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Financial Flows: Spatial Imaginaries of Speculative Circulations

Paul Langley

Introduction: from chain to spinning top

Amidst the unfolding of the recent global financial crisis, ‘complexity’ was widely posited to be a significant causal factor by practitioners, policymakers and media commentators (Christophers 2009; Datz 2013). By way of simplification and visualisation, assertions that global finance was collapsing under the weight of its own complexity were often accompanied by a particular set of maps. Dating from the late 1990s and early 2000s, the maps in question were flow diagrams – typically composed of boxes and arrows, variously coloured and arranged - representing the innovative techniques of asset-backed securitisation and their associated array of capital market and derivative instruments. Coming to prominence during the turmoil, these techniques and instruments were supposed to ‘complete’ and ‘perfect’ the markets by enabling the widespread distribution of the default risks of sub-prime mortgage lending, but only succeeded in exacerbating ‘systemic risk’ (Langley 2008a, 2013). Maps of the so-called ‘securitisation chain’ thus became a ubiquitous feature of the demystifications of the crisis offered by policy and media reports, even featuring in the 2010 Oscar-winning documentary film, *Inside Job*.

As Ismail Erturk and his co-authors suggest, the mapping of this now notorious feature of the global financial market landscape as a chain was significant, not least because the chain was much more than a useful descriptive device for bringing the complexities of global finance down to earth (Erturk *et al.* 2011). It also ‘encouraged the view that securitization was akin to a regular production system that transformed raw inputs - in this case mortgages or other loans - into final products, which were sold on to investors at the end of the production chain’ (Erturk *et al.* 2011: 581). Indeed, the visualisation of securitisation as a productive and ordered process - ‘linear flows with a beginning, middle and end’ (p. 582) - had been ‘an important influence on light-touch regulatory prescriptions’ which assisted financial market innovation prior to the crisis (p. 581).

In place of the flow diagrams of the securitisation chain, and taking inspiration from Michel Serres' writings on the appearance of turbulence in the physics of energy and heat flows, Erturk *et al.* (2011) propose a pair of altogether more illuminating metaphors for envisioning securitisation and global financial flows more broadly. For them, the metaphors of ‘circuit’ and ‘spinning top’ provide effective concepts for opening-up some of the important dynamics of financial flows. In contrast with a linear chain, thinking in terms of a circuit emphasizes return loops over directional flows; ‘everyone gets paid as long as there is throughput in the circuit’ (p. 586). And, by adding the metaphor of the child’s toy, a spinning top, Erturk *et al.* underscore the importance of circulatory ‘throughput’ by reminding us that ‘finance requires momentum to remain stable’ (p. 586). This is because when flows grind to a halt, as was the case in the crisis, then the edifice of global finance begins to spin-off in highly unpredictable and destabilising directions.

Erturk *et al.*'s (2011) attention to the role of the securitisation chain as an imaginary of global financial flows, and their re-envisioning of securitisation techniques as circuit and spinning top, echoes previous interventions by social scientists. Recall, for example, J.K Gibson-Graham's (1996: 135-7) proposal to re-think money and finance as 'the seminal fluid of capitalism', and to thereby stress how the excesses of 'the body of capitalism' periodically become manifest in 'a spasm of uncontrollability and unboundedness'. Gordon Clark (2005), meanwhile, draws our attention to how the metaphorical mapping of global financial markets typically conjures-up a relatively smooth space of watery flows that can be channelled and directed, rather than the embedded realities of uneven geographies which are produced by the inherent tendency for finance to concentrate in key urban centres. For Clark, it is 'mercury' rather than water that provides an illuminating metaphor for understanding global financial flows, not least because 'mercury pools by its very nature' (p. 104). The ostensible watery qualities of financial flows - creating the impression that markets operate as 'hydraulic systems' that function to irrigate the 'real' economic landscape - also provide the focus for Anne Mayhew's (2011) analysis of the mid-twentieth century development of flow-of-funds accounting by the Federal Reserve. With clear parallels to Erturk *et al.*'s intervention, Mayhew recovers a debate that turned on whether the movements that practitioner accountants were attempting to capture as a flow-of-funds were more akin to circuits of electricity than to streams and rivers.

Such provocations to interrogate critically the spatial imaginaries of financial flows provide the starting point for this chapter. Here, though, I want to take inquiry in two underexplored directions. First, the chapter asks a different kind of conceptual question from the provocations discussed above. Rather than highlighting that which is elided through an established imaginary (e.g. chain) and proposing a corrective metaphorical concept (e.g.

spinning top), I want ask how the generative force of spatial imaginaries might be understood in the context of long-standing conceptual debates that identify speculative circulations as a defining, geographical feature of financial markets. Erturk *et al.* (2011) allude to such debates when they propose the metaphors of circuit and spinning top, but I bring them into the foreground here. In short, I want to ask how the constitutive contribution of spatial imaginaries to the production and reproduction of speculative circulations can be conceptualised and analysed. Second, I want to draw analytical attention to a trope present within and across prevailing spatial imaginaries that, coming to the surface during the global financial crisis in the USA and UK particular, envisions financial flows as vital and essential to contemporary life. This trope is politically significant because it helps establish the limits within which debate and disagreement over the future of financial flows takes place. Once speculative circulations appear to be fundamental to securing wealth and wellbeing - despite the insecurity produced by their volatilities and vicissitudes – political debate itself takes on a circular quality in which there appears to be no alternative to what Michel Foucault (2007: 49) terms the ‘freedom of circulation’.

The chapter proceeds in three main sections. As the opening section briefly reviews, critical understandings of finance in the contemporary social sciences are marked by an analytical concern with the circulatory and speculative qualities of their problem-object. While they also hold out some promising avenues through which to consider how speculative circulations are actually produced and reproduced, at present they tend not to pay particular analytical attention to the constitutive work which is accomplished by spatial imaginaries. The second section suggests Georg Simmel’s century-old contribution to the social theory of money can begin to provide a conceptual basis from which to analyse the constitutive relationships between spatial imaginaries and speculative circulations. The very idea of

money and its mobility was crucial to Simmel's (2004) account of the role of money in the making of a particular modern and urban 'style of life' at the turn of the twentieth-century. In a similar manner, imaginaries of speculative and uncertain financial circulations can be seen as necessary to the privileged positioning of 'the markets' in the making of a valued form of Anglo-American, neo-liberal life during the first decades of the twenty-first century. The third and final section focuses on three particular spatial imaginaries of the speculative circulations of global finance that loomed large in the governance of the recent crisis; namely, the 'liquidity' of money markets, the 'toxicity' of capital markets, and the 'casino' practices of banking.

Speculative circulations

As post-Keynesian economists Massimo Amato and Luca Fantacci (2012) highlight, the meanings ascribed to 'finance' are often misleading with regard to its temporal-spatial dynamics. The etymology of 'finance' can be traced to the old French terms *fin* (end) and *finer* (to make an end, settle debt), and to the English *fine* (a monetary penalty). Similarly, in contemporary usage the verb 'to finance' usually refers to borrowed monetary resources, especially as they are used to fund purchases and investments. What 'finance' usually invokes, in short, is the two-way flow of a credit-debt relation: credit-money is received, on the one hand, and requires debt (principal and interest) repayment over some period of time, on the other. However, Amato and Fantacci emphasise a notable feature of the temporality of financial relations: when viewed in the aggregate, such relations are never settled, they do not end. Indeed, as the rapid and on-going expansion of the volume of outstanding household, corporate and sovereign debt in recent decades so vividly attests (Pettifor 2006), the opposite would seem to be case.

Moreover, Amato and Fantacci's (2012) analysis reveals the especially intriguing ways in which the contemporary burgeoning of financial relations without foreseeable end is intimately bound-up with the changing spatiality of those relations. Through careful examination of a series of historical developments – most notably, the collapse of the Bretton Woods system of fixed-exchange rates and capital controls - Amato and Fantacci show that the business of wholesale finance has progressively become dominated less by the creation of credit-debt relations in primary markets, and more by the commodification of credit-debt relations and their risk attributes in secondary and derivative markets. In sum, for Amato and Fantacci, contemporary finance without foreseeable end is characterised by the trading of exchangeable and transferable claims upon the future, and by geographies of speculative circulations which are fundamentally different to the two-way flows of a credit-debt relation.

Those writing in the Marxist political economy tradition may well be sceptical of Amato and Fantacci's (2012) claims about the novelty of contemporary developments (e.g. Arrighi 1994), but they would likely agree with their characterisation of the temporal-spatial character of finance. Consider, for example, Brett Christophers' (2009) intervention into debates over the complexity of contemporary finance. As he works towards an analysis that takes inspiration from David Harvey's (1982) theoretical development of Marx, Christophers (2009: 817) makes the following observation:

Much of the perceived complexity in modern finance stems ... from the fact that the credit relationship rarely remains, in this day and age, a simple binary one. In other words, it is seldom the case that where money is lent by A to B, *only* A and B remain parties to the money in question: for B will frequently lend that same money on in one way or another, and the loan that A has made to B will *itself* often be passed on in the

form of a new credit instrument. Multiple credit instruments and relationships, therefore, but only one underlying pool of money.

In Harvey's (1982) analysis, the 'multiple credit instruments and relationships' that comprise financial flows occupy a position in the circuits of capitalism which is, at once, essential and destabilising. He posits, for instance, that 'the circulation of interest-bearing capital performs certain vital functions and the accumulation of capital therefore *requires* that money capitalists achieve and actively assert themselves as a power external to and independent of actual production processes' (p. 261, original emphasis). There are, for Harvey, six such 'functions' (pp. 262-72). Banking and finance: (1) mobilise money that would otherwise lay idle; (2) provide credit that accelerates trade and the circulation of commodities; (3) increase the rate of commodity production through fixed investment; (4) facilitate the formation of 'fictitious capital' (wherein credit is extended indefinitely as re-saleable ownership claims that are always waiting to be realised, i.e. stocks and shares); (5) encourage the equalization of profit rates across the economy because of 'flows in response to profit rate differentials' (p. 270), and; (6) embolden the dynamism of capitalism by assisting the centralization and restructuring of capital. In return for the performance of these vital functions, banking and finance extract rent in the form of the appropriation of interest. In the first instance and in aggregate, then, the movements and machinations of finance capital under capitalism are understood primarily in terms of the two-way flows of the power relation of credit-debt.

At the same time, a feature of the theoretical development of Marx offered by Harvey (1982: 283) is that pre-capitalist tendencies for money lending to be largely usurious and parasitical - tendencies 'which Marx was aware of but brushes aside' (p. 257) - continue to be present in his account of the place of finance capital within capitalism. When understanding finance

capital as ‘a process, as opposed to a particular set of institutional arrangements or a catalogue of who is dominating whom within the bourgeoisie’, Harvey highlights a number of ‘circumstances’ and ‘barriers’ that prevent it from ‘functioning as a fine-tuner of accumulation’ (p. 287). These include the persistent tendency for money capital to be ‘indiscriminate as to its uses since it typically flows to appropriate revenues of no matter what sort’ (p. 287). Although the two-way circulation of interest-bearing capital is thus crucial to the disciplinary power and dynamism of the credit-debt relation in capitalism (see also Lazzarato 2015), for Harvey it remains the case that ‘there is nothing to prevent speculative investment in the appropriation of revenues from getting entirely out of hand’ (p. 287). The result is that capitalism is characterised not only by a ‘surface froth of perpetual speculation’ (p. 325), but also by tendencies to ‘speculative fever’ which periodically come to dominate as a discernible phase in the ups-and-downs of the ‘accumulation cycle’ (p. 303). The speculative passions and flows of finance capital that Harvey identifies are not, however, a simple destabilising force within capitalism. As refined in his later work, speculative circuits are understood by Harvey (2001) to be capable of providing a ‘spatio-temporal fix’ for the contradictions of capitalism. By switching excess capital into secondary circuits and establishing claims upon specific urban property markets during a particular conjuncture, for example, finance capital is able to paper over the cracks of crisis-prone capitalism. Such fixes remain necessarily temporary, however, as they also serve to widen the reach and deepen the intensity of capitalism’s destabilising contradictions.

The post-Keynesian and Marxist political economy traditions can thus be seen to leave us in little doubt: aggregate financial flows are not merely the cumulative result of two-party credit-debt relations, but necessarily also include the speculative circulations of transferable claims on the future. Put baldly, much of the flow of finance which passes as necessary for

the operation of the ‘real economy’ of production and consumption – and, increasingly, for the provision of the ‘public goods’ of urban infrastructure (e.g. transportation, energy, waste, communication) (Allen and Pryke 2013; O’Neill 2010, this volume), and even the preservation of liveable environments for future generations (Sullivan 2012) - is actually speculative circulations.

Furthermore, as it pin-points the speculative quality of financial flows with considerable clarity, Marxist political economy also holds that the conditions of possibility for speculative circulations are systemic to capitalism. To paraphrase Harvey (1982: 261), speculative circulations are an inevitable consequence of the ‘power external to and independent of actual production processes’ that ‘money capitalists’ are required to ‘achieve and actively assert’. It follows that the contemporary pervasiveness of the speculative circulations which encircle the globe is largely a consequence of the particular achievements and assertions of power by finance capital, in the USA in particular (e.g. Gowan 1999; Panitch and Gindin 2013).

However, if we look beyond post-Keynesianism and Marxist political economy to the plural, critical understandings of finance which are also present in the social sciences, we find that analytical emphasis is typically placed upon an array of contingent conditions that might also be said to make speculative circulations possible. A number of conceptual routes for analysing the processes and practices that produce speculative circulations are opened up, for example, by the recent calls to draw together cultural economy concepts with over two decades worth of research into the geographies of money and finance (Hall 2011, Langley 2016).

Reflecting its core concern with how relatively discrete and variegated financial markets are assembled through socio-technical and material processes (e.g. MacKenzie 2009), what

cultural economy suggests is that economic formulas, models and other calculative devices play a crucial role in making the more-or-less discrete appropriations of speculative circulation possible. This may help put some flesh on the bones of Maurizio Lazzarato's (2015: 43) recent claim that rent - as an apparatus that appropriates and captures value in ways distinct from the apparatuses of profit and taxation – is an 'accounting machine' that includes its own 'criteria for evaluation and comparison, its own measurements, and its own property regime'. And, if the dynamic category of 'value' is held to be the foundational and 'organising principle of capital' (Mann 2010a: 175), then it follows that recognising the contingent constitutive force of economic formulas, models and devices is critical to explaining how the rent-like appropriations of speculative circulations come to figure so positively in the prevailing value regime (Cooper and Konings 2015). At a minimum, while post-Keynesian and Marxist political economy foreground the speculative qualities of financial flows, cultural economy accounts of financial markets certainly help to deepen understanding of the contingent socio-technical and material conditions which make speculative circulations possible.

If we take analytical insights from geographic research into the significance of financial centres, meanwhile, there is clearly also a sense in which the conditions and processes that sustain speculative circulations are place-based. Once financial centres are understood as crucibles of financial information, trust and knowledge/power (Clark 2005; Lee 2011; Thrift 1994), for instance, then the speculative circulations of finance can be understood to be manufactured, directed and made meaningful through calculative and interpretative practices in such centres. And, as ethnographic research into the workplaces of the City of London and Wall Street highlights (Ho 2009; McDowell 1997), the production of speculative circulations can also be understood as an embodied process, requiring the calling-forth and performance

of particular subjectivities. In the contemporary City, for example, it is clear that much has changed from the era of ‘gentlemanly capitalism’ (Augar 2000), but it remains unclear at present what the recent crisis means for the exuberant and aggressive masculine subjectivity of the valorised market trader of recent decades (Hall and Appleyard 2012). This is especially the case given the rise of high-frequency trading and the role of algorithms in trading strategies (MacKenzie *et al.* 2012), and the associated valorisation of the embodied mathematical knowledge of so-called ‘quants’ (Patterson 2011). The present moment would seem to require a more thorough questioning of the embodied processes through which speculative circulations become possible (Borch, Hansen and Lange 2015), especially as unfold in financial centres and workplaces.

What this brief review of critical social scientific research makes plain, in sum, is that speculative circulations are an inherent feature of capitalist finance, and that the analysis of how these circulations are made possible in different contexts should consider configurations of class and sovereign power and the complex concentrations of economic knowledge and gendered embodied work which take place in global financial centres. It remains the case, however, that the knowledge and practices of finance which tend to be addressed by existing research are largely confined to expert knowledge and professional practices. There is limited attention to the highly-mediated perceptions and dispositions concerning the uses and circulations of finance that travel and spread throughout contemporary societies (de Goede 2012). As Urs Stäheli (2013) argues, with reference to the USA between the 1870s and 1930s - a context in which financial markets first began to take on enormous importance in mainstream culture – the spectacle of speculation is translated into popular knowledges and discourses in ways that are crucial to sustaining and legitimating its circulations. This is arguably intensified in the contemporary period, when the fluctuations and undulations of

‘the markets’ have become the basic feedstock of a ‘finance-entertainment complex’ operating in real-time (Taylor 2004: 191; also Clark, Thrift and Tickell 2004). Although it places the speculative qualities of financial flows to the front-and-centre of analysis and provides significant insights for exploring their constitution, critical social science presently gives little analytical weight to the force and play of spatial imaginaries when accounting for the production and reproduction of speculative circulations. In the following section, I turn to the social theory of money to begin to provide a conceptual basis from which to analyse the constitutive relationships between spatial imaginaries and speculative circulations.

Spatial imaginaries

Originally published in 1907, Georg Simmel’s (2004) *The Philosophy of Money* is widely regarded as a principal contribution to the classical social theory of money. The prevailing contemporary reading of this text follows Zelizer’s (1994) influential critique and positions Simmel - alongside Marx, Weber and others - as a theorist who emphasises money’s calculative quality as a means of accounting that renders things commensurate (e.g. Gilbert 2005). For Simmel, it is the circulation of the quantifications of money which are crucial to understanding how ‘a coherent world of value’ - where value appears as an objective property of objects themselves - can emerge through the interplay of ‘subjective desire’ and ‘intersubjective processes of exchange’ (Dodd 2014: 27-9). Yet, the operation of money is, for Simmel, not solely understood as the circulation of a pure instrument of quantitative valuation (Dodd 1994, 2014). Rather, the circulation of money also carries with it the very idea of money; that is, the symbolic meanings and associations necessarily attached to money. It is in these terms that Simmel probes the relations between money in circulation and the ‘individual freedoms’ of an emerging modern, metropolitan ‘style of life’ at the turn of

the twentieth-century. By ‘uniting people while excluding everything personal and specific’ (Simmel 2004: 347), both monetary calculation and the idea of money are crucial to the loosening of social bonds and the flattening of social hierarchies, as all things and desires come to appear to be available at a price.

For John Allen and Michael Pryke (1999), the emphasis Simmel places on the idea of money and its contribution to modern social life provides a critical vantage point from which to understand how the time-spaces of contemporary global financial flows are produced and reproduced. To extend Simmel’s insights, Allen and Pryke make two principal conceptual moves in the context of classical and contemporary writings on the social theory of money. First, while Simmel devoted his analytical attention somewhat narrowly to the circulation of money as currency in a world of exchange, Allen and Pryke conceive money and finance more broadly. This follows from a number of different perspectives found in the contemporary social theory of money. Here ‘money’, in the first instance, is a means of accounting and sustaining the uncertain promises to pay of credit-debt relations rather than an enabler of exchange (Ingham 2004; Lazzarato 2012). The claims and obligations of credit-debt themselves become transferable, and can be represented as financial instruments to be speculated upon in the markets, because they are denominated in a shared money of account.

Second, Allen and Pryke (1999) develop and elaborate upon Simmel’s concerns with the idea of money through the categories of ‘money imaginary’ and ‘cultures of money’ (see Dodd 1994). While Simmel sought to understand how the idea of money produced a particular ‘style of life’ somewhat specific to metropolitan Berlin, for Allen and Pryke there are multiple imaginaries that make the contemporary movements of money and finance meaningful and which contribute to multiple money cultures. As they have it, with

derivatives in particular, 'it is not the instruments so much that are of concern', but 'the ideas about what they may facilitate and what different groups of people in locations distant from one another imagine themselves to be involved in' (p. 52). It follows that the shared meanings of 'money cultures' are 'lived, experienced, and interpreted by particular groups in particular places at particular times', and are 'made up of people who position themselves in relation to the circulation of money and are also positioned by it' (p. 65). What specific monetary and financial circulations are taken to mean thus influences not only actions and responses, but the formation of subjectivities (see Langley and Leyshon 2012).

Allen and Pryke's (1999) second conceptual move runs somewhat counter to that which is typically made in the contemporary social theory of money. Following Zelizer's (1994) intervention (see Dodd 2014: 286-294), monies in use and circulating alongside of each other are typically held to be acted on and 'ear-marked'. In short, according to the contemporary social theory of money, the circulation of money is not simply a corrosive force that wipes away social bonds. Rather, it is said to be subject to cultural pressures and processes which can ensure that, when it is in use, money is employed in ways that are largely consistent with existing identities and interests. For Allen and Pryke (1999: 65), in contrast, there can be 'no endless play of money cultures'. This is because, grounded in Simmel's assertion that the circulation of money also carries with it the very idea of money, money is always already a spatial imaginary and a culture. It is not a thing that, empty of meaning at the outset, can be culturally or politically ear-marked when put to use. There may well be a 'diversity of cultural interpretations related to movement and mobility' which are of constitutive significance to the circulations of monies (p. 65). But, amidst this diversity are prevailing imaginaries that, stressing the crucial role of money and finance in modern social

relationships, hold a particular and pervasive generative force that contributes to sustaining monetary and financial circulations and summoning up monetary and financial subjectivities.

Rooted in Simmel's concern with the symbolic meanings and associations always already attached to modern money, and extended through Allen and Pryke's (1999) prescient contribution, what can be said of how spatial imaginaries provide conditions of possibility for speculative circulations? The primary focus for Allen and Pryke's (1999) own analysis is derivative markets, and thus upon how imaginaries of the mobility of money in those markets give meaning to elite, professional practices in the financial centres where these markets are located. As they have it, the symbolic marking of derivative circulations by their pace and simultaneity 'positions many of those working in finance in a culture of fast risk and effortless gain' (p. 62). Allen and Pryke (1999) are also careful to differentiate the particular culture of derivatives markets from the popular culture of global finance that, they suggest, has taken hold in recent decades and provides 'a wider circuit of meaning' for 'personal finance' in the USA and UK in particular (p. 64). As they have it, quoting terms from Simmel, today's popular culture of finance features a spatial imaginary that is characterised by "'restless flow'" and "'effortless multiplication'", such that 'a world of derivatives and speculative gain' appears to be 'not restricted to a handful of dealers in the world's financial centres' (p. 64).

The presence and play of spatial imaginaries of speculative circulations in everyday life which Allen and Pryke (1999) highlight can be understood, moreover, as a manifestation of the biopolitical mode of power and security that Foucault (2007, 2008) identified in his later work (Langley 2015). For Foucault (2007), one of the features that distinguishes biopolitical power from other modalities (i.e. sovereignty and discipline) is the way in which it configures

and seeks to act upon circulations. Circulations of ‘people, merchandise, and air etcetera’ may well be uncertain and pose dangers (p. 29), but it is apparently upon these very circulations and their contingencies that the dynamic and entrepreneurial production of wealth, health and happiness rests (Foucault 2008). With a clear parallel to Simmel’s account of the role of the idea of money in the making of a modern and urban ‘style of life’ at the turn of the twentieth-century, on these terms the last three-to-four decades have seen uncertain financial market circulations come to be understood as vital to securing a valued form of neo-liberal life.

As constituted through the prevailing spatial imaginary, the ostensible significance of speculative circulations to contemporary socio-economic life does not simply turn on their growing contribution to economic growth (Christophers 2013), or on finance’s continuously asserted role of providing investment that is said to nourish the ‘real economy’ of production and employment. Rather, what is especially notable is how this spatial imaginary figures the close interrelations that have developed between the saving and borrowing of everyday life in Anglo-America, on the one hand, and the speculative circulations of global financial markets, on the other (Langley 2008b). The rise of mutual fund stock market investment has increasingly displaced retail deposit saving and collective retirement insurance. In consequence, security now seems to turn less than previously upon thrifty provision for the future and the calculation, pooling, and spreading of uncertainties as ‘risks’. Instead, it now appears to turn on the entrepreneurial embrace of the risks and uncertainties of financial circulations, accompanied by the de-politicization of the unequal distribution of rewards. At the same time, relatively unencumbered access to mortgage and consumer credit would now seem to play a positive role in facilitating the prosperity of all. The result, as Lazzarato (2012: 94) argues, is that the management of debt - alongside the management of precarious

employability, falls in real wages, and the shrinking availability of public services – now characterises the lived experience of (in)security for the majority. But, imagined as vital and essential to contemporary life, finance and its speculations remain free-flowing and largely unencumbered by the kinds of restrictions and regulations that were in place four decades ago.

The governance of the global financial crisis

One method for analysing how highly-mediated spatial imaginaries envision speculative circulations as essential to contemporary life is to interrogate how these imaginaries come to the surface during moments of crisis, featuring in particular in the interventions that seek to render and govern crises. This is clearly a somewhat different form of inquiry to that which, inspired by Marxist political economy, posits the ‘vital functions’ (Harvey 1982) of financial flows within capitalism and seeks to explore various attempts by central banks, treasuries and regulators aimed at restoring those circulations (e.g. Epstein and Wolfson 2013). For the latter form of inquiry, the spatial imaginaries of financial flows which are present in governmental interventions would not seem likely to be accorded analytical weight as generative forces in their own right. Yet, one of the notable features of crises is that they are not governed as crises of finance and capitalism, *tout court*, but through relatively discrete technical problematisations in which the rendering of issues of circulation looms large (Langley 2015). At a general level, for example, crises of banking and finance are typically defined in economic theory and practice as ‘liquidity crises’ (Allen *et al.* 2011). Whether finding form as a ‘run’ by depositors on a fractional reserve bank, for instance, or as a rupture in money and capital market flows, it is a ‘liquidity squeeze’ that is typically held to be the essential and defining feature of a financial crisis.

To take a more specific example, consider the spatial imaginary that prevailed in the governance of the Asian financial crisis of 1997-8. Here the technical problem that was fabricated and managed was ‘international capital mobility’. This spatial imaginary was crucial to the governance of the crisis by the International Monetary Fund (IMF) and other international financial institutions (IFIs). State-imposed capital controls to restrict disruptive cross-border flows, or transaction taxes to slow capital flows within and between markets, were both eschewed by the IFIs on the grounds that such measures interrupted the capacity of global finance to provide vital flows for ‘real’ economic investment (Watson 2007; Gallagher 2015). What emerged from the crisis for the IFIs was a developmental agenda that called for the more careful ‘sequencing’ of financial reform, wherein the deregulation of domestic financial systems preceded the removal of capital controls which remained necessary to enable the benefits of free-flowing finance (Langley 2004; see Lai and Daniels, this volume).

In the governance of the global financial crisis that began in the autumn of 2007, meanwhile, the figuring of the technical problems to be addressed featured an array of spatial imaginaries of speculative circulations. In the Anglo-American heartland of the crisis in particular, these imaginaries were notable for the ways in which they construed anything less than the full restoration of circulations as a fundamental threat to the security of the population. What was to be secured through crisis governance was not merely the markets, the banks, and the financing of the ‘real economy’ they are said to provide for, but popular stock market investment and privatized pensions, on the one hand, and expanded and widespread availability of mortgage loans and consumer credit, on the other. Restoring the uncertain circulations of finance and banking was figured, in short, as a matter of security, an urgent need to refurbish a particular and valued form of Anglo-American, neo-liberal life. To

paraphrase Harvey (2011: 7), it was not that ‘everyone in power recognized’ the crisis as ‘a matter of life and death for capital’, but that there was a tendency for the crisis to be rationalized and strategized as a threat to the security of life itself.

Take, for example, how during the first twelve months or so the crisis was made legible and governed as a problem of ‘liquidity’. As noted above, crises of banking and finance are typically defined in economic theory and practice as ‘liquidity crises’. As such, it was no surprise when the media consistently iterated the global financial crisis as a situation in which liquidity had ‘evaporated’ from markets which were also said to have ‘dried up’, ‘seized up’ or ‘frozen over’; or that the Federal Reserve's and the Bank of England's complex and unprecedented last resort lending interventions were cast as ‘pumping’ or ‘injecting liquidity’. The markets in question were the money and capital markets: in money markets, banks and other institutions were unable to access short-term debt or renew (‘roll-over’) outstanding obligations; in capital markets, there were few buyers, as institutions sought to off-load vast portfolios of assets related to and derived from sub-prime mortgages. That the purchase of capital market assets had tended to be funded through the money markets only compounded the issue.

Yet, governing the crisis as a technical problem of liquidity also had a number of wider symbolic and cultural resonances. To recall the provocations of Clark (2005) and Mayhew (2011) noted at the outset, the watery spatial imaginary of liquidity conjures the circulations of finance in a particular way: markets appear as functioning to provide the flows essential to the irrigation of the ‘real’ economic landscape. Prior to the crisis, the spatial imaginary of liquidity had become something of a totem for the innovations that had supposedly ‘completed’ and ‘perfected’ the markets (Cooper 2014). As Pasanek and Polillo (2011: 232-

3) note, 'liquidity' borrows from broader representations of markets which gives 'flows of currency and credit the appearance of a natural and automatic process', and thereby 'reinforces laissez-faire models of equilibrium and circulation'. As such, when the crisis hit, the liquidity of markets appeared as 'the prerequisite for the very possibility of credit' (Amato and Fantacci 2012: 24). It followed from this spatial imaginary of financial circulation that the so-called 'credit crunch' acutely experienced by firms and domestic borrowers in retail markets was indeed a direct consequence of the illiquidity prevailing in money and capital markets. Put another way, as Bryan and Rafferty (2013) have it, if the markets could not provide the liquidity to keep the circulations of finance in motion, then it appeared that central banks had little choice but to rip up their rulebooks to provide liquidity as a 'public good'.

The first year or so of the crisis also saw the enactment of a number of governance initiatives, in the USA in particular, that turned on a spatial imaginary that envisioned the speculative circulations of the capital markets in a related but somewhat different manner. When the Federal Reserve acted to save Bear Stearns in March 2008 and American International Group (AIG) in November 2008, and when the US Treasury unveiled the Troubled Assets Relief Programme (TARP) at the height of the crisis in September 2008, the technical problem to be governed was said to be one of 'toxicity'. Sub-prime assets, now illiquid and thus impossible to value, were commonly referred to as 'toxic assets', 'toxic refuse', and 'toxic waste'. This marked something of a departure from previously prevailing descriptions of failing assets as 'junk', and as that which could be merely discarded without consequence. Assets that were 'toxic', in contrast, were poisonous to those that held them. The supposed solution was to create 'bad banks'. This was a form of crisis management that drew on two previous crisis governance experiments: the 1989 Resolution Trust Corporation, created in response to the

US Saving and Loans debacle; and the aptly named Retiva and Securum bad banks that were established in 1992 in response to the Swedish banking collapse. The aim of the bad banks created in the global financial crisis was to take toxic assets temporarily out of circulation, thereby making it possible for markets to return to the norm of price discovery necessary for the circulation of transferable claims.

Talk of toxicity replaced the hydraulic and watery qualities of financial flows with an altogether more embodied spatial imaginary of circulation. The description of assets as ‘toxic’ called-up the long-standing representation of money and finance as the blood of the economy-body (Johnson 1966; Mann 2010b; Simmel 2004: 474). It thus appeared that the cardiovascular financial system of the economy-body had been momentarily poisoned, a vision drawing sustenance from the medical etymology of the term ‘crisis’ and the related tendency to represent the financial crisis itself through an array of analogies with contagious diseases (Peckham 2013). It followed that the necessary solution was a set of ‘bad bank’ interventions akin to a purification or dialysis of the financial bloodstream. What was also notable, moreover, were the various ways in which siphoning-off toxic assets was explicitly represented as a move which would prevent the infection from spreading to the rest of the economy, endangering life itself. For example, when explaining Bear Stearns’ bad bank to a Senate committee in April 2008, then-President of the Federal Reserve Bank of New York, Timothy Geithner (2008), stated that ‘if this dynamic continues unabated’ without ‘a forceful policy response’, then ‘the consequences’ would include ‘higher borrowing costs for housing, education, and the expenses of everyday life’ and ‘lower value of retirement savings’. Similarly, in the televised address to the nation he delivered when the TARP proposals were before Congress, President George W. Bush (2008) stressed that ‘This rescue effort is not aimed at preserving any individual company or industry. It is aimed at preserving America’s

overall economy'. For Bush, it was clear that 'our entire economy is in danger', and that the costs of inaction would be high:

... without immediate action by Congress, America could slip into a financial panic and a distressing scenario would unfold. More banks could fail ... The stock market would drop even more, which would reduce the value of your retirement account. The value of your home could plummet ... Even if you have good credit history, it would be more difficult for you to get the loans you need to buy a car or send your children to college.

Bush's televised address left viewers in little doubt that toxic assets were a problem for the American way of life, and that the TARP provided the solution to that problem. As he later put it (in Politi 2008), the TARP was required 'for the financial security of every American'.

As the crisis deepened in the autumn of 2008, the technical and circulatory problem to be addressed by crisis management was rendered differently yet again. Now it seemed that the critical issue was the solvency of banking which, in popular parlance, was 'under water' and in need of 'bailout'. The action apparently required to restore the solvency of banking thus appeared to be 'recapitalisation', and not the 'nationalisation' that these actions were also recognised as carrying forward. Enacted through various sovereign treasury programmes on either side of the Atlantic during 2008 and 2009, the bailouts were figured through a spatial imaginary that envisioned the credit flows of commercial banking as particularly crucial to contemporary, Anglo-American life (Langley 2015: 97-99). Of particular interest to us here, however, is the content of the ensuing interventions which centred on the regulation of banking. The problem in this respect was widely held to be that so-called 'permissive', 'lax'

and ‘light-touch’ regulation prevailing prior to the crisis had enabled commercial banks to become ‘too big to fail’ through excessive risk-taking in wholesale markets. In the terms that travelled through political and media circles in the UK and in the wake of the bailout of Royal Bank of Scotland in particular, banks had not been concentrating on their ‘core business’ of lending to businesses and families, and instead had become embroiled in ‘the casino’ of speculative circulations (e.g. Turner 2009: 94; *The Guardian* 2010).

A spatial imaginary that differentiates between types of financial flows – contrasting the apparently steady saving and lending of commercial banking with the reckless and rash gambling of the markets – was also a feature of US regulatory responses to the Wall Street Crash of 1929, most notably the Banking Act (known as the Glass-Steagall Act) of 1933. Given impetus by the Pecora Hearings, the Banking Act of 1933 was carried through Congress by former Treasury Secretary, Carter Glass, and then-Chairman of the House Banking and Currency Committee, Henry B. Steagall. While it also created the Federal Deposit Insurance Corporation, the legislation was especially significant in the way that it condemned universal banking and firmly divided deposit-taking commercial banks from investment banks. Glass in particular had become the spokesman for a period in popular culture marked by revulsion at the so-called ‘madhouse’ of Wall Street during the roaring ‘twenties (Fraser 2005: 367). As President Franklin D. Roosevelt famously put in at his inauguration speech in March 1933, ‘Practices of the unscrupulous money changers stand indicted in the court of public opinion, rejected by the hearts and minds of men’ (in Chancellor 2000: 220). The spatial imaginary that differentiated between financial flows in the US in the wake of the Wall Street Crash was thus one in which the speculative circulations of stock markets posed a security threat to valued life, and accordingly the excesses of the markets were to be curtailed and prohibited.

The headline regulatory interventions in the USA and UK in the recent global financial crisis – namely, the ‘Volcker rule’ included in the Dodd-Frank Wall Street Reform and Consumer Protection Act of late 2010, and the ‘Vickers’ ring-fence’ which, emerging from the Independent Commission on Banking report in 2011, featured in the Banking Reform Act of 2013 – were certainly similar to the Glass-Steagall Act. Indeed, Paul Volcker, the former head of the Board of Governors of the Federal Reserve who was the driving force behind the regulation that bears his name, certainly took inspiration from Carter Glass, and the Volcker rule was often referred to in media and policy circles as ‘Glass-Steagall lite’. Yet, as they sought to specify the permissible practices of banks across the domains of financial flows that they differentiated, the Volcker rule and the Vicker’s ring-fence did not condemn and curtail speculative circulations. Rather, certain wholesale market circulations deemed high-risk and casino-like were positioned at one remove from deposit-taking banks. While the flow of credit from commercial banking thus appeared to provide the financial essentials of life, speculative circulations nonetheless continued to be imagined as crucial to securing wealth and wellbeing.

Conclusions

Money moves, finance flows. And, as stressed by classical and contemporary social scientific research conducted from a wide range of perspectives, circulation is crucial to the very nature and existence of money and finance. As Georg Simmel asserts (2004: 571), for example, ‘when money stands still, it is no longer money according to its specific value and significance’. It is clearly no surprise, then, that money and finance are replete with popular terminology, figures of speech, metaphors and maps that provide these circulatory

geographies with spatial imaginaries. To date, however, research which draws attention to the significance of representations of the movements of money and finance concentrates on how they obscure certain underlying or arguably more telling dynamics. With reference to financial flows specifically, the task for critical analysis would seem to be one of eschewing prevailing imaginaries – especially as they suggest productive inflows into the ‘real economy’ – and of proposing an alternative envisioning capable of bringing the uneven, volatile and/or speculative qualities of circulations to the fore.

In contrast, and in the context of previous social science that underlines that the geographies of financial markets are marked by speculative circulations, this chapter's first motivation is to ask how the generative force of spatial imaginaries might be understood in conceptual terms. While extant research opens up a number of conceptual routes to considering the production and reproduction of speculative circulations – from class and state power to the complex concentrations of embodied work, knowledge and calculation in global financial centres, for example – it largely neglects the role of spatial imaginaries. The chapter takes inspiration from Georg Simmel's (2004) attention to the symbolic meanings and associations necessarily attached to money in circulation, and to how the very idea of money is crucial to the making of a particular modern and urban ‘style of life’. From Allen and Pryke's (1999) extension of Simmel's concepts in their analysis of derivatives markets, and through recourse to Foucault's (2007, 2008) account of the biopolitical mode of power and security, the chapter offers an approach for understanding how prevailing spatial imaginaries contribute to the constitution of contemporary speculative circulations.

The second motivation for the chapter is analytical and political in character. The omission of the generative force of spatial imaginaries from critical understandings of speculative

circulations certainly presents a conceptual problem. But this omission is perhaps only of wider significance because of the highly-mediated representations of ‘the markets’ and their mobilities that, especially in present-day popular culture in the USA and UK, envision financial flows as vital and essential to the contemporary, neoliberal style of life. The analysis offered here illuminates and explores the presence of spatial imaginaries of speculative circulations in the rendering and governing of the recent global financial crisis. This includes how the crisis was made-up and managed as the technical problems of ‘liquidity’ in money markets, ‘toxicity’ in capital markets, and the regulation of ‘casino’ practices in banking. What this shows, moreover, is that the spatial imaginaries of financial flows at work in the governance of the global financial crisis did not necessarily deny the speculative character of circulation. The markets and banks that were being saved from themselves through unprecedented liquidity injections, bad banks, bailouts and the like were not solely envisioned as the source of flows necessary for the operation of the ‘real economy’. Speculative circulations were also deeply implicated in securing wealth and wellbeing of the population because of the entrepreneurial opportunities they apparently afford.

Giving conceptual and analytical consideration to the constitution of speculative circulations through spatial imaginaries thus sheds some fresh light on what is one of the principal and pressing political questions provoked by the recent global financial crisis: why, despite the magnitude of the ruptures experienced during the crisis, has global finance emerged largely unscathed, with its speculative circulatory excesses intact? Or, as French and Leyshon (2010) put it, why has the crisis proved to be such a terrible waste for progressive politics? This is not to claim, of course, that existing critical social scientific research into money and finance does not also provide useful vantage points from which to consider this question. It would indeed seem fair to conclude that class and state power have ensured that global finance

remains very much open for business, and that the expert knowledge networks centred on Wall Street and the City of London have largely continued to define the ‘anti-political’ (Barry 2002) calculative market terrain upon which debate takes place. What recognising the generative force of spatial imaginaries suggests, however, is a somewhat different conclusion. It is also a conclusion that is, arguably, a more disturbing one. Prevailing and highly-mediated spatial imaginaries stymie popular debate and disagreement over the freedoms of speculative circulations in what are typically reified as ‘the markets’ (see also Christophers 2015). In doing so, they also forestall the emergence of what William Connolly (2002) calls a genuinely pluralist and ethical politics, and a society in which asset holders and prime borrowers would call into question their own identities and the personal security that speculative circulations supposedly produce.

Bibliography

- Allen, F., Carletti, E., Krahen, J.P, and Tyrell, M. (eds.) (2011) *Liquidity and Crises*, New York: Oxford University Press
- Allen, J. and Pryke, M. (1999) ‘Money cultures after Georg Simmel: Mobility, movement, and identity’, *Environment and Planning D: Society and Space*, 17(1): 51-68
- Allen, J. and Pryke, J. (2013) ‘Financializing household water: Thames water, MEIF, and ‘ring-fenced’ politics’, *Cambridge Journal of Regions, Economy and Society*, 6(3): 419–439.
- Amato, M. and Fantacci, L. (2012) *The End of Finance*, Cambridge: Polity Press.
- Arrighi, Giovanni (1994) *The Long Twentieth Century: Money, Power and the Origins of Our Times*, London: Verso
- Augar, P. (2000) *The Death of Gentlemanly Capitalism: The Rise and Fall of London’s Investment Banks*, Penguin, London.

- Barry, A. (2002) 'The anti-political economy', *Economy and Society*, 31(2): 268-284
- Borch, C., Hansen, K.B, and Lange, A-C. (2015) 'Markets, bodies and rhythms: A rhythmanalysis of financial markets from open-outcry trading to high-frequency trading', *Environment and Planning D: Society and Space*, 33(6): 1080-1097
- Bryan, D. and Rafferty, M. (2013) 'Fundamental value: A category in transformation', *Economy and Society*, 42(1): 130-153
- Bush, G.W (2008) 'Transcript: President Bush's speech to the nation on the economic crisis', *New York Times*, online edition, September 24. Available at:
<http://www.nytimes.com/2008/09/24/business/economy/24text-bush.html>
- Chancellor, E. (2000) *Devil Take the Hindmost: A History of Financial Speculation*, Basingstoke: Macmillan
- Christophers, B. (2009) 'Complexity, finance, and progress in human geography', *Progress in Human Geography* 33(6): 807–824
- Christophers, B. (2013) *Banking Across Boundaries: Placing Finance in Capitalism*, Chichester, UK: John Wiley & Sons Ltd.
- Christophers, B. (2015) 'Against (the idea of) financial markets', *Geoforum*, 66(1): 83-93.
- Clark, G.L (2005) 'Money flows like mercury: The geography of global finance', *Geografiska Annaler*, 87B, 2: 99-112
- Clark, G.L, Thrift, N. and Tickell, A. (2004) 'Performing finance: The industry, the media and its image', *Review of International Political Economy*, 11(2): 289-310
- Connolly, W. E (2002) *Identity/Difference: Democratic Negotiations of Political Paradox*, Minneapolis, MN: University of Minnesota Press
- Cooper, M. (2014) 'The strategy of default: Liquid foundations in the house of finance', *Polygraph: An International Journal of Culture and Politics*, 23/24: 79-96

- Cooper, M. and Konings, M. (2015) 'Contingency and foundation: Rethinking money, debt and finance after the crisis', *The South Atlantic Quarterly*, 114(2): 239-250
- Datz, C. (2013) 'The narrative of complexity in the crisis of finance: Epistemological challenge and macroprudential policy response', *New Political Economy*, 18(4): 459-479
- de Goede, M. (2012) *Speculative Security: The Politics of Pursuing Terrorist Monies*, Minneapolis, MN: University of Minnesota Press
- Dodd, N. (1994) *The Sociology of Money: Economics, Reason and Contemporary Society*, Cambridge, UK: Polity Press
- Dodd, N. (2014) *The Social Life of Money*, Princeton, NJ: Princeton University Press
- Epstein, G.A and Wolfson, M.H (2013) 'Introduction: The political economy of financial crises', in M.H Wolfson and G.A Epstein (eds.) *The Handbook of the Political Economy of Financial Crises*, Oxford, UK: Oxford University Press, 1-20
- Erturk, I., Froud, J., Lever, A. and Williams, K. (2011) 'Changing the metaphor: finance as circuit', *Socio-Economic Review*, 9(3): 580-588.
- Foucault, Michel (2007) *Security, Territory, Population, Lectures at the Collège de France, 1977-1978*, trans. G. Burchell, Basingstoke, UK: Palgrave MacMillan
- Foucault, Michel (2008) *The Birth of Biopolitics, Lectures at the Collège de France, 1978-1979*, ed. M. Senellart, trans. G. Burchell, Basingstoke, UK: Palgrave MacMillan
- Fraser, S. (2005) *Wall Street: A Cultural History*, London: Faber & Faber
- French, S. and Leyshon, A. (2010) "'These f@#king guys": The terrible waste of a good crisis', *Environment and Planning A*, 42(11): 2549-59.
- Gallagher, K. P. (2015) 'Contesting the governance of capital flows at the IMF', *Governance: An International Journal of Policy, Administration, and Institutions*, 28(2): 185-198

- Geithner, T. (2008) 'Actions by the New York Fed in response to liquidity pressures in financial markets', Committee on Banking, Housing and Urban Affairs, US Senate, Washington, D.C, April 3. Available at:
<http://www.newyorkfed.org/newsevents/speeches/2008/gei080403.html>
- Gibson-Graham, J.K (1996) *The End of Capitalism (as we knew it): A Feminist Critique of Political Economy*, Oxford: Blackwell.
- Gilbert, E. (2005) 'Common cents: Situating money in time and place', *Economy and Society*, 34(3): 357-388
- Gowan, P. (1999) *The Global Gamble: Washington's Faustian Bid for World Dominance*, London: Verso
- Guardian (2010) 'Barclays' Bob Diamond hits out at criticism of "casino banks"', *The Guardian*, September 12. Available at:
<http://www.theguardian.com/business/2010/sep/12/barclays-bob-diamond-casino-banks>
- Hall, S. (2011) 'Geographies of money and finance I: Cultural economy, politics and place', *Progress in Human Geography*, 35(2) 234–245.
- Hall, S. and Appleyard, L. (2012) 'Financial business education and the remaking of gendered investment banking subjects in the (post-crisis) City of London', *Journal of Cultural Economy*, 5(4): 457-472
- Harvey, David (1982) *The Limits to Capital*, Oxford, UK: Blackwell
- Harvey, D. (2001) *Spaces of Capital: Towards a Critical Geography*, Edinburgh, UK: Edinburgh University Press
- Harvey, D. (2011) 'Roepke lecture in economic geography – Crises, geographic disruptions and the uneven development of political responses', *Economic Geography*, 87(1): 1-22
- Ho, K. (2009) *Liquidated: An Ethnography of Wall Street*, Durham, NC: Duke University Press

- Ingham, G. (2004) *The Nature of Money*, Cambridge, UK: Polity Press
- Johnson, J. (1966) 'The money = blood metaphor, 1300-1800', *The Journal of Finance*, 21(1): 119-122
- Langley, P. (2004) '(Re)politicising global financial governance: What's "new" about the "new international financial architecture"?'', *Global Networks: A Journal of Transnational Affairs*, 4(1): 69-88
- Langley, P. (2008a) 'Sub-prime mortgage lending: A cultural economy', *Economy and Society*, 37(4): 469-494
- Langley, P. (2008b) *The Everyday Life of Global Finance: Saving and Borrowing in Anglo-America*, Oxford, UK: Oxford University Press
- Langley, P. (2013) 'Anticipating uncertainty, reviving risk? On the stress testing of finance in crisis', *Economy and Society*, 42(1): 51-73.
- Langley, P. (2015) *Liquidity Lost: The Governance of the Global Financial Crisis*, Oxford: Oxford University Press.
- Langley, P. (2016) 'Crowdfunding in the United Kingdom: a cultural economy', *Economic Geography*, online early.
- Langley, P. and Leyshon, A. (2012) 'Financial subjects: an introduction', *Journal of Cultural Economy*, 5(4): 369-373
- Lazzarato, M. (2012) *The Making of the Indebted Man*, Los Angeles, CA: Semiotext(e)
- Lazzarato, M. (2015) *Governing By Debt*, Los Angeles, CA: Semiotext(e)
- Lee, R. (2011) 'Spaces of hegemony? Circuits of value, finance capital and places of economic knowledge', in Agnew J.A. and Livingstone D.N. (eds.) *The Sage Handbook of Geographical Knowledge*, London: Sage, pp. 185–201
- MacKenzie, D. (2009) *Material Markets: How Economic Agents are Constructed*, Oxford: Oxford University Press

- MacKenzie, D., Beunza, D., Millo, Y., and Pardo-Guerra, J. P. (2012) 'Drilling through the allegheny mountains: Liquidity, materiality and high-frequency trading', *Journal of Cultural Economy*, 5(3): 279–96.
- Mann, G. (2010a) 'Value after Lehman', *Historical Materialism*, 18(4): 172–188
- Mann, G. (2010b) Mann, G. (2010) 'Hobbes' redoubt? Toward a geography of monetary policy', *Progress in Human Geography*, 34(5): 601–625
- Mayhew, A. (2012) 'Money as electricity', *Journal of Cultural Economy*, 4(3): 245-253
- McDowell, L. (1997) *Capital Culture: Gender at Work in the City*, Blackwell, Oxford
- Panitch, L. and Gindin, S. (2013) *The Making of Global Capitalism: The Political Economy of American Empire*, London: Verso
- Pasanek, B. and Polillo, S. (2011) 'After the crash, beyond liquidity', *Journal of Cultural Economy*, 4(3): 231-238.
- Patterson, S. (2011) *The Quants: How a Small Band of Maths Wizards Took Over Wall Street and Nearly Destroyed It*, New York: Random House
- Peckham, R. (2013) 'Economies of contagion: financial crisis and pandemic', *Economy and Society*, 42(2): 226-248
- Pettifor, A. (2006) *The Coming First-World Debt Crisis*, Basingstoke: Palgrave MacMillan.
- Politi, James (2008) 'Senators promise action this week', *Financial Times*, October 1, p. 8
- Simmel, G. (2004) *The Philosophy of Money*, Third Enlarged Edition, ed. D. Frisby, trans. T. Bottomore and D. Frisby, London: Routledge
- Stäheli, U. (2013) *Spectacular Speculation: Thrills, the Economy, and Popular Discourse*, Stanford, CA: Stanford University Press
- Taylor, M.C (2004) *Confidence Games: Money and Markets in a World Without Redemption*, Chicago, IL: University of Chicago Press

- Thrift, N. (1994) 'On the social and cultural determinants of international financial centres: the case of the City of London', in Corbridge, S., Martin, R. and Thrift, N. (eds.) *Money, Power and Space*, London: Blackwell, pp. 327-355.
- Turner, A. (2009) *The Turner Review: A Regulatory Response to the Global Financial Crisis*, March, London: Financial Services Authority. Available at:
<http://www.fsa.gov.uk/pages/Library/Corporate/turner/index.shtml>
- Watson, M. (2007) *The Political Economy of International Capital Mobility*, Basingstoke: Palgrave MacMillan
- Zelizer, V. (1994) *The Social Meaning of Money: Pin Money, Paychecks, Poor Relief and Other Currency*, New York: BasicBooks