taxes and to benefit from other measures of devolution is – to a significant degree – structurally constrained by the centralist system of government that is embedded in the UK. What remains unclear, however, is the extent to which the constraints of a centralist system of government also provide structural limitations to infrastructure investment, and, equally, whether further devolution – if at all possible – would indeed facilitate greater levels of infrastructure investment.

6.2.2 Decentralisation and infrastructure investment in Newcastle: a fictitious relationship?

The assertion made by proponents of decentralisation is that local authorities in the UK are inhibited from investing in infrastructure because they do not have adequate freedoms and powers. In particular, the lack of *autonomy* at the local level inhibits local authorities from engaging in financialised investment practices, which are becoming increasingly important for making investments in infrastructure because of the contemporary fiscal challenges that face local authorities and the need to generate returns on investment. Providing localities with more autonomy, then, could theoretically give them a greater ability to engage in financialised investment practices and – by extension – to increase their expenditure on infrastructure.

A logical conclusion, then, is that decentralisation leads to higher levels of investment in urban infrastructure. However, as with the link between decentralisation and economic growth (see Pike et al., 2012), there is little coherent evidence to suggest a correlation between decentralisation and infrastructure investment. In response to this void, and using Newcastle as a case study example, this section questions how certain aspects of decentralisation can create the conditions required for infrastructure investment by facilitating the use of financialised investment practices.

6.2.2.1 A diverse tax base

With the exception of project-generated revenues and sources of income that have been specifically negotiated through City Deals (see below), locally retainable sources of revenue in Newcastle are limited to council tax and 50% of NDRs. In contrast, municipalities in the US can capture revenues as diverse range of taxes. The City of Chicago, for instance, could potentially structure a financing mechanism around any one of at least 29 locally raised taxes, including a ‘Sales Tax’, a ‘Hotel Accommodations Tax’, an ‘Airport Departures Tax’, a ‘Parking Tax’ and a ‘Vehicle Fuel Tax’, as well as taxes on liquor, soft drinks, cigarettes, bottled water and boat moorings (City of Chicago, 2014b).

A wider range of locally available taxes provides a larger and more diversified pool of revenue streams from which infrastructure projects can be funded. In addition, a large number of locally retainable taxes enables the local governing entity to pick and choose the most appropriate source(s) of taxation in order to ensure that the beneficiaries of the infrastructure

investment bear the cost of that investment (known as the ‘benefits principle’) (see Tiebout, 1956; Musgrave, 1990; Oakland and Testa, 1996). Not all tax-based investments adhere to the ‘benefits principle’: for example, the wealth of users (and non-users) and their ‘ability to pay’ might also be taken into account (ibid.). Nevertheless, when looking to *capture the value* of an item of infrastructure in order to create upfront investment, it is perhaps most logical to use a source of taxation that will be generated by the piece of infrastructure at hand and that targets the infrastructure’s beneficiaries. Simply put, it would be more advantageous for a local authority like Newcastle, which wishes to use future tax receipts to finance a *wide variety* of infrastructure, to have access to a *wide array* of locally retainable taxes. Currently, Newcastle City Council is limited to Council Tax and a portion of NDR income, which massively reduces its fiscal management and investment capabilities.

A more diverse tax base would also reduce the risks inherent in any one particular source of taxation. Indeed, the localisation of NDRs alone has created an overdependence on NDRs as a source of taxation, making the tax base of local authorities particularly vulnerable to NDR volatility:

‘I would counter [the assertion that we are striving to gain more access to business rates] because business rates are very volatile, it’s not the world’s greatest tax base, it’s not in our control, and we don’t set the rateable values. There are [also] over £900 million of appeals outstanding... So actually, it strikes me at the moment as a slightly risky tax base’ (Author’s interview, City Treasurer, metropolitan borough council, and Treasurer, combined authority, 2013).

Having a broader and more resilient tax base, then, would provide more certainty against which borrowing for infrastructure investment could occur.

6.2.2.2 The power to set tax rates and to levy new taxes and fees

In addition to having access to a wider range of taxes, the ability of Newcastle City Council to invest in infrastructure could also be improved by enabling it to set the rate of taxation and to levy new taxes and fees. The ability to set the rate for locally retainable taxes would give Newcastle City Council the ability to raise extra capital to fund schemes or to provide tax incentives for businesses to locate within their boundaries.

According to the London Finance Commission (2013: 58), devolving taxes to local authorities in the UK would improve (democratic) accountability, align policy with local

needs, increase systemic efficiency, provide local government with more autonomy, and increase transparency.

The suggestion that local authorities could set the rate of tax, however, is highly unpalatable for HM Treasury:

[Local authorities could retain] a share of corporation tax, for example, if they are successful in attracting corporations, or could even have the ability to vary the corporation tax rate. But the Treasury are worried about displacement around simple tax increment financing schemes, so they are never going to allow variation in tax rates in different areas' (Author's interview, Partner, international professional services firm, 2013).

EU competition regulations provide a further challenge to the decentralisation of taxation in the UK. For example, 'EU law prohibits varied rates [of VAT] within a member state' (London Finance Commission, 2013: 70).

In general, the question of devolving the power to local authorities to set the rate of taxation seems to hinge on the issue of fairness, the potential uneven implications of allowing variation in tax rates between localities (which could include a 'race to the bottom' whereby competing authorities perpetually reduce taxation to attract business), and the potentially negative economic implications for national productivity (despite counter arguments to suggest that tax competition leads to economic allocative efficiency (e.g. Tiebout, 1956; Oates and Schwab, 1988)).

Perhaps most importantly, the counterargument to increasing the rate of taxation in order to raise funds for infrastructure investment is that the (increased) tax burden on residents and businesses that results could potentially undermine the economic case for investment in the first place. That is, the growth you were expecting to stimulate through new infrastructure investment is wiped out by the higher costs of doing business in a higher-tax environment. This is especially true in places like Newcastle, whose economy is relatively vulnerable to small increases in the cost of production.

In sum, whilst levying new taxes or introducing changes in the tax rate give local authorities more flexibility to raise revenues for funding and financing infrastructure, such a form of decentralisation would be both problematic and contentious.

This section has demonstrated that decentralisation could facilitate the implementation and use of financialised investment practices at the local level, and could enable local authorities to use these practices in a more controlled and efficient manner. It could be argued,

therefore, that fiscal decentralisation would create the conditions for a greater level of investment in urban infrastructure. Although the decentralisation argument appears to be gathering momentum, it must be considered alongside the complex and contradictory process of reterritorialisation that is taking place in the UK. In practice, the transition from a highly centralised system of government towards a more decentralised system where local authorities have some degree of genuine financial autonomy is fraught with power struggles, negotiations and trade-offs. Crucially, these dynamics are not confined to the binary of the local and national scales, but are exhibited across and through multiple spatial scales. To illustrate these complexities, the next section analyses the most significant codifications of devolution for the specific purposes of supporting infrastructure and urban development in the UK: ‘City Deals’ and ‘Growth Deals’.

6.2.2.3 City Deals: negotiated devolution and the emergence of the city-region

In July 2012, following a period of negotiation between city authorities and central government, eight ‘City Deals’ were announced (Table 6.5). These deals gave the respective cities:

‘the powers and tools they need to drive local economic growth; [u]nlock projects or initiatives that will boost their economies; and [s]trengthen the governance arrangements of each city’ (HM Government, 2012: 1).

Although the City Deals represent a codified commitment to providing cities with the powers to stimulate urban development and economic growth, it is questionable whether they represent ‘a radical devolution of power to England’s largest cities’ (Waite et al., 2013: 775):

‘The idea of the City Deals is to have accepted within Parliament the link between cities and growth, and that more local control gets better growth and better competitiveness. I think, by and large, there is an acceptance of that, but what hasn’t really happened is any logical conclusion which is any real devolution’ (Author’s interview, Director, national policy think tank, 2013).

Crucially, rather than representing systemic fiscal decentralisation, the City Deals take the form of individual and bespoke agreements between the government and the cities involved.

In most of the City Deals, there is some semblance of fiscal decentralisation: Newcastle, Nottingham and Sheffield were granted permission to engage in TIF, while Greater Manchester was permitted to retain an additional portion of NDR revenues, and Liverpool

and Bristol were granted the permission to retain NDRs in a series of new Enterprise Zones or Areas (Table 6.5).

Table 6.5: Fiscal decentralisation through City Deals?

City Deal	Measures of devolution and powers for funding and financing infrastructure	Other fund allocations or financing tools for infrastructure (no explicit fiscal decentralisation)
Greater Birmingham and Solihull	N/A	GBS Capital – a £1.5bn investment fund to deliver infrastructure projects (aggregates, recycles and invests public funds).
Bristol and the West of England	Five new Enterprise Areas which can retain 100% of their business rate growth for a period 25 years. Use of business rates to create £1bn economic development fund. New rail planning and delivery powers.	A 10 year allocation of ‘local majors funding’ to fund Greater Bristol Metro. Ability to recycle savings from the Bus Rapid Transit Network locally.
Leeds City Region	N/A	A £1bn West Yorkshire ‘plus’ Transport Fund financed by a levy on local councils, a 10 year allocation of ‘local majors funding’, and co-investment from Department for Transport. A £200 million city-regional investment fund from pooled business rates and other sources. Investment is matched central government.
Liverpool (Part 1) and Liverpool City Region (Part 2)	A new Enterprise Zone in City Fringe Buffer Zone and Central Business District.	A £75m mayoral investment fund (which includes funding from government). A new city-regional transport body that will establish a transport fund worth £800m over 10 years. An additional city-regional investment fund.
Greater Manchester	Greater Manchester Combined Authority retains a portion of	Transport investment through an allocation of ‘local majors funding’.

	additional tax revenue according to levels of growth created through infrastructure investment ('Earn Back') up to £30 million per year. Devolution of the Northern Rail franchise.	
Newcastle	An Accelerated Development Zone (ADZ) gives Newcastle the potential to invest £92 million through tax increment financing.	Investment programme to improve A1 Western Bypass and improve broadband infrastructure.
Nottingham	A New Development Deal enables Nottingham to invest £8 million through tax increment financing	Improvements to Midland Mainline and links to HS2. Investment in super-fast broadband.
Sheffield City Region	A New Development Deal enables Sheffield to invest £33 million through tax increment financing Devolution of Northern Rail franchise.	£700 million Sheffield City Region Investment Fund. Includes £30 million from Sheffield City Council and NDR revenues from a city centre development scheme. Transport investment through 10-year allocation of 'local majors funding'. Better Bus Area pilot.

Source: Adapted from HM Government, 2012; Marlow, 2012; Pike and O'Brien, 2014.

However, the permission to engage in these activities is accompanied by a strict set of boundaries. For example, Manchester can only 'earn back' up to £30 million per year, Newcastle can only invest £92 million through the use of TIF in its ADZ, while Sheffield can only invest £33 million through TIF. Furthermore, a large proportion of the finalised agreements merely serve to confirm the availability of predominant central government funding instruments, such as the allocation of 'local majors funding' to fund transport projects, or provide 'soft' statements of support for investment in local infrastructure projects, both of which fall short of representing genuine measures of fiscal decentralisation.

Perhaps most importantly, by granting individual cities the explicit permission to engage in (a small number of) very specific activities through what HM Government (2011: 1) refers

to as ‘tailored’ agreements, City Deals simultaneously serve to prohibit cities from engaging in any activities that require powers that have not been expressly granted to them. That is, whilst the City Deals *enable* cities to fund and finance infrastructure, they also *limit* the ability of cities to innovate and experiment, *exclude* them from using investment practices used by other cities, and *inhibit* them from making their own decisions about how local infrastructure is funded and financed.

Despite their debatable influence on levels of decentralisation, the City Deals do appear to have instigated a perhaps less predictable process of reterritorialisation, in the form of what could be termed the *rise of the city-region*.

Although Greater Manchester has been the spearhead of the city-regional movement, establishing the UK’s first CA in 2011 as a culmination of decades of city-regional collaboration, the fact that CAs have since been established in the North East, West Yorkshire, Sheffield City Region and Liverpool City Region is indicative of a trend towards the creation of city-regional governing institutions (Pike and O’Brien, 2014). The formation of CAs builds on the foundations laid by the Local Enterprise Partnerships (LEPs), which were created by the Coalition Government to fill the void left behind by the Regional Development Agencies (RDAs), combining elected officials and local corporate elites to provide a more dynamic form of strategic governance and leadership (Pugalis, 2010). Together, the emergence of LEPs and CAs can be regarded as products of a wave of city-regionalism that is searching to enhance local capacity for innovation, collaboration and growth – especially in the field of infrastructure investment (see Table 6.6) – in an otherwise centralist environment.

The endeavours of both localities and the central government to modify, rescale and restructure urban governance systems in the UK are motivated by a series of converging factors which enable local economic growth and prosperity to be most successfully delivered through public sector interventions at the city-regional scale.

In Newcastle, the emergence of the North East Combined Authority (NECA) and North East Local Enterprise Partnership (NELEP) can be attributed to a range of factors that enhance the locality’s position at the bargaining table with Central Government in the devolution process, and that create a more attractive environment for infrastructure investment:

- *Enhanced negotiation capabilities.* The newly created NECA arguably has a greater ability than its constituent local authorities to negotiate with central government for the devolution of powers to help fund and finance infrastructure (HM Treasury and North East Combined Authority, 2015);

- *Polycymaking across a functional economic area.* The NECA and NELEP can prioritise transformational infrastructure projects that cross territorial boundaries and that could not be funded, delivered and managed at the individual local authority level (*ibid.*);
- *Pooling resources for infrastructure investment.* The NECA can create new funding sources and engage in innovative financing practices by pooling funds with other jurisdictions. They can also amplify the spending power within the city-region by creating ‘funds of funds’ or ‘spends of spends’ (Pike and O’Brien, 2014; HM Treasury and North East Combined Authority, 2015);
- *Revolving investment funds.* The pooling of local authority capital into a North East-wide investment fund potentially enables the adoption of otherwise unavailable financialised investment practices, such as revolving investment funds (see Section 5.2.1 and ‘Earn Back’ below);
- *Combating austerity urbanism.* By collaborating through formal arrangements, such as a CA, the impacts of fiscal stress upon levels of capital investment can be minimised and the risks of investing in infrastructure can be shared, thus alleviating the downward pressures of austerity urbanism.

The imperative of pursuing new and innovative ways of funding and financing infrastructure that could stimulate job creation and reignite economic growth even in times of fiscal stress where traditional models of infrastructure investment are increasingly out-dated and unavailable, then, appears to be bound up in the changing nature of urban governance in the UK. Rather than taking place within a political vacuum, however, the negotiation of City Deals and the formation of CAs is taking place within a political economy in which the UK’s central government is still the dominant force and in which individual territorial units are increasingly competing for investment, jobs, tax base expansion, and ultimately their own survival. Not only does this make the ‘institutional fix’ of the Combined Authority an innately precarious and unstable one, but it also renders the City Deals a mere snapshot of what is a much longer complex, multidirectional and contradictory process of reterritorialisation.

6.2.3 From the Transport Innovation Fund to Earn Back: financing Metrolink in Greater Manchester

The Greater Manchester Combined Authority (GMCA) is possibly the most authentic city-regional institution amongst England’s Core Cities. Far from being a product of City Deal

negotiation or fast policy transfer, GMCA has its origins in a rich heritage of city-regional collaboration (Figure 6.3).

Importantly, for over 45 years, the evolution of city-regionalism in Greater Manchester has been closely linked with the city-region's transport infrastructure needs and, in addition, a significant degree of strategic guidance and legislation from the national government. The South East Lancashire and North East Cheshire (SELNEC) Passenger Transport Executive (PTA) (Figure 6.3) was formed as part of the 1968 Transport Act which created a total of 5 PTAs across the UK. In April 1974, when the Metropolitan County of Greater Manchester was formed, SELNEC was reinvented as the Greater Manchester Passenger Transport Authority (GMPTA). Although the Metropolitan County of Greater Manchester was dissolved and replaced by the Association of Greater Manchester Authorities (AGMA) in 1986, the GMPTA continued its role as the city-region's transport body. Between 1986 and 2011 AGMA and the GMPTA worked in combination to deliver coherent strategic transport planning and infrastructure delivery across the city-region. In 2011, building on this legacy, Greater Manchester was designated the first Statutory City Region in the UK, while the GMPTA was renamed Transport for Greater Manchester (TfGM).

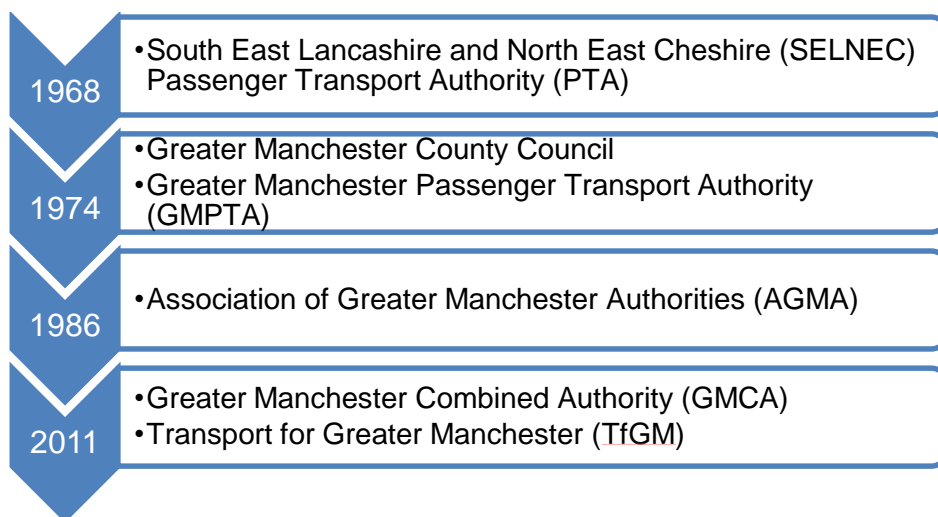


Figure 6.3 A history of collaboration: institution building in Greater Manchester

Source: Author's own.

The most recent catalyst for collaboration, and arguably the trigger for the formation of TfGM and the GMCA, has been the Greater Manchester's tram network, Metrolink. Not only is Metrolink a cross-jurisdictional infrastructure asset and thus at least requires some

basic inter-jurisdictional collaboration and funding, but it is also an incredibly large and expensive item of infrastructure that could not be funded by a single local authority.

Fundamental to the development of the Metrolink system was the need to attract investment from central government. In the early 2000s there was a plan to deliver a 'Big Bang' of Metrolink, building on the already completed 'Phase 1', the north-south spine from Altrincham to Bury, and 'Phase 2', a line out to Eccles in the west, by implementing three further phases, 3a, 3b, and 3c, which would extend the tram system to Rochdale, Ashton-under-Lyne and Manchester Airport. Although central government support temporarily wavered, £575 million was eventually made available by the Department for Transport (DfT) in 2004.

Whilst the money from the centre was essential to initiate the Metrolink expansion, it was insufficient to deliver the whole of Phase 3. As such, the GMPTA was forced to develop a mechanism that would provide a platform to generate a new source of revenue:

'At that time there were only 2 games in town... One was the Work-Place Parking Levy, and the other was the Transport Innovation Fund, which in other words is the congestion charge. We decided to go for the congestion charge option. In the round, a £3 billion project which would have delivered all the outstanding extensions on Metrolink at that time' (Author's interview, Chair, local transport authority, 2013).

The Transport Innovation Fund proposed to create a £3 billion investment package by pooling funds from a variety of sources including £1.3 billion of capital grant from DfT, £200 million of resource grant from DfT (for Metrolink maintenance), £100million of local contributions, and £1.15 billion of borrowing undertaken by the GMPTA against future congestion charge revenues (GMPTA, 2008: 17). Before being implemented, however, the Transport Innovation Fund was subject to a referendum in December 2008, and every one of Greater Manchester's ten districts voted against the Fund.

Rather than shelving the plans and undoing years of work that included extensive planning and cost-benefit analysis, AGMA and the GMPTA pushed to build on the collaborative relationships engendered by the Transport Innovation Fund and to devise a new strategy for funding and financing Metrolink Phase 3. Two key events occurred on the back of the Transport Innovation Fund's failure.

First, it initiated the attempt to create a Combined Authority. The collaboration between Greater Manchester's districts demonstrated that there were clear linkages between district ambitions and the city-region's broader economic strategy. Moreover, it provided a coherent framework from which to make a convincing case to government for the devolution of

responsibility and powers. Consequently, Greater Manchester was granted Combined Authority powers in 2011.

Second, the failure of the Transport Innovation Fund gave rise to the Greater Manchester Transport Fund (GMTF), a £1.5 billion fund, proposed in 2009, which is now emerging as one of GMCA's most successful policies, and has been influential in causing the race for Combined Authority status in other city-regions across England. Crucially, the GMTF enabled the resumption of the Metrolink expansion and provided vital bargaining chip for GMCA in the City Deal negotiations with central government, and underpinned GMCA's case for an 'Earn Back' mechanism.

Following a similar model to the Transport Innovation Fund, the GMTF uses an objective appraisal model based on GVA to determine which schemes to prioritise, and is comprised a range of funding sources that are pooled into a single fund. The £1.5 billion funding package includes grants from DfT; a portion of Greater Manchester Integrated Transport Block Local Transport Plan funding (also central government grant); Metrolink fare box and revenues from other assets; and a levy on the 10 districts of Greater Manchester in the form of their usual contributions to TfGM, but with an additional an escalator of 3% over 6 years.

In order to finance transport improvements upfront, the GMTF has borrowed approximately £400 million from the Public Works Loan Board (PWLb) and £600 million the European Investment Bank (EIB) (£1 billion in total). The easily accessible, flexible and affordable PWLB debt is complimented by the EIB facility, which, unlike the PWLB debt, enables GMCA to forward fix interest rates until 2015, thus de-risking a large chunk of the GMTF.

There is an element of risk taken around establishing the GMTF, because it is predicated upon getting passengers to use the Metrolink system. The operating model for the Metrolink is effectively a profit share arrangement, whereby TfGM pay a private sector operator (Paris Regional Transport – RATP) to operate and maintain the Metrolink system and receive a portion of the fare box revenues. The risk of that the Metrolink might underperform commercially is effectively shouldered by the 10 Greater Manchester districts, because the recourse for the £1 billion of debt sits with them:

'It's our money going in. The risk sits with the 10 local authorities. They're putting in the increased contribution. Other than the grant element, there is nothing going in from central government. The Combined Authority borrows the money. TfGM deliver the schemes in the main. The Combined Authority funds them either through the government grant it's received or the borrowings, and then the Combined Authority

has a route back to the 10 districts in terms of its levy that it can raise' (Author's interview, City Treasurer, metropolitan borough council, and Treasurer, combined authority, 2013).

There is certainly some risk associated with the substantial volumes of debt used to finance Metrolink, giving the GMTF the appearance of a financialised investment fund. However, the debt is borrowed largely against future district contributions, rather than uncertain future revenues based on tax base expansion or asset value appreciation, thus reducing the level of speculation in the GMTF.

According to the GMCA, one of the key risks for GMCA and TfGM is being insulated from the financial benefits that have been created by the jobs and economic growth attributable to Metrolink. Indeed, GMCA's contention is that the majority of the tax base expansion that results from its own investment is currently remitted to the national exchequer, rather than retained locally.

In response to this risk, in its City Deal negotiations with the centre, GMCA bargained for powers to retain some of the fiscal benefits from their investments through the GMTF. GMCA claimed that with more access to the fruits of its investment, it could generate even more jobs, growth and productivity by recycling any returns back into Greater Manchester's infrastructure stock. This gave birth to the idea of 'Earn Back'.

The premise of Greater Manchester's Earn Back scheme, which was finalised in the 2012 City Deal, is that it provides GMCA an opportunity to capture a greater portion of the value that is created through the GMTF's investments, thereby rewarding GMCA for its investment to date and incentivising it to invest more in the future and, in particular, to create more economic growth.

Earn Back enables GMCA to retain (or 'earn back') up to a maximum £30 million per year of NDRs over and above the standard 50% that it is otherwise entitled to retain. The exact proportion of this £30 million that GMCA is able to retain in any one year is calculated using a formula which takes into account the level of GVA growth in Greater Manchester. In short, Earn Back is a 'payment-by-results' mechanism, through which the central government donates a portion of its tax receipts to GMCA, but only if the investment in Greater Manchester's infrastructure generates sufficient economic growth.

Importantly, GMCA can borrow against anticipated future Earn Back receipts in order to finance the very infrastructure that might generate the required GVA increases. In contrast to the basic GMTF model, then, Earn Back takes on a more speculative guise:

‘Whilst the transport fund so far has been against the districts committing a contribution and effectively underwriting it, Earn Back is committing borrowings against a revenue stream which is largely uncertain because you don’t know what economic performance is. You can model what the outcomes should be, but it’s clearly at the more risky end of the spectrum’ (Author’s interview, City Treasurer, metropolitan borough council, and Treasurer, combined authority, 2013).

Not only is Greater Manchester’s transport infrastructure strategy geared towards infrastructure investments that generate a return on investment in order to create a revolving fund, but it also incorporates an element of speculation, meaning that the revolving capabilities of the fund, and the fiscal security of the 10 districts that guarantee the debt, become uncertain. Although Earn Back is only worth £30 million per year and, thus, the speculative element of the GMTF is limited, the challenge for Greater Manchester is to manage the processes of fiscalisation and financialisation. Whilst the development of a city-regional governance system has provided new opportunities for infrastructure investment, it has also paved the way for an increasingly speculative approach to infrastructure investment, meaning that GMCA risks fostering political, economic and fiscal tensions between the 10 Greater Manchester districts and potentially creating the foundations for future fiscal crisis.

6.3 Concluding remarks: urban governance, fiscal stress and reterritorialisation

This chapter has shown that the financialisation of capital investment has transformative implications for urban territoriality and governance. Just as the financing practices used by cities varies according to spatio-temporal factors (Chapter 5), the ways in which the financialisation of capital investment affects urban governance and reterritorialisation is equally diverse. Accordingly then, this chapter has presented a fine-grained analysis of the actually existing financialisation in each of the six case study cities and its interaction with neoliberal processes of rescaling, restructuring and the fiscalisation of urban development.

In the US, financialised investment practices appear to be a key ingredient in enabling fiscally stressed urban governments to pursue programmes of development that are strategically centred around the generation of financial returns and fiscal benefits. In Chicago, for example, the city government was partially able to close its 2014 budget deficit of \$339 million by using \$30.3 million of surplus TIF revenues. According to the Civic Federation (2013), such revenues will play an increasingly important role in balancing the City of Chicago’s budget in the future. Because it securitises anticipated future tax receipts, TIF

enables the City of Chicago to make investments in infrastructure in spite of the absence of capital in its Corporate Fund. This process is referred to here as the fiscalisation of urban development. Crucially, as the examples of Chicago and Buffalo demonstrate, this cocktail of financialisation and fiscalisation intensifies inter-urban competition, incentivises the process of circumvention, and leads to the fragmentation of urban governance. Perhaps most significantly, the fiscalisation of urban development can foster a hazardous form of speculative urbanism, which, in the case of Stockton, led to fiscal crisis and ultimately bankruptcy. Indeed, Stockton provides an example of the most severe form of deterritorialisation, whereby, in bankruptcy, the City government is close to complete dissolution.

For English cities, infrastructure investment takes place within the UK's structurally embedded framework of centralism. Because central government is the 'single source of constitutional power and authority' (Wilson and Game, 2011: 33), cities' ability to fund and finance infrastructure is almost inevitably defined in relation to central power and control. However, the pressures of fiscal stress and the emerging opportunities to engage in financialised investment practices are stirring up a challenge to the hegemony of the centre. In a series of bilateral agreements between individual cities and central government – the City Deals – the eight Core Cities have bargained for essential powers to engage in infrastructure investment. In reality, however, the City Deals incorporate only a select few examples of (very limited) devolution and have a negligible impact on local powers of 'initiation' and 'immunity' (see Clark 1984; Chapter 4). Furthermore, as the example of Sheffield highlights, the devolution of power is an innately contradictory and uneven process. Nevertheless, the prospect of engaging in financialised investment practices and negotiating with the centre for a better deal continues to fuel the process of reterritorialisation, and across all three UK case studies there is evidence of the (re)emergence of the city-region. By collaborating formally through city-regional institutions, such as LEPs and CAs, local governments can increase their capacity to negotiate for devolution, target larger and more transformational forms of (trans-territorial) infrastructure, create larger pools of investment capital, devise new and innovative financing practices that are unavailable at the individual local authority level, and mitigate the impacts of fiscal stress and austerity urbanism. Greater Manchester provides the most developed example of city-regional institution building, and, demonstrates the benefits for funding and financing infrastructure by pooling funds and leveraging power and money from the centre. However, as with the US examples, the model of urban development pursued in Greater Manchester is at risks of fostering competition, fragmentation, and a hazardous form of city-regional speculation.

Chapter 7: The intensification of ‘splintering urbanism’

The processes of unbundling, segmentation and privatisation have underpinned the financialisation of infrastructure (O’Neill, 2010; 2013), and have been pivotal in enabling new sources of investment to flow into cities’ built environment. At the same time, however, the transition away from the ‘modern infrastructural ideal’ towards a more unbundled, segmented and privatised model of infrastructure provision has fuelled a shift towards what Graham and Marvin (2001) term ‘splintering urbanism’.

Whereas Graham and Marvin’s (2001) analysis of splintering urbanism highlights that privatised and market-based models of infrastructure provision lead to a highly uneven distribution of networked infrastructures across urban space, this chapter makes a case that splintering urbanism is in fact a core feature of the financialisation of the capitalist city. The chapter does not refute the argument made by Graham and Marvin, but rather it builds upon their theorisation of splintering urbanism to demonstrate that the financialisation of infrastructure and capital investment intensifies the process of urban splintering.

Like the process of financialisation itself, however, the extent to which the financialisation of infrastructure accelerates the process of splintering urbanism is highly place-dependent. Because underperforming and peripheral economies are less conducive to investment models that are premised on capturing the future value increases generated by an item of infrastructure, the financialisation of capital investment is less secure in these places, resulting in a polarised landscape of infrastructure investment. This Chapter argues, in part, that the uneven geographies of financialisation can be attributed to the unique ‘geographies of risk and return’ associated with a particular place, which is shaped as much by distinctive local economic geographies as it is by investor calculations or logics.

Despite the continued – and in some instances increased – role of the state in funding and financing infrastructure, it is undeniable that the willingness and ability of financial intermediaries to invest in urban infrastructure assets is increasing. In some places, this is leading to a rapid growth in the private ownership of public assets, transforming them from useful and productive components of the built environment into purpose-built revenue generating machines. As the case study of Chicago in Section 7.2.1 illustrates, the privatisation of public infrastructure can be an attractive options for governments suffering from fiscal stress or looking for quick fixes to fiscal crisis, albeit fraught with often-unforeseen risks and costs (Farmer, forthcoming).

Chapter 5 argues that more financialised models of infrastructure funding can increase need to generate returns on investment (both public and private), for example for servicing debt or for meeting value creation and value capture targets. Sections 7.1.3 and 7.2.2 further interrogate these sorts of funding practices and argue that the need to generate returns on investment incentivises governments and private enterprises to pursue an acceleration in the circulation of capital through the built environment. Although the ‘creative destruction’ of the built environment is already considered to be a key component of capitalist urban development (Harvey, 1985a; Weber, 2002), the Newcastle and Buffalo case studies below illustrate that the intensified search for returns on investment – necessitated by the financialisation of infrastructure and the adoption of financialised investment practices – is causing an acceleration in the process of creative destruction, which, in turn, has splintering implications for the city.

Key elements of the financialisation of capital investment, such the issuance of public debt in the capital markets and the direct investment into the built environment by financial institutions, seem to be causing cities and financial markets to become more integrated and interdependent. A crucial effect of this interdependence is that cities become increasingly vulnerable to systemic crises, which potentially causes the emergence of fiscal stress and even bankruptcy. Section 7.2.3 explores the splintering implications of Stockton’s bankruptcy and especially aims to highlight the costs of the City’s previously speculative model of urban development and financial mismanagement for the citizens, employees and retirees of Stockton.

7.1 The uneven geographies of risk in the UK: seeking a return on infrastructure investment

Innovations in the structuring of infrastructure funding and financing, such as the evolution of public-private partnerships, have created opportunities for the private sector to assume a greater-than-ever role in urban infrastructure investment. Indeed, it has been argued in some quarters (e.g. Whitfield, 2010) that private investors are circling the UK’s public infrastructure assets like vultures, waiting to prey on the juicy returns available.

Despite this dominant metanarrative, the ‘geographies of risk and return’ in many parts of the UK dictate that genuine opportunities for profitable infrastructure investment are limited and, consequently, that the public sector continues to be fundamentally important for defraying the costs of the nation’s infrastructure and – perhaps more importantly – taking

the risk that is associated with debt-based and sometimes speculative investments. This contention is explored further using the cases of Sheffield (Section 7.1.1) and Manchester (Section 7.1.2) below.

Central to the public sector's willingness to make infrastructure investments are the potential rewards of economic growth and job creation that could result. As urban governments strive to meet such strategic objectives through infrastructure investment, they draw on a series of increasingly entrepreneurial and financialised funding and financing practices. Due to the logic of accelerated capital circulation that sits at the heart of such funding and financing practices, as the case study of Science Central in Newcastle (7.1.3) demonstrates, the financialisation of infrastructure investment necessarily coincides with a shift in the strategic priorities of the City Council away from job creation and economic growth and towards the rapid recycling of investment through the built environment, with often splintering and destructive implications.

7.1.1 The public and private geographies of risk and return in Sheffield City Region

In a book entitled 'The Global Auction of Public Assets', Whitfield (2010: 213) proclaims that Sheffield is 'fast becoming a PPP city'. To some, however, the prospect that Sheffield is becoming privatised – or, at least, dominated by PPPs – would seem improbable. After all, this city, fresh from industrial decline, is located in a part of the UK still referred to in some business circles as the 'Socialist Republic of South Yorkshire'.

Despite the existence of PPP arrangements for profitable enterprises such as waste management, corporate services and building services, the core infrastructure of contemporary Sheffield, for the most part, has been created through public investment. The Sheffield Supertram, for instance, completed in 1995 at a cost of £240 million, was funded almost in its entirety by £233 million of central government funds (DSC, 2000; Winkler, 2007). Although the Supertram was sold to Stagecoach in 1997, and thus became privatised, the purchase price was a mere £1.15 million (only 0.5% of its original cost) (House of Commons Transport Committee, 2005: 9), which cannot be considered a substantial private investment in Sheffield's urban infrastructure.

The 1991 World Student Games (WSG) and its infrastructural components present a similar story of Sheffield's dependence on public funding. The City Council paid £147 million to host and construct the facilities for the WSG, which ultimately has left a savage debt legacy, costing the City Council approximately £25 million per year until 2024 (Sheffield City

Council, 2010). Despite a refinancing agreement with the PWLB to reduce the cost of debt, the stifling costs of maintaining the WSG facilities have led to the Don Valley Stadium being earmarked for demolition. Perhaps the most telling aspect of this example, and a sign of Sheffield's continued dependence on public sector investment, is the list of potential contributors to the 'advanced park for sports and wellbeing', which will replace existing facilities at the WSG site. These include Sheffield City Council, Sheffield University, Sheffield Hallam University, Sheffield Teaching Hospitals NHS Trust, Sheffield City Region Local Enterprise Partnership and Sport England (Mark, 2013).

Further evidence of the public sector's continued significance in funding Sheffield's infrastructure can be found in Sheffield City Council's support for the Sevenstone development, which is underpinned by a purchase guarantee and a TIF scheme (Chapter 5).

In contrast to Whitfield's (2010) assertion that Sheffield is fast becoming a PPP city, then, it appears as if the public sector will continue to be both the engine of the city's economy and the source of its infrastructure investment.

The emergence of city-regional institutions has been a key feature of Sheffield's recent reterritorialisation. A driving force in the formation of the Sheffield City Region LEP and the Sheffield City Region Combined Authority (SCRCA) has been the idea that public capital can be most efficiently channelled into 'value-creating' infrastructure projects through a collaborative city-regional investment framework (Section 6.2). To this end, the Sheffield City Region Investment Fund (SCRIF) has been a key product of Sheffield's territorial reconfiguration.

Arguably, the SCRIF represents the most comprehensive attempt in recent history to stimulate Sheffield's city-regional economy through public investment. To date, a total of 17 different infrastructure and development projects have been identified for up to £435.35 million of investment through the SCRIF (Table 7.1). These 17 projects are prioritised according to their ability to generate productivity, jobs and growth – loosely defined as Gross Value Added (GVA). In a similar vein to the Strategic Investment Framework used by Greater Manchester Combined Authority (Chapter 5), the SCRIF uses a 'Single Assessment Framework' (SAF) based on a model called 'FLUTE' (Forecasting the interactions of Land-Use, Transport and Economy) (Figure 7.1).

Table 7.1: Sheffield City Region Investment Fund, initial prioritised scheme list

GVA/£ Rank	Name	£GVA (£m)	Cost to SCRIF (£m)	£GVA/ £SCRIF
1	M1 J36 to Dearne Valley	3663.9	24.4	150
2	Cudworth – Grimethorpe	204.2	5.3	39
3	Sheffield City Centre	695.3	26.4	26
4	Doncaster DN7	294.2	12.8	23
5	Chesterfield Waterside	72.3	3.2	22
6	Chesterfield Northern Gateway	102.6	7.9	13
7	M1 J37 Claycliffe Link	143.1	11.9	12
8	West Moor Link	193.1	16.3	12
9	Upper Don Valley	604	53.4	11
10	Doncaster Urban Centre	268	27.8	10
11	Lower Don Valley - Waverley	407.8	45	9
12	Gateway to the Sheffield City Region	131.6	15.8	8
13	Harworth Bircotes (transport)	80.2	12.2	7
14	North Doncaster A1-A19 Link	134.8	25.8	5
15	Lower Don Valley - Sheffield	252.9	58.2	4
16	Worksop and Vesuvius Works	77.1	26.5	3
17	Barnsley-Doncaster BRT	81.2	62.5	1
Total Potential Cost to SCRIF			435.35	

Source: Sheffield City Region, 2013a.

In short, the FLUTE model measures how much, if any, ‘additionality’ will be generated by a particular public infrastructure investment (see GenEcon and MVA Consultancy, 2013: 13-16). As such, it aims to justify particular interventions by showing that GVA increases within

the Sheffield City Region are the direct result of public investment, rather than the product of pre-existing market trends. For Sheffield City Region, the ability to make such a justification is essential for two main reasons. First, it legitimises the initial public investment in the eyes of HM Treasury and, therefore, substantiates SCRCAs claims for powers from the Centre that will enable it to raise funds and make investments. Second, it provides SCRCAs with some degree of assurance of a return on their investment (in the form of access to an expanded tax base), which is essential for the SCRIF to revolve and to recycle capital through Sheffield's built environment.

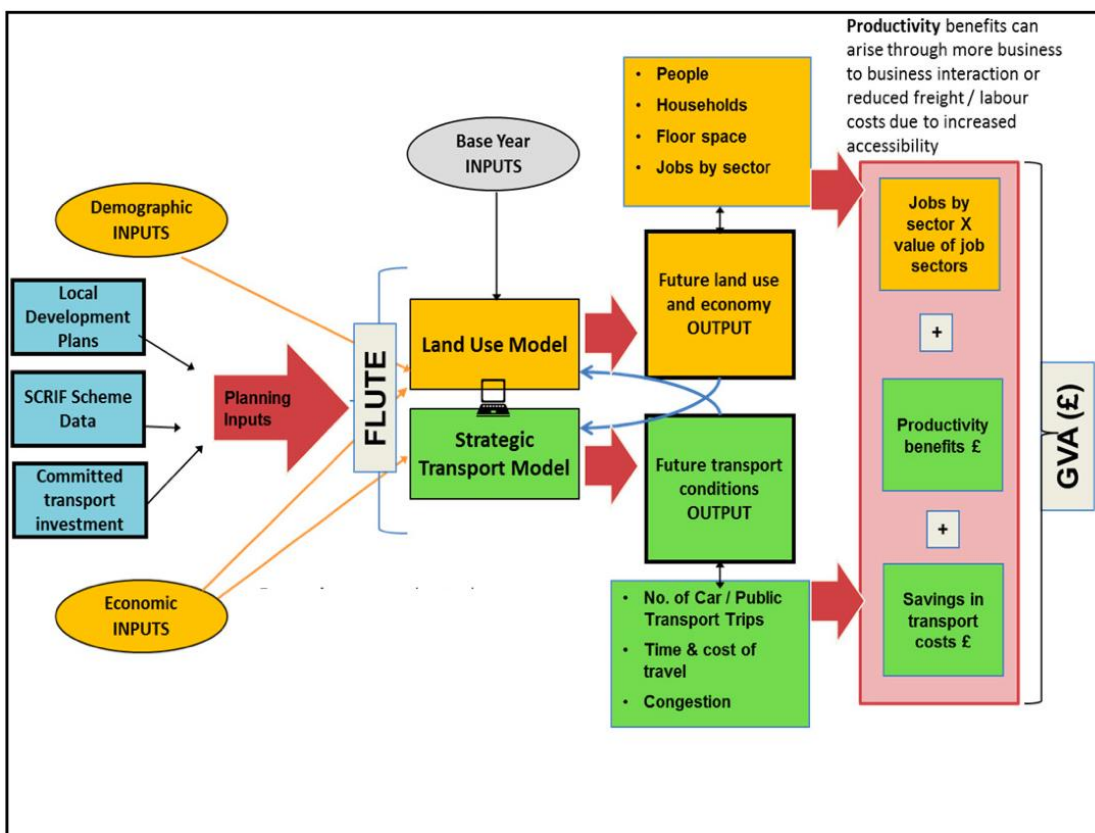


Figure 7.1: The FLUTE model used by SCRIF

Source: Willumsen, 2013.

A key question that emerges from the analysis of SCRIF, however, is that if publically funded infrastructure can generate returns on investment in a way that can support a revolving infrastructure fund, then why are the projects highlighted in Table 7.1 not being invested in by the private sector?

Take the landmark SCRIF investment entitled ‘M1 J36 to Dearne Valley’ in Table 7.1, for example. This £24.4 million investment package includes: strategic highway infrastructure; 295 hectares of site preparation work; and an estimated 3,600 units of housing (Sheffield City Region, 2013b). It is ranked at the top of SCRIF’s investment list because it is forecast to generate £3663.9 million in GVA, with a return on investment ratio of 1:150. It is undeniable that such an increase in GVA would be beneficial for the local economy. Importantly, however, the significant increase in GVA is not easily monetised: unlike in Greater Manchester where the GMCA has an ‘Earn Back’ mechanism (Chapter 6), the only financial returns available in Sheffield would be from growth in the existing local tax base (Council Tax and 50% of NDRs).

The inability to monetise the broader economic and social benefits of infrastructure is also a key obstacle to private investment. For the private sector, GVA is not an adequate measure of return: the only relevant measures for financial institutions and investors are the risk-adjusted ‘internal rate of return’ (IRR), which equates to a capital investment’s profitability, and the risk-adjusted ‘net present value’, which ‘estimates how much a potential project will contribute to shareholder wealth’ (Brigham and Houston, 2007: 361, 363). Although the ‘M1 J36 to Dearne Valley’ clearly has the ability to generate GVA increases, this ability does not necessarily translate into an ability to generate profitability.

Risk is also a key determinant of whether an investment in infrastructure takes place. For the private sector the primary *risk* of investing in an infrastructure project is that ‘the predicted revenues do not materialise’ (Grimsey and Lewis, 2002: 109). This risk can be broken down into a number of different categories, such as technical risk, construction risk, financing risk, political risk, etc. (ibid; AMP Capital, 2013; Weber and Alfen, 2010). For the public sector, risk is arguably less tangible. For example, an important risk is that a proposed investment will cost more than anticipated, potentially causing fiscal stress, hampering service delivery and inhibiting broader social and economic development. Because of these differences, it is possible to increase efficiency by allocating specific risks to the stakeholder who has the capacity to bear and manage those risks most effectively (Figure 7.2), thus providing justification for the public-private partnership (PPP) model of investment (OECD, 2007).

In a PPP or PFI, the public sector (and the taxpayer) typically remains the party that *funds* the infrastructure. This is because it has access to income sources, such as taxation or government grants, which are not available to private investors, and which are available irrespective of the ability of the infrastructure to generate project-specific revenues. While the public sector could just fund and finance the scheme in isolation, bringing private *finance*

into a PPP can enhance the overall ‘Value for Money’ (VfM) that the infrastructure item represents for the taxpayer by creating efficiency savings and by transferring a range of risks to the private sector. From a private investor perspective, investing in a project that is funded from public sources is an attractive prospect because their return on investment is implicitly underwritten by the taxpayer: this benefit is sometimes codified by an explicit public guarantee of private revenues (PwC, 2011b). Although such an arrangement ensures that the public sector will bear the full cost of the infrastructure, it also reduces the weighted average cost of capital (WACC)¹ available to the private sector, thus reducing the return required by investors and, at least in theory, enabling the public sector to generate VfM.

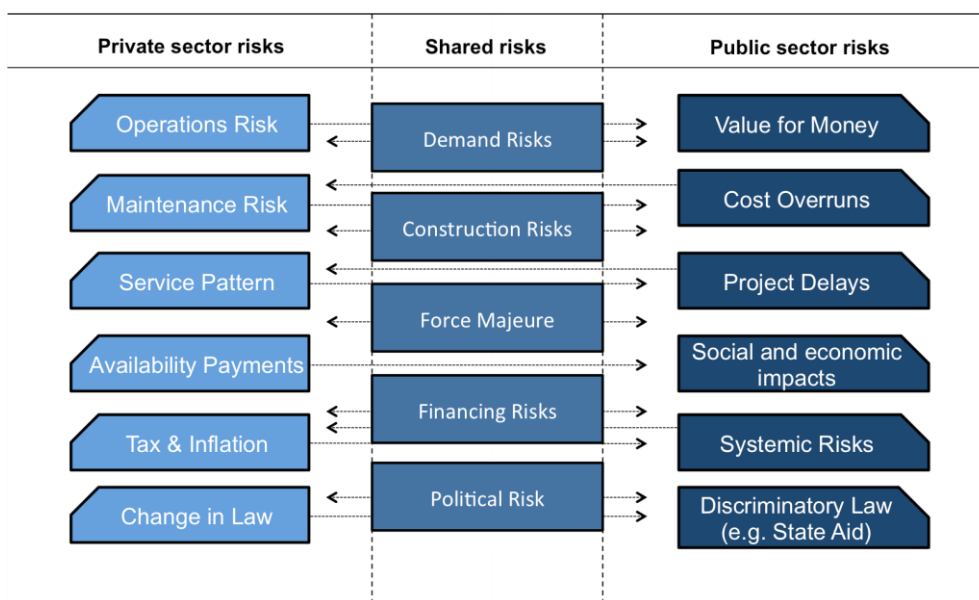


Figure 7.2: Public and private risk allocation in a public-private partnership

Source: Author’s own.

Building on the ‘M1 J36 to Dearne Valley’ example, it should be noted that road infrastructure is a notoriously difficult asset to *fund* through *private* sources: there are a huge range of political, economic and financial challenges to funding and delivering toll road infrastructure (Bain, 2009a). More commonly, road infrastructure is *funded* by the public sector (using ‘availability payments’ or ‘shadow tolls’) while incorporating elements of private *finance*, such as in a PFI (Bain, 2009b). The reader should note, for instance, that even the

¹ WACC is a measure of the average cost of debt capital and equity capital and the extent to which an investor or business is using borrowed money (Vecchi et al., 2013).

Chicago Skyway (below), a landmark example of private investment in road infrastructure, was actually funded by the City of Chicago.

Perhaps the most important factor in the case of the ‘M1 J36 to Dearne Valley’ improvements and SCRIF’s other 16 projects, however, is the particular *‘geography of risk and return’* (see Section 2.4.1) that characterises Sheffield. The place-specific factors that would make private investment in an item of infrastructure in Sheffield seem risky, for example, could include: the fall in the average daily flow of vehicles on the M1 between Sheffield boundary and J34 from 101,077 in 2001 to 77,457 in 2012 (UK Traffic Data, 2014); the increase in Sheffield’s office vacancy rates from 6.7% in 2002 to 12.5% in 2009 (Centre for Cities, 2011: 19); or the comparatively low headline office rental values in Sheffield (Knight Frank, 2014).

These factors, which are unique to Sheffield City Region, point towards the uncertain viability of funding infrastructure through demand-based project-generated revenues (private funding). Ultimately, the characteristics of Sheffield’s economy (i.e. its ‘economic geography’) mean that the role of the state in funding and financing infrastructure is just as important as ever. Even at where infrastructure is financed by the private sector, such as in a PPP, the state (and taxpayer) remains vital in providing the political and regulatory environment in which investment can occur (‘market making’) and in generating the underlying revenues that defray the costs of the infrastructure item at hand (funding).

7.1.2 Private investment in Greater Manchester’s infrastructure? The persistent role of the state

Like Sheffield, Manchester has its share of PPPs, including a £165 million Private Finance Initiative (PFI) agreement between Manchester City Council and Amey and Laing Roads for the provision of street lighting, and a £3.8 billion PFI agreement between the Greater Manchester Waste Disposal Authority, nine Greater Manchester Waste Collection Authorities, and Viridor Laing (Greater Manchester) Ltd for the provision of waste collection and recycling services. Although it is undeniable that such PFI deals represent a degree of private sector investment, the financing mechanism at the heart of these PFI deals ensures that the private sector’s revenue needs are met by mortgage-style payments from the public sector partner (Froud, 2003; Leyshon and Thrift, 2007). That is, whilst they are financed by the private sector, they are funded by the public sector.

Through Earn Back (Chapter 6), the Greater Manchester Combined Authority (GMCA) is arguably leading the way in the UK in terms of funding and financing infrastructure by monetising the economic benefits of its investments. Whilst it is essential to recognise that GMCA's progress in this area is as a direct result of political, financial and legislative support from HM Government, it is also telling that GMCA is willing to borrow against speculative future increases in GVA and the associated revenue streams that it generates: it demonstrates that Greater Manchester's economy has the capacity to grow, creating value that can be captured, and thus providing GMCA with an incentive to invest.

Although this model of value capture works for GMCA, the prospect of generating a more straightforward commercial revenue stream from infrastructure remains as challenging as ever:

'If you look at a transport interchange, if you go to somewhere like Altrincham or Piccadilly, the opportunities for that to generate significant levels of commercial revenues are very limited. The revenue that [TfGM] can generate from transport interchanges is a departure charge, which is relatively small beer. [Otherwise], there really aren't any opportunities in terms of generating public transport infrastructure that makes money... We could have had a differential fare structure on Metrolink, which would have generated far more revenue than the current system, but it would have a very negative impact on the role that the tram system has within the wider transport network, and the role that it has within the economy of Manchester. So we see very clearly [a model that is less efficient at generating revenue] as an integral part of a functional economic area, and fulfilling environmental and social objectives' (Author's interview, Finance Director, local transport authority, 2013).

Given the sparse opportunities for TfGM or GMCA to tap into project-generated revenues, it is perhaps to be expected that there are limited prospects for private sector investment in Manchester's infrastructure. Indeed, despite the ability of public infrastructure investment to unlock *economic growth* in Greater Manchester, the same infrastructure does not appear to be able to generate the required level of packageable, securitiseable and tradable *revenue* streams to meet the desired risk-adjusted returns of private investors.

There is no lack of investment-capital ready and waiting in the wings, even in the wake of a series of constraints placed on financial institutions' investment and lending abilities since the financial crisis, such as the Basel III capital requirement regulations (Allen et al., 2012):

'It is crystal clear that there is no shortage of national and international capital that is looking to invest in development. The global markets are alive and kicking' (Author's

interview, Director of Investment Management, international investment management firm, 2012).

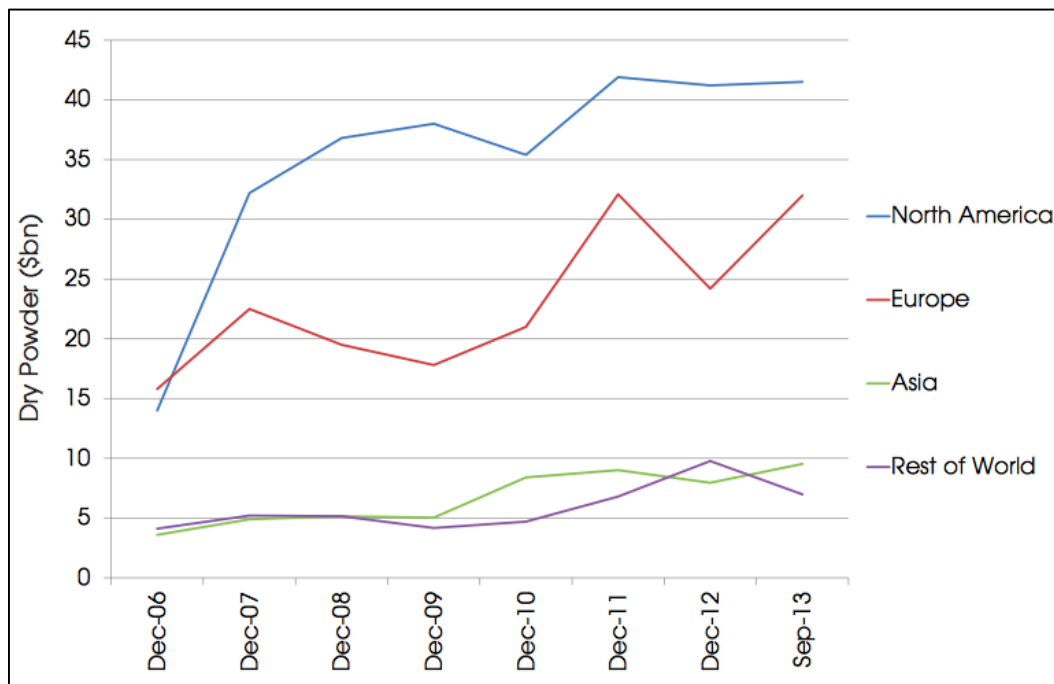


Figure 7.3: Unlisted infrastructure fund dry powder by primary regional focus, December 2006 - September 2013

Source: Preqin, 2013: 7.

If anything, an analysis of the levels of ‘dry powder’ (that is, money that is ready and waiting to be invested) within unlisted infrastructure funds confirms that there is an oversupply of capital in the markets (Figure 7.3). Instead of being a supply issue, then, it appears that the key obstacle to private investment in infrastructure is a lack of genuine opportunities for revenue and profit generation.

This section has already established that the ‘geographies of risk and return’ and, specifically, the challenges of creating project-generated revenues – can limit the opportunities for infrastructure to be funded and financed solely by the private sector. In Manchester, for example, although office vacancy rates have decreased since 2012, the overall trend indicates increasing vacancy rates since 2004 (Jones Lang LaSalle, 2013). Furthermore, prime office rents have only increased at a compounded annual growth rate of 1% over the last five years (Cushman and Wakefield, 2014), substantially below growth rates in the City of London (4.3%) and London’s West End (6.6%) (ibid.). While the relative underperformance of

Manchester's commercial property market does not in itself mean that infrastructure projects cannot generate project-generated revenues, these statistics reveal the relatively unfavourable geographies of risk and return in Manchester.

The activities of the Greater Manchester Pension Fund (GMPF) are indicative of these geographies. The GMPF manages and invests the pension contributions of public sector employees and their employers in the Manchester city-region, including all ten Greater Manchester Councils, as well a range of other public sector employers. Local authority pension funds have been lauded as a potential source of much-needed investment in local infrastructure (DCLG, 2012b). In practice, however, GMPF functions like any other pension fund, aiming to provide sufficient returns to meet pension obligations (in FY 2013/14, the fund made a return of 7%) (GMPF, 2014):

'[Pension funds] are not doing it for the love of growth in the economy. They're looking for a commercial return from it. That's what they're there for. They're not charities' (Author's interview, City Treasurer, metropolitan borough council, and Treasurer, combined authority, 2013).

As a result, there is an innate tension between any ambition of the GMPF to invest in local infrastructure and its actual ability to do so. Currently, GMPF is invested in £98 million of infrastructure assets and has committed a further £144 million to this sector. However, this investment is not dedicated to local infrastructure projects and is instead deployed wherever it can generate the best returns for the fund. That said, GMPF actively invests in regeneration schemes in the UK through its Property Venture Fund. Key investments in Greater Manchester include a stake in the development of 'Airport City', an £800m project in the Airport Enterprise Zone, and a 270,000 sq. ft. office block in St Peter's Square. Nevertheless, even the Property Venture Fund invests more in London and the South East (approximately 25%) than it does in Manchester and the North West (approximately 20%) (GMPF, 2014), providing further evidence that the geographies of risk and return are not balanced in its favour in the local context of the Manchester city-region.

There is no doubt that Greater Manchester presents a different case from Sheffield City Region. Nevertheless, for all of the hype surrounding the Greater Manchester's resurrection as the economic jewel of the North, public investment has been absolutely central to its recent success. The most notable examples of publically funded infrastructure include Metrolink (Chapter 6), Manchester Airport (Chapter 5), the Commonwealth Games Stadium (now the Etihad Stadium) and Manchester's conference centre ('Manchester Central') (Chapter 5). Even projects like Media City in Salford, which is regarded as a symbol of

Greater Manchester's transition towards a successful knowledge economy fit for the 21st Century, received over £30 million of funding from the North West Regional Development Agency (NWDA). Further still, one of Media City's 'spin-offs', the Sharp Project in Manchester, has also had substantial public sector funding, receiving £2.6 million in ERDF funding, £3.3 in NWDA funding, and £4.7 million from Manchester City Council (Ekosgen, 2013: 11).

Despite the 'rise of the infra funds' (Orr, 2007) and the 'rise of a global infrastructure market' (Torrance, 2009b), the state has arguably never had a larger role to play in funding and financing infrastructure. While some landmark infrastructure projects in core economic areas, such as Thames Tideway Tunnel in London, can be funded through private sources (i.e. the 'customer') (Thames Water, 2013), other similar scale infrastructure projects in London, such as Crossrail (also in London), still require substantial public sector funding and support (Butcher, 2014). Even in the Thames Tideway Tunnel, there is a substantial role for the state to play in terms of regulation.

In more peripheral or underperforming areas, such as Sheffield and Manchester, however, the state's role in funding infrastructure can be regarded as even more important. At the same time that its role is increased, the state is exposed to a greater array of challenges in places like Sheffield and Manchester: public sector organisations in these locations also suffer from more fragile tax bases and weaker levels of tax base growth, factors which are becoming especially important given the current wave of fiscal devolution to local authorities in England, and which, when combined with greater infrastructure spending responsibilities, could create spaces of fiscal stress (Chapter 6). More broadly, the revelation that the state's role is indeed as significant as ever – if not more so – highlights the importance of making a conceptual distinction between *funding* and *financing*, and reinforces the need a more detailed and fine-grained analysis of financialisation of public capital investment and its implications.

7.1.3 Taking risks on viability gaps? Decentralisation and the intensification of creative destruction in Newcastle

One of the major barriers to private development and privately funded infrastructure in Newcastle is the lack of viable development opportunities. Whereas Newcastle City Council has previously relied on a steady flow of grant funding from the centre, the availability of such funding – especially in a form specifically designed to close viability gaps – has dried up since the Coalition government embarked on its project of deficit reduction through austerity and spending cuts:

We have a fundamental problem [in Newcastle] of growing values in what is a low-demand market... The whole public sector funding regime has changed radically from one of gap funding, to one of equity investment, and the level of equity investment today is considerably smaller than the funding available through [previous] gap funding regimes, both from Europe and from the central government (Author's interview, Partner, local property consultants, 2012).

The lack of central government funding, in combination with (not unrelated) processes of fiscal decentralisation (Section 6.2), has put more onus on local authorities across England to address the challenges of funding infrastructure and urban development through initiatives that are led, funded and delivered locally.

Local authorities like Newcastle City Council have been keen to take on the mantle of delivering infrastructure and local economic development, despite these activities remaining outside of their statutory obligations, because development initiatives can help meet their own strategic objectives, such as economic growth and job creation. The Core Strategy and Urban Core Plan for Gateshead and Newcastle upon Tyne, for example, states 'economic prosperity' as the first of its five key strategies, for which it identifies some key policy actions:

'Gateshead and Newcastle must promote the growth of key sectors including globally competitive universities, a cluster of hospitals, a thriving knowledge economy driven through research and innovation, a strong financial and professional services sector, good road and public transport accessibility and access to a skilled labour force' (Gateshead Council and Newcastle City Council, 2014: 53).

In line with the above policy actions, Newcastle City Council has pursued a development project called 'Science Central', which aims to combine 'the world-renowned scientific expertise of Newcastle University' with 'leading-edge businesses' (Science Central, 2014), potentially creating up to between 2000 and 5000 new jobs by 2020 (Pearson, 2010). The brownfield site in the heart of Newcastle on which Science Central is currently being assembled was previously home to the Tyne Brewery, where Newcastle Brown Ale was brewed until the Brewery closed in 2004.

While the site's centrality gives it additional strategic significance, its history as a Brewery and previously as a coal-mining site also creates a unique set of infrastructural and development challenges and costs:

'The site was used by the brewery, and there were lots of buried foundations and lots of contamination. Before the brewery, there was a lot of terraced housing and industry

on site. Before that, there was quite a lot of coal mining. So it's a very complex site' (Author's interview, Senior Project Manager, local development firm, 2014).

In addition to the infrastructural challenges and their related costs, a further challenge for Science Central is preserving the value of the site (and the land in particular) while remaining loyal the strategic objectives of fostering world-renowned scientific businesses. By shunning market demands for other forms of say retail-led development, the unquestionably well-intentioned strategic objectives of Newcastle City Council have arguably reduced the value of the site.

As a result of this combination of challenges, the early phases of Science Central have attracted very little private investment. After the closure of the Tyne Brewery, the site is estimated to have been acquired by Newcastle City Council, One North East and Newcastle University for between £33 million and £50 million (Pike, 2014). In addition to this initial capital outlay, public money has also funded the first phase of site preparation:

'In terms of funding for phase 1 [of Science Central], the budget is £31.5 million to deliver soft landscaping, hard landscaping, and the enabling work. The £31.5 million is made up of £8 million each from the University and Newcastle City Council. In addition, the City Council have applied for and secured investment from the Regional Growth Fund (RGF), which is £6 million. There is also money coming in from the European Regional Development Fund (ERDF) of about £5.5 million. There was also then a pot of money right at the start of the project of about £4 million, which was made up of equal amounts between the City Council, the University, and One North East' (Author's interview, Senior Project Manager, local development firm, 2014).

Importantly, Science Central is also part of Newcastle City Council's Accelerated Development Zone (ADZ), its tax increment financing (TIF) scheme (Section 5.2.2). Consequently, the City Council's investment is predicated on generating an uplift in the non-domestic rates (NDRs) payable by businesses located within Science Central. As discussed in Chapters 5 and 6, the process of securitising uncertain future tax base growth is highly speculative, potentially providing rich rewards but also exposing cities to a new set of risks.

Whilst it appears that the development of Science Central is not an explicit example fiscalisation (that is, the pursuit of development specifically in search of fiscal rewards), emergent processes of fiscal decentralisation and devolution in England are placing increasing pressure on the City Council to find ways of meeting its strategic objectives through developments that, through the generation of increased tax revenues, are effectively self-funding (Chapters 5 and 6). Arguably, the Science Central project represents such an attempt. Crucially, the contention here is that the need to meet its debt-service obligations,

in addition to the attraction of recycling any excess revenues back into the urban environment, provides a strong incentive for Newcastle City Council to accelerate the circulation of capital through the built environment and, in turn, to actively promote the process of creative destruction. In short, the faster that this brownfield site in the heart of Newcastle can be turned into a tax-generating parcel of commercial property, the better.

According to Pike (2014), the process of creative destruction, or ‘fast development’, is certainly evident in the Science Central case:

‘The approach to redeveloping the Tyne Brewery site can be characterised as ‘fast development’. Newcastle City Council, the then Regional Development Agency One North East and Newcastle University were quick to acquire the site with the aspiration of deploying the land as part of their ‘Science City’ regeneration vision of urbanising the knowledge economy... The pursuit of ‘fast development’ meant local actors rushed to clear the site and demolish the brewery buildings to create a clean slate for the new vision of science and technology-led urban renewal’ (Pike, 2014).

Unfortunately, the process of creative destruction can have splintering implications for urban environment. In particular, Pike (2014) bemoans how key aspects of Newcastle’s ‘internationally resonant’ culture and heritage, significant historical and architectural artefacts, and other key ‘elements of authenticity and uniqueness’ were lost through the process of fast development on the Tyne Brewery site. Indeed, Pike asserts that:

‘[g]iven its rapid rhythm and desire to quicken the circulation of capital, ‘fast development’ brooks little dissent and encourages no reflection’ (Pike, 2014).

What is perhaps most telling about the Science Central example, however, is the extent to which Newcastle City Council – as the agent of creative destruction – had a clear incentive to pursue this form of ‘fast development’. The financialised investment mechanism at the heart of the Science Central deal, Newcastle City Council’s ADZ, necessitates the accelerated circulation of capital through the built environment: both the City Council’s ability to meet its debt-service obligations and the future recycling of surplus capital back into the urban environment are entirely dependent on the speed at which the Science Central development can be transformed from downtrodden brownfield site to a thriving hub of knowledge-driven private enterprise.

Admittedly, the slow rate of development since the demolition of the Tyne Brewery makes it possible to question the extent to which this case resembles ‘fast development’. However, the key point remains that Newcastle City Council’s intent is to accelerate the circulation of capital through the built environment in order to fund and finance Science Central. If

anything, the inability to stimulate commercial development demonstrates just how precarious and crisis-prone the financialisation of infrastructure investment can be.

On revisiting the composition of Science Central's funding package, it is evident that not all the funding is tied to Newcastle City Council's ADZ. However, going forward, as sources of central government funding continue to dry up, and as the processes of fiscal decentralisation and devolution continue to unfold in the UK, the opportunities for local authorities to engage in financialised investment practices, as well as the potential risks and rewards of doing so, will only increase. Accordingly, the accelerated circulation of capital through the built environment will become a strategic imperative, which will have increasingly splintering implications for the UK's cities.

7.2 The splintering implications of financialised investment in the US

The highly variable geographies of risk and return are equally evident in the US. Arguably, Chicago, as a hub of global commerce and finance, is in a strong position to leverage the benefits of financialisation. Indeed, Section 7.2.1 below demonstrates how Chicago's infrastructure assets are becoming an increasingly attractive investment proposition for financial institutions. At the same time, however, by entering complex contractual agreements with financial institutions for the maintenance and operation of its infrastructure assets, the City of Chicago – despite its institutional sophistication – has unduly taken on a new set of unforeseen risks and costs.

The example of Chicago stands in stark contrast to that of Buffalo, a city which struggles to attract private investment, especially within its dwindling downtown and ageing post-industrial wastelands. In an attempt to reinvigorate the city, governing officials have designed their policy interventions, such as capital investment in site remediation and preparation, to create a landscape that is as attractive as possible to private capital. By lubricating the process of demolition and redevelopment in the hope of unlocking private investment, however, the City of Buffalo and its supporting development agencies have set upon a policy of creative destruction, in which urban churn is favoured over wider social and economic objectives.

Whereas prior to the subprime crisis in 2007-8, Stockton was perceived as one of California's most buoyant property markets, the City's current state of fiscal crisis illustrates how the prospect of financial and fiscal returns clouded the severe risks that were associated with the City's speculative investment practices (see 5.1.3 and 6.1.3). The full extent of the consequences of Stockton's bout of speculative urbanism is still far from clear. Nevertheless,

the on-going bankruptcy process serves as a lesson in the potentially splintering implications of forging closer relationships and interdependencies with financial markets.

7.2.1 Long-term infrastructure leases in Chicago: a fiscal fix with splintering implications

The leasing of public assets to private investors is a form of PPP that can help deliver, operate and maintain essential urban infrastructure. Technically, asset leasing can also be used as a tool to fund and finance the development of new infrastructure. Current practice, however, suggests that asset leasing, rather than being used specifically as a tool to fund or finance infrastructure, is used more broadly as a way of providing funds to a public authority – in return for access to an existing infrastructure asset and its revenue streams – for the purpose of stabilising the public authority’s financial condition. As one of the most visible forms of private investment in infrastructure, asset leasing, therefore, occupies a strange place in the landscape of infrastructure funding: it is a tool which, for the most part, neither funds nor finances infrastructure.

The City of Chicago, for instance, has used the leasing of public assets to private investors as a strategy to raise capital in order to address its persistent Corporate Fund deficit (Civic Federation, 2013). By leasing-out a selection of assets, the City has raised enormous sums of money, enabling it to meet its current financial needs, as well as to set aside provisions with the intention of mitigating future fiscal crises.

In addition to performing as a mechanism for plugging holes in public sector budgets, long-term infrastructure leases also provide a rare opportunity for large volumes of yield-seeking capital to be channelled into the built environment, generating stable, index-linked returns and creating diversity within investor portfolios (Inderst, 2010; Solomon, 2009).

Perhaps most notably, the Chicago examples show that new risks are actually assumed by the public sector through the lease process. For example, lease contracts may contain hidden costs, unforeseen liabilities and clauses that restrict the process of urban planning and strategic development (Ashton et al., 2014; Farmer; forthcoming). A further consequence of the lease ‘transaction’ is that it initiates a long-term process of institutional and regulatory adaptation, such as the ‘deployment of supplementary regulatory powers’ in response to the City’s obligation to preserve investor returns (Ashton et al., 2014: 10). Not only can infrastructure leases have splintering implications for the urban environment, then, but they also provide further evidence of the continued role of the state in a financialised world – albeit in new and reterritorialised forms.

7.2.1.1 Chicago Skyway: a quick budgetary fix

The first landmark infrastructure lease in Chicago came in 2005 when the City of Chicago leased the Skyway, a toll bridge on the city's South Side that links the Interstate 90 (I-90) between Chicago and Indiana, to a private consortium, Cintra-Macquarie, for a period of 99-years at a cost of \$1.83 billion.

The Skyway is not a new item of infrastructure: it was originally built in the 1950s at a cost of \$101 million (1958 prices) (CDOT, 2005). Between its opening in 1958 and the signing of the lease contract in 2005, the Skyway had been owned and operated by the City of Chicago (City of Chicago, 2005). Prior to the lease, the City had already issued two series of bonds against bridge's future toll revenue, Skyway Tollbridge Revenue Bonds Series 1996 (\$180 million), and Skyway Tollbridge Revenue Bonds Series 2000 (\$139 million) in order to pay for a \$260 million renovation programme (City of Chicago, 2004).

Although the lease transaction provided funding to service these debts (see Table 7.2), this was only achieved by securitising the future tolls that the City would have been entitled to receive anyway. In addition to the fact that the City of Chicago was perfectly able to maintain and operate the Skyway over the preceding 46 years, this implies that a lease was not needed for maintaining or renewing the infrastructure itself, which could continue to have been funded through project-generated revenues and financed through the bond markets.

The decision to lease the Skyway, however, was reached during a period in which the City's fiscal health appeared to be entering a period of decline. For example, the City faced budget deficits of \$140 million, \$116 million, and \$155.5 million in FY2002, FY2003, and FY2004 respectively (Civic Federation, 2001, 2002, 2003), and its direct debt rose from \$1.7 billion in FY1995 to \$5.1 billion in FY2004, representing an increase of 202% (Figure 7.4).

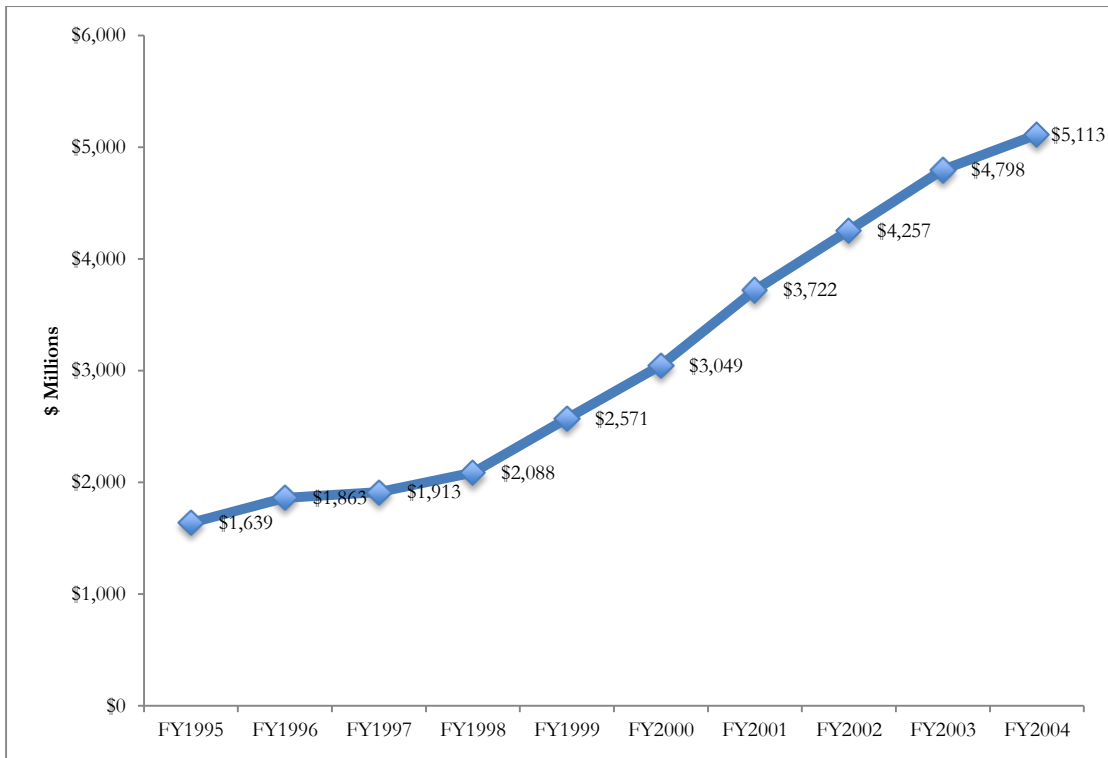


Figure 7.4: City of Chicago direct debt, FY1995-FY2004

Source: Civic Federation, 2005: 31.

It would perhaps be too far to suggest that the City was in fiscal crisis, although these figures suggest that Chicago was at least entering a phase in its history that might be characterised by fiscal stress. Further weight can be given to this interpretation by analysing the ways in which the revenue from the Skyway lease was used (Table 7.2).

Table 7.2: Distribution and use of revenue from the Skyway lease transaction

Skyway Lease Revenue	Destination of Funds	Status
\$500 million	Skyway Long-Term Reserve Fund	In tact (legally restricted)
\$855 million	Used to retire Skyway debt and other City debt	All \$855 million was used by 2005
\$100 million	Human Infrastructure Fund	Drawn down by 2009
\$375 million	Mid-Term Reserve Fund	Drawn down by 2011

Source: Civic Federation, 2013: 105-6.

Although a large portion (up to \$855 million) of the Skyway lease revenues were used to retire existing Skyway debt – or, in other words, to fund the renovations that took place at the turn of the Millennium – and at least \$375 million was used to stave off fiscal crisis over a period of 6 years after the lease, with a further \$500 million being reserved for fiscal emergencies that arise over the long term (Table 7.2). Had the City of Chicago been in better shape fiscally, the Skyway lease could have been used to create a revolving fund that could have reinvested revenues into other aspects of the City’s infrastructure. Although the Human Infrastructure fund is an attempt to do this, it only accounts for 5% of the \$1.83 billion raised through the deal.

In 2010, the rating agency Fitch downgraded Chicago’s general obligation debt from AA to AA+ with a negative outlook while Moody’s downgraded the City’s debt to from Aa2 to Aa3 with a stable outlook (Fitch Ratings, 2010; Moody’s Investors Service, 2010), both citing the over-dependence on revenues from long-term leases for maintaining budgetary stability. The Civic Federation (2010, 2013), an organisation that promotes a sustainable and long-term approach to public financial planning, has also expressed concern about the City’s recent dependence on revenues from the Skyway deal and other leases to balance its budget. Whilst it is surely true that asset leases cannot act as a sustainable model of generating revenues for the City over the long term, it should perhaps be emphasised that the critiques of the Civic Federation and credit rating agencies have more to do with the ill health of the rest of Chicago’s finances and less to do with any immediate negative consequences of asset leases *per se*.

Indeed, there are certainly positive aspects to the Skyway privatisation and the privatisation of road infrastructure more broadly:

‘The private sector is going to manage [Skyway] to a level that it continues to perform, and the public will continue to get that value out of that. Our toll way system, until recently, had been pretty much a failure: it was crumbling; the tolls were low; the City was afraid to raise the tolls; and there was extortion. It has since turned around dramatically, so that today it’s probably the best toll way network in the country’ (Author’s interview, Executive Vice President, regional planning agency, 2012).

Despite the tangible benefits that can be achieved through private sector efficiencies, the evidence available from the Skyway deal appears to show that fiscal stress (current and impending) was the key driver of the lease. In a more fiscally stable environment, the public

sector may well have chosen to retain ownership of the Skyway and thus benefit from a stable income of toll revenues over the long term.

7.2.1.2 Chicago Parking Meters: from quick fix to long-term liability

The Skyway deal signalled the start of a period in which the long-term lease model was rolled out across Chicago to a number of other suitable forms of infrastructure. Perhaps the most notable example is the lease of the city’s parking meters to Morgan Stanley Infrastructure Partners (MSIP) in 2008 for a term of 75 years at a cost of \$1.15 billion.

Like the Skyway deal, the parking meter lease can be understood in the context of growing fiscal pressures on the City. In July 2008, the City’s budget deficit was forecast to rise to \$469 million for FY2009, while its direct debt for FY2008 had risen to \$6.1 billion (or \$2,115 per capita) (Civic Federation, 2008, 2009). Indeed, an analysis of the use of revenue generated by the lease transaction almost mirrors that of the Skyway deal, with the exceptions that there was no significant outstanding debt to retire from any recent renovations and that a greater proportion of the revenue was dedicated to providing budgetary relief (Table 7.3).

Table 7.3: Distribution and use of revenue from the Parking Meter lease transaction

Parking Meter Lease Revenue	Destination of Funds	Status
\$400 million	Parking Meter Long-Term Reserve Fund	\$320 million drawn down to date
\$325 million	Mid-Term Reserve Fund	Drawn down by 2011
\$100 million	Human Infrastructure Fund	\$83.5 million drawn down to date
\$326 million	Discretionary Budget Stabilization Fund	Drawn down by 2010

Source: Civic Federation, 2013: 109.

In addition to providing further evidence that the City of Chicago has used long-term asset leases as a fix to its short-term fiscal challenges, the parking meter deal also exhibits the on-

going risks, liabilities and costs that a public sector lessor can face well beyond the signing of the lease agreement.

It is important here to separate the genuine on-going risks, liabilities and costs from the general controversies of the lease. Of great frustration to the public, for instance, was the poor implementation of the privatisation: despite large rate increases, coins remained the only method of payment, meaning that paying for parking was simply impractical. Taken in isolation, however, this short-term frustration did not pose any genuine form of threat to the City, taxpayer or user (in fact, arguably the lease proceeds actually prevented tax increases or service cuts in the short term).

Nevertheless, it is beginning to emerge that the lease has also exposed the City to some longer-term risks and liabilities:

‘Not only did [the Mayor] give away those metres for 75 years, but also if there are handicapped people parking in the spaces and not paying, we have to reimburse [the investors] for that. Every time we have a street resurfacing and we have to close the street for a couple of days to put new asphalt on it, we have to repay them for lost revenues. If we want to move some spaces because we want to put a curb cut in there, we have to reimburse them for that... We’re planning for bus rapid transit in the city. But, if we want to take away a lane, and dedicate it to busses, we’ve got to compensate them for all that lost revenue. So we’ve essentially given up the right to control the public way’ (Author’s interview, Executive Vice President, regional planning agency, 2012).

In a damning analysis of the parking meter lease, Farmer (forthcoming: 28) argues that the concession agreement has ‘left future residents with less control over their streets, higher transportation costs, new layers of expenditures and debt, fewer revenue-generating resources, and the bulk of the risks and costs to the system’.

Farmer’s contention is that there is a contradiction at the heart of the long-term lease model: the very attempt to safeguard an infrastructure asset’s long-term revenue generating ability – a prerequisite for investor participation – necessarily creates new obligations, risks and costs for the City.

Following the parking meter lease, for instance, when planning and developing new transport infrastructure such as a bus system, or, similarly, when improving accessibility for disabled persons, the City of Chicago and its planning agencies have been contractually obliged to ensure there is no negative impact on the concessionaire’s income from the meters. As a result, the City incurs a cost, either socio-economically by being forced to implement a

revised, restricted and potentially sub-optimal policy initiative, or financially in the form of ‘true up’ payments to the concessionaire, which compensate it for loss of revenues (Table 7.4).

Over the 75-year lease term, there is a risk that the City will be continuously and severely hampered by these costs. Indeed, whereas MSIP is expected to generate \$11.6 billion from the parking meters, the City of Chicago could be forced to pay MSIP \$1 billion in ‘true ups’ (Farmer, forthcoming: 16) – almost the same value as the entire lease agreement.

Crucially, over such a large timescale, the City’s obligation to preserve the value of these meters, and the need to subsequently manage and mitigate the costs of doing so, necessitates a continuous process of institutional adaptation and restructuring (Ashton et al., 2014, Farmer, forthcoming). From the outset, the ability of governments to engage with global flows of capital and financial intermediaries depends on them developing the institutional capacity to be agile, reactionary and decisive (Ashton et al., 2014). During the course of a lease, institutional structures that threaten the sacrosanctity of the asset’s revenue generation capability are pressurised to restructure in order to align with this overarching objective. For example, since the parking meter deal was struck, the City of Chicago’s Commissioner of Transportation has become subordinate to the City’s Department of Revenue with respect to parking meter management and revenue collection (ibid.). Furthermore, in some parking-related matters, the Department of Revenue is also now free to act beyond the scrutiny of other City officials and internal monitoring procedures (ibid.).

Table 7.4: The risks and costs of the Chicago Parking Meter lease

Risk	Costs	Implications
Fee increases	<p><u>CBD:</u> 2008: \$3 per hour 2013: \$6.50 per hour</p> <p><u>Rest of Loop:</u> 2008: \$1-1.50 per hour 2013: \$4.00 per hour</p> <p><u>Other areas:</u> 2008: \$0.25-0.75 per hour 2013: \$2.00 per hour</p>	<p>Between 2008 and 2013, parking meter fees increased by between 117% and 700%.</p> <p>In 2006 (before the lease) the parking meters generated \$22 million during the year. In 2011, Meters generated \$80 million.</p>

Non-compete clauses, adverse action clauses and true-up adjustments	<p>In 2012, MSIP claimed up to \$61 million in ‘true-up adjustments’.</p> <p>Although this has been challenged, the anticipated total cost of true-up adjustments is still \$242 million.</p> <p>The City agreed to pay a further \$54.9 million to CPM for losses of revenue due to free parking for disabled persons.</p>	The threat of true-up adjustments means that there is a permanent constraint on the ability of the City to freely undertake urban planning and development, especially in the area of transport planning.
Preserving investor returns	The parking meter lease agreement has positioned the ability of the meters to generate revenues as sacrosanct, prioritising private revenue generation over other policy objectives.	Private value creation has become central to public policy, e.g. removal of rush hour parking bans and stricter enforcement of fines for parking offenses.

Source: Ashton et al., 2014; City of Chicago, 2008; Dardick, 2014; Farmer, forthcoming; Waguespack, 2008.

The contention could be made that the risks and costs associated with the Chicago parking meter deal specifically result from the relative inexperience of the City in leasing infrastructure, the City’s hasty approach to signing the concession agreement, and its desperation to achieve a short-term fiscal fix. However, following Ashton et al. (2014) and Farmer (forthcoming), the key driver of new costs and risks appears to be the long-term and ‘transactional’ nature of infrastructure leases in general. Indeed, the lease places inherent pressures on the municipal government to maintain the value of the asset throughout the entire lease term. Crucially, in turn, these pressures can create new sources of fiscal stress, drive new phases of state and institutional restructuring and reterritorialisation, and have splintering implications for the urban environment.

7.2.1.3 Chicago Infrastructure Trust: governing urban problems through financial markets

In March 2012, Rahm Emmanuel, the Mayor of Chicago, created the Chicago Infrastructure Trust in order to find innovative ways to fund ‘transformative infrastructure projects’ in Chicago. The Infrastructure Trust is expected to contribute approximately \$1.7 billion of the

\$7 billion of infrastructure spending targeted by Rahm Emmanuel over his term as Mayor (Kirkman, 2012). In particular, the objective of the Trust is to use innovative and bespoke mechanisms to channel private sector investment into the city's infrastructure, whilst maximising the creation, capture and extraction of value. In essence, the creation of the Chicago Infrastructure Trust represents an attempt to rollout the asset-leasing model (above) by forging investor-government partnerships that are equipped to adapt and respond to the different needs of a wide range of infrastructure across the city.

Despite early calls for the Chicago Infrastructure Trust to function like an infrastructure bank or fund, for example by pooling capital from a range of private investors, the Trust has indeed developed into more of a specialist public sector investment partner. As such, it plays a deal-making role, providing private investors with access to public assets, and a structuring role, creating special-purpose vehicles through which finance can be raised 'off balance sheet' and returns can be provided to private investors or can be earmarked for reinvestment into Chicago's infrastructure.

The Chicago Infrastructure Trust's first three projects have focused on making energy efficiency savings by retrofitting publically owned buildings. The aim of a retrofit is to implement measures such as replacing inefficient boilers and thin windows, improving lighting and adding insulation, which would create energy savings that translate into annual financial savings that can be securitised in order to defray the upfront costs of the retrofit. After any debt has been serviced, savings will be used to provide returns to the Trust's private financiers and, finally, to the Trust itself.

Forecasts had indicated that the initial value of these projects would be anywhere between \$50 million and \$115 million each (Chicago Business Journal, 2012; Ruthhart, 2013). However, project complexity (Figure 7.5) and technical challenges, such as the difficulty of structuring an appropriate financing package that transfers risk away from the City of Chicago whilst also remaining attractive to investors and contractors alike, have led to shrinkage in the size of deals.

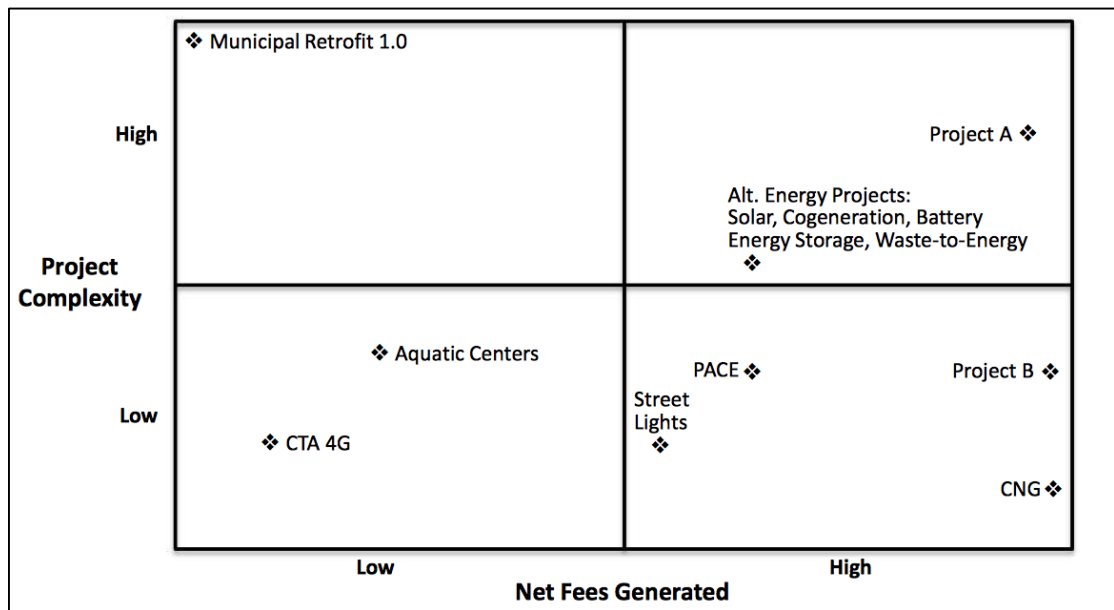


Figure 7.5: Feasibility of approved or proposed Chicago Infrastructure Trust projects

Source: Chicago Infrastructure Trust, 2014a.

Although the Trust currently pertains to have a project pipeline of over \$1 billion (Chicago Infrastructure Trust, 2014a), the only deal that has closed so far is a \$12.9 million contract to retrofit 60 municipal buildings (ibid.). Such a modest deal, with a return on investment of only 4.95% (ibid.), is not necessarily going to grab investors' attention. Other projects in the pipeline include: two further retrofit schemes, one of the city's swimming pools and another of the city's streetlights; a scheme to deliver compressed natural gas fuelling infrastructure by leasing city-owned properties to private providers of compressed natural gas fuel; a scheme to provide '4G wireless' on the Red and Blue lines of the Chicago Transit Authority subway system by selling licencing agreements; and a Property Assessed Clean Energy (PACE) scheme, which would provide renewable energy upgrades to commercial buildings which would be funded by incremental property taxes and financed by the Trust and its private investors (Chicago Infrastructure Trust, 2014a, 2014b). However, these schemes are all in their infancy and almost certainly subject to change.

The unexpectedly barren first two and a half years of the Chicago Infrastructure Trust is perhaps illustrative of the challenges of rolling out the asset-leasing model and tailoring it to small and bespoke projects that have proven to be complex and not particularly profitable. Arguably, it also signifies a sense of caution that has developed in City Hall following the controversies of recent large-scale asset leases such as that of the parking meters.

However, the gradual evolution of the Trust does reflect the continued willingness of the City of Chicago to embrace the process of financialisation as a solution to its growing fiscal pressures and persistent economic challenges. Indeed, Ashton et al. (2014: 14) maintain that the Trust is the latest example of the City's growing attempts to 'govern urban problems through financial markets'. The impending acceleration of activities by the Chicago Infrastructure Trust, therefore, may force the City to enter into a new series of tempestuous negotiations with financial intermediaries, and thus produce a similar – if not increasingly complex and opaque – set of risks, obligations and costs for the City going forward.

7.2.2 The Buffalo funding model: countering urban decline or fuelling creative destruction?

The geographies of risk at play in Buffalo determine that the state must continue to perform a central role in funding and financing infrastructure. However, in the shared context of fiscal stress and economic stagnation, the reaction of Buffalo's governing entities to this need takes the shape of a wave of entrepreneurial policymaking, which frequently prioritises the objective of capturing value from the built environment that can either be harvested or recycled back into the further value-creating projects.

Specifically, Buffalo's governing institutions face the challenging task of managing urban decline by investing what limited resources they have in carefully selected strategic locations that might serve to rejuvenate the city's hollowed-out centre. As well as opportunities for revival, vacant areas of urban land can simultaneously be black holes into which public sector capital is indefinitely sucked. Indeed, there is a successful industry in Buffalo that thrives off the flow of public capital into these urban areas by offering services which accelerate the destruction and recreation of the built environment under the pretence that this process is helping to meet strategic objectives. Crucially, this process of 'creative destruction' could have severe and negative consequences for Buffalo, especially including the displacement or exclusion of low-income and minority communities from newly redeveloped areas.

Although the processes of deindustrialisation and suburbanisation are no longer at their most potent, Buffalo's post-industrial heritage continues to constrain its transition towards a modern knowledge-based economy (Glaeser, 2007). Furthermore, these processes continue to expose Buffalo to a very particular form of urban development, namely the recurrent investment of public capital in large derelict or vacant areas in the hope of transforming the city's fortunes:

‘We have had a fifty year fixation on silver bullets and islands of development. They are sprinkled throughout the region, whether it’s the Stadium in Orchard Park or the Convention Centre downtown, it’s just one after the other... It is something to do with the sheer availability of vacant land’ (Author’s interview, Executive Director, local community development organisation, 2013).

In addition to the sheer availability of empty or unproductive urban land, there is a very evident political-economic driver of such large-scale and purportedly ‘transformative’ urban development projects:

‘It is just a classic growth machine complex. It’s five developers and they like big projects. They like to build them and they like to finance them, it’s the same story: wielding their power to allocate public capital – usually it’s to capture public capital, privatise the gains and socialise the risks... Generally I think those projects have done very little to strategically position Buffalo for growth even within a capitalist framework... but I guess there is a desperation that comes out of deindustrialisation that makes you a little more prone to fantasies, to white knights coming in and saving you’ (Author’s interview, Executive Director, local community development organisation, 2013).

Most infrastructure or urban development projects in Buffalo are not viable in their own right. In other words, due to the unique economic geography of Buffalo, these projects do not yield sufficient project-generated revenue in order for them to be privately funded. Powerful developers, however, can put pressure on Buffalo’s governing institutions to use public capital to fill these viability gaps, and, as long as there is the potential to ‘leverage in’ a satisfactory ratio of private dollars to public dollars spent, the argument can be made that this use of public capital meets strategic objectives such as economic growth and job creation.

The Metro Rail transit-oriented development that sits at the heart of one of Buffalo’s current landmark urban development projects, the Buffalo-Niagara Medical Campus, is a good example of how public interventions are justified in this light:

‘The Metro Rail transit-oriented development is heavily weighted in favour of private investment as opposed to public. That doesn’t mean that there aren’t increments of public subsidy – there is actually gap financing right across the project – but we see a shift in public investment fostering private. The whole theory of the Buffalo Billion Investment Fund is that \$1 will leverage \$5 of private investment, so we’re looking for that kind of ratio’ (Author’s interview, Dean, local university, 2013).

In total, the Buffalo-Niagara Medical Campus will cost \$375 million (McCarthy, 2013). In combination, the completion of the Buffalo-Niagara Medical Campus and another landmark

project, the Erie Canal Harbor Development (or ‘Canalside’), will require \$2 billion of investment, of which approximately 50% will be from public sources, plus a further \$1 billion of investment in related transit infrastructure.

Table 7.5: Sources of funding for Phase 1 of the Canalside development, Buffalo

Funding Source	Amount of Investment
New York Power Authority	\$92,828,507
New York State	\$21,000,000
Empire State Development Blueprint	\$5,000,000
Private Development	\$340,897,950
Total	\$459,726,457

Source: New York State Urban Development Corporation and Empire State Development, 2013: 15.

Table 7.5 outlines the funding sources for Phase 1 of the Canalside development. Private investment has been ‘leveraged’ in by public capital at a ratio of approximately 3:1. Although this seems like a productive use of public capital, an alternative reading of the Canalside development could emphasise that for every three dollars of private investment, one dollar of public investment is required to make the scheme viable. In other words, whilst the private sector is investing its own capital, it is using public capital as a tool for de-risking development and for catalysing the circulation of its own capital through the built environment.

The effect of this model of urban development is the emergence of a series of collaborative partnerships between local political and economic elites, which have the sole intention of ‘doing projects’ and ‘churning money’. This is creative destruction in motion, and it is a win-win for the parties involved: policymakers can evidence tangible progress whilst proclaiming the number of private dollars ‘leveraged in’, developers can reap the profits, and local quangos, such as the Industrial Development Agencies (IDAs), fulfil their funding requirements:

‘A lot of these deals, we’ve come to call *‘building harvesting’*. What happens is like with the AM&A’s [department store] deal they had lined up: \$15million to acquire and demolish... The money would come from some State agency. The Erie County Industrial Development Agency, because they were the mechanism that collected and dispersed the money, would get to keep 20%. That’s over £2million on one building demolition... All these IDAs, by law, have to be self-funding. How are they funded? Well they live off 20% of whatever money they can pull in, so they have to flip land, flip buildings and pull in money any way they can’ (Author’s interview, Principal, local law firm, 2013).

The implications of this process of creative destruction can be highly fragmentary for the urban environment and the city’s residents. Particularly notable in Buffalo is the impact that this model of urban development has for reinforcing the separation between what Graham and Marvin (2001) call ‘spaces of seduction’ and ‘networked ghettos’ (Section 2.4).

The new Buffalo-Niagara Medical Campus, for instance, could have become an anchor institution for social and economic development in East Buffalo, a historically deprived area of the city. However, Buffalo’s development elite exerted sufficient influence over the actors involved to ensure that the scheme was located in a more profitable location:

‘When we saw the original outlines of the way in which they were going to develop the Buffalo-Niagara Medical Campus, Ellicott Street [in the West] was going to be the spine of the neighbourhood rather than Michigan Avenue [in the East]. We had a shouting match, because we wanted the spine to be Michigan. Because if Michigan is the spine, development might drive towards the East, rather than towards the West. There was a lot of debate, but the Medical Campus cut a deal with the local minister, and the minute that deal was cut, everything was lost’ (Author’s interview, Director, university department specialising in urban studies, 2013).

On the surface, whether a development is located either three blocks east or three blocks west seems largely insignificant. However, a closer look at Figure 7.6 indicates that changing the location of a transformative development project by a few blocks could dramatically influence the type of community that stands to benefit from the development. Out of 102 metropolitan areas in the US, Buffalo is the 6th most racially segregated (Population Studies Centre, 2010). The East Side, which is a majority black area (Figure 7.6), has suffered disproportionately from this segregation: median income on the East Side is as low as \$14,000 per year, average house prices are only \$40,000, while indicators such as violent crime are higher than the Buffalo average (City Data, 2014; Realtor.com, 2014; WGRZ, 2014).

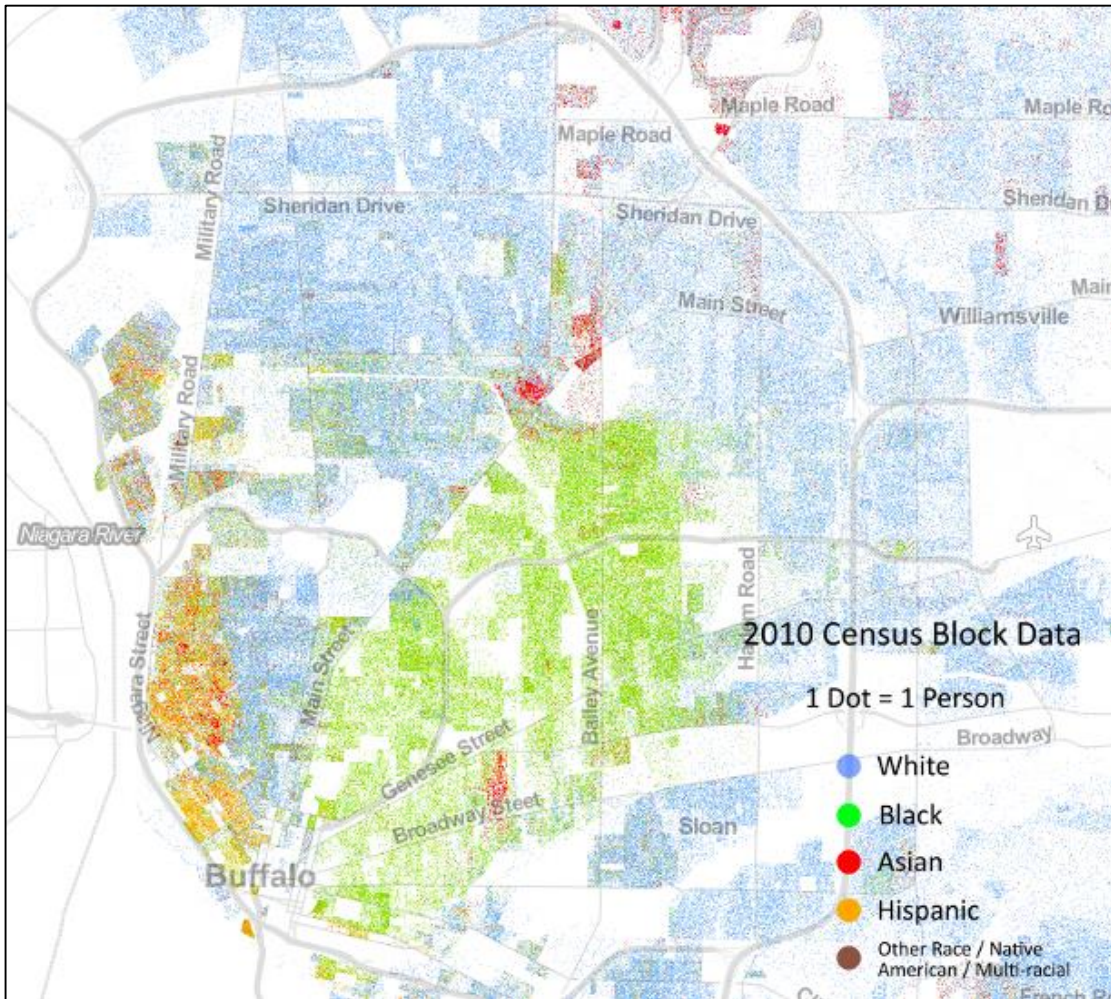


Figure 7.6: Racial dot map of Buffalo based on 2010 US Census data

Source: Cable, 2013.

In a sense, though, the specific location of the Buffalo Niagara Medical Campus is of minor importance. Even if it had been located in the heart of East Buffalo, it might still have had negative and splintering implications. Miner (2014), for instance, questions the extent to which new landmark developments, such as the Buffalo Niagara Medical Campus, Larkinville and Canalside, are helping poor inner-city neighbourhoods. On the contrary, Miner argues that, actually, the ‘Buffalo Boom’ is in fact excluding lower-income and minority groups from the benefits of urban development and is thus augmenting the downward cycle of inner-city poverty.

Indeed, the contention here is that patterns of inequality and racial segregation in Buffalo are (at least partially) caused by the ways in which infrastructure and urban development are funded and financed. Although less explicitly financialised than in Chicago, the Buffalo

model, which has its origins in the city's encounters with deindustrialisation and suburbanisation, prioritises the circulation of capital through the built environment, fuels the process of creative destruction, and has splintering implications for Buffalo and its urban environment.

7.2.3 At the market's mercy? Exploring the implications of Bankruptcy in Stockton

For Stockton, the processes of financialisation and fiscalisation that were at the heart of the City of Stockton's project of speculative urbanism in the early and mid 2000s have had visibly splintering implications for the city's urban environment. In particular, the City's bankruptcy filing in June 2012, which was underpinned by the City's over-indebtedness and partially caused by its highly financialised and speculative capital investment programme (Section 5.1.3), entered the City into a damaging process of fiscal adjustment. Through the adjustment programme (see US Bankruptcy Court, 2013c), the City had little option but to cut wages and salaries, terminate employee and retiree benefit and healthcare packages, increase taxes, cut services and significantly reduce capital expenditure. These measures, together with the broader economic impact of the subprime crisis and ensuing economic crisis, have had severely splintering implications for Stockton.

7.2.3.1 From healthcare to homicides: the impacts of fiscal crisis on Stockton and its citizens

The fact that the City of Stockton was enduring a period of fiscal crisis became apparent well before the City filed for bankruptcy in 2012. For instance, between FY2008-9 and FY2009-10 the City's General Fund revenues dropped by almost 20% from \$203.1 million to \$166.9 million (City of Stockton, 2014a: 3). At the same time that its revenue base was collapsing in wake of the subprime and economic crises (Section 6.1.3), the City was also faced with the spiralling costs of its labour force, retirees and debt obligations.

At first, the City attempted to address its fiscal crisis internally. In order to close the gap between falling revenues and rising costs, the City reached into its financial reserves until to the point of exhaustion, after which it decided to begin making cuts in jobs and services in an attempt to balance its budget. Between FY2008-9 and FY2010-11, the City made \$52 million of 'savings' by cutting the level of wages paid to its employees (City of Stockton, 2014a: 3). Depending on their role within the institution, employees' wages were cut by

between 9% and 23% (ibid.). At the same time, the promise of retiree medical coverage was rescinded for all employees.

Over the same period in which the City of Stockton implemented these substantial cuts to benefits and pay, \$38 million of worth redundancies and service reductions were also made, exposing Stockton’s employees and residents to even further pain (City of Stockton, 2014a: 3). In total, the City’s police force was reduced by a quarter, its fire service shrank by almost a third, and 43% of staff in non-safety roles were made redundant. Just as the cuts to benefits and pay had serious negative implications for retirees, these cuts to services and the workforce had drastic and splintering implications for the citizens of Stockton.

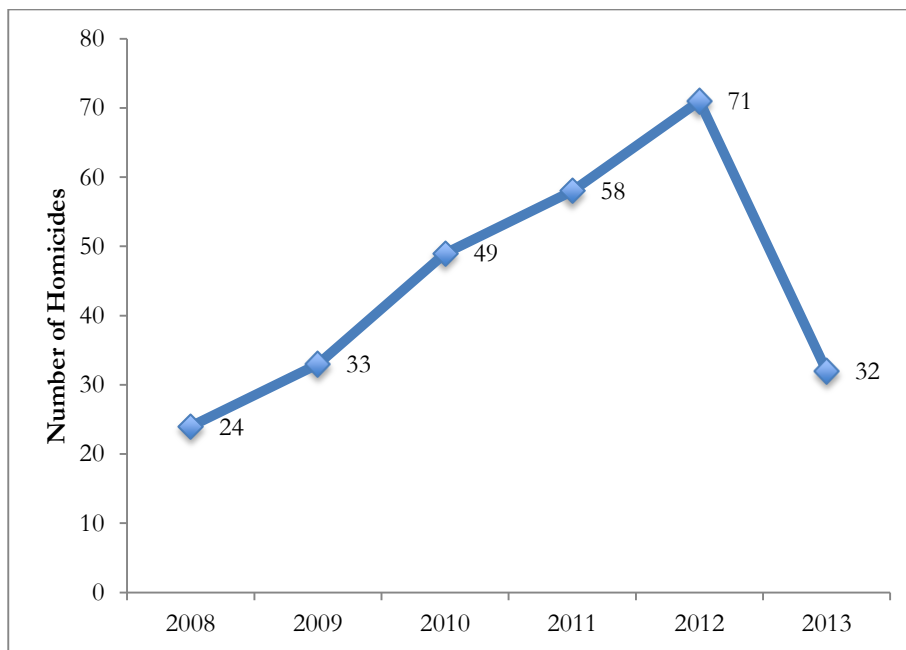


Figure 7.7: Number of homicides in Stockton, 2008-2013

Source: City of Stockton, 2013c and Blankstein, 2014.

Between 2009 and 2013, the 25% reduction in police services equated to a total of 99 police officer positions, 53 civilian positions and 40 part-time policing positions being cut (Jones, 2013). The effects of these cuts have not been incidental. For example, there has been a direct correlation in the number of homicides committed in Stockton and the reduction in police forces: between 2008 and 2012, homicides increased by almost 200% (Figure 7.7). Rates of other violent crimes have generally been more stable over this period. However, between 2011 and 2012, the number of violent crimes also increased from 4,155 to 4,630 per 100,000 population (Blankstein, 2014).

Although the cuts implemented by the City of Stockton were unprecedented and ‘unheard of among Californian cities’, they were insufficient to balance the FY2012-13 budget, which still faced a shortfall of \$26 million (ibid: 4). As a result, in February 2012, the City began ‘AB506’, a mediation process with its creditors (City of Stockton, 2012a), which signalled the start of the process that culminated in the City filing for bankruptcy on the 28th June 2012.

The bankruptcy process itself had further negative implications for Stockton’s employees and residents. The Pendency Plan, which was adopted on 26th June 2012, reinforced cuts in employee salaries and benefits that had taken place over the previous four years, and outlined plans to phase out all benefits for retirees by 2014. In July and August 2012, a series of agreements were finalised with labour unions, resulting in further cuts to employee benefits and pay of \$39.6 million (City of Stockton, 2014a).

Due to the severity of the City of Stockton’s fiscal crisis, it was essential that the process of cost cutting was also combined with measures to increase the City’s levels of revenue generation. Because of the persistence of Stockton’s faltering tax base and its broader economic underperformance, there has been limited potential for raising additional revenue through existing sources. In order for the City to forge a sustainable financial future and a viable plan of adjustment, therefore, proposals were drawn up to implement a new local sales tax. In November 2013, a proposed 0.75% increase in the Stockton’s sales tax (‘Measure A’) was approved by voters and adopted by the City, alongside another measure to improve public safety by hypothecating 65% of revenues raised by Measure A to implement the Marshall Plan Violence Reduction Strategy (‘Measure B’).

In reality, the City of Stockton’s fiscal crisis has had severe and damaging implications for the city’s residents and businesses. For some, such as City employees who have lost their jobs or pensioners who have lost their health insurance, the City’s spiral towards bankruptcy has been a disaster, while the crisis has also had an unprecedented impact upon the quality of local public services such as fire and police, with knock-on implications for public safety and wellbeing. The citizens, employees and retirees of Stockton have – to a greater or lesser extent – been helpless in their ability to negotiate the currents of global change that eventually sent the City of Stockton over the edge of the fiscal cliff. Nevertheless, they have had to bear a significant portion of the costs of the City’s pursuit of an overly speculative development strategy in the early 2000s and its related yet unforeseen trend towards structural over-indebtedness and ultimate insolvency.

7.2.3.2 Conceptualising bankruptcy: splintering urbanism and the future of capital investment in Stockton

Stockton's bankruptcy provides an invaluable lens through which to observe and make sense of the interdependencies between the municipality and its employees, citizens and creditors, while also posing questions as to the ability of Stockton to invest in infrastructure going forward. More broadly, cases of municipal bankruptcy can inform our understanding of the relationship between cities and the financial markets that emerges during the adoption of financialised investment practices and can help to shape debates around the ways in which cities can and should negotiate the process of financialisation and the intensification of systemic competition.

The decision by the City of Stockton to cut pay, benefits, jobs and services well before considering entering the process of mediation and eventually filing for bankruptcy implies that the employees, retirees and citizens of Stockton were first in line to suffer the effects of fiscal crisis, while other stakeholders, such as the investors who purchased the City's bonds should remain protected. While this pattern of events might be viewed as absolutely necessary for maintaining fiscal discipline amongst municipalities and for preserving the integrity of the municipal bond market, it nevertheless represents only one of a number of ways in which the City's descent into fiscal crisis could have been addressed.

Because municipal bankruptcy – with the exception of other recent yet relatively minor cases (see Davidson and Ward, 2014) – has historically been such a rare occurrence (Spiotto, 2012), the negotiations between the City of Stockton and its creditors have been fraught with conflicting political and financial interests, the legal authority and credibility of which have been highly uncertain. As a result, the City of Stockton, its creditors and the presiding federal court have had the challenging task of conceptualising municipal bankruptcy, its processes and implications almost entirely anew.

Although the Pendency Plan issued by the City of Stockton on 26th June 2012 suspended debt payments to creditors, the legality of this suspension and the overall eligibility of the City for Chapter 9 bankruptcy were immediately challenged by the City's creditors. In particular, objections were raised by a group of municipal bond insurers, referred to as the 'Capital Market Creditors', which included Assured Guaranty, National Public Finance Guarantee ("NPF") and Franklin Templeton ("Franklin"). Table 7.6 provides an overview of Stockton's outstanding obligations at the start of the bankruptcy process.

Table 7.6: City of Stockton's outstanding debt obligations during bankruptcy

Creditor and Detail	Amount (\$ millions)
Association of Retired Employees - Retiree Medical Costs	\$545.0
Assured Guaranty 2007 Pension Obligation Bonds	124.3
NPFG 2004 Arena Lease Revenue Bonds	45.1
Assured Guaranty 2007 400 E Main Building Bonds	40.4
Franklin Funds 2009 City Facilities Lease Revenue Bonds	35.1
Jarvis City General Fund to Utility Fund Statement	32.0
NPFG 2004 Parking Structure Lease Revenue Bonds	31.6
Sports Team Lease Subsidy (Thunder and Ports)	15.6
AMBAC 2003 Certificates of Participation	12.6
NPFG 2006 SEB Building Lease Revenue Bonds	12.1
State of California Department of Boating Marina Development Loan	10.8
Marina Towers Judgment	1.9
Price Judgment	1.4
Total	\$907.9

Source: City of Stockton, 2014a.

The largest obligation is to the Association of Retired Employees, who claimed that cuts to healthcare benefits would cost approximately 1,100 retirees a total of \$545 million over their lifetimes. The settlement reached in August 2013 provided current and former workers with only \$5.1 million of compensation for lost retiree health benefits (only 1% of the estimated cost of future healthcare needs) (Church, 2014). Although it required a vote of agreement from the Association's members, this settlement is a clear indication that both the City of Stockton and the Judges presiding over the mediation and litigation processes have prioritised long-term General Fund stability over employee and retiree wellbeing.

Perhaps the most contentious cases, however, are those of Capital Market Creditors, the municipal bond insurers who together had approximately \$300 million of liabilities in default.

It is important to note that the Capital Market Creditors were not the original investors in the bonds, rather the parties that insured the investments. Nevertheless, it remains the case that the Capital Market Creditors took a calculated business decision to insure the City of Stockton's debt, for which they would have received insurance premiums. In this way, the Capital Market Creditors can be regarded as fundamentally different from the employees, retirees and citizens who also stand to lose from Stockton's bankruptcy:

‘These insurance companies have made a calculated decision based on risk analysis to undertake this particular business, whereas the employees and the pension holders don't really have that opportunity’ (Author's interview, Employment Attorney, local law firm, 2013).

The bond insurer with the biggest liability is Assured Guaranty, which has between \$155 million and \$170 million of liabilities in default. Despite the fact that Assured Guaranty made a calculated decision to attempt to profit from insuring these risks, the bankruptcy court has viewed that they are entitled to a substantial settlement. In order reach an agreement over the \$40.4 million of outstanding variable rate bonds that the City issued to acquire the ‘400 E Main Building’, and the \$124.3 million of pension obligation bonds that were issued to enable the City to meet its pension contribution obligations in 2007 (see Table 6.4), a settlement package was devised that passed the legal title of ownership of the ‘400 E Main Building’ to Assured Guaranty, which the City of Stockton would lease back until 2022 (Chin, 2013; City of Stockton, 2014a). The settlement also provided that the City will make additional ‘Lease Ask Payments’, ‘Special Fund Payments’ and ‘Supplemental Payments’ of \$250,000 per year between 2023 and 2053 (City of Stockton, 2014a). Through the combination of these measures, Assured Guaranty expects to get a ‘full recovery’ on its liabilities (Chin, 2013). The nature of City's settlement with Assured Guaranty, then, contrasts starkly with its settlement with the Association of Retired Employees which provides employees and retirees with a ‘recovery’ of under 1%.

The City has also negotiated a settlement with National Public Finance Guarantee (NPMG) over \$45.1 million of outstanding debt obligations in respect of the 2004 Arena Lease Revenue Bonds and a further \$31.6 million in respect of the 2004 Parking Bonds (see Section 5.1.3). Because the revenues for servicing these bonds are ring-fenced (the tax increment from the Events Center project and the ‘lease back’ payments from the City to the Redevelopment Agency were always intended to be used for debt service (see Section 5.1.3)), NPMG, like Assured Guarantee (above), have pressed the City for full repayment. Even though this settlement implies that the ownership of the Stockton Arena will stay with the

City, the uncertainty over the future TIF receipts means some debt repayments may yet come from the City's General Fund, inflicting further damage upon the City.

The negotiations with Franklin will perhaps have the biggest ramifications for the people of Stockton, and ultimately for pension holders across the US. Franklin has persisted in its objections to the City of Stockton's Pendency Plan and rejected any settlement agreement on the grounds that the City should reduce its payments to CalPERS (the California Public Employees' Retirement System) in order to free up money to compensate Franklin. While the City of Stockton argues that CalPERS Pension Plan Participants are entitled to their existing pension benefits and that California State law makes CalPERS 'an arm of the State of California' which thus 'protects it against impairment in a chapter 9 case as a result of the protections of the Tenth Amendment' (US Bankruptcy Court, 2014a: 2), Franklin maintains that federal law can 'preempt' State law and, therefore, that retiree benefits can – and should – be impaired in Stockton's Bankruptcy case (ibid.). Although the federal court had ruled that the impairment of retiree benefits is a possibility, Stockton's plan to preserve its payments to CalPERS has since been approved (US Bankruptcy Court, 2014b). That said, Franklin are appealing the decision, and, as such, the outcome remains uncertain (Kasler, 2014).

Table 7.7 shows a comparison of the estimated sources of 'restructured savings' that will be made by the City of Stockton between 2013 and 2041. Of a total of \$1.1 billion savings, \$796 million or 70% comes from city employees and retirees. Investors and insurers only lose out on \$326 million (contributing towards only 29% of total restructured savings).

The bankruptcy filing has also had substantial implications for the City of Stockton's ability to make future investments in infrastructure. In the short term, at least, it appears as if the City of Stockton's General Fund will not be able to support new infrastructure investments. Of the \$738 million of required investment outlined in the FY2014-15 – FY2018-19 Capital Improvement Plan, for example, only \$2.775 million (0.4%) is funded from the General Fund. Nevertheless, 47% (\$347 million) of projects in the Capital Improvement Plan do have identified funding sources, although 97% of these are defined as 'restricted' or 'non-discretionary' (that is, from ring-fenced sources of income, such as Measure K tax receipts which can only be spent on transportation projects) (City of Stockton, 2014b).

Table 7.7: Comparison of the City of Stockton's estimated sources of restructured savings between FY2012-13 and FY2040-1

Area of Savings	General Fund	Other Funds	Total	% of Total
Labour-Prior	\$25	\$17	\$42	4%
Labour-Future	167	107	274	24%
Retirees	263	190	453	40%
Debt	326	0	326	29%
Other	38	0	38	3%
Total	820	313	1,133	100%

Source: City of Stockton, 2014a.

Although Stockton can still technically issue debt (Mochizuki, 2012), its weak credit rating – currently at Ca (meaning ‘highly speculative and... likely in, or very near, default, with some prospect of recovery of principal and interest’) (Moody’s Investors Service, 2013b, 2014) – indicates that it will be unable to engage in more speculative debt-based investment practices for the short and medium term. Despite the emergence of Infrastructure Financing Districts as a replacement for the dissolved Redevelopment Agencies (see Section 6.1.3), then, it appears that the opportunities for infrastructure investment in Stockton, at least for the time being, are extremely limited.

Overall, the effects of fiscal crisis and bankruptcy can be regarded as devastating for the City of Stockton’s employees, for its retirees and citizens, and for future capital investment projects. This analysis echoes Peck’s (2013) assertion that municipal bankruptcies in the US have played out in an intensely neoliberal and destructive manner:

‘The logic of municipal bankruptcy, which favours the ‘creditors’ bargain’, not only represents the antithesis of Keynesian redistribution, it also threatens to substitute fiscal technopolitics for actual politics... [F]iscally constrained municipal politics have become framed by and subjugated to the hegemonic model of long-run tax restraint and rolling expenditure cuts’ (Peck, 2013: 19-20).

In addition to the negative consequences of the City’s bankruptcy for its employees, retirees and citizens, and for raising finance to invest in infrastructure going forward, the Stockton case serves to illustrate the systemic nature of competition within a financialised world. In

part, Stockton is in its present predicament because of its pursuit of wealth creation, inward investment, asset value appreciation and tax base expansion, all of which were regarded as key to its competitiveness in relation to other cities. At the same time, Stockton was presenting itself to investors as a competitive destination for investment (in terms of providing risk-adjusted returns) in relation to other debt-issuing entities on a national – if not international – stage. Going forward, in light of bankruptcy, the competitiveness of the City of Stockton as a debt issuing entity appears to be lower than ever: no longer can it borrow money or attract investment, and, for the time being, no longer can it pursue a financialised programme of capital investment.

7.3 Concluding remarks: financialisation and the intensification of splintering urbanism

Primarily, this chapter has sought to interrogate the implications of the financialisation of infrastructure and urban development. Although the ways in which financialisation plays out are unique to any particular place, this chapter has attempted to demonstrate the broader splintering implications that the emergence of financialised models of infrastructure funding and financing has for the urban environment.

The analysis of *funding* and *financing* in Sections 7.1.1 and 7.1.2 illustrate that even as infrastructure assets are becoming privately owned or invested in by private investors, the cost of paying for the infrastructure is often ultimately borne by the public sector. This is particularly evident in more peripheral and underperforming areas, as the case studies of Manchester and Sheffield demonstrate. Although innovations in the structuring of infrastructure funding, such as the evolution of public-private partnerships, can facilitate the flow of yield-seeking capital into the urban environment, the consequences of these complex and often opaque funding packages can be that the public sector continues to *fund* the delivery of new infrastructure assets, while the private sector captures or extracts the value. Indeed, this piece of analysis raises questions about the utility of private investment in urban infrastructure and suggests that the state will continue to have a significant role in funding and financing infrastructure going forward.

The analysis of the privatisation of public assets in Chicago builds upon the notion that the financialisation of infrastructure can have costly implications for the public sector. Through an examination of high-profile asset leases, such as Chicago Skyway and Parking Meters, Section 7.2.1 demonstrates that privatisation deals can expose the public sector to a whole

series of new risks, cost and obligations. In particular, the work of Ashton et al. (2014) and Farmer (forthcoming) is drawn upon to illustrate how asset leases place an inherent pressure on governments to maintain the value of privately owned public assets in order to facilitate the generation of profits for investors and shareholders. Crucially, these pressures can lock cities into unfavourable financial arrangements, restrict the ability of city governments to plan and develop their cities, and enable deep-seated fiscal issues to go unnoticed and unchallenged.

Opportunities for economic growth, wealth creation and meeting other strategic objectives can be unlocked by funding models that enable or incentivise an acceleration in the rate of urban development. However, as sections 7.1.3 and 7.2.2 portray, in Buffalo and Newcastle, the acceleration of the destruction and recreation of the city centre appears to have become a strategic end in itself. Crucially, this strategic end – otherwise conceptualised as the process of ‘creative destruction’ – can have severe and negative consequences for the urban environment, such as increasing inequality or racial segregation, or – as demonstrated by the demolition of the Tyne Brewery site in Newcastle – by destroying a city’s unique and invaluable heritage and identity. Perhaps most significantly, as the financialisation of infrastructure funding and financing intensifies, city authorities become increasingly dependent on an accelerated process of urban development in order to generate sufficient revenues to repay their debts or to reinvest in the urban environment, whilst unwillingly exacerbating the negative and splintering implications of this form of urban development.

Finally, in an analysis of the City of Stockton’s bankruptcy, Section 7.2.3 highlights the splintering implications of the speculative and highly financialised model of urban development pursued by the City during the early 2000s. In some respects, the splintering implications of bankruptcy are clear: people have lost their jobs, service levels have plummeted, City employees have suffered pay cuts, and both employees and retirees have had the healthcare benefits wiped out. However, these impacts are a direct result of the specific way in which Stockton’s bankruptcy and its relationship with the capital markets have been conceptualised. Indeed, an alternative conceptualisation of who should bear the costs of Stockton’s bankruptcy could have been entirely possible. Nevertheless, the bankruptcy ruling taken place through a generally accepted legal process, and thus provides warnings to other cities about the potential costs of their interactions and increasing interdependencies with financial markets.

Chapter 8: Funding and financing urban infrastructure in the UK and US: conclusions and reflections

Against the backdrop of a dangerously widening infrastructure gap and a global economy in crisis, infrastructure investment has taken on new meaning and significance. For governments looking to stimulate growth, create jobs and reinvigorate their economies, infrastructure has become a beacon of recovery. For investors, infrastructure provides a potential solution to the constant search for returns in what is an over-crowded and turbulent global marketplace.

The growing importance of infrastructure investment, however, is matched by an increasingly problematic series of challenges. Economic stagnation has limited the ability of infrastructure items to generate revenues, reducing the opportunities for private investment, especially in peripheral areas. Furthermore, the emergence of fiscal stress across all levels of government is severely hampering the efforts of policymakers to mount Keynesian-style investment programmes.

Nowhere has the challenge of funding and financing infrastructure been more evident than in the arena of the city. Internationally, cities are suffering from a lack of infrastructure investment, while their built environment continues to offer measly returns to private investors and their governing institutions buckle under the pressure of fiscal stress. Indeed, in the contemporary economic climate, the armoury of mechanisms available to fund and finance infrastructure has been insufficient to unlock the desired levels of investment.

Through an in-depth analysis of urban infrastructure in the US and UK, this thesis has argued that the confluence of these factors is fuelling a transformation in the funding and financing of infrastructure, with unprecedented implications for urban development and the broader urban environment.

By way of conclusion, this chapter summarises the key themes that have been addressed in the thesis and builds on the core arguments made in order to answer the four main research questions presented in Section 2.5. This final discussion also draws out the ways in which the study has addressed gaps in the literature and made a number of conceptual and theoretical contributions. Although no attempt is made to provide a definitive set of policy recommendations, the findings of this research do have consequences for our understanding of the role of governments in funding and financing infrastructure, which, in turn, could potentially have knock-on implications for policymaking in practice. Finally, the chapter outlines the limitations of this study and sketches out some areas for future research.

8.1 Summary of findings

This thesis has compared the funding and financing of urban infrastructure in the UK and the US through an empirical analysis of the case studies of Buffalo, Chicago and Stockton in the US and Manchester, Newcastle and Sheffield in the UK.

From the outset, in order to maintain clarity and coherence throughout the thesis, a clear definition of infrastructure is adopted, detailing infrastructure as *the interrelated physical components of the urban environment requiring significant capital investment, which have multiple transferable meanings and representations, and which enable economic growth and capitalist development* (Section 1.1). Similarly, an attempt is made to define and distinguish between the terms ‘funding’ – *the sources of income that defray infrastructure costs over time* – and ‘financing’ – *the financial arrangements that enable the costs of a project to be met as they are incurred* (Section 1.2).

Having established the key drivers and parameters of the study in Chapter 1, Chapter 2 reviews the disparate literatures relevant to the funding and financing of urban infrastructure. A core aim of the literature review is to develop a more coherent analytical framework through which the funding and financing of infrastructure can be better understood. Perhaps the most important body of literature in this respect is the work on ‘financialisation’ – a process defined by Pike and Pollard (2010) as the increasing influence of financial markets, their processes and intermediaries in contemporary capitalism. Through financialisation, the key determinants of infrastructure investment are shaped by the imperatives of capital accumulation and the *acceleration* of capital circulation (Section 2.1). Indeed, taking a political-economic perspective, the process of financialisation is regarded as increasing the extent to which the value of the built environment can be used to facilitate speculation and to provide a refuge and source of growth for yield-seeking surplus capital. Although, as O’Neill (2013) maintains, the financialisation of infrastructure involves the segmentation, unbundling and privatisation of infrastructure, a political-economic reading also enables the state to be conceptualised as key actor in facilitating and shaping the process of financialisation. Notably, the role of the state in funding and financing infrastructure is itself becoming financialised (Weber, 2010).

Over time, the state’s investment in – or regulation of – infrastructure has been subject to change. Importantly, the core characteristics and territoriality of the state itself have undergone a similar process of evolution. Section 2.2 introduces Brenner’s (Brenner, 1999, 2004a, 2004b) concept of ‘reterritorialisation’ in order to suggest that the latest changes in

the state's role as an infrastructure investor – characterised by the process of financialisation – are embroiled in the constant process of state restructuring and geographical change. Crucially, in parallel with the processes of financialisation and the increasing influence of extra-local financial intermediaries, the governance of urban infrastructure is developing a multiscalar territoriality that goes way beyond conventional city limits.

However, it is not only the process of financialisation that is placing pressure on the state to adapt and evolve: in wake of the global financial and economic crisis, governments across all levels are facing unprecedented fiscal pressures (Section 2.3). Drawing on a body of literature that emphasises the effects of financial and economic crisis on governments' budgets, and on the politics of austerity that have emerged as a result, the thesis questions the ability of governments to invest in infrastructure going forward. Under significant pressure to reinvigorate their economies, it is argued that the growing use of speculative forms of debt-driven investment could have substantial and damaging implications for the future financial condition of urban governments.

Beyond the implications for governments' financial condition, Section 2.4 examines the potential consequences of financialisation for urban development more broadly. In particular, Graham and Marvin's (2001) conception of 'splintering urbanism' is used to develop potential explanations of the impact of financialisation. Indeed, the argument is made that the continued unbundling, segmentation and privatisation of infrastructure – processes which facilitate the financialisation of infrastructure (O'Neill, 2013) – lead to a series of uneven, destructive and splintering outcomes.

Having designed the thesis's research questions in light of the literature review (Section 2.5), a robust methodological framework is then developed in order to ensure that the research questions can be answered most effectively through the empirical data analysis (Chapter 3). Perhaps the most important feature of the methodology adopted here is the comparative element, which ultimately defines the study. As such, Section 3.1 provides an overview of comparative methodologies, highlighting common features from examples in the literature, such as the identification of similarities and differences between cases. Ward's (2010b) call for a more 'relational' understanding of comparative research is also addressed and heeded. As part of a relational approach, the positionality of the researcher within a theory-practice nexus, in which academic and practitioner discourses overlap to shape knowledge, policy and practice, is also considered.

The methodology chapter also undertakes a detailed analysis of possible case study selection techniques, and aims to defend the case studies chosen in this research (Section 3.2). The

'city' is chosen as the primary unit of analysis (instead of comparing individual funding mechanisms or infrastructure projects) because of the need to interrogate the contextual specificities of place that are so important to the funding and financing of infrastructure. The decision to use 'critical cases' as the method of case study selection is also justified, with emphasis placed on the potential ability of critical cases to enable new theoretical insights (Barnes et al., 2007). The choice of the US and the UK as comparator countries and of the specific case study cities is similarly informed by their ability to address the key research themes that this thesis seeks to address. Finally, the chapter outlines a case for using semi-structured interviews and documentary analysis as the primary methods used in this research (Section 3.3).

The geographical context of an infrastructure project is highly influential for how it is funded and financed. The federal system of government in the US, for example, has a marked impact on the finances of state and local governments (Chapter 4). Even though cities in the US can be regarded as more autonomous than British cities, their ability to fund and finance infrastructure is still constrained by the State-imposed mandates and budget constraints that characterise the American system of fiscal federalism (Section 4.1). Nevertheless, innovations in governance structures and forms of finance available from the municipal bond markets enable city governments and their sub-components in the US to evade certain State restrictions, thus facilitating new and entrepreneurial forms of infrastructure investment.

In a similar vein, infrastructure funding and financing in the UK is hugely influenced by the prevailing system of governance. English cities and their governing institutions are subordinate to a relatively more powerful central government in Westminster (see Pike and Tomaney, 2009), which undermines their autonomy and often hampers their ability to invest in infrastructure (Section 4.2). Despite the persistent shackles of centralism, the emergence of spatially uneven development across the UK has fuelled debate about whether local governments should have more powers in order to help stimulate economic growth and development. Although a more devolved model of local government could create more options for funding and financing infrastructure and could potentially lead to economic convergence between London and the South East and the other 'regions', there is a real danger that decentralisation could isolate and suffocate some of England's more peripheral and underperforming cities (Section 4.2.1). For the time being, at least, it appears as if the structurally embedded centralism of the UK will continue to define English local government and the ways in which local authorities invest in infrastructure.

In both the UK and the US, the geographical and contextual factors that influence infrastructure investment are not confined to the national scale. Rather, each case study city is influenced by its own unique multiscalar geography. From industrial decline, to suburbanisation, to city-regional collaboration, to enduring political regimes, each city case study city has its own distinctive political economy that shapes the landscape of infrastructure investment (Sections 4.1.3 and 4.2.3).

The unique characteristics of place necessitate that each infrastructure investment is in some way bespoke. The extent to which any individual funding or financing mechanism can be considered financialised, therefore, is also highly variable between different projects and places. This geographical variation is emphasised in Chapter 5, which on the one hand explores the evolution of a range of investment strategies that prioritise the generation of financial returns and the recycling of capital through the urban landscape in Manchester, and on the other hand demonstrates that traditional models of funding and financing (such as State and federal grants) are still important in Buffalo, NY. That said, the emergence of tax credit syndication programmes and use of PILOT increment financing at Buffalo Lakeside Commerce shows that even in challenging economic conditions, where future revenue generation and asset value appreciation are highly uncertain, there are some opportunities for engaging in financialised forms of investment.

The argument that the geographies of financialisation require a nuanced and fine-grained approach is reinforced through an in-depth analysis of tax increment financing (TIF) in the cities of Chicago, Newcastle, Sheffield and Stockton (Sections 5.1 and 5.2). In particular, the highly sophisticated risk management techniques that are employed by the City of Chicago – in what can still be expressed as a speculative form of investment – are juxtaposed with the limited ability of English local authorities to pass risk onto the private sector in the early stages of an infrastructure project. Rather than resulting from inexperience or negligence on the part of the local authorities, however, the contrasting approaches to risk management are defined by the varying powers that the different city governments have in terms of being able to employ certain risk management techniques, such as the issuance of certificates of participation (COPs). Also significant are the contrasting economic geographies of Newcastle, Sheffield and Chicago, especially with regards to the more vibrant commercial property sector in Chicago, which is influential in determining the willingness of private sector actors to take on construction and development risk in infrastructure projects. An analysis of ‘redevelopment’ in Stockton provides further evidence of the variability of TIF across different cities: built around the foundations of a ‘lease-out-lease-back’ mechanism, TIF (or ‘redevelopment’) in Stockton resembles an extremely complex process, which, prior

to bankruptcy, had enabled the city government to pursue an aggressive yet highly speculative model of urban development. Ultimately, Chapter 5 calls for a more refined, nuanced and geographically sensitive conceptualisation of the process of financialisation.

Beyond encouraging a more entrepreneurial and commercially sensitive form of policymaking, the financialisation of capital investment has some profound implications for the form, structure and territoriality of the state (Chapter 6). In particular, the opportunity to address fiscal stress and economic stagnation through new funding and financing practices is placing pressure on the state to adapt, change and undergo a process of reterritorialisation.

For example, the systems of governance in Chicago and Buffalo, cities which are either in or have recently undergone a period of severe fiscal stress, are evolving to accommodate new models of infrastructure investment in the hope of stimulating economic growth and generating fiscal rewards (Sections 6.1.1 and 6.1.2). The adoption of infrastructure and urban development strategies specifically because of their potential to generate increased levels of tax income or other financial rewards for the municipality can be described as the ‘fiscalisation’ of urban development. In conjunction with this idea, the Chicago and Buffalo examples indicate that the increasing ability of fiscally stressed cities to engage in fiscalisation – enabled by the use of financialised investment practices – is creating an intensification in the levels of competition, not only between rival municipal jurisdictions, but also between different levels of government and a whole host of other economic agents that are active within the capital markets.

The argument that the fiscalisation of urban development causes an intensification of what is labelled ‘systemic competition’ is taken up in an in-depth analysis of Stockton, CA (Section 6.1.3). The Stockton example illustrates how the combination of fiscalisation and a highly speculative form of urbanism made the city government highly vulnerable to the fiscal effects of the subprime- and global financial crisis. Stockton’s bankruptcy certainly represents a worst-case scenario of pursuing a financialised model of urban development. In the midst of crisis, however, Stockton has also been exposed to a largely State-driven form of reterritorialisation in which Californian Redevelopment Agencies have been abolished by the State Legislature in order to stop the haemorrhaging of funds from the State’s budget. This new round of reterritorialisation provides enormous challenges for the City of Stockton going forward.

In the UK, the process of reterritorialisation has emerged as part of and in response to the perceived need to make large-scale investments in infrastructure, despite a severe lack of resources across all levels of government (Section 6.2). Indeed, the cases of Sheffield,

Newcastle and Manchester illustrate how the challenges of engaging in financialised investment practices under a centralist framework of government are driving new rounds of reterritorialisation: namely, the decentralisation of sources of taxation, such as ‘business rates’; the emergence of ‘City Deals’, a codified form of negotiation for powers between city governments and the centre; and the creation of new city-regional institutions, such as Local Enterprise Partnerships (LEPs) and Combined Authorities (CAs). While the Greater Manchester case stands out given the success of mechanisms such as the Greater Manchester Transport Fund and ‘Earn Back’, the examples of Newcastle and Sheffield demonstrate that the combination of financialisation and reterritorialisation are often partial and full of challenges. For example, while more access to the local tax base and the devolution of financing powers provide new opportunities for engaging in financialised models of investment, they also remove the security of central government grants and the redistributive safety net that is inherent in the UK’s centralist system, potentially isolating local authorities and exposing them to the harsh realities of fiscal independence.

In addition to certain fiscal consequences, financialised investment practices can have broader implications for the urban environment. Whilst capitalism has long been defined by its contradictory outcomes, the extreme acceleration of the circulation of capital that characterises financialisation has arguably intensified its uneven and destructive effects. Most importantly in the context of this thesis, the process of financialisation appears to have intensified the ‘splintering’ implications infrastructure investment (c.f Graham and Marvin, 2001) (Chapter 7).

The tendency towards unevenness displayed by financialised models of infrastructure investment can be explained, in part, by developing an analysis of the geographies of risk and return. In Manchester and Sheffield, for instance, characteristics of their respective local economies, such as the meagre opportunities for asset value appreciation in the commercial property sector or the uncertain demand for new infrastructure services such as transport improvements, necessarily limit the opportunities for financial intermediaries to generate a return on investment (Sections 7.1.1 and 7.1.2). In other words, the embedded economic geographies of Manchester and Sheffield mean that infrastructure can seldom be funded from private sources. Where opportunities for private investment do exist, it is mostly in the form of providing the financing in public-private collaborations, which are typically underpinned by public sources of funding. Rather than transferring risk to the private sector, this kind of arrangement requires substantial public sector support and risk taking.

One of the most notable examples of the assumption of new risks and obligations by the public sector specifically in order to create and preserve value for the private sector is the City of Chicago's sale of public assets to private investors on long-term lease agreements (Section 7.2.1). Drawing on the work of Farmer (forthcoming) and Ashton et al. (2014), an in-depth analysis of the Skyway and Parking Meter deals suggests that even after a lease agreement has been completed, there are a wide range of financial, political and economic risks that emerge for the city government, especially due to its obligation to preserve the value of the built environment for private gain. In addition, the Skyway and Parking Meter leases provide evidence of the splintering implications of financialised models of investment, such as a loss of control over strategic planning initiatives and a series of financial penalties for contract breaches. The continued roll-out of Chicago's long-term lease model through vehicles such as the Chicago Infrastructure Trust can be understood as a response to the City's challenging fiscal environment that delivers short-term financial rewards but simultaneously creates long-term risks, costs and unwanted obligations.

As Sections 7.1.3 and 7.2.2 demonstrate, splintering implications of financialised capital investments are also evident in Buffalo and Newcastle. The exact processes through which these splintering implications emerge, however, are unique to the historically underperforming economies of Buffalo and Newcastle and the current fiscal challenges facing their governing entities. In Buffalo, the desire of its governing entities to stimulate development and growth results in a sudden influx of public capital into selected urban wastelands, helping to generate profits for a small group of powerful construction and development companies, with little benefit for the wider city, as money simply gets 'churned' through the built environment. This form of 'creative destruction' (c.f. Harvey, 1985a), increasingly facilitated by financialised investment practices, is also evident in Newcastle. Indeed, drawing on Pike (2014), the case study of Science Central is used to illustrate how the potential for fiscal benefits and financial rewards have stimulated a process of 'fast development', which has destroyed an iconic aspect of the city's heritage.

Perhaps the most extreme forms of splintering urbanism have been evident in the context of the bankrupt City of Stockton (Section 7.2.3), which has plummeted into fiscal crisis as a result of a prolonged period of speculative urbanism and financialised infrastructure investment. Crucially, the ways in which Stockton's bankruptcy case has been conceptualised has seemingly rewarded the capital markets at the expense of the employees, retirees and citizens of Stockton. Not only has the fallout from the City's programme of fiscalisation resulted in job losses, pay freezes, benefit cuts and a significant reduction in core services, such as policing, but it has also severely limited the ability of Stockton to engage in debt

finance and capital expenditure more broadly going forward. The Stockton example is striking for its severity, but because it underlines the interconnections between municipal authorities and the capital markets and highlights the extent of cities' vulnerability to systemic competition.

8.2 Addressing the research questions

The first of four research questions addressed by this thesis is '*How is infrastructure funded and financed in cities in the UK and the US? And to what extent are these processes being financialised?*'

Perhaps the most important finding of the empirical analysis presented in Chapters 5-7 in regard to this research question is that there is a huge degree of variation in the ways in which infrastructure is funded and financed. This variation is evident between different places but also between projects within the same city. Whilst the national and regional setting remains vitally important – and thus the distinction between the UK and the US remains valid – the factors that shape the funding and financing of infrastructure are necessarily unique to any individual project and its specific (multiscalar) spatio-temporal context.

Despite this variegation, there are some broader trends that can be identified that characterise the funding and financing of infrastructure in the UK and the US. Indeed, this research has demonstrated that the funding and financing of infrastructure is undergoing a process of transformation: away from traditional models that are becoming increasingly unavailable and out-dated, towards more financialised models.

Like the basic funding and financing arrangements of an infrastructure project, the process of financialisation is also defined by variation and unevenness. Rather than all funding and financing practices adhering to all ten key characteristics outlined in Table 2.2, each investment process displays different degrees and forms of financialisation: any one funding or financing mechanism, for instance, might involve financial intermediaries, require urban governments to speculate against uncertain future revenue streams, use financial technologies, and transform infrastructure into a financial asset defined by risk and return, all to a greater or lesser extent. Crucially, as Chapter 5 demonstrates, the uneven and inconsistent ways in which these features define infrastructure investments is evidence of the process of financialisation at play.

The second research question is '*What is the role of the state in funding and financing infrastructure? Is this role changing? And, if so, what are the implications for the organisation of the state?*'

In face of the unbundling, privatisation and financialisation of infrastructure, the stage ought to be set for a decline in the influence of the state in the funding and financing of infrastructure. However, the findings obtained from the six case study cities examined in this research indicate that this is not the case. Instead, the state continues to play a central role in the funding and financing of infrastructure, adapting in any way possible in order to meet the challenges of stimulating economic growth and societal progress.

In part, the endurance of the state as a key actor in the landscape of infrastructure investment can be attributed to the volatile and uncertain contemporary economic conditions in which opportunities for private value creation and profit accumulation are less abundant than they might otherwise be: the challenge of making infrastructure productive is especially apparent in underperforming and peripheral economies, which are characterised by unfavourable geographies of risk and return. In these conditions, the state is the only actor with the capacity to take risk and invest, and is the only actor encouraged to do so by extra-financial motives, such as the stimulation of economic growth and the creation of jobs.

But, the presence of an investment void into which the state much step is not the only factor driving its continued – if not increased – role in the funding and financing of infrastructure. Crucially, the ability to use more financialised models investment has enabled the state to invest in infrastructure in circumstances where it would previously have been impossible. Whether through the ability to use securitisation to borrow against fictitious future revenue streams or to structure a deal so that debt remains off-balance-sheet, there are a range of ways in which the state can embrace the process of financialisation in order to make previously inconceivable investments.

Even in cases of what appears to be the unadulterated privatisation of an infrastructure asset, the state plays a key role as a regulator, market maker and value preserver. Whilst, of course, the capacity and willingness of governments to act varies widely (depending on the political-economic context at hand), the fundamental importance of the state is consistent throughout the six case study cities.

In both dealing with the implications of financialisation and attempting to harness the infrastructure investment opportunities that it generates, the state and its multiple component parts have undergone a process of reterritorialisation. In some senses, this process resembles the continuous processes of state evolution, rescaling and restructuring that already occur within the confines of neoliberal capitalism. Nevertheless, the process of financialisation – and, more specifically, the financialisation of infrastructure investment –

has undoubtedly added a new dimension to the production and reproduction of the state and its territoriality.

The third research question is '*Why are fiscally stressed governments investing infrastructure? How is fiscal stress causing changes in the way that infrastructure is financed and funded, and with what implications?*'

Government budgets have come under enormous strain in wake of the global financial and economic crisis. Some governing institutions, especially at the urban level, have experienced unprecedented levels of fiscal stress due to the confluence of a number of factors, including local tax base shrinkage, a reduction in financial assistance from other levels of government seeking to consolidate their own fiscal position, the underperformance of previous investments, and the rising costs of core services and activities. In light of these challenges, amongst the very few options for stimulating economic growth, creating jobs and generating increased tax receipts, infrastructure investment appears to be the most viable option (alternatives, such as making changes in monetary policy, for instance, are not available to – or within the remit of – most urban governments).

While fiscally stressed governments invest in infrastructure in order to create jobs and economic growth, the potential for creating a fix to fiscal crisis is also a key driver. Evidence from all six case studies suggests that the pursuing fiscal benefits from infrastructure investments – a phenomenon described as the 'fiscalisation of urban development' – is indeed a central determinant of urban governments' infrastructure investment decisions.

Crucially, although fiscally stressed cities have traditionally struggled to make the upfront investments needed to capitalise on the financial rewards and fiscal benefits of infrastructure, the emergence of financialised investment practices has created new opportunities for governments with a worsening financial condition to access the capital required to make such investments.

Indeed, the empirical analysis undertaken in this thesis demonstrates that fiscal crisis has been a major incentive for urban governments to find increasingly innovative and entrepreneurial ways of investing in infrastructure and urban development. By taking advantage of technologies such as securitisation, financialised models of investment enable governing institutions to capture the *future* value of infrastructure and bring it forward into the *present*, enabling them to defray the costs of infrastructure regardless of the health of their underlying finances at the time.

Whilst, of course, the use of financialised investment practices could enable governments to generate new sources of income and expand their tax base, thus ensuring the future

sustainability and competitiveness of the city going forward, there is also the possibility that engaging in speculative, debt-driven and financialised forms of funding and financing could make city governments vulnerable to fiscal stress and crisis, especially in the case of a broader systemic crisis. Less dramatically, the fiscalisation of urban development also serves to intensify inter-jurisdictional competition for resources, and thus contributes to the fragmentation, circumvention, and reterritorialisation of existing systems of government and governance.

The fourth and final research question posed in this thesis is *‘To what extent does the financialisation of infrastructure and capital investment have splintering implications for cities and the process of urban development?’*

Financialisation can be interpreted as incentivising the acceleration of capital accumulation and circulation – two of capitalism’s core features – and, by facilitating the process of capital switching, as intensifying the process of overaccumulation. As such, financialisation can be regarded as amplifying the contradictory and crisis-prone characteristics of capitalism. In addition to the new opportunities for funding and financing infrastructure created through the process of financialisation, then, the financialisation of infrastructure investment has also created a range of potential risks and costs for urban governments and the urban environment more broadly. Indeed, evidence from the empirical analysis conducted in this research demonstrates that the financialisation of infrastructure investment is intensifying the process of urban splintering.

The links between financialisation and the intensification of splintering urbanism is perhaps most clearly exemplified by what can be described as the acceleration of creative destruction – a process through which the demolition and redevelopment of the urban landscape serves to reinforce patterns of class domination and uneven development. When using debt-driven, speculative and financialised funding and financing mechanisms, there is a need for the infrastructure item at hand to generate returns on investment as quickly and as effectively as possible (in order to minimise the cost of debt service requirements, or in order to generate surplus capital that can be ‘recycled’ or ‘revolved’ back into further infrastructure investments). There is a clear incentive, then, for policymakers and investors to pursue the acceleration of capital circulation through the built environment, causing an intensification of creative destruction and augmenting its splintering implications.

Equally important to the intensification of splintering urbanism is the extent to which the state takes on new and often unforeseen risks when engaging in financialised investment practices. This is most obvious when the state combines with the private sector, such as in

public-private partnership arrangements. Where the geographies of risk and return dictate that infrastructure cannot be funded and financed purely from private sources, the state – given its broader strategic objectives – assumes risk on behalf of the private sector, ensuring that the private sector can generate value from the infrastructure and that this value is contractually safeguarded going forward. Paradoxically, such a move forces the strategic objectives of the state to move away from issues such as social cohesion, economic growth and inclusive urban development towards the preservation of investor returns and shareholder value.

Finally, there are the splintering implications of failed investments. The speculative nature of many financialised investment practices means that the non-materialisation of revenues that are required to meet the costs of the infrastructure at hand is a very real possibility. Although the fiscal stress that this causes for urban governments might seem like a mere administrative issue, the reality of a stifling debt burden is that it requires expenditure cuts to be made elsewhere in order to free up funds for debt service. Indeed, when caused by failed speculative investments, fiscal crises are mediated through the financial markets in a way that prioritises investor recoveries over urban development and citizen wellbeing. The dominance of financial interests in the prevailing legal discourse makes pay freezes, benefit cuts, job losses and service reductions an almost inevitable consequence of a failed financialised infrastructure investment.

8.3 Contributions to the literature

A key objective of this research has been to contribute to an enhanced understanding of the funding and financing of urban infrastructure by developing a conceptual and theoretical framework that addresses some shortfalls in the existing academic literature. The contention made in Section 1.4 was that gaps in the literature are not only inhibiting our understanding of infrastructure investment, but are also adversely affecting our understanding of the broader process of capitalist development.

8.3.1 Reinforcing the distinction between funding and financing

Although the distinction between terms *funding* and *financing* with respect to infrastructure investment has been made in a select few commercial reports and policy documents (Australian Financial Services Council and Ernst and Young, 2011; Maxwell-Jackson, 2013;

PwC, 2014), there has certainly been a lack of common conceptual understanding within the academic literature.

Drawing on these examples, this thesis has defined ‘funding’ as *the sources of income that defray infrastructure costs over time* and ‘financing’ as *the financial arrangements that enable the costs of a project to be met as they are incurred*.

Without such a conceptual understanding, making sense of the landscape of infrastructure investment becomes an impossibility. Take the following example. A common question for urban policymakers is ‘How can we attract more private investment in infrastructure in our city?’ Of course, the intention of this question is to ask ‘How can we ensure that the private sector *funds* more infrastructure so that the cost does not fall on the shoulders of the taxpayer?’ Nevertheless, the question could actually be interpreted to mean ‘How can we ensure that the likes of pension funds and bond investors provide more of the upfront capital to *finance* our infrastructure [the cost of which will ultimately be borne by the taxpayer]?’ Clearly, then, failing to acknowledge the difference between funding and financing could have damaging implications on both a practical and analytical level.

Distinguishing between funding and financing has been fundamentally important for this research. By developing this distinction as part of a conceptual framework for understanding the landscape of infrastructure investment, this thesis has arguably made an important conceptual contribution. That said, there is certainly more work that could be done in developing and refining the definitions put forth here, especially with regards to other investment classes and industries.

8.3.2 Evidencing actually existing financialisation and conceptualising its variation

Perhaps the most significant shortcoming of the literature is its inconsistent and at times incoherent conceptualisation of financialisation. Although the concept of financialisation has had a muted influence on mainstream understandings of the role of finance in the contemporary economy (Engelen and Faulconbridge, 2009; Muellerleile et al., 2014), it has the potential, if more thoroughly developed, to serve as an invaluable tool for analysing the global financial system and for explaining the contradictory and uneven geographies of capitalism.

A key reason for financialisation’s disjointed conceptualisation is the lack of empirical evidence and concrete examples of ‘actually existing’ financialisation (Christophers, 2012; French et al., 2011; Pike and Pollard, 2010). In addition, although the strength of the concept

is its emphasis on the variegation and multiscalarity of financial systems, academic analysis has focused on subjects like the global financial crisis at the expense of issues such as the drivers and implications of financialisation at the local and urban scales (Weber, 2010).

In order to address these gaps, this thesis has undertaken a fine-grained empirical analysis of the funding and financing of urban infrastructure. By selecting six case study cities in two countries, each with their own distinctive characteristics, the study has interrogated the extent to which the process of financialisation is contingent on the specificities of place.

The variability of financialisation is made apparent by the evidence presented in Chapter 5. Sections 5.1.2 and 5.2.1, for instance, distinguish between a more financialised approach to funding and financing infrastructure in Greater Manchester (for example, through revolving funds such as the North West Evergreen Fund and the Manchester City Council Capital Fund) and the less financialised grant arrangements used in Buffalo to fund and finance projects such as the Buffalo Lakeside Commerce Park.

The evidence presented in Sections 5.1.1, 5.1.3, 5.2.2 and 5.2.3 is equally as compelling. A comparison of tax increment financing (TIF) in Newcastle, Sheffield, Chicago and Stockton, for instance, not only serves to illustrate that the mechanics of TIF vary from place to place, ensuring that different city governments take on different levels of risk and indebtedness, but also that some features of the financial engineering process do not always adhere to the narrative of financialisation as a contradictory and crisis-prone process. Indeed, financialisation can fluctuate from being speculative, opaque and risky in some instances to being sensible, innovative and productive in others.

Although the evidence from this research indicates that instances of financialisation are dependent on place and therefore necessarily unique, there are nevertheless some similarities between individual cases of infrastructure investment that enable emergent trends and broader themes to be drawn out of the complexity and diversity of financialisation. These broader themes are presented in Table 2.2 as the common characteristics of financialised investment practices, but deserve some extension and development here.

1. *The growing influence of financial intermediaries.* Evidence from this research suggests that there is a growing influence of financial intermediaries in funding and financing infrastructure. This is despite the continued (if not increased) role played by the state. Chicago's asset leasing deals (Section 7.2.1) illustrate how this might be so: whilst the likes of Cintra-Macquarie and Morgan Stanley have leased major infrastructure assets, the City of Chicago still plays a crucial role in preserving the value of the built environment.

2. *The increasing interdependencies between cities and financial markets.* This research has shown that the interdependencies between cities and financial markets, which became evident in the sub-prime and financial crises (Kirkpatrick and Smith, 2011; Pani and Holman, 2013), can also be regarded a characteristic of the financialisation of infrastructure investment. When an infrastructure project is financed through the capital markets, for instance, an interdependency is created between the municipal bond issuer and the investor: the issuer requires debt in order to raise capital, while the investor needs bonds to generate a yield on its surplus capital. If the issuer fails to meet debt repayments, the issuer may lose its credit rating, have its assets possessed or even face bankruptcy, while the investor may be forced to take a reduced repayment or 'haircut'. Similarly, in public-private partnership arrangements, interdependencies develop around areas such as risk sharing, revenue generation and asset value appreciation (see Section 5.2.1 and Chapter 7).
3. *The increasing use of financial technologies, such as securitisation.* The financialisation of the funding and financing of infrastructure has undoubtedly involved the emergence and widespread use of financial technologies and structuring arrangements, most notably including securitisation (see Section 2.1.2). Although securitisation is especially apparent in the example of TIF in Newcastle, Sheffield, Chicago and Stockton (Chapter 5), it is also evident in some form across all six of the case study cities: the Greater Manchester Combined Authority securitises future Earn Back receipts to invest in Metrolink (Section 6.2.3), for instance, while the Buffalo Urban Development Corporation securitises PILOT receipts through the Buffalo Brownfield Redevelopment Fund (Section 5.1.2). Other financial technologies and bespoke structuring arrangements, such as certificates of participation, are also emerging.
4. *The use of increasingly speculative investment practices that rely on the prediction, calculation and modelling of the future.* The empirical analysis provided evidence of the speculative use of 'fictitious' future revenues for financing infrastructure projects upfront. Whilst this point largely draws on the same body of evidence as the point on securitisation above, it is important to recognise that speculation and securitisation are not synonymous: for example, the organisational capacity and experience of the City of Chicago, its higher level of autonomy, and the city's more vibrant commercial property sector arguably make TIF less speculative than in Newcastle or Sheffield (Sections 5.2.2 and 5.2.3). Similarly, in Stockton, CA, the use of redevelopment was arguably made more speculative by the lease-out-lease-back mechanism at the heart

of the TIF scheme, and the City of Stockton's broader plunge into over-indebtedness.

5. *A transformation in the purpose, function, values and objectives of government, which are being brought in line with those of financial actors and institutions.* Because financialised investment practices often rely on the creation of future revenues to defray the costs of the infrastructure at hand, the pursuit of revenue-creation and generating a return on investment becomes a strategic priority. Section 5.2.1 provides evidence, for example, of the transition of Manchester City Council towards an institution that has taken on some of the characteristics of an investment bank in order to revolve capital through the built environment. Similarly, Science Central in Newcastle and the new Medical Campus in Buffalo provide examples of the strategic prioritisation of the accelerated circulation of capital throughout the built environment specifically to generate revenues for recycling back into the urban landscape (see Sections 7.1.3 and 7.2.3).
6. *An increase in public sector indebtedness and risk taking.* A new post-financial crisis regulatory environment has combined with stagnating asset values and commercial revenues to limit the private sector's ability to fund and finance infrastructure. At the same time, widespread fiscal stress has inhibited governments from using traditional sources of funding and financing. Together, these constraints have provided an incentive for governments to engage in risky debt-based investment programmes. Perhaps with the exceptions of Buffalo, which still has a steady stream of funding from the State of New York, and Stockton, which is still reeling from its last round of debt-fuelled speculation, urban governments in all four other case study cities are rapidly adopting new debt-based investment practices.
7. *The transformation of infrastructure from a physical and productive component of the urban environment into a financial asset defined by risk and return.* Financialised investment practices cannot be used to fund or finance an item of infrastructure that does not create monetisable value. As a result, infrastructure has adopted the characteristics of a financial asset that is defined by risk and return, rather than by its physical or economic characteristics.
8. *The increasing control over infrastructure by yield-seeking surplus capital.* Although the state's role in funding and financing infrastructure continues to be hugely important, this research has demonstrated that the influence of yield-seeking surplus capital over the built environment of cities is also growing as part of the process of financialisation. The fallout from the Chicago asset leases (Section 7.1.2), for instance, is illustrative of the penetration of extra-local financial actors into local systems of governance and

regulation, and provides evidence of how ‘actually existing’ financialisation drives the creation of what Torrance (2008) identifies as multiscale systems of governance.

9. *The transformation of infrastructure into an engine for economic growth and tax base expansion.* The objective of creating returns on infrastructure investment is often aligned with the aspiration of generating new sources of taxation and expanding the income gained from existing taxes. Indeed, the process of financialisation both enables and fuels the fiscalisation of urban development, through which the prospect of tax base expansion becomes central to infrastructure investment strategies. The opportunity to generate fiscal benefits through infrastructure investment has caused an intensification in the levels of inter-governmental competition and fragmentation, as the examples of Buffalo and Chicago exhibit (6.1.1 and 6.1.2).
10. *The highly geographically uneven ability to engage successfully – if at all – in funding or financing infrastructure.* The continuing process of financialisation ensures that opportunities for infrastructure investment are becoming increasingly geographically uneven. Indeed, because infrastructure projects in places with underperforming economies have limited prospects for revenue generation and asset value appreciation, the opportunities for utilising financialised models of investment are drastically reduced. While factors such as the type, quality, cost and size of infrastructure are of course important, the underlying economic geography of a place is absolutely fundamental in determining whether the value required to fund and finance a project can be created or not. The examples of the Greater Manchester Pension Fund (GMPF) and Sheffield City Region Investment Fund (SCRIF), in particular, illustrate how what is termed ‘the geographies of risk and return’ influence opportunities for infrastructure investment through financialised funding and financing practices.

In sum, this thesis has demonstrated that whilst the process of financialisation is certainly influenced by place, it is not entirely geographically contingent. Indeed, there are broader stories about how the financialisation of infrastructure investment is unravelling and what implications it has for urban development. Perhaps most importantly, these empirically driven themes can certainly be used to inform an enhanced understanding of the process of financialisation more broadly.

8.3.3 Towards a political economy of financialisation?

Beyond highlighting the characteristics of ‘actually existing’ financialisation, this thesis follows calls from French et al. (2011), Hall (2013), Pantich and Konings (2009) and Pike

and Pollard (2010) to take a political-economic approach to conceptualising financialisation. In particular, this analysis has challenged the narrative that financialisation is a behemoth of borderless privatisation that is sapping away the power and relevance of the state. Rather, the evidence from this research indicates that, in the contemporary economy, the role of the state is perhaps more important than ever, especially with respect to infrastructure investment.

In contrast to accounts of the financialisation of infrastructure that emphasise the securitisation of traditionally public infrastructures by specialist infrastructure investors (e.g. Allen and Pryke, 2013; O'Neill, 2013), this research builds on Weber's (2010: 252) analysis of the 'financialization of urban development public policy' to illustrate that the state is intimately bound up in the process of financialisation.

The notion that capital investments made by the state can be regarded as 'financialised' (Section 8.3.1), implicitly challenges the view that financialisation involves the switching of capital from the primary, secondary and tertiary circuits of capital to a separate and distinct 'quaternary' circuit representing the financial system (Section 2.1.2; also see Aalbers, 2008; Harvey, 1982; 1985b). Indeed, rather than implying a separation of the state and the financial system, it implies a *transformation* of the state, its activities and ultimately its territoriality *into something that is more financial*. Crucially, such an analysis begins to deconstruct what Bryan and Rafferty (2013: 134) term the 'canonical categories' (such as 'production', 'circulation' and 'fundamental value') of political-economic traditions such as Marxism, enabling a more sophisticated understanding of financialised capitalism.

In order to make sense of financialisation's implications for the state, this thesis has drawn on the concept of 'reterritorialisation' (Brenner, 1997, 1998, 1999). Informed by the work of Lefebvre (1976a, 1976b, 1977, 1978) and Harvey (1982, 1985c), Brenner develops the concept of reterritorialisation to explain the processes of spatial reconfiguration and territorial reproduction that are necessary to sustain capitalism during globalisation. What this research has shown is that the proliferation of financialisation has created new and unique rounds of reterritorialisation. Indeed, the increasingly contradictory and crisis-prone characteristics of financialised capitalism have demanded new forms of spatio-temporal fix, which, in turn, have unprecedented implications for territorial organisations and the spatiality of cities.

Because the state is at the heart of the financialisation of infrastructure investment, and – through the capital investment process – is arguably becoming financialised in its own right, the analysis of the funding and financing of infrastructure presented in this research has

provided a unique lens through which to view and interrogate the reterritorialising implications of financialisation.

In the case study of Buffalo, for instance, the financialisation of capital investment appears to be incentivising municipal governments to circumvent State-imposed debt limitations through the creation of new special district governments, which can then engage in more speculative forms of debt-based infrastructure investment (Section 6.1.2). Similarly, in Chicago, the already fragmented system of governance is becoming reinforced by the enhanced competition for tax revenues driven by the need for municipal governments to access new sources of income to defray the costs of infrastructure projects (Section 6.1.1). In Manchester, Newcastle and Sheffield, the emerging opportunities to engage in financialised investment practices are energising challenges to the dominant centralist model of governance in the UK, inciting new rounds of devolution and decentralisation, and fuelling the emergence of new city-regional institutions such as Local Enterprise Partnerships and Combined Authorities (Section 6.2).

By developing a political-economic approach to financialisation, then, this thesis has not only demonstrated the continued importance of the state in the funding and financing of urban infrastructure and in the financialised economy more broadly, but it has also begun to interrogate the implications of this role for the territoriality and organisation of the state going forward.

8.3.4 Linking financialisation with fiscal crisis and the financial condition of the state

Even though the actions of national governments in the wake of the global financial crisis, such as bailing out catastrophically failing financial institutions (which arguably triggered sovereign debt crises the world over), have received some attention (French and Leyshon, 2010; Lapavitsas et al., 2010), and a small body of analysis (Davidson and Ward, 2014; Hall and Jonas, 2014; Kirkpatrick and Smith, 2011; Peck, 2013) has made more explicit links between financial and fiscal crises, there has undoubtedly been a lack conceptual analysis linking the process of financialisation with the financial condition of the state. In order to address this gap, this thesis has developed a more systematic analysis of the relationship between fiscal stress and financialisation.

Most basically, using the funding and financing of infrastructure as a lens, this thesis has argued that fiscal stress is a key driver of financialisation, as well as being a potential consequence it. Drawing on an understanding of fiscal stress as the worsening of a

government's financial condition to an extent that the government can no longer meet its financial and service obligations (Hendrick, 2011), this thesis has argued that fiscal stress has instigated the search for more innovative and entrepreneurial models of infrastructure investment which enable cash-strapped governments to tap into future and fictitious sources of revenue. By nullifying the otherwise harsh realities of fiscal crisis in this way, governments have served as a catalyst to the process of financialisation.

Just as financialised models of investment have given governments the opportunity to invest in infrastructure in times of fiscal stress, the process of financialisation has also enhanced the prospect of creating fiscal benefits from infrastructure investments (such as improvements in a government's financial condition or the creation of additional resources for future capital investments). In particular, the need to generate future returns on investment when using a financialised investment practice (in order to repay debt) means that the infrastructure item at hand potentially has the capability to generate surplus revenues (either directly or indirectly) for the benefit of a government's balance sheet.

Misczynski's (1986; also see Chapman, 2008; Lewis, 2001; Schafran, 2013; Wassmer, 2002) concept of the 'fiscalization of land use', which suggests that planning decisions are influenced by a development's ability to generate additional tax receipts and thus improve a government's financial condition, has been extremely helpful in beginning to explain this phenomenon. Nevertheless, Misczynski's analysis attributes the emergence of fiscalisation solely to the existence of constrained fiscal environment, and thus neglects the funding and financing arrangements that are required to 'unlock' the fiscal benefits of development. In contrast, this research as shown that – when a government is fiscally stressed – strategies of fiscalisation are only made possible by engaging in financialised models of investment. The case study of Stockton, for example, which also highlights the potential pitfalls of fiscalisation (such as the possibility of over-indebtedness, fiscal crisis and bankruptcy), shows that fiscalisation was fuelled by the availability of financialised investment practices (Section, 6.1.3).

The emphasis on the development process itself (and, in particular, on the processes of funding and financing) begins to extend fiscalisation's conceptual relevance beyond the discipline of town planning. Furthermore, the assertion that fiscalisation drives and is driven by the process of financialisation is a clear and tangible example of how the fiscal stress and the financial condition of governments are interlinked with the process of financialisation.

8.3.5 Developing the concept of splintering urbanism

It can be suggested that the variety and diversity of infrastructure transformations and their implications are such that ‘one cannot speak of “splintering urbanism in general” in any meaningful analytical way’ (Coutard, 2008: 1819). Nevertheless, Coutard (2008: 1819-20) concedes that, if more sensitive to the variegations of capitalism, the splintering urbanism thesis could offer a ‘fruitful and valuable analytical framework’ for developing ‘innovative understandings’ of contemporary urban development.

In this research, Graham and Marvin’s (2001) splintering urbanism thesis is particularly useful because of the ways in which it describes and explains the processes of unbundling, segmentation and privatisation, which, as O’Neill (2010, 2013) suggests, have facilitated and driven the financialisation of infrastructure. As suggested by Coutard (2008), however, the current conceptualisation of splintering urbanism seem to be limiting its ability to fully explain the contemporary urban and infrastructural landscape. Specifically, the focus of Graham and Marvin’s analysis on the physical distribution of infrastructure networks, rather than on the actual process of unbundling itself, has the effect of limiting splintering urbanism’s explanatory power.

In order to respond to this shortcoming, this research has shifted the analytical focus towards the process of unbundling and, more specifically, the changing patterns of investment that it enables. Crucially, the financialisation of infrastructure and capital investment appears to have exacerbated the uneven flow of finance into the built environment. The void of private sector investment in infrastructure in both Manchester (Section 7.1.2) and Sheffield (Section 7.1.1), for instance, highlights the challenges of attracting global flows of finance to areas defined by an unfavourable ‘geography of risk and return’. Because the underlying economic geographies of Sheffield and Manchester limit opportunities for revenue generation and asset value appreciation, the state is forced to intervene and, ultimately, to assume potentially harmful risks.

Even in a more favourable environment for private investment, such as Chicago, the splintering implications of infrastructure investment are intensified by financialisation. Building on the work of Ashton et al. (2014) and Farmer (forthcoming), for example, this thesis has shown that the City of Chicago has been exposed to a new set of risks and costs by leasing high-value infrastructure assets to consortiums of financial intermediaries in order to create short-term fixes to fiscal crisis. As a result of its commitment and contractual obligation to preserve the value-creating ability of the leased infrastructure assets, the City of

Chicago has lost control over some areas of urban development policy and planning, and suffered real financial losses.

A further conceptual contribution is achieved by applying a political-economic understanding of financialisation to the concept of splintering urbanism. In particular, the accelerated circulation of capital through the built environment – encouraged by financialisation – appears to have intensified what Harvey (1985a: 27) terms ‘creative destruction’. Indeed, the case studies of Buffalo and Newcastle (Sections 7.1.3 and 7.2.2) demonstrate how the heightened imperative of capital circulation that accompanies financialised investment practices leads to bland, exclusionary and even destructive urban development outcomes.

8.4 Limits of the study and future research

As a comparative study between cities in the UK and the US, the empirical scope of this research is necessarily limited. Indeed, although this chapter has argued that there are some shared characteristics between different models of funding and financing infrastructure and that some crosscutting analytical themes are beginning to emerge, a wider range of case studies would almost certainly show evidence of further variation and yield some new analytical insights.

To expand and build upon the research presented here, then, a first step might be to adopt a broader range of case study cities within the national frameworks of the US and the UK. This would challenge the emergent analytical themes to explain trends in the funding and financing of infrastructure in places that share the same overarching national contexts but that have their own unique economic geographies. It might also be informative to develop a sector-specific analysis within these two countries, concentrating for example on urban rail infrastructure, road infrastructure or brownfield site remediation and preparation. Not only would this help to develop a more fine-grained analysis of the geographies of financialisation within the UK and the US, but it would also draw out the nuanced ways in which the funding and financing of infrastructure varies according to the sector or infrastructure item at hand.

Moving beyond the national confines of the US and the UK, conducting further research into the funding and financing of infrastructure in other comparator countries would also uncover a different set of investment practices. On the one hand, this might challenge the assertions made in this research regarding the core drivers and implications of infrastructure investment, and, therefore, question the extent to which investment practices are becoming

financialised. On the other hand, however, the conceptualisation of financialisation developed in this thesis is premised on the idea that the extent and nature of financialisation is dependent on the specificities of an infrastructure item's spatio-temporal context and, as such, would predict such variation.

Beyond adding to the empirical scope of this thesis, a potentially fruitful area of further research would be to build upon the political-economic approach to financialisation developed here. Although this research brings the state back to the centre of the process of financialisation, its role in facilitating – if not driving – a more financialised form of capitalism certainly requires further examination. Even in the field of infrastructure investment, where the rise of the infrastructure fund looks likely to continue, there is a whole range of analytical challenges regarding the state's interaction with financial markets, their intermediaries and processes. In particular, there is a need to build on the distinction between 'funding' and 'financing' developed here and to interrogate the specific relationship between the state and the investor at the 'site of investment', such as in a PPP arrangement, in order to understand who is bearing the risk of investing and at what cost.

Finally, it is also essential that future research takes a more nuanced and fine-grained approach to understanding of the role of the state in the process of financialisation more broadly. This will help move beyond debates about the 'rise' and 'fall' of the state and enable researchers to focus on constructing detailed accounts of financial markets and their processes. Indeed, a programme of research aimed at developing informed examples of 'actually existing financialisation' would not only enhance our understanding of the global financial system and its role within contemporary capitalism, but would also provide a rich source of policy recommendations and ideas, and, therefore, ultimately enhance the relevance and impact of a geographical approach to finance.

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Appendix 1: List of Interviewees

Case Study	Title	Type of Organisation	Date
Buffalo, NY	President	Local law firm	03.05.13
	Chair and Professor of Law	State public benefit corporation	01.05.13
	Regional Development Specialist	Development agency and chamber of commerce	23.04.13
	Vice President	Development agency	24.04.13
	President	Development agency	03.05.13
	Director	University department specialising in urban studies	26.04.13
	Executive Director of the Office of Strategic Planning	Municipal authority	26.04.13
	Chairman	Regional development firm	26.04.13
	President	Local development firm	30.04.13
	President	Local business consultancy	22.04.13
	Special Counsel	Local law firm	23.04.13
	Partner	Local law firm	25.04.13
	Partner	Local law firm	03.05.13
	Partner	Local law firm	25.04.13
	Partner	Local law firm	25.04.13
	Partner	Local law firm	25.04.13
	President	Private foundation	03.05.13
	Councilmember	Municipal authority	25.04.13
	Vice President	Private foundation	03.05.13
	Executive Director	Development firm and community organisation	01.05.13
	Professor of Economics & Finance	State public benefit corporation	30.04.13
	Principal	Local law firm	01.05.13
Dean	University	22.04.13	
Chicago, IL	Principal	Local architectural firm	12.11.12
	Partner	Local law firm	29.10.12

	Chief of Staff	Planning agency	08.11.12
	Project Manager	Municipal authority	14.11.12
	Director of Debt Management and Investment Banking Relations	Municipal authority	7.11.12
	Director of Financial Policy	Municipal authority	7.11.12
	Dean	University department specialising in planning	25.10.12
	Associate Professor	University department specialising in public administration	13.11.12
	Senior Vice President	Local development firm	02.11.12
	Managing Director and Chief Research Officer	Local investment management firm	16.11.12
	Executive Vice President	Planning authority	31.10.12
	Chairman and Chief Executive Officer	Local architectural firm	14.11.12
	Director of Capital Markets	State agency	24.10.12
	Deputy Director and Capital Budget Manager	State agency	08.11.12
	President	Local government research organisation	14.11.12
	Project Manager	Local government research organisation	14.11.12
	Director of Communication and Outreach	Planning agency	14.11.12
	Project Manager	Federal agency	24.10.12
	Operations Specialist	Federal agency	24.10.12
	Managing Director	International investment bank	26.10.12
Stockton, CA	Principal	Local economics consultancy	18.04.13
	Executive Director	State agency	16.04.13
	Deputy Executive Director	State agency	16.04.13
	Judge	Federal bankruptcy court	08.04.13
	President and Chief Executive Officer	Local development firm	19.04.13

	Chief Executive Officer	Local business improvement district	15.04.13
	Chief Executive Officer	Investment management firm	08.04.13
	Partner	International law firm	11.04.13
	Executive Director	Planning agency	18.04.13
	Partner	International law firm	15.04.13
	Managing Director of Public Finance and Investment Banking	International investment bank	15.04.13
	Director	State agency	16.04.13
	Employment Attorney	Local law firm	09.04.13
	Columnist	Local media corporation	15.04.13
	Assistant Professor of Urban Studies and Planning	University	19.04.13
	Manager	Planning agency	10.04.13
	Senior Regional Planner	Planning agency	10.04.13
	Senior Regional Planner	Planning agency	10.04.13
	Deputy Treasurer	State agency	16.04.13
	Superintendent	Local school district	17.04.13
	Economics Leader Writer	International media corporation	02.04.13
	Professor of Economics	University	08.03.13
	Executive Director	Planning agency	10.04.13
Manchester	National Head of Infrastructure, Projects and Energy Group	International law firm	02.08.13
	Director	National policy think tank	05.07.13
	Partner	Local development firm	12.07.13
	Partner	International professional services firm	02.07.13
	Director	Local development firm	03.07.13
	Professor of Project Management	University	04.07.13
	Director	University business school	04.07.13

	Head of Finance	Metropolitan borough council	02.07.13
	Treasurer	Metropolitan borough council	02.07.13
	Managing Director	National development firm	01.10.12
	Director of Economic Strategy	Local policy think tank	30.10.13
	Development Director	Local development firm	02.07.13
	Chair of the Transport for Greater Manchester Committee	Transport authority	01.07.13
	Finance Director	Transport authority	01.07.13
Newcastle	Policy Manager	Metropolitan borough council	09.10.13
	Regional Senior Director	National commercial property agents	04.02.14
	Associate Director, National Markets: Land and Development	National commercial property agents	04.02.14
	Partner	Local property consultants	29.08.12
	Member	House of Lords	28.09.12
	Director of Policy, Strategy & Communications	Metropolitan borough council	03.09.12
	Councillor	Metropolitan borough council	14.09.12
	Councillor	Metropolitan borough council	05.10.12
	Senior Accountant	Metropolitan borough council	10.09.12
	Accountant	Metropolitan borough council	10.09.12
	Policy and Information Officer	Metropolitan borough council	11.09.13
	Director of Finance and Resources	Metropolitan borough council	03.09.12
	Economic Adviser and Associate Fellow	National policy think tank	28.08.12
	Senior Project Manager	Local development firm	11.02.14
	Deputy Chief Executive	Metropolitan borough council	09.10.13
	Finance Director	Local development firm	26.02.14
	Corporate Director	Metropolitan borough council	09.10.13
	Head of Strategic Development	Metropolitan borough council	09.10.13

	Principal	Local development consultancy	04.09.12
Sheffield	Director	National asset management firm	14.10.13
	Director	National development firm	27.09.13
	Partner	International law firm	26.09.13
	Strategic Development and Funding Manager	Metropolitan borough council	10.07.13
	Director of Finance	Metropolitan borough council	10.07.13
	Principal Planning Officer	Metropolitan borough council	23.08.13
	City Development Manager	Metropolitan borough council	26.09.13
	Councillor	Metropolitan borough council	15.10.13
	Professor of Public Policy Analysis and Evaluation	University	24.09.13
Other specialist interviews	Director of Policy (Finance)	National property consultancy	07.08.12
	Assistant Policy and Technical Director	National agency	03.08.12
	Adviser	National agency	26.07.12
	Director of Investment Management	International investment management firm	14.09.12
	Managing Director	National development firm	30.08.13
	Director	National development firm	26.07.12