1. The geography of money and finance

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1.1 INTRODUCTION: THE CASE FOR A GEOGRAPHY OF MONEY

The aim of this Handbook is to make the case for the necessity – conceptual, empirical and political – to think spatially about the constitution and expressions of money and financial systems: in short to make the case for a geography of money. A key tenet of the Handbook is that taking space and place seriously is essential to understanding the constitution, operation and organization of money and financial systems, institutions, agents and markets. For economic geographers such thinking is by no means new (Harvey, 1973, 1982; Corbridge et al., 1994; Leyshon and Thrift, 1997; Martin, 1999), although the dynamics of money and finance have, for too long, appeared 'offstage' (Clark, 2006: 84) relative to long(er) standing concerns of production, work, technological change, competition, agglomeration and urban and regional economic development. Beyond the discipline of Geography, and notwithstanding the ground-breaking work of Viviana Zelizer (1979), however, much of the social sciences have encountered matters financial as 'largely the (self-appointed) preserve of (financial) economists, wrapped in a forbidding mantle of technicality that warned outsiders of finance's inherent complexity' (Christophers, 2015: 189). More recently, however, a burgeoning body of work on money and finance in Sociology, Anthropology, Development, Management and Political Science, has been inspired by the growing social and cultural visibility of financial logics, practices and institutions in contemporary life.

The chapters in this Handbook reflect some of this proliferating interest in money and finance, but more than this, they also articulate some of what is at stake in developing a more sophisticated understanding of the spatialities of money and finance. The role of financial logics, institutions and practices in producing and distributing a series of devastating, and ongoing, economic and political upheavals – most recently in the shape of the subprime crisis of 2007–08 – demonstrates the urgent necessity to move beyond narratives of 'inherent complexity' to better understand the economic, social, political and cultural relations of money and power that shape livelihoods and patterns of international, urban and regional development.

What do we mean when we talk about a more sophisticated understanding of the spatialities of money and finance? One part of this involves appreciating the constitutive, and not merely expressive, significance of geography. These chapters go much further than simply recognizing that money and finance are arranged and instituted in particular geographical forms, that financial logics, practices, markets and institutions are located and 'happen somewhere'. Instead they argue that spatiality is integral to money, in the forms it takes, the organizations through which it is institutionalized, the ways in which it deconstructs, reassembles and distributes assets, liabilities, risk and indeed, conceives of time and space.

Relatedly, an important element of thinking spatially is to acknowledge and understand the world in its variegation and complexity, as opposed to the world represented in the neoclassical parables of *homo economicus*, perfect information and frictionless flows of capital to the highest rate of return. Such an acknowledgement and commitment is essential; geography can help reveal the sociality and politics of financial relations otherwise depicted as 'technical', 'neutral' or simply 'economic'. More than this, spatial thinking is part and parcel of understanding money and finance holistically, as incorporating economic, social, political, environmental, and cultural issues.

The chapters in Part I of the Handbook are concerned with some of the conceptual issues involved in thinking about the geography of money. One of the primary features of the history of money is the recurrent tendency for the emergence and inevitable subsequent bursting of 'asset bubbles', what Kindleberger (1978) famously referred to as 'manias, panics and crashes'. According to Kindleberger, financial crises have a distinctive temporal pattern, in terms of how originate, develop and then end. But as **Dymski and Shabani (Chapter 2)** argue, bubbles and crashes are also spatially constituted. They interrogate three contrasting definitions of asset bubbles – those based on ideas of equilibrium, those empirically defined, and those rooted in heterodox concerns with economic processes and outcomes in real-time settings. Their key argument is that while economists are increasingly incorporating asset bubbles into their analyses of financial crisis, they 'are interested in commonalities in experience across space, and thus conduct analyses implicitly *in* space, but not *of* space'. As such, econometric modelling of asset bubbles serves to invisibilize the importance of space by reducing it to merely a 'site' of infection or contagion. This impoverished conception of space serves a broader theoretical and methodological purpose; spacelessness enhances the generalizability of mainstream models. So, even as recent financial crises and their asset boom and bust characteristics have spawned a myriad of opportunities for modelling crises and contagion – usually oriented around transaction costs, missing information and the institutional limits of markets – such approaches decline to 'place' asset bubbles, to interrogate the territorialized differentiation of how firms, households, investors and consumers connect with different circuits of capital (see Benner et al., 2010), or to interrogate how these territorializations shape both cause and consequence.

So, what would a more spatially sophisticated and realistic conception of an asset bubble look like? Dymski and Shabani endorse a geographical political economy that argues that asset bubbles come into being in given places because of spatially uneven market and income structures and, in turn, their interaction with wider, uneven flows of goods, services, credit, and capital. In essence, and connecting to broader work on the subprime crisis (e.g. Aalbers, 2009), this spatialized understanding requires an interrogation of the links between the local and the global and a recognition of the variegation of crisis and its contingent, developing spatial outcomes.

The financial crisis of 2007–08 also informs the discussion by **Christophers (Chapter 3)**, which deploys a political economy framework to trouble another orthodox parable, namely the idea of 'market discipline' which conceives markets as institutions that crystallize information into prices, act as regulators and check risk taking behaviour. Christophers argues that 'market discipline' had, at best, a tenuous relationship with banking reality prior to the financial crisis of 2008 and, in its aftermath, has even less relevance. The chapter develops this argument by examining the shifting nature of pre- and post-crisis relations between three key groups of actors, commercial banks and financial institutions, central banks and states. Christophers delineates a post-crisis geographical political economy of money and finance that is marked by a reordering of relationships between these different institutional actors. He notes the growing power of banks deemed 'too-big-to-fail' (TBTF) and interrogates the shifting spatiality of 'the market' deemed to be disciplining such institutions in the aftermath of the crisis.

As such, Christophers delineates some emerging contours of a new political economy of money, one marked by some very different geographies to its predecessor and a more central role for nation states in managing markets. These contours chart the growth and political power of transnational institutions deemed TBTF – beyond market discipline – and their reliance on 'geographically-specific re-couplings' with relevant nation states, notably the US and Great Britain, able and willing to effect their bailouts and to secure the conditions of their political and economic reproduction. This new political economy is one in which, Christophers argues, the materiality of central and commercial banks and states – vis-à-vis markets – has deepened and become more visible. An important question raised here, and reflected in many other chapters, concerns the politics of governing financial institutions and relations; if 'market discipline' is of declining relevance to institutions deemed TBTF, then who or what is disciplining such institutions?

Corpataux, Crevoisier and Theurillat (Chapter 4) focus on exploring some of the conditions in which investors and entrepreneurs can and are becoming increasingly disconnected from each other. They argue that financialization is an intrinsically spatial phenomena in that it is a form of producing and then exploiting the mobility of capital. Financial markets, while appearing ever more remote from the workings of 'real' economies of machines, buildings and infrastructure, are profoundly significant in shaping uneven development. Drawing on research in Switzerland, the chapter explores various spatial, institutional and functional disjunctures between the workings of financial markets and the real economy. In terms of corporate governance, for example, they chart some of the institutional and regulatory changes needed to convert real into financial capital, changes that produce and enhance the liquidity and mobility of financial capital that, in turn, allow the separation of the investor and the entrepreneur. Such institutional changes have ushered in a system of exceptional capital mobility that allows for strategies of quick exit and little commitment. Investment strategies can be detached, quantitative and decontextualized, products of Markovitz's (1959) portfolio theory that encourages the diversification of risk through investment in non-correlated assets. A key argument here is that 30 years of enhancing the mobility of capital has meant that the distance – functional, spatial, social or otherwise – between investors and their investments has been growing.

How are such shifts territorialized? And with what consequences? Corpataux, Crevoisier and Theurillat argue that this growing distance between investors and their investments is manifest in the concentration and centralization of investment decisions, epitomized in the growth of global cities. One corollary of this centralization and concentration is the takeover of regional banking institutions and a reduction in regional capacities for monetary creation. Another is the 'short circuiting' of the traditional boundaries and hierarchies of local, national and international governance. The resulting spatial hierarchy is bifurcated between a network of global cities that compete on the basis of attracting investment flows and a 'mosaic' of territories competing in terms of innovation and cost reduction.

The mobility of capital in different and changing forms is a theme that animates the chapters by Dick Bryan, Michael Rafferty and Duncan Wigan and Michael Pryke. **Bryan, Rafferty and Wigan (Chapter 5)** interrogate what they term the 'deconstruction and reconstruction of capital' as constitutive for understanding the changing spatialities and temporalities of capital. Using David Harvey's (1973) work on absolute, relative and relational space, they explore how financial markets are creating forms of relative and relational capital that generate complex, opaque geographies of obligation that defy absolute forms of measurement. Their analysis points not just to the changing scales of finance, but also its changing forms. Thus, they explore how financial derivatives deconstruct 'things' into constituent elements before blending and reconstructing different elements into a single measureable unit that can be traded. This ability to deconstruct and then reconstruct all manner of spatio-temporal forms of capital poses insuperable challenges to ideas about knowability, control, measurement and pricing. Financial transactions connect and blend different times, spaces and risks, transcending ideas about linear time and 'national' and 'offshore' jurisdictions. This appreciation of the changing forms and possible spatialities of capital have profound implications and open up different ways of thinking about how we understand capital and its classic institutional forms like 'the corporation', which is now being deconstructed and reconstructed into tradable constituent parts.

In similar vein, albeit from a different theoretical orientation, **Pryke (Chapter 6)** argues that space is not simply an inert backdrop or passive flatland, but is actively entangled in market practices. His chapter is centrally concerned to use some of the lessons of the 2008 crisis to produce a more spatially sensitive understanding of money. Again, the idea that financial innovation *is* spatial innovation figures prominently. Pryke argues for a topological understanding of space that is supple enough to comprehend how financial risks can be imagined and assembled from assets around the globe. Aided and abetted by mathematical models and visualization software, mortgages in cities like Baltimore can be 'reduced to code' and traded internationally. Such an understanding transcends metaphors of 'flows' and 'circulation', with implications for authorities tasked with regulating these time-spaces. National regulatory authorities are faced with financial innovations that not only generate new connections and linkages, but also new risks that generate radical uncertainty and unpredictability. Risk is always much more than a statistical attribute of data and as such, finance is never merely 'technical'; its politics must always be interrogated. While the software and modelling create new instruments and combinations, the brute materiality of finance strikes when these markets unravel, as they did in 2008 to devastating effect.

1.2 MONEY, THE SPATIAL ORGANIZATION OF FINANCIAL SYSTEMS AND UNEVEN GEOGRAPHICAL DEVELOPMENT

The contributions gathered in Part II of the book are all concerned, in one way or another, with how the operation – and, indeed, the very spatial organization – of financial systems (their institutions and markets) shapes the geographies of socio-economic development. The tendency for capitalism to develop unevenly across space has long attracted the attention of geographers. Over the years, various theoretical and conceptual frameworks have been advanced for understanding this tendency and its effects. We know much about how the forces of competition and technological change drive a constant process of 'creative destruction' in which new firms, new jobs, new products, new skills and new technologies drive out and render obsolete old ones, thereby producing perpetual instability of economic landscapes (see, for example, Harvey, 2006; Cooke et al., 2011). We know much about how this instability involves an ongoing tension between forces making for the spatial agglomeration of economic activity on the one hand, and their geographical dispersal on the other, and how these forces have themselves become increasingly global in scope, operation and consequences (see Scott, 2006, 2011).

Yet, it is probably no exaggeration to say that, for the most part, our theories of uneven geographical development have not assigned much explicit recognition or integration of the roles that financial markets and institutions play in this process. Certainly finance rarely figures as a key determinant in the models and analyses of agglomeration, innovation, clustering, production networks, governance, and the like around which much of the recent work in economic geography and regional studies has centred. But access to finance is of crucial importance to the investment and disinvestment decisions of firms, their capacity to innovate, and their merger and acquisition strategies. How financial institutions allocate funds to firms, economic activities, and hard and soft infrastructures exerts a key influence over economic development and economic growth. Likewise, firms vary significantly in the power they are able to exert over financial institutions when seeking capital. Thus the geography of financial systems – how banking systems, capital markets and the institutions involved are spatially organized, and the rules and practices by which such systems allocate funds across space – and the geography of economic and social development – the spatialities of investment, disinvestment, innovation, employment, infrastructure housing and per capita incomes – are inextricably interrelated (see Figure 1.1). Regional development drives a demand for finance for investment which is funded (or not, as the case may be) by the financial system, which allocations and reallocations of funds in turn shape the pattern and form of regional development. The chapters in this section of the book explore and identify the nature of this interrelationship.

Firms can raise capital for new investment, expenditure on new R&D, on new product development, takeover, merger or acquisition, and other activities requiring finance, from various sources. The conventional sources have been loans from banks, retained profits, and capital raised by issuing shares. Retained profits and bank loans have traditionally been major sources of finance for small, privately owned firms unwilling or unable to raise funds via a public listing on a stock market. A bank loan immediately links a firm into the banking system more generally, and into the wider financial system as a whole, given banks will have other opportunities for lending and/or investment, and that the interest rates charged on a loan will be influenced by the bank rate set by the central bank of the country concerned, and that this rate in turn will reflect that central bank's monetary policies. The use of retained profits will, of course depend on the performance of the firm and its other obligations, as well as conditions in the wider financial marketplace (such as interest rates). For larger firms and corporations that are publicly listed on stock markets the main source of new capital will be via the issuance of new shares to private and institutional investors (such as pension funds). Equities entail dividend payments by the firms concerned, and of course the value of a company's shares will depend not only on the company's performance (in particular its declared profits), but also on the movements on

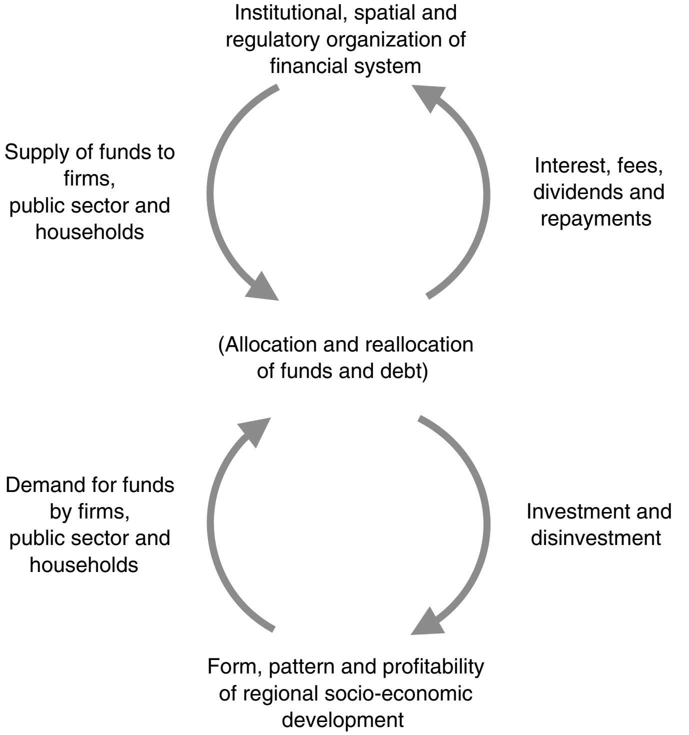

Figure 1.1 The intersection and interdependence of the financial system and regional socio-economic development

stock markets more generally, movements that may have nothing to do with the company in question but which reflect wider market sentiments, global economic conditions, and economic and political shocks of various kinds.

Over the past thirty years or so, other capital circuits have come into existence which provide firms with alternative sources of funds, such as venture capital, private equity and crowdfunding. Venture capital is intended – at least in principle – to provide forms of finance for new, early-stage and emerging growth companies, particularly in high-risk sectors and activities that cannot easily raise funds by issuing debt or borrowing from banks. Private equity is a source of investment capital from institutions and high-net-worth individuals for the purpose of investing and acquiring equity ownership in companies. Although often trumpeted as supporting and fostering the new and small firm sector, especially in high-technology, a not inconsiderable proportion of venture capital finds its way into management buy-out and buy-ins, even mergers and acquisitions, and in lower-risk sectors of activity such as retailing. Private equity firms raise funds and manage these monies to yield favourable returns for their shareholder clients, typically over a short time horizon. In recent years both of these new circuits of finance for companies have expanded beyond their individual home nation borders and have gone global. The phenomenon of 'crowdfunding' provides a novel Internet-based platform through which small, often 'alternative' businesses can raise finance from a myriad of individuals, each typically committing only a small sum in return for an attractive rate of return (Langley, 2016). It offers a source of funds for business that operates outside conventional and institutionalized financial markets.

But at the same time as these developments have been occurring, in many countries banking systems themselves have undergone or have begun to undergo historic processes of restructuring, centralization and concentration, involving reductions in the number of independent banks and a shift towards a more branch-based banking model. This process happened in the UK as early as the nineteenth century, but is a more recent, and still ongoing, development in countries like Germany and Italy. And while this has been happening, many larger banks have gone global, establishing branches worldwide and operating on a truly global scale, seeking out the most profitable investment and projects, and using securitization to bundle loans with different degrees of risk into debt instruments that can be traded on global financial markets.

How the financial system interacts with and shapes uneven geographical development is thus inextricably bound up with the changing institutional and spatial organization of the financial system itself. In her 'stages of banking development' theory of the spatial evolution of the financial system, Dow (1999) used post-Keynesian monetary economics combined with Myrdalian ideas of centre-periphery uneven development to argue that the spatial structure and organization of financial systems are intimately bound up with their economic and institutional development. Thus, the increasing concentration of a banking system into just a few major banks, if accompanied by the spatial concentration of the main offices and high order functions of those banks into a major financial centre, can lead to or exacerbate a core–periphery pattern of regional development dominated by the region hosting that financial centre. Funds and savings will tend to flow from the peripheral regions to the core region where opportunities for liquidity, investment and financial returns are highest. How far and under what conditions and terms funds flow back to the periphery then becomes a key factor affecting economic development and growth there.

According to conventional theory, provided financial markets work freely and smoothly, and there are no information barriers or frictions, the spatial structure and organization of a financial system should have no material effect on the geographical allocation of loan and investment capital: distance should not be a factor influencing the spatial flow of funds. This issue has attracted increasing interest from researchers, both in the United States and in Europe. The balance of evidence suggests that even though credit scoring of firms has become increasingly codified and automated, and information can now be easily gathered and communicated electronically, physical distance continues to matter in banking and that most loans and related services provided to small businesses are made by financial institutions close to those businesses (Peterson and Rajan, 2002; DeYoung, Glennon and Nigro, 2006; Alessandrini et al., 2009; Udell, 2009; Brevoort and Wolken, 2009; Cerqueiro, Degryse and Ongena, 2009). Under such conditions, whether the financial system is spatially centralized or decentralized may then assume key importance for the form and pattern of uneven geographical development.

Klagge, Martin and Sunley (Chapter 7) develop this argument conceptually, and then explore it empirically by comparing the UK and Germany, the former having a well-established branch banking model and a highly spatially centralized financial system (in London), the latter a much more decentralized system, with numerous local banks and several financial centres (see also Klagge and Martin, 2005). The evidence, particularly with respect to venture capital, where regular contact between the investee firm and the investor institution is important, suggests that the more decentralized market in Germany results in a more even distribution of investment across regions: in the UK, in contrast, the geography of venture capital investment is regionally uneven and biased towards London and the South East, where the majority of venture capital institutions are also located. There is also evidence for the UK that at times of financial crisis and recession, peripheral regions are more likely to suffer from credit rationing by banks (Degryse, Matthews and Zhao, 2015).

While physical distance may be the most obvious measure of 'proximity' between banks and customer firms, it is not necessarily the most meaningful or relevant, particularly when either the bank or its customer firms have multiple geographical locations. Especially in the provision of credit, when a bank has multiple branches, the concept of 'distance' becomes complex. The bank's branches may play different roles in providing services to borrowers, with one branch serving as a point of personal contact with a firm seeking a loan, another housing the decision makers who approve or deny the loan, and yet another which has responsibility for loan monitoring operations (Brevoort and Wolken, 2009). Similarly, for firms with multiple locations, it is not necessarily clear which location in the most relevant for obtaining financial services. Each location may play a role, and the importance of each may differ according to the nature of the financial service being sought. Thus 'distance' can be a complex, multidimensional relational concept. Drawing on earlier work (for example, Zazzaro, 1997; Alessandrini, Croci and Zazzaro 2005), **Papi, Sarno and Zazzaro (Chapter 8)** make a distinction between 'operational distance', the physical distance between a bank and its customers, and 'functional distance', defined as the distance between a bank's decision-making centre and the bank's branch. Functional distance thus captures the spatial remoteness between the different hierarchical layers of a banking organization. Using network analysis techniques, and focusing on the Italian banking system, they show that the overall interconnectedness of geographical credit markets has significantly increased over time, whether measured at the regional or provincial level. They go on to demonstrate that within this process, there has been a growing and marked centralization of the system within a few northern Italian banking centres to the detriment of the southern credit markets and regions. Their study highlights the importance of the concept of distance, especially that of functional distance, in shaping the relationships between banks and local borrowers, and how this has worked in recent years to intensify the country's core–periphery financial and banking divide, with adverse consequences for the small business sector in the south of the country.

For large firms, of course, apart from retained profits, the main source of finance for expansion and growth is often the public stock market, that is by issuing shares, stocks and bonds. Historically, in the early days of industrialization, manufacturing firms used retained profits or bank credit for their development and expansion. But with the emergence of large corporations in the twentieth century, and their need to raise large amounts of capital for investment, national stock markets assumed a key role as a source for such funding. Again, historically, this suggests a certain geography of reliance on stock markets, with those regions and localities specializing in large-scale manufacturing being much more linked into the stock market than other regions. National stock markets – or sometimes regional ones where these exist – thus became the conduits for steering capital from investors, wherever these were located, into the industrial base of particular regions.

Although stock markets have become globalized in their operations and interrelationships, a 'home bias' by investors nevertheless seems to have persisted, and even a financial centre bias (whereby firms near a nation's financial centre are more likely to participate in stock markets than are provincial firms – see Wójcik, 2009). One issue that has remained under-explored, however, is the relationship between innovative firms and the stock market. According to **Wójcik (Chapter 9)**, there are several interrelated questions here. Are more innovative firms more likely than less innovative ones to use stock markets to raise capital? Or put another way, do stock markets tend to promote more innovation by firms? Are innovative service sector firms just as likely to use stock markets as manufacturing firms? Using cross national data, Wójcik finds empirical support for these hypotheses. And what do stock markets imply for the geographies of innovation? While the venture capital market has developed to direct capital to innovative SMEs, large innovative firms (whether manufacturing or service based) may prefer to use stock markets. And venture capital markets often function as a feeder to stock markets. The presence of a large and thriving stock market may thus help to promote innovation in an economy, and thence may influence how this new economy develops geographically. As Wójcik asks: how far and in what ways do particular production systems and financial systems co-evolve (he mentions Silicon Valley and NASDAQ in the US)? Even more prosaically, if a local high-tech cluster produces its own stock market index of leading local firms, does this help to attract capital into the area (Cambridge, UK, has one such index, which is regularly compared to – and outperforms – the FTSE on the London stock market).

Of course, local and regional development is not just about the activities of firms, and how those activities are financed. It also involves investment in the public infrastructures that facilitate those activities, in the social infrastructures that support and attract workers and their families – especially housing – and in the public services on which both business and households depend. In fact, investment in infrastructure, of all kinds, is now widely recognized as key to economic growth and development at all spatial scales. The demand for new and improved infrastructure appears to be almost insatiable. But at the same time, its financing has become a major challenge (Della Croce and Gatti, 2014). As western advanced economies have shifted to neoliberal economic policies, in which privatization of public sector assets and latterly restrictions on public spending imposed as part of a new politics of 'fiscal prudence' (austerity), have taken hold, so states have sought other means of financing investments in key infrastructures. As **O'Brien and Pike (Chapter 10)** argue,

> the result is that governments and private actors are exploring – and in some cases being compelled – to adopt (more) financialized practices and mechanisms in an attempt to leverage new capital . . . The financialization of infrastructure, which has a distinct geography concentrated on urban and suburban areas . . . is a growing feature of an increasingly financialized global economy.

Whether it be the use of various kinds of public–private partnerships (PPPs),whereby a national or local government enters into a contract with private sector organizations to build and manage infrastructure (roads, airports, hospitals, etc.), which the national or local government then rents back, or outright privatization of existing or private provision of new infrastructures (possibly with state guarantees or underwriting), infrastructure has become a distinct asset class for private, institutional and some sovereign wealth fund investors. As such, the financing of local, regional and city infrastructures is becoming increasingly interwoven with global financial institutions, flows and markets. But, as O'Brien and Pike show, using the UK, USA and Australia as examples, this process is unfolding in different ways in different countries, and even between different localities and cities within them.

And it is not just public infrastructure that is undergoing a major transformation in terms of funding. Other dimensions of public spending, such as on local services and utilities, are also facing increasing pressures. In almost all advanced countries, local governments and public bodies have responsibilities for delivering key social and related services that help to underpin local economic performance and social reproduction, from healthcare to education, from environmental services to police and fire services. Different countries have evolved different models for delivering and financing such activities, involving different funding arrangements as between the central state and local state authorities – in essence, different degrees of devolution of revenue-raising (essentially local taxes) and revenue-spending powers **(Slack, Chapter 11)**. Some countries, such as Denmark, Japan and to a lesser extent the United States, have long had a relatively high degree of local devolution of tax-raising powers. Others, such as Spain, France and Italy, have been moving progressively towards greater devolution. The United Kingdom stands in quite marked contrast, in not only having a low level of decentralization, but in having become more centralized (see Table 1.1).

At the same time that a process of fiscal devolution has occurred in many countries, state-sponsored institutional investors – commonly referred to as sovereign wealth funds (SWFs) – have grown in number. As **Dixon (Chapter 12)** shows, there are now perhaps as many as 60 or more of these SWFs, commanding assets of around \$6 trillion. Widely viewed as a new and distinct class of actor in global financial markets, SWFs fall into three main types, in terms of the sources of their funds: resource commodity-revenues, balance of payments surpluses, and fiscal surpluses. Sovereign wealth funds can also be found in quite different types of political-economic regime, from social democracies (such as Norway) to command economies (such as China) to autocracies (such as some Middle Eastern oil states). While some SWFs may be more of a status symbol than a necessary policy tool, as Dixon argues, SWFs can influence socio-economic development in significant ways, whether by covering state pension obligations or by investing

Table 1.1 Proportion of total local tax revenue raised by local government (per cent)

Country	1975	1995	2012
United States	14.7	13.2	15.2
Spain	4.3	8.5	9.9
Denmark	30.4	31.9	26.9
France	7.6	11.0	13.2
Italy	0.9	5.4	16.4
Japan	25.6	25.3	24.7
Germany	9.0	7.4	8.2
United Kingdom	11.1	3.7	4.9

Source: OECD (2015) *Tax Policy Analysis*.

in companies, infrastructure and property. Through their involvement in global financial markets SWFs can influence the movement of funds across space, both within and between nations. Both through their investments, both direct and indirect, in companies, public infrastructure projects and (mostly urban) property, both at home, and abroad, SWFs can significantly reinforce or reconfigure the geographies of economic development. The complexity of the overseas investment of these SWFs is only now beginning to emerge, and while they can provide much-needed capital for local businesses and projects, their investment has not been without concern, for example over their implications for the loss of local ownership or security of local strategic infrastructures and utilities.

One of the primary arenas for the impact of finance on the socio-economic landscape has been housing. Indeed, as **Aalbers (Chapter 13)** argues, the twentieth century could well be called the 'century of the mortgage market'. During the course of that century, across the leading OECD nations the share of mortgage loans in banks' total lending activity roughly doubled, from 30 to 60 per cent. The rising demand for home ownership, not just as social necessity but increasingly as a household investment vehicle (especially as a pension asset), and the steady and seemingly ineluctable increase in house prices, all fuelled the expansion of the mortgage market, and traditional mortgage institutions (Sassen, 2009). What historically had been a 'locally originating, locally distributed' model of mortgage lending had become a 'locally originating, globally distributed' model (Wainwright, 2009; Martin, 2011), linking housing and the geographies of urban development into the flows and forces of the global financial system more widely (Aalbers, 2009). Those geographies, furthermore were uneven: in the United States, for example, the housing and subprime mortgage boom was not a universal phenomenon, but one concentrated in particular cities and states, such as Nevada and Florida, often associated with large-scale speculative housing developments. Thus when the housing bubble burst, in 2007, as a result of escalating numbers of mortgage repayment defaults, the collapse and credit squeeze induced recession this triggered were likewise geographically uneven (Immergluck, 2011; Martin, 2011; Walks, 2013). Not dissimilar geographically uneven effects of this housing mortgage boom and bust cycle have been experienced in other countries, such as Spain (particularly along its Mediterranean coast) and Ireland (especially around Dublin). Thus the global financial crisis was not only a regionally uneven process in its origins, but also in its socio-economic effects.

As **Searle and Köppe (Chapter 14)** go on to show, the mortgage crisis links directly to the wider issue of household debt. They document how household debt has risen dramatically in many countries over recent decades, to reach almost $30 trillion in some 22 OECD countries by the eve of the financial crisis in 2007. The relaxation of financial constraints on banks and mortgage institutions in the 1980s and 1990s, together with low interest rates in the 2000s, have resulted in an historic increase in both secured and unsecured debt in the household sector. And this increase in household debt is part of a more general rise in debt across other major sectors of the socio-economy (non-financial corporate, financial, and government). The geographies of debt have not been that extensively studied, but the financial crisis has revealed just how important these geographies can be, both in fuelling inflationary bubbles (in housing especially), and when these bubbles burst (Walks, 2014). Not only has housing debt become inextricably bound up with the financial system as a whole, and with the latter's globalization; increasingly, housing is being seen not just as a social necessity, but as an asset invested in order to build up capital resources to be deployed for both consumption (for example, through equity release) and welfare purposes, especially retirement pensions. In some advanced states, asset-backed welfare is increasingly being used to supplement or even replace traditional state welfare provision, and housing provides just one such key asset. This development raises a number of issues. For one thing, households have a vested interest in ever-rising house prices, since the increase in the capital value of a house offers greater potential income in case of emergencies, and most importantly in the form of equity which can be realized to help fund retirement (and/or to pass on to other members of the family). The geographies of house price inflation take on an obvious relevance in this context, and these geographies will reflect underlying processes of wage growth, and housing demand and supply, which in their turn will be shaped by patterns of regional and local economic growth and development. But at the same time spatial variations in house prices and housing costs will influence the geographies of affordability, household debt, and welfare. The rise of 'credit capitalism' signals a new phase, and certainly a new major mechanism, of uneven regional development, driven by households' access to and use of credit and the circulation and refinancing of the debt so generated.

The growth of 'credit capitalism' has been paralleled by a growing crisis of what many have called 'pension fund capitalism' (Clark, 2000). One of the most striking post-war developments in the advanced economies was the dramatic expansion of the pension fund industry, a development that transformed the financial structure and institutions of modern capitalism. Not only was this expansion associated with the growth of the public sector, the employees of which enjoyed generous final retirement benefits, but also with the growth of company pension schemes. Largely an Anglo-American phenomenon, but copied elsewhere in different variants, the growth of company pension plans and funds accompanied the growth of the large company and corporation. For much of the post-war period, when virtually full employment and steady economic growth obtained, corporate sector pension fund assets comfortably exceeded the demands made on them by retiring employees. New institutional structures arose to manage and govern the huge pension funds involved, and, inevitably, those institutions and the flows of monies they invested and managed on behalf of the company sector developed distinct geographies, being articulated by institutions in national financial centres. There is then a complex geography to pension fund capitalism, which may involve and produce spatially uneven outcomes (see for example, Martin and Minns, 1995; Sunley, 2000; Monk, 2009).

Yet it is precisely this system of pension fund capitalism that has come under increasing strain, indeed crisis. According to **Clark (Chapter 15)** 'company-sponsored pension benefit systems have had their day'. He argues that 'pension fund capitalism' has been undercut by the transformation of corporate form and functions, and that the long-term decline of employer-sponsored benefit systems matches the transformation of managerial capitalism, including the relative decline of manufacturing, the spatial and functional dissembling of production systems, and the tensions involved in allotting profits between shareholder returns and workers' pension benefits. Added to such issues, demographic ageing has meant that the outgoings from pension funds often exceed incomings from company and workers' contributions, so that many corporate pension funds (and indeed public sector funds) have gone into deficit. Further, increased stock market volatility in recent years has dented the investment returns to pension funds. It would be premature indeed to announce the end of 'pension fund capitalism': in the UK for example, a new law means that every employer must automatically enroll workers into a workplace (defined contribution) pension scheme (provided they are aged between 22 and State pension age, earn more than £10,000 a year, and work in the UK). But fundamental changes are firmly underway in the form and structure of the pension fund industry that will almost certainly have major implications. As Clark argues, these changes raises key issues about employee decision-making, and crucially, about income distribution and inequality, and hence about the geographies of socio-economic development. Hitherto, relatively little attention has been directed to the geographical impact of pension fund systems (though see, for example, Botts and Patterson, 1987; Monk, 2009) yet it is clear that their sheer scale as a financial circuit, their close dependence on the geographies of economic growth and development, and their impact back on those geographies, all call for closer scrutiny and analysis.

1.3 SPACES OF FINANCIAL AND MONETARY REGULATION

The history of modern capitalism is also a history of the development of regulation, of systems and architectures of rules, principles and laws intended to govern and stabilize the functioning of the economy, ranging for example from competition and company law, to employment law, to trading agreements and policy, to taxation, to rules prescribing the operation of banks and financial markets. Regulatory rules and principles have their own geographies or 'landscapes', their own 'spaces'. Those spaces can be local, national or global, and can vary not only in their geographical coverage or jurisdiction, but in their geographical (un)evenness. There can be complex multiple layers and scales to a regulatory system. Nowhere is this more evident than in the regulation of finance and financial institutions. Given the fungibility and mobility of money – the ease with which it can be converted from one form into another and moved from place to place – and hence its inherent instability as a store of value, a means of exchange and as a social relation, it is not surprising that historically both national and subnational authorities have introduced regulatory structures intended to control financial activity without overly hindering the basic functions and importance of money in the economy.

The history of financial regulation is long and well documented. In many nations, responsibility for overseeing financial markets and financial services has evolved over centuries, and in many instances the shifts and changes that trace out that evolution have been as much in response to major crises, economic upheavals and political events, as to the march of incremental adjustments and additions. And while different nations have developed their own internal regulatory systems, these have long interacted with and been influenced by the evolution of international systems of monetary cooperation, financial standards and regulatory practices, which themselves have their specific geographies.

The Gold Standard is one case in point. The Gold Standard was a way to solve the instability and disruptions to international capital markets caused by the collapse of the bimetallic system: it was a response to the failure of countries to agree on steps to sustain international bimetallism. Most countries went onto the Gold Standard between the 1870s and the first decade of the twentieth century. However, as Eichengreen and Flandreau (1994) show, geographically the Gold Standard had several core–periphery distinctions. It did not revolve simply around the City of London, but evolved out of the British, French and German zones of global economic influence, and as a consequence had three main centres, London, Paris, and Berlin, corresponding to a complex geography of 'peripheries'. The geographical spread of the Gold Standard, as an international monetary system, was shaped by countries' level of economic development, the magnitude of their reserves relative to world specie markets, whether those reserves were concentrated at a central bank, and by the presence or absence of imperial ties. What some regard as the world's most successful international monetary arrangement appears to have worked automatically, requiring little more than a resolve on the part of the involved countries to keep their own Gold Standards in good working order (Selgin, 2013). The institutional setup consisted of nothing other than the sum of these national Gold Standard arrangements: there was nothing in it akin to the International Monetary Fund or Special Drawing Rights or other such centralized and bureaucratic facilities. But it nevertheless performed a regulatory function, in that it kept international exchange rates from fluctuating beyond very narrow bounds, and thereby encouraged the growth of international trade and investment. However, just as Britain's adoption of the Gold Standard had led to its geographical diffusion across large swathes of the international economy, so Britain's abandonment of the standard in 1931 quickly led to its almost universal abandonment.

Its successor, the post-war Bretton Woods system of international monetary regulation, set up in 1944, was far more institutionalized. The Bretton Woods agreement saw the establishment of two new international regulatory institutions, the IMF and the World Bank, and a system of monetary management and fixed exchange rates, with all currencies linked to the US dollar, which in turn was linked to gold. To prevent speculation against currency pegs, capital flows between countries were severely restricted. This system was accompanied by nearly a decade and a half of rapid economic growth amongst the more advanced countries, and a relative paucity of economic recessions and financial crises. Its success depended in large part on the economic prosperity and leadership of the United States, which acquired considerable geopolitical power and influence as a result. The IMF and World Bank also to a large degree came under the influence of – and some would say, served the interests of – the US. Certainly these two institutions came to have their fierce critics, not least for their perceived domination by the rich world. At the level of international regulation, the post-war financial system was controlled by the United States. But in the end it proved too inflexible to deal with the rising economic position of Germany and Japan, coupled with the declining economic power of the US and its reluctance to adjust its domestic economic policies to maintain the gold peg. When President Nixon abandoned the link to gold in 1971, the fixed exchange rate system disintegrated. The period since has seen repeated financial instability, with countries involved in what has been a 'race to the bottom' in terms of deregulating their domestic financial systems as part of a more general shift to a neoliberal stance towards economic policy and economic management.

The wave of domestic financial deregulation began in the 1970s but gathered pace in the 1980s and 1990s. Most countries up to that time had developed various legal controls and strictures governing the activities of banks and other financial institutions. Arguably, the United States had acquired one of the most complex of all domestic regulatory landscapes, with Federal and state layers of regulation and supervision (see Komai and Richardson, 2011). As Viner, writing back in the mid-1930s put it, this development was

> rooted in the country's history, in its regional diversities, and local loyalties. Its persistence is due to the support it derives from state jealousy of encroachments on state autonomy, from agrarian and small-town jealousy of the metropolitan areas, and from the nation-wide fear of undue concentration of financial power in the great metropolitan centers, and especially fear of Wall Street domination. (Viner, 1936: 112)

This statement was made barely three years after the introduction of the Glass–Steagall Act of 1933, in response to the collapse of a large portion of the American commercial banking system earlier that year. Among other things, this Act introduced the separation of bank types according to commercial and investment activity. This Act remained in operation until its repeal in 1999. Other key Acts that defined distinctions and demarcations between banks and other financial institutions had been abolished in the 1980s. And the restrictions on inter-state banking, that had been in force for decades, were removed in 1994.

Financial deregulation has been no less dramatic in the UK. Over the course of the 1980s and 1990s, the established practices in the London Stock Exchange (the historical separation between stockbroking and market-making functions) were abolished (by the Financial Services Act of 1986 – so-called 'Big Bang'), the separation between investment banking and retail banking removed, legislation passed to allow building societies to demutualize and become banks, and barriers to foreign ownership of British financial institutions were removed. These changes, made by the Thatcher governments, were basically intended to make the UK financial services sector, and the City of London especially, more competitive.

There is no doubt that the wave of deregulation, in the USA, UK and elsewhere, over the 1980s and 1990s helped spur the dramatic growth in finance and banking on global markets and in the major financial centres like New York and London. Finance became viewed as *the* engine of economic growth, even as itself the driver of a new form of capitalism, a 'new world order'. Thus speaking in mid-2007, Gordon Brown, the UK Chancellor of the Exchequer claimed that as a result of the City of London's 'remarkable achievements', aided by the 'light touch regulation' he had pursued as Chancellor, the British economy had entered 'an era that history will record as the beginning of a new Golden Age' (Brown, 2007). A year earlier the Conservative leader, David Cameron, had sounded no less triumphant, proclaiming the 'victory of capitalism, privatization and liberalization' and attaching the credit for Britain's finance-based and City-focused success to the 'critical Conservative decisions' that the Tories had taken when they were in government. It was, he argued, their historic deregulation of banking and the City of London in the 1980s, especially Big Bang in 1986, that had 'injected an enterprising spirit' into the City and the economy as a whole (Cameron, 2006).

As it turned out, of course, the celebratory tone of these self-congratulatory encomia proved to be a hostage to fortune. The collapse of Northern Rock Bank in the UK in November 2007, and of Lehman Brothers in the US less than a year later in September 2008, were just two of the many bank failures that marked the most severe financial crisis for 80 years, a crisis that emphatically undermined any presumption about the pre-eminent driving role of financial services within the economy and which instead has cost taxpayers dear in bailouts to keep the banking system afloat. The cause of the global financial crisis was obviously not simply due to the neoliberal obsession with deregulation. But the more permissive regulatory landscape that had emerged over the 1980s and 1990s was undoubtedly a major contributing factor. The dramatic advances in telecommunications technologies and the ingenuity of financiers and financial institutions to dream up ever more sophisticated financial products, instruments and practices enabled money to escape what weak regulatory structures there were. At the same time, weak regulatory and conduct authorities failed to detect the spread of fraudulent practices within the financial services sector, such as mis-selling financial products and fixing inter-bank interest rates. While there has since been some tightening up of regulatory structures, and banks have been fined and compelled to hold larger capital reserves, governments have stopped short of more rigorous control and oversight (in the UK, for example, the new Financial Conduct Authority dropped its promised enquiry into banking culture and standards only a few months after it was launched).

How the changing landscapes of financial regulation shape the operation of financial systems across geographical space is thus a key issue for enquiry, and is the subject of the chapters that form Part III of the book. In his chapter, **Bieri (Chapter 16)** examines the process of financial regulation as part of the larger process of regulatory governance of the economic system as a whole. As he argues, financial regulation (like all economic regulation) is a deeply path-dependent process, in the double sense that at any one time the regulatory architecture that is in force reflects the cumulative legacy of its past development, and in that every action in a regulatory regime creates a financial reaction the consequences of which, both spatial and non-spatial, tend to have lasting effects on the configuration of activity in the financial sector and the real sector alike. Thus the trajectory of spatial economic development and the advancement of the monetary-financial system should be seen as a joint historical process, with regulation playing a key linking causal role. Using this conceptual framework, this chapter shows how different regulatory regimes shape the international and interregional flow of funds across space. The structure of the regulatory system influences in important ways the roles played by the various components of the monetary-financial system (financial instruments, financial markets, and monetary and financial intermediaries) in promoting the mobility of funds among the various sectors of the space economy. This chapter illustrates how shifts in the political economy of financial regulation have created new geographies of the flows of funds – a set of spatial circuits that are characterized by a rapid evolution in bank complexity. Focusing on the US banking sector before and after the recent crisis, it is shown how the interplay between structural changes in financial intermediation and shifting regimes of US banking regulation gave rise to a distinct unevenness of spatial capital flows and depository agglomeration – a combination that ultimately co-determined the spatial impact of the fall-out from the financial crisis. Overall, this chapter develops the case that money and finance are non-neutral with regard to space principally because the institutional arrangements of financial regulation matter for how the spatial economy evolves.

In her chapter, **Dörry (Chapter 17)** seeks to define and elaborate the notion of 'regulatory space', and how such spaces interact with the evolving nature of financial systems, institutions and practices. As these systems, institutions and practices have become ever more integrated globally, and ever more sophisticated technologically, so they have rendered regulation ever more difficult. The globalization of money and financial markets challenges the effectiveness and territoriality of national-level systems of regulation, while at the same time enabling money flows to escape to exploit gaps and differences in those national regimes: global flows of mobile finance can 'touch down' in chosen places to exploit the regulatory environments that best match their 'needs' and from where those monies, and financial practices, technologies, and instruments on which they rely are injected back into the global financial system. The rise of so-called 'offshore financial centres' over recent decades illustrates this constant search by financial institutions – and high-net-worth individuals – for gaps and holes in the regulatory landscapes of money. These offshore centres take various forms, but their primary purpose is to attract incomes and earnings of individuals and companies by offering low or even zero taxes, financial secrecy and a range of services intended to benefit the 'shell subsidiaries' that such individuals and companies typically use for this purpose. These have the outward appearance of being legitimate, but are just empty shells that do nothing but manage money while hiding its ownership. The Tax Justice Network (2012) estimated that perhaps as much as US$21–$32 trillion of assets and profits is sheltered from taxes in unreported tax havens worldwide, though other estimates put the sum at around US$8 trillion. But even that lower figure implies that large sums of tax revenue are being lost to the countries where the individuals and companies are based, revenues that could contribute to public expenditure and welfare in the countries concerned. The Panama Papers scandal that broke in 2015 testifies to the scale of the use of these 'offshore' havens. A huge leak of some 11.5 million documents containing confidential information on more than 200,000 offshore companies involved with one of the world's most secretive companies, the Panamanian law firm Mossack Fonseca, show just how widespread the abuse of offshore tax havens is. Among its lists of companies are more than 110,000 incorporated in the offshore centre of the British Virgin Islands, nearly 50,000 in Panama itself, and around 15,000 in each of the Bahamas and the Seychelles. A number of well-known banks were among these lists. What is clear is that tax avoidance or evasion is occurring on a global scale, and despite the outcry by national governments in response to the Panama Papers leak, the reality is the issue can only be solved effectively by regulatory measures agreed at an international level. However, the construction of a supranational regulatory space seems a long way off.

While attention has understandably focused on these 'offshore' gaps in the regulatory landscape of money and finance, and the role they have played in the development of financial products and circuits intended to escape national tax regimes, as **Wainwright (Chapter 18)** argues we should not lose sight of the fact that national governments themselves have been re-regulating their onshore spaces in an attempt to mimic offshore financial centres, to create what in effect are 'onshore–offshore' spaces. By introducing 'light-touch' regulation, secrecy guarantees and other such inducements, governments have used various 'liberalization' concessions to attract mobile corporate profits and funds, as well as personal wealth, into their jurisdictions, and thereby boost their financial services industry. In the US, states such as Delaware and Nevada allow shell companies, whose owners are not identified, thereby providing cover for foreign cash. Britain is perhaps even worse. London runs a network of some of the worlds' largest offshore havens, the remnants of the British Empire. To be sure these places are partly independent. But their lax financial legislation is approved in London. And London acts as a hub for sucking up the unregulated monies, of the handling of them, from this network of offshore centres. Under the aegis of the City of London Corporation, the independent body that represents London-based financial institutions and financiers, London itself operates in effect as an onshore–offshore centre. However, using empirical evidence on the growth of asset-backed securities (ABS) markets, and ideas from emergence theory, Wainwright shows how this onshore–offshore phenomenon has permeated European financial space more widely. European financial centres have developed onshore–offshore havens modelled on the earlier activities of the offshore centres found on numerous small island economies. A desire by the financiers involved with the growth of ABS and other special purpose vehicles (SPVs) to domicile assets close to European centres, combined with the recognition by governments of the usefulness of securitization as a financial mechanism that could lower costs to corporate borrowers and potentially fund growth, and the design of bespoke regulation aimed at facilitating these products and activities, have resulted in the legitimization of these onshore–offshore markets. No longer can 'offshore' financial space be equated with the well-known list of small island economies. Nor can offshore space be viewed as being isolated from wider financial networks involving the world's main financial centres. Traditionally 'offshore' activities have become integrated within onshore spaces to create new 'hybrid' spaces driven by and consistent with new financial products.

Perhaps understandably, most of the literature on the instabilities of the global financial system – and indeed much of financial geography literature – has focused on developments and weaknesses in western financial centres, and to some extent on emerging market countries, and much less attention has been directed at the problems and challenges facing banking and finance in transition economies, like those of Eastern Europe and China. From an institutional and regulatory perspective, these countries have been developing their own 'hybrid' varieties of capitalism, involving among other things a blurring of the boundaries between private and public (state) property rights. In his discussion, **Yeung (Chapter 19)** documents the case of the restructuring and re-regulation of Chinese banking. As he argues, 'mainstream' (that is western) theories of banking and finance may not be applicable to the Chinese economy. Although China has been adopting some of the organizational forms and imperatives of market capitalism, it does not yet have a functioning market-based system of banking, and the state still exerts a powerful influence and regulatory control over the economy. Banking in China exhibits features typical of a transitional economy, with some of the world's largest joint-stock banks co-existing with former state-owned banks, city commercial banks, and hundreds of thousands of rural cooperative institutions. Since the early-2000s, China has been embarked on a mission to improve the efficiency, governance and monitoring of this complex system of banks, with the task being overseen by the China Banking Regulatory Commission (CBRC) established in 2003. As Yeung reveals, the CBRC is essentially performing a balancing act between ensuring the long-term viability of the banking industry and the financial security of the general public. While the CBRC's regulatory reforms have helped to promote and underpin the country's rapid economic growth over the past two decades, problems of moral hazard have continued to characterize the Chinese banking system, whereby non-performing loans taken out by local government officials and state-owned enterprises are expected to be bailed out by the central government, and investments are expected to be safe under the CBRC's regulations. At the same time, the levels of debt within the Chinese financial system, and within its economy as a whole, have risen substantially in recent years. A substantial part of this debt has gone to fund infrastructural projects and a housing development bubble, with the latter resulting in the co-existence of high prices and a huge inventory of unsold property, not just in the major cities of the eastern seaboard, but also in third and fourth tier cities, where at the time of writing property price deflation is already evident (*South China Morning Post*, 2016). China's debt–GDP ratio has risen to exceed that of leading western countries such as the USA and Germany and local government debt stands at an all-time high (over 50 per cent of total government debt). Sensing the dangers of this rise, the Chinese government has introduced new restrictions on local government debts, as well as new regulations on the shadow banking sector that has also grown in recent years. What the case of China illustrates is the regulatory tensions and challenges created by the transition of a system long dominated by state-ownership and underwriting to one increasingly exposed to market-based operations and instabilities.

In **Chapter 20, Marandola and Sinclair** switch attention to the role and regulation of credit rating agencies. These are private organizations that charge banks, financial and non-financial corporations, and local, provincial and national governments, for evaluating their creditworthiness in the form of 'credit ratings' or assessments of the credit risk of a prospective debtor, predicting their ability to repay the debt. Credit ratings are ubiquitous in financial markets, and since they determine the ease with which, and the cost at which, organizations and governments can raise credit in financial markets, they can exercise considerable influence over the geographies of credit flows in the global economy. For example, countries such as Australia and Canada, typically rated at AAA, can raise credit more easily and cheaply compared to countries such as Greece and Venezuela (both rated CCC). Yet, as Marandola and Sinclair argue, credit rating agencies pose an interesting puzzle for the legitimacy of global regulation. As profit-seeking firms, they lack a formal element of coercion. They do not set legal rules that borrowers are forced to observe, yet they are able to wield considerable power in shaping financial landscapes. There have been repeated calls from firms, governments and financial regulators to hold credit rating agencies accountable for their activities. Yet this demand for accountability has not had much effect on how these agencies operate. Attempts to regulate credit agencies have not proved particularly effective. In essence, there seems to be a major and persistent 'accountability gap' (Kerwer, 2004), a gap that is the more disturbing given that just three such agencies – Moody's, Fitch, and Standard & Poor's, all US-based – dominate the global financial system. Being of US origin, these big three have been criticized for being unable to adapt their standards and assessment benchmarks to different economies and regions, showing a tendency to underrate non-US businesses. Marandola and Sinclair discuss a number of ways in which this accountability gap might be closed and credit rating made more effective, including a greater critical self-awareness of the potential systemic and longer-term impact of their activities (to counterbalance the overwhelming emphasis on short-term rent seeking), and an organizational architecture based on regional and national communities of agencies, in which geographical proximity would facilitate communication and sharing of norms and best practices among members.

Taken together, the chapters in this section of the book point emphatically to the importance of the regulatory landscape for understanding the evolution, expansion and operation of financial markets. The geographies of money and the geographies of regulation are inextricably intertwined, each influencing the other. Regulatory structures condition the spatial flows of money, while financial innovation – of both products and institutions – allows money to escape or circumvent regulatory structures. Regulatory arrangements have failed to keep pace with financial innovation. In fact, even worse, the deregulation of financial markets that has taken place across much of the globe over the past three decades itself helped to stimulate a wave of financial innovation that culminated in the global financial crisis of 2007–09. As nation states and international bodies now struggle to reinstate (some degree of) regulatory control over financial systems, public confidence in banks, financial institutions and financiers is at an all-time low. Little wonder then, that various alternative monies and financial circuits have emerged that operate outside the conventional financial system. These too have taken on their own geographies.

1.4 NEW AND EMERGING MONEY SPACES

Money, as Harvey (1982: 245) reminds us, is not merely an expression of wealth, but rather 'the very incarnation of social power'. As such, money – its forms, institutions, movements and distribution – is always intensely political, always a source for contestation, struggle and innovation. Financial crises typically produce the conditions for an intensification of such struggles and innovations and spawn new and different thinking about money and how it is and should be organized. The recent crisis has focused attention again, not only on regulatory failures and weaknesses, but more broadly on the centrality of money to everyday life and on how the economy and society 'work' and are controlled.

The chapters in this section explore, in different ways, some new and emerging geographies of money that are shaped by an unease with the status quo. Such explorations typically return us to some very basic questions about money, values and social relations that have long occupied social theorists of money. For starters, what is money? Social theories of money have long stressed the contradictory dualities of money. For Georg Simmel (1978: 277), money is 'the most perfect representation' of the tendency to reduce quality to quantity, an impersonal, indiscriminate medium that morphs complex economic and social relations into a quantity, a price. The corollary of this reduction and quantification is that, 'we do not ask what and how, but how much' (Simmel, 1978: 259). For Marx (1973: 221), this reduction was alienating and corrosive because money, as 'the god among commodities', dissolved personal and community ties and became 'the *real community*' (Marx, 1973: 225). Yet money, as Viviana Zelizer's (1989) work reminds us, is simultaneously particular, social, laden with meaning and ritual, and often gendered. For all money's powers of rationalization, homogenization and absolute interchangeability, its sociality stubbornly persists. For Zelizer (1989: 347–348), 'values and sentiments reciprocally corrupt money by investing it with moral, social and religious meaning'. Money, be it in commodity form or as state promise, is inseparable from ideas of obligation, reciprocity, domination, authority and commitment that tie people together through space and time.

Thinking about new and emerging geographies of money thus entails juggling this duality, while also looking beyond questions of 'how much' to revisit broader normative questions about values, economic and otherwise. What forms of money represent appropriate stores of value and means of circulation? Who can and should issue money? What is the geographic reach of different monies? In what ways is money tied up with concerns about growth (or the lack of) and sustainability in different places? These are by no means new questions. Money has long been central to thinking about values, pecuniary and otherwise. Thinking about money, its forms, its institutions and its mobilities, has been integral to the political strategies of Utopian, environmental and other social movements keen to challenge the hegemony of capitalist markets. The 2008 crisis has, not surprisingly, spawned new international protest movements like *Occupy* – that cite the greed and corruption of 'the 1 per cent' as central to the production and reproduction of wider patterns of social and economic inequality – while also intensifying the search for forms of financial institutions and innovations that make some claims to fulfilling broader socially and economically useful objectives.

Knox-Hayes (Chapter 21) takes the events of 2009 as her starting point and juxtaposes the unfolding of the financial crisis in the US and Europe with the Copenhagen meeting of world leaders, activists and other civil society groups that was designed to generate an international response to climate change. For Knox-Hayes, these financial and environmental crises are inextricably linked. Climate change, biodiversity loss, resource depletion and ecological degradation are all the results of human production and, more specifically, the productivity (or not) of capitalism. Financial and environmental crises are fundamentally rooted in a crisis of production and representation of value over time and space. Knox-Hayes thus explores the hitherto neglected relationship between the generation of value through socio-economic and socio-natural circuits of capital, drawing on recent developments in financial markets designed to price environmental goods and services. She revisits and extends our understanding of spatial and temporal dynamics of circuits of capital by exploring the possibilities and limits of how financial markets are being used to price environmental goods and services. On the plus side, environmental finance can be conceived as producing a 'parallel economy', one in which the use of externality pricing is intended to balance the environmental impact of production and to possibly extend the value of environmental resources over future space and time. So, for example, carbon markets can raise awareness and make explicit hitherto unaccounted costs of burning fossil fuels and encourage high emitters to either become more efficient or go out of business. Such results are inevitably spatialized; emission reduction in one place can be tied to clean energy production elsewhere, with material and discursive benefits. The flip side of environmental finance, however, is a deepening of the logics and practices of financialization. The very mobility of say carbon credits, and the process of translating environmental resources and stresses into financial representations, allows the spatial and temporal separation of the sale/purchase of the carbon credit and the material reality of emissions. Financial representations of the environmental world can just as easily mismanage resources and ultimately can produce financial crises.

In his exploration of the recent proliferation of alternative, complementary and community currencies, **North (Chapter 22)** takes us to some different fringes of financial markets. Local currencies vary along a spectrum of social, technological and geographical difference. For example, are they convertible (or not) with bank-created fiat money or instead perhaps calibrated around time? Do they have a physical form or are they entirely electronic? Are they conceived as 'local' to particular geographic areas, or, like Bitcoin, seen as potentially global? And for whom and for what ends are they created? North reveals some of the myriad rationales behind their conception, from survival strategies, alternative ways of living and the sharing economy, to re-claiming and re-embedding money in more convivial, cooperative local communities, through to wider critiques of value, growth and environmental sustainability.

Struggles over how, and by whom, money is labelled, represented and appropriated feature prominently in **Datta's (Chapter 23)** examination of the vast and rapidly growing flows of transnational migrant remittances. Such flows have attracted growing policy interest, not least when their growth is juxtaposed against declining or at best fluctuating overseas development assistance (ODA) and foreign direct investment (FDI). But how are such flows to be conceptualized? Geography, again, is integral to understanding differences in the uses and meanings of money and indeed in how different individuals and communities conceive, experience and live the material and emotional relations between money, work and caring. In some senses remittances can be viewed as 'alternative' forms of finance that follow migration patterns and meet basic human welfare needs around different parts of the globe. Yet the interest of the World Bank, Wall Street, other national and financial intermediaries and Development Economics also lends weight to suggestions that remittances are now conduits for the formalization and extension of circuits of 'poverty capital' (Roy, 2010). As such, remittances can be seen as a new opportunity for mainstream financial institutions, alongside neoliberal discourse about the creation of migrant-investor subjectivities and a discursive and political shift to explore how remittances can be used not merely to support consumption, but rather as forms of investment.

As Datta's chapter investigates the complex economic and social resources and aspirations behind remittances, **Rethel (Chapter 24)** interrogates the possibilities and limits of Islamic finance. Islamic finance houses a diverse, emerging set of principles and practices about debt, credit and risk that make claims to be based on risk sharing, fairness and social responsibility. Another attractive element of Islamic finance is its emphasis, in principle if not always in practice (Pollard and Samers, 2007), on profit and loss sharing. Beyond the mutual financial interests that bind financial intermediaries with the firms and projects they invest in, there is the wider aspiration in Islamic finance that the financial economy and the 'real' economy of good ideas and making things stay closely integrated; the speculative excesses of finance that have seen the explosive growth of derivatives markets – out of all proportion with the growth in global commodity trade – is frowned upon in Islamic finance. As with all 'alternatives', however, questions of definition and differentiation from 'the mainstream' are everywhere. These relate to different conceptions of what Islamic finance is and should be, and, more prosaically, how Islamic finance can co-exist with some of the geographies of regulation explored in Part III. Rethel explores three competing 'imaginary landscapes' of Islamic finance and their jostling for position in Malaysia, the US and the UK. These imaginaries vary from a form of 'business as usual' through to more radical visions that position Islamic finance as an 'alternative' and more moral and responsible form of finance than that responsible for the 2008 crisis.

For all the growing interest in Islamic finance, the 2008 financial crisis has generated interest in other 'alternatives' to the traditional banking sector. **Gray and Zhang (Chapter 25)**, explore another one of these in the form of crowdfunding. Depending on how it is defined, crowdfunding has been around for a long time, but its recent growth is associated with new Internet technology platforms and ongoing disquiet with traditional banks and capital markets. Crowdfunding enables individuals and organizations to provide capital to firms, ideas and projects. As is true of local currencies, remittances and Islamic finance, however, on closer examination crowdfunding is a concept that houses a diversity of motivations and practices, from supporting new creative projects or local charities through to financing new tech start-ups. Again, this alternative raises all manner of questions, conceptual and political. How should crowdfunding be conceptualized? What is the size, scope and nature of crowdfunding? Who and where are the investors and recipients? Is crowdfunding simply replicating existing circuits of capital or opening up new streams of finance for entrepreneurs and communities? What is crowdfunding doing to existing geographies of capital?

Finally, **Pilkington (Chapter 26)** explores the foundation of Bitcoin, a new form of digital money launched in October 2008 by a pseudonymous person or persons calling him/herself or themselves Satoshi Nakamoto. Bitcoin is distributed in a peer-to-peer database of electronic signatures and its most powerful innovation is a 'Blockchain', an electronic register of all the Bitcoin transactions authenticated by a network of computers. Bitcoin are finite – their creation rests on computing power and cryptographic technologies premised on the impossibility of factorizing prime numbers – and represent a largely untraceable and anonymous way of moving money. One of the most disruptive properties of Bitcoin is its signaling of a world of new peer-to-peer technologies that allow the transfer of credit without the need for nation states and banking and other financial intermediaries as we currently understand them. Bitcoin is stateless (and designed as finite so that it cannot be debased by nation states), does not rely on conventional payment systems and intermediaries and was born in the aftermath of the financial crisis amidst distrust and revulsion of the status quo. Again, what are the limits and possibilities of Bitcoin? In what contexts are such developments democratizing, or, as several high profile cases thus far suggest, an opportunity for criminality and yet more tax avoidance? What can we say of its efficacy given that it requires no national regulatory authority or promise and privileges peer-to-peer transactions over those routed through conventional intermediaries? How are existing regulators and financial intermediaries responding to its threat but also its possibilities in terms of securing their own proprietary variants of Blockchain technology? Bitcoin is further evidence, if any were needed, of the growing problems that new technologies generate for nation states and international bodies struggling to reinstate confidence and control in financial systems and institutions. It also provides a fascinating glimpse into the relations between money, space, values, technology, identity, regulation and trust. Like other technologies, such as writing and the advent of double-entry bookkeeping, Bitcoin has the potential to change how we think about and use money.

1.5 A CONCLUDING COMMENT

According to Cohen (1998: 21) a geography of money itself requires a clear analytical distinction between physical and functional notions of space – the former being tied to location and place, the latter to 'networks of transactions and relationships'. Put another way, monetary geography has to do with 'spaces of flows' rather than a 'space of places', and requires a 'flow-based model' of financial relations in which '[t]he dimensions of currency space are more accurately measured not by the standard coordinates of longitude and latitude but by supply and demand, the behaviour and decisions of diverse agents, including governments, in the global marketplace for money' (Cohen, 1998: 21).

The network idea is indeed vital for understanding the spatial organization of money and finance. There is a very real and significant sense in which money space is a complex system of networks of financial flows, transactions and relationships. This point was in fact emphasized well over a half a century ago by the French economic historian

Francois Perroux. He coined the phrase ‘monetary space’, ‘seen more easily in terms of a “network” of payments’ (Perroux, 1950: 97–98). Today such networks – for there are multitudes of such webs – are organized and integrated through electronic information systems which compress both time and space.

This focus on networks resonates closely with the so-called ‘relational turn’ in human and economic geography, in which the interactions between agents, firms, institutions and social groups define both the nature of geographic space itself, and the meaning and relationship between the places in which those agents, firms, institutions and groups are located. Yet such a conception does not negate the importance of place, of location, far from it: the nodes on any network matter. The more so if certain nodes dominate the network. In the global financial system, a handful of global financial centres (typically metropolitan capitals or major cities) control and shape the flows of money in the specific networks concerned (be they investment banking, securities trading, foreign exchange trading, insurance and so on). Money tends to flow to these and other key nodes, to be collected and managed there: there is an ineluctable ‘lumpiness’ in the spaces of money (a bit like the tendency for liquid mercury to form globules – Clark, 2005). The flows of money help to constitute and give meaning to these places, whilst the latter articulate those same flows and hence the importance of those places in their respective networks. Further, money does not flow equally, or equally easily, to other nodes (cities and regions) on those networks: relational dependencies, hierarchies and asymmetries typify monetary spaces. Together, the various chapters in this Handbook are all concerned with conceptualizing or analyzing these complex relational geographies of finance and money. And taken together they not only point to the growth of interest in this exciting area of research, but also, hopefully, provide inspiration for the future work that needs to be undertaken.

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