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Sub-Prime Mortgage Lending: A Cultural Economy

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Sub-Prime Mortgage Lending: A Cultural Economy

Abstract

Developing cultural economists' concerns with the assembly of agency in financial markets, agency in sub-prime mortgage lending in the United States is shown to have been made up through calculative devices of risk. Credit reporting and scoring provided for the targeting, sorting, pricing and governing of customers in terms of risk. The securitization of mortgages into risk-structured financial instruments made possible extended lending. Interest-only adjustable rate mortgage products called up mortgagors who, as leveraged investors, embraced risk in a rising property market. The current sub-prime mortgage crisis is understood in critical terms as a moment when the contradictions of these risk devices and their incapacity to capture the uncertain future have come to the surface, and agency in sub-prime lending has been disassembled. Cultural economy is thus shown to make a distinctive contribution to the politicization of sub-prime that stresses the ambiguous politics of calculation.

Keywords: sub-prime mortgages; cultural economy; agency; risk-based pricing; securitization; adjustable rate mortgages.

Introduction: ‘unscrupulous lenders’

Contributing to a hearing of the Congressional Joint Economic Committee in March 2007, Senator Charles E. Schumer stated that the boom in sub-prime mortgage lending that had gathered pace from the mid-1990s was ‘a terrible instance where a lack of oversight has led to a Wild West mentality among unscrupulous lenders and, frankly, the exploitation of large numbers of financially unsophisticated borrowers’ (cited in Peters and Andrews, 2007). For Senator Christopher J. Dodd (2007a), Chairman of the Senate Banking, Housing and Urban Affairs Committee, sub-prime lenders originated mortgages ‘on the basis of the value of the property, not the ability of borrowers to repay. This is the fundamental definition of predatory lending’. Such remarks would seem broadly typical of the representation of sub-prime mortgage lending that has now come to prevail. Ever since a crisis began to emerge in late 2006, and particularly after this crisis fed into the ‘credit crunch’ that has engulfed global financial markets from August 2007, politicians and the popular media have been queuing-up to take aim at sub-prime lenders. The result has been a policy consensus that lenders in this sector of the mortgage market were out of the control of public authorities, and that a predatory and exploitative bubble of lending was inflated which fed off low interest rates and rapidly rising house prices. By way of illustration, the Mortgage Reform and Anti-Predatory Lending Act has, at the time of writing in January 2008, passed through the House of Representatives and is awaiting a Senate vote. Emerging out of the House Committee on Financial Services, the Act makes provision for a national standard in the licensing of lenders, guarantees of responsible lending, and the prohibition of abusive lending.

Given the misery currently being experienced by many sub-prime mortgagors and the reverberation of the crisis throughout the financial and ‘real’ economies, the condemnation of sub-prime lenders and the regulatory response that follows from it are understandable. Nonetheless, this representation of sub-prime mortgage lending gives rise to a very significant question: if the boom in sub-prime

lending can appear as so deleterious and deadly in the context of the current crisis, how did it materialize over more than a decade as a largely undisputed and extremely profitable venture? It is possible, of course, to fall back on canonical texts and trusted truisms in order to begin to answer this question. Writing prior to the crisis, for example, Edward Chancellor (2005) draws insights from Keynes and Minsky to warn that an irrational lending bubble is inflating in the US and that, as in the past, the bubble will inevitably burst. The boom in sub-prime lending comes to be regarded as typical of what happens when ‘unscrupulous lenders’ are left unchecked by regulators to pursue their innate motivations, thereby reinforcing deep-seated popular suspicions of Wall Street’s financiers that, while undermined in recent decades, have certainly not evaporated in American society (see Fraser 2005). However, to view the boom in sub-prime lending as nothing new is highly problematic. Across the financial media, coverage of the crisis has consistently stressed how sub-prime lending turned on recent innovations and techniques that are especially notable due to their complexity. It is this emphasis on the specifics of the materialization of sub-prime mortgage lending that I want to critically explore here, taking inspiration from and contributing to the growing literature on ‘cultural economy’ and ‘the cultural economy of finance’ in particular.

For Michael Pryke and Paul du Gay (2007), cultural economy is a ‘broad church’ inhabited by ‘a variety of approaches to the analysis of economic and organizational life’ (p. 340). What unites these approaches, they continue, is ‘a shared focus on the heterogeneous ways in which objects and persons (firms, markets, consumers) are “made up” or “assembled” by the discourses and *dispositifs* of which they are supposedly the cause’. Thus, while cultural economy is the outcome of diverse responses by those studying economic life to the ‘cultural turn’ in social theory (Amin and Thrift, 2004; du Gay & Pryke, 2002), it has nonetheless become marked by a tendency to ground these responses in science and technology studies and especially the actor-network theory (ANT) of Bruno Latour (1987, 1999, 2007) and Michel Callon (1998, 1999, 2005). For Latour (1999), ANT entails an ethnomethodological commitment not to ‘claim to explain the actors’ behaviour and

reasons, but only to find the procedures which render actors able to negotiate their ways through one another's world-building activity' (p. 21). For Callon (2005), meanwhile, agency 'as a capacity to act and to give meaning to action' - or what, drawing on Deleuze, he terms *agencement* - is inseparable from the 'prostheses, tools, equipment, technical devices, algorithms, etc.' that potentially make it up (p. 4). In organized, dynamic and decentred market networks specifically, 'distributed agency' is not the 'the encounter of (already 'agenced') persons and devices', but 'the very result of these compound *agencements*' (Muniesa, Millo and Callon, 2007, p. 2).

Although cultural economists have addressed the assembly of agency through an array of 'market devices' across a range of relatively discrete market networks (Callon, Millo and Muniesa, 2007), the exploration of *agencement* in financial market networks has been to the forefront of this research. Donald MacKenzie (2004, 2006) has, for example, stressed the performativity of economic models of the financial market as one such device, primarily the capital asset pricing model, modern portfolio theory, and the Black-Scholes pricing model. In the assembly of agency in financial market networks, however, the issue is often how the representations and models of 'mathematized finance' come into operation (du Gay, 2007, p. 577). Therefore, attention has also focused, for instance, on the screened representation of contemporary finance through computer terminals and software programmes (Knorr-Cetina, 2003; Pryke, 2007), or the stock ticker as the first custom-tailored technology adopted in financial markets (Preda, 2006). The commonality across such diverse market devices is the way that, in the course of the assembly of agency, they render, qualify and abstract action, positioning and standardizing it in the calculative space of 'the financial market' (see Callon and Muniesa, 2005). Such insights into the assembly of agency in financial market networks are especially pertinent in the contemporary period when saving and borrowing networks have come to extend beyond 'high finance' and into the routines and rhythms of everyday life in Anglo-American society (Langley, 2008).

In terms of the materialization of sub-prime mortgage lending, then, cultural economy can be seen to provide the basis for a distinctive and critical analysis. The coverage of the sub-prime crisis in the financial media may well have already drawn attention to the complex and technical practices of lending. Yet, the agency of lenders - including their inherent profit motives and related predatory tendencies which emerge when they are insufficiently regulated – is already assumed to be in place. A cultural economist, in contrast, is predisposed to ask how the historically specific agency of sub-prime lending came to be assembled. Whether or not lenders can be characterized as ‘unscrupulous’ or ‘predatory’ in a realist sense, or whether those involved fully appreciated the complexities and dangers of the practices they performed, are not the most pertinent questions to ask when it comes to understanding the materialization of sub-prime mortgage lending. Rather, what matters are the ways in which the assembly of the socio-technical agency of sub-prime lending ensured that it came to appear as a legitimate part of the contemporary financial markets, that is, as calculative and scientific. To borrow terms from Callon (1998), certain ‘calculating tools’ and ‘technical devices’ of risk were especially important, at once, to both the assembly of agency in sub-prime lending and the constitution of this more-or-less discrete ‘space of calculability’ (p. 23-6).

The first section below concentrates, therefore, on the significance of three key sets of calculative devices of risk in the assembly of agency in sub-prime mortgage lending from the mid-1990s. First, credit reporting and scoring tools, combined with marketing strategies, provided the basis for the sorting, targeting, pricing and governing of customers through the prism of risk. This is known as ‘risk-based pricing’, that is, the categorization of borrowers according to calculations as to their likelihood of default, and the charging of graduated rates of interest based on these categorizations. Second, loans made by sub-prime lenders as ‘assets’ were securitized and moved ‘off-balance sheet’. The ‘pooled’ or ‘packaged’ future repayments of mortgagors thus provided for the payment of principal and interest on bonds structured according to risk calculations. The devices of securitization and structured finance are especially important in sub-prime networks because

specialist lenders lack the capital base of liabilities held by banks and, as such, are thoroughly reliant for asset growth on the issue, rating and structuring of bonds. Third, the interest-only and adjustable rate mortgage products which came to predominate in sub-prime lending called up mortgagors who, as leveraged investors, responsibly and entrepreneurially embraced risk in a rising property market. Such products played to and reinforced subjectivities of owner-occupation in contemporary liberal government, whereby sub-prime lending appeared as furthering opportunities for the accumulation of housing wealth, freedom and security in an ‘ownership society’ (Bush, 2005).

The second section below turns to address the implications that a cultural economy analysis of the materialization of sub-prime lending has for how we might understand the current crisis. Once we have asked how agency in sub-prime lending is made up, it becomes impossible to sustain an account of the crisis that apports blame onto ‘unscrupulous lenders’ and/or their complex performances as ‘already agenced’ institutions. Cultural economy can inform an alternative critical reading of the crisis, then, as a moment when the contradictions of the key risk devices of lending have come to the surface, and agency in sub-prime lending has been disassembled. Each set of devices is shown to have been unable to capture future uncertainties through apparently rational and scientific calculations of risk. Risk-based pricing failed, in its own terms, to effectively price default risk; securitization enabled so-called ‘risk spreading’ amongst investors, but intensified the contraction of lending once uncertainties became apparent and liquidity dried-up; and interest-only and adjustable rate mortgage products sharply exposed borrowers to uncertainties over interest rates and house prices, and lenders to rapidly rising default rates. In each case, the second section below also examines how practitioners and policy-makers have responded as these contradictions have emerged. By way of conclusion, I reflect further upon the contribution of cultural economy to the politicization of sub-prime, responding to the charge that cultural economists tend to neglect the political.

‘Modern techniques’

A cover story from *The Banker* magazine in August 2001 included the following rallying call:

Mortgage banks everywhere hear the news: ex-bankrupt businesspeople, struggling divorcees, freelancers and the self-employed are your best customers not your worst. Stop trying to lend at low margin to accountants, lawyers and civil servants who are reliable but earn the bank peanuts. Instead, find the customers who used to be turned away; by using modern techniques, in credit scoring and securitization, they can be transformed into profitable business (Kochan, 2001, p. 3).

The ‘news’ of the opportunity for ‘profitable business’ that this statement conveys is suggestive as to the boom in sub-prime mortgage lending that gathered pace in the United States from the mid-1990s. During this period, many individuals and households who would have previously been ‘turned away’ from the mortgage market on a range of grounds came to be included as a matter of routine. Mortgage lending to those deemed to fall within the category of ‘sub-prime’ - borrowers with a low, irregular or unverifiable incomes such as workers on temporary employment contracts or the self-employed, and/or those with poor credit histories and scores as a consequence of no borrowing record, past failures to meet obligations or bankruptcy – grew at an average annual rate of 25% between 1994 and 2003. Sub-prime lending far outpaced the rate of growth in the ‘prime’ mortgage sector which itself was racing ahead. In 2003, originations of sub-prime mortgages reached \$330 billion, just less than 10% of total US mortgage lending and up from only \$35 billion ten years earlier (Kirchhoff and Block, 2004). By this time, major sub-prime mortgage lenders such as Ameriquest, Countrywide, National City and New Century Mortgage had grown to become important financial market institutions in their own right. High profile acquisitions followed,

including, for example, Citigroup's purchase of Associated First Capital in 2000, and HSBC's 2003 takeover of Household International. Lenders' close working relationships with realtors, appraisers and brokers, and the arrangement fees and payments made to brokers in particular, also ensured that lenders were far from alone in reaping the benefits of the boom. The rate of increase in sub-prime mortgage lending accelerated again from 2003 through to 2006, with new originations in 2006 standing at somewhere between \$605 billion and \$625 billion (*The Economist*, 2006; 2007b). Such was the scale of these new originations that sub-prime lending came to account for between one-fifth and one-quarter of all new mortgage originations in the US in 2006.

Although suggestive of the boom in sub-prime mortgage lending, Kochan's (2001) statement in *The Banker* also begins to highlight that the assembly of agency in sub-prime lending networks from the mid-1990s hinged on 'modern techniques', or what I will call 'calculating tools' and 'technical devices' (Callon, 1998). In addition to the tools and devices of 'credit scoring' and 'securitization' mentioned by Kochan, certain mortgage products were also significant in a rising property market. Taken together, these tools and devices created the capacity to act and gave meaning to action in sub-prime networks, whereby profitable lending appeared as rational and scientific.

Credit scoring and risk-based pricing

Credit scoring makes it possible for sub-prime lenders to target borrowers who are deemed risky. It also makes possible the pricing and governing of those borrowers in terms of risk. After the apparent initial success of credit reporting and scoring in credit card networks (Burton, 2008, pp. 50-8; Leyshon & Thrift, 1999; Marron, 2007; Poon, 2007), the widespread performance of these techniques across a wide range of borrowing networks during the late 1980s and early 1990s fed the profiling of low-risk borrowers who were 'cherry picked' by lenders (Leyshon & Thrift, 1995). A transformation in banks and financial services companies was underway during this period, as the

purported academic discipline and profession of marketing created ‘customer-orientated’ organizations (Burton, 1994; Morgan and Sturdy, 2000). For mainstream lenders, as Gary Dymski (2005) summarises, ‘The search for financial customers’ became ‘quite different than in even the recent past’, as ‘thick sets of somewhat heterogeneous borrowers and depositors in well-defined geographic markets’ were replaced by ‘thin sets of well-defined and homogeneous borrowers and depositors, in shifting sets of geographic markets’ (p. 449). But, in concentrating their attention on these ‘prime’ customers, mainstream lenders, in effect, sorted but neglected a particular category of borrower or ‘market space’ that gradually became the focus for sub-prime lenders (Burton et al., 2004, p. 13). This is indeed a significant ‘market space’. In US mortgage networks, borrowers with a FICO score above a threshold of 620 (up to a maximum of 850) are deemed prime, leaving around 20% of borrowers that are being monitored and measured by the credit report and scoring companies as ‘sub-prime’ (Chinloy and MacDonald, 2004, p. 153).

In sub-prime mortgage lending, the combination of credit scoring devices and marketing strategy led contingently not only to the targeting of a sub-prime ‘market space’, but also to the sorting, stratification and pricing of that market segment as a series of more closely-defined ‘thin sets’. Once sorted and categorized according to their probability of default, borrowers were charged graduated rates of interest based on these categorizations. This so-called ‘risk-based pricing’ was first established amongst home and car insurance providers during the mid-1980s, whereby potential policy-holders deemed to be ‘high risk’, either as a consequence of living in certain postcode areas or a ‘bad’ record of previous claims, were required to pay substantially greater premiums than those deemed ‘low risk’. In sub-prime mortgage lending, meanwhile, the future uncertainties of a mortgagor’s repayments were pre-emptively folded into the present through stratified risk calculations and pricing decisions. Thus, as automated software underwriting systems based on standards produced by Freddie Mac and Fannie Mae came to take hold throughout mortgage networks during the late 1990s, they enshrined the importance of credit scores,

segmentation and risk-based pricing in lending decisions (Stuart, 2003, pp. 124-8). Ultimately, in theory at least, 'The higher interest rates (and higher fees) charged' by sub-prime lenders insured that loans would 'remain profitable even if a fairly high default rate is realized' (Dymski, 2005, p. 450).

Once borrowers were sorted and stratified into risk cohorts through the calculations of credit scoring, the charging of relatively high rates of interest in sub-prime lending was de-politicized and become very difficult to question. In comparison with the marginalization of individuals and households in inner-city areas during the 1950s and 1960s, the apparent 'inclusion' experienced by sub-prime mortgagors limited the scope for critical questioning of the rates of interest and fees that they paid (Wyly, Atia, Foxcroft, Hammel & Phillips-Watts, 2006). Activist campaigns against the 'red-lining' of inner-city borrowers in mortgage and consumer credit lending in the mid-twentieth century had typically identified and opposed discrimination on the grounds of race in financial markets, leading to the outlawing of such exclusion through the Equal Credit Opportunities Act of 1976. The majority of sub-prime mortgagors, meanwhile, live in inner-city areas and are often African Americans and Hispanics. That they pay relatively high rates of interest is, according to government economists Crew Cutts and Van Order (2003), for example, the outcome of impartial and detached economic calculation and not prejudice.

Risk-based pricing not only found form in the assembly of agency in sub-prime lending, then, but simultaneously extended the agglomeration of borrowers and would-be borrowers as a governable population of mass financial consumers. As Donncha Marron (2007) suggests in this regard, calculative tools of risk-based pricing become significant to contemporary liberal government not by scientifically dividing populations between 'included' and 'excluded', but by managing the consumer population 'as a spectrum' of targeted 'sub-populations' (p. 122). Once all self-disciplined and rational consumers are widely regarded as culpable for their own choices, it would

only seem to be fair and in the interest of all that those who have made poor financial choices and mistakes in the past pay higher rates of interest in the present. Once a sub-prime mortgagor re-establishes their record of financial self-discipline and their credit score improves, they can reasonably expect the rate of interest that they pay to decrease into the future. Conversely, should they fail to keep up regular repayments, they are rightly sanctioned through the ratcheting-up of the interest rate that they pay.

Securitization and structured finance

While securitization and structured finance have come to feature strongly in prime mortgage lending in the United States over the last three decades or so (Carruthers & Stinchcombe, 1999; Gotham, 2006; Langley, 2006; Stuart, 2003), the importance of these calculative technologies was magnified in the assembly of agency in sub-prime lending. Specialist sub-prime lenders are almost exclusively so-called ‘centralized lenders’ who, in contrast with banks and thrifts, do not hold a stock of savings capital on their balance sheets as liabilities. Sub-prime lenders typically enjoyed large short-term lines of credit provided by their bankers who, in some instances, were also their parent company. This provided operating capital for the initial making of loans. Sub-prime lenders were also usually either ‘small cap’ public corporations, or owned in partnership by banks and all manner of institutional investors (Bajaj & Haughney, 2007). So, although diverse in terms of ownership and sources of investment capital, sub-prime institutions were nonetheless reliant upon the tools of securitization for the continuous expansion of their loan books, that is, for ‘asset growth’. Unlike banks who may be able to match increasing assets against increasing liabilities on their balance sheets, sub-prime lenders must move assets ‘off-balance sheet’ through securitization programmes. Securitization ‘pools’ or ‘packages’ the future obligations of borrowers to provide the ‘backing’ for payments of interest and principal on bonds that are issued. In the parlance of practitioners, under the ‘originate and distribute model’ of lending, the balance sheet is not

'weakened' by the growth of risky assets. Investors in sub-prime mortgage-backed securities (MBS) received a premium over and above the interest payable on prime MBS, with the extent of this premium measured in terms of 'spreads' over-and-above prevailing prices for 'risk free' government bonds. In US mortgage networks, then, around three-quarters of all mortgages at the end of 2006 were securitized, up from approximately half at the end of the twentieth-century (*The Economist*, 2007c; Stuart, 2003, p. 22). This growth was in large part a consequence of the increasing prominence of sub-prime lending within mortgage networks during this period.

Given the 'risky assets' that were securitized in sub-prime lending, the calculative tools of credit rating were particularly significant in authorising MBS issues. The allocation of a simple letter rating to all MBS, in an evidently expert and objective manner by Moodys, Standard and Poors and Fitch as the principal agencies, creates apparent transparency and comparability for investors (see Sinclair, 2005). Yet, rating also brought a degree of standardization and certainty that would have otherwise been lacking in the risk/reward characteristics of sub-prime MBS. Indeed, sub-prime lending sometimes came to be known as 'B-and-C lending'. This referred to the ratings that were usually given to sub-prime MBS and, for investors, immediately differentiated these bonds from the AAA-rated bonds backed by prime mortgages, for example. That said, the relationship between the aggregation of borrowers into a pool of collateral that backs a particular bond and the rating of that bond - what Marron (2007) calls the relationship between 'micro-risk' and 'macro-risk' - became increasingly blurred from the late 1990s by the calculations of structured finance. Structured finance 'sliced and diced' sub-prime MBS issues into a wide-range of collateralized debt obligations (CDOs) with differing risk/reward characteristics. It became possible to disperse particular risks across different CDOs and, at the same time, to concentrate risk in others. Within a CDO issue based on a sub-prime loan portfolio, tranches of 'investment grade' instruments (rated BBB and above) were derived and, at the same time, risk was concentrated in the 'first-loss' or 'equity-tranche'. The equity-tranche was sometimes held by sub-prime lenders themselves, their parent

banks, or by investors (typically hedge funds) who often had the option to force the issuer to buy it back should so-called 'early payment default' problems develop with the underlying stream of repayments. Meanwhile, as the institutions that organized and marketed securitization and structured finance programmes, investment banks had first option when it came to buying the bonds and CDOs that were produced.

Again arising from the apparently risky nature of the assets that were securitized and structured in sub-prime lending, derivatives techniques were also more important than in prime mortgage lending. The principal derivatives contracts in this regard were credit default swaps (CDS). In simple terms, a CDS is an agreement whereby one party makes a series of payments to another in return for compensation in the event of a specified default or 'credit event'. Investors in sub-prime bonds used CDS to insure themselves against defaults. Indexes provided the basis for the cost calculations for the insurance of bonds against losses. When the index for a tranche of bonds that were proving problematic fell, for example, the cost of insurance rose. By way of illustration, ABX Home Equity indexes make reference to baskets of CDS on tranches of bonds backed by sub-prime mortgages, and differentiate each in terms of both the bonds' ratings and their date of origination. So, for example, the ABX.HE 07-1 BBB minus index comprises credit default swaps that reference 20 sub-prime MBS rated BBB minus issued in January 2007 (Anderson, 2007). Given the potential volatility of sub-prime bonds, CDS were also the focus for trading by hedge funds and others who bet on defaults without owning the bonds themselves. It was quite possible, for instance, for a hedge fund to 'short' sub-prime bonds through CDS, that is, to bet that their prices would fall and to reap rewards from that fall.

Mortgage products and leveraged investors

In the context of rapidly rising house prices and historically low interest rates during the first years of the new millennium in particular, the socio-technical assembly of sub-prime lending also came to feature a specific set of mortgage products. The standing of the 30-year fixed-rate repayment mortgage as the predominant product across all US mortgage networks was eroded during this period by the rise of so-called ‘affordability products’. For example, 10.2% of all new mortgages in the US in 2003 were interest-only, rising to 26.7% in 2005 when a further 15.3 % of mortgages took the form of flexible, payment-option, and negative amortization loans (Darlin, 2006). An interest-only product makes no provision for the repayment of the principal borrowed; flexible and payment-option products allow borrowers to choose how much to pay each month; and monthly repayments gradually increase over time under a negative amortization mortgage as they are set at levels which are insufficient to cover the interest and principal of the loan. In sub-prime lending where enabling affordability was a highly significant issue, interest-only loans became the norm. Moreover, the primary mortgage products provided in sub-prime lending by the early years of the new century were interest-only ‘adjustable rate mortgages’ (ARMs). Under an interest-only ARM, the length of time over which repayments are to be made is compressed, with those repayments made in the first two or three years made at a reduced or ‘teaser rate’ of interest. For instance, under the common 2/28 hybrid product, the teaser period lasts for two years whereupon the interest rate ‘resets’ to a substantially higher rate and monthly repayment for the following 28 years. Overall, a quarter of all mortgages in the US in 2006 were ARMs, a figure that rose to over three-quarters in sub-prime lending and higher still in California, the cities of the South, and along the Texan border with Mexico where sub-prime borrowers were concentrated (Bajaj & Nixon, 2006a, 2006b; *The Economist*, 2007b, 2007f).

The labelling of these mortgage devices ‘affordability products’ is disingenuous in several respects. For one thing, they only make owner-occupation more affordable as a housing strategy in the short-term as, for example, the repayment of the principal still ultimately has to be made under the terms

of an interest-only mortgage. The relationship between these mortgage products and owner-occupation is also ambiguous. On the one hand, the provision of affordability products and the growth of sub-prime lending more broadly contributed to increasing the rate of owner-occupation of the housing stock. Homeownership in the US reached 64% of the adult population in 1970, and did not rise any higher until after the explosion of sub-prime mortgage lending from 1994. By 2004, the homeownership rate in the US reached 69% (Samuels, 2007). On the other hand, however, the early years of the new millennium also witnessed a considerable growth in remortgaging activity unrelated to new house purchases by either first-time buyers or existing owner-occupiers. Indications are that in remortgaging and taking advantage of historically low interest rates, US mortgagors released \$500 billion worth of equity from their homes between 2002 and 2005 (Freddie Mac, 2005), with roughly one-quarter of the funds generated used to meet obligations arising from unsecured consumer borrowing (Aizcorbe, Kennickell & Moore, 2003, pp. 25-6). Such trends were particularly acute in sub-prime lending. While roughly half of mainstream mortgages in the US in the first years of the new millennium were new originations for purchases, this share fell to around one-quarter in sub-prime lending where the majority of originations refinanced existing obligations. In the terms of practitioners, the ‘churn rate’ - that is, the regularity with which borrowers remortgage or undertake a ‘refi’ - was considerably higher in sub-prime lending.

Despite the disingenuous features of ‘affordability products’, they were nonetheless highly significant in the assembly of agency in sub-prime lending. In a manner not dissimilar to the ways in which credit scoring and risk-based pricing rendered, qualified and abstracted sub-prime lending as a calculative space and action, interest-only ARMs appeared as products that enabled the inclusion of borrowers as agents within the mortgage and housing markets. For sub-prime mortgagors, such inclusion and gaining ‘a foot on the property ladder’ seemed all the more necessary in a rising property market. Indeed, underpinning affordability products in general and interest-only ARMs in particular is the assumption that house prices will rise, creating equity for the

owner-occupier who can ‘cash out’ this equity in order to meet future and rising repayments. Reducing repayments in the short-term is thus not simply a responsible affordability strategy, but also an entrepreneurial strategy of leveraged investment that embraces the risk of house price changes. At the same time, the entrepreneurial manipulation of outstanding obligations is an important self-discipline within an interest-only ARM, as the mortgagor will take up a ‘refi’ before the reset date when monthly payments rise. House price rises during the initial option period are assumed to have created equity that can be ‘cashed out’ to meet the future and higher repayments of a refinanced mortgage.

Again, as with the calculative tools of credit scoring and risk-based pricing, what is notable is the way in which affordability products did not just find their form in the assembly of agency in sub-prime lending. Interest-only ARMs and other affordability products also simultaneously contributed to a subtle transformation in the liberal government of the population of owner-occupiers, targeting the sub-population of sub-prime. As I have argued elsewhere, the embodiment of extended mortgage borrowing over the last decade or so has entailed the re-making of owner-occupiers (Langley, 2006; also Smith 2007). Owner-occupiers are summoned up not simply as ‘suburban subjects’ (Grey, 1997) who regard the shelter and refuge of their home as key to their freedom and security, but as leveraged investors. The leveraged investor is a mortgagor who regards their home as an asset that will grow to realize returns. While these returns appear as essential for freedom and security in the future – the central message of asset-based welfare programmes - they also require the self-disciplines of responsible and entrepreneurial extended borrowing in the present. Amidst governmental programmes led by Freddie Mac (2005) and Fannie Mae (2005) to extend the right to home-ownership to minorities and those on low-incomes (Shlay, 2006), and the Bush administrations wider commitments to create a so-called ‘ownership society’ (Bush, 2005), interest-only ARMs served, in effect, to target the assembly of the leveraged investor in sub-prime mortgage lending.

Risks, uncertainties and crisis

As the crisis in sub-prime mortgages and the ensuing credit crunch unfolded through 2007, politicians and media commentators were quick to blame the greed of predatory sub-prime lenders and brokers, and the complicity of the investment banks, hedge funds, credit rating agencies and so on in complex practices and instruments that stoked the bubble. Once we have asked how agency in sub-prime lending is made up, however, accounts of the crisis which typically apportion blame onto unscrupulous lenders and their backers become problematic. To be sure, the boom in sub-prime lending massively enriched lenders, brokers, investment banks and all manner of investors. There is clearly a sense in which the representation of financial economies through risk calculations makes possible the accumulation of profits in the present by colonising the future (Blackburn, 2006). Yet, the assembly of agency in sub-prime lending was not imposed and legitimated ‘from the outside’, but was contingently embedded and embodied ‘inside’ more-or-less discrete networks through certain calculative devices of risk.

‘Risk’ is a pivotal category of understanding in calculative and scientific representations of modern finance (de Goede, 2004, 2005). The category of risk itself makes possible market innovation and trading and, for that matter, the charging of interest in everyday saving and borrowing networks. As Mitchell Dean (1999) puts it more broadly:

There is no such thing as risk in reality. ...Risk is a way – or rather, a set of different ways – of ordering reality, of rendering it into a calculable form. It is a way of representing events in a certain form so that they might be made governable in particular ways, with particular techniques and for particular goals (p. 177).

Informing this view of risk is a critical reading of Frank Knight's (1921) classic investigation of indeterminacy. Thus, the category of risk can be seen as distinct from uncertainty, the former as the statistical and predictive calculation of the future, and the latter as non-calculable future volatilities that are beyond prediction (see Reddy, 1996). Moreover, as Timothy Mitchell's (2002) research into the technological constitution of economic networks illustrates, calculative devices that seek to count and account for economies always fall short of fully containing the complexities of economic life. Tools, devices, and techniques of risk, such as insurance and actuarialism, only provide a means in the present of calculating and feigning control over a necessarily uncertain future. By implication, this suggests a critical cultural economy reading of the sub-prime crisis as a moment when the contradictions of the key risk devices of lending and their incapacity to calculate the uncertain future have come to the surface, and agency in sub-prime lending has been disassembled.

Risk-based pricing and 'default correlation'

Problems in sub-prime mortgage lending first began to come to light during the latter half of 2006. Sub-prime mortgages originated in 2004, 2005 and early 2006 were proving particularly problematic. In the terms of the industry, mortgages of these 'vintages' proved to be 'sour' as growing numbers of borrowers failed to keep up with, and then defaulted on, their repayments. Swamped by returns due to the early payment default clauses in their securitization programmes, a large number of small and medium-sized sub-prime mortgage lenders quickly either went out of business – 36 by mid-March 2007 according to *The Economist* (2007f) – or were purchased by Morgan Stanley, Merrill Lynch, Citigroup, Barclays, Deutsche Bank and others at apparently bargain prices. HSBC's announcement of an overall record profit for 2006-7 in February 2007 was overshadowed by the setting aside of a massive \$11 billion of capital to cover bad debts going forward, and the chief executive and vice chairman of HSBC Finance Corporation (created when HSBC acquired Household International) were forced to step down (*The Economist*, 2007a). Credit

derivative indexes for sub-prime MBS fell sharply during this period, and sub-prime lending was largely curtailed.

Given that risk-based pricing failed, in its own terms, to effectively price risk in US sub-prime mortgage lending, it is not surprising that this calculative edifice has already come under scrutiny from policy-makers and media commentators. Attention has concentrated on the extent to which the relative infancy of sub-prime networks meant that there was a lack of ‘historical data’ on which inferences from past statistics could be used to calculate future probabilities of default for different categories of borrower. The historical data that was available for sub-prime mortgagors only encompassed the last decade or so; a period of relatively low and stable interest rates, on the one hand, and rising house prices, on the other. So, for example, when seeking to defend the failure of HSBC Finance Corporation to predict the scale of defaults by sub-prime mortgagors, Chief Executive of HSBC Michael Geoghagan noted that ‘You’ve got to have history for analytics ... the fact of the matter is there [isn’t history] for the adjustable rate mortgage business when you’ve had 17 jumps in US interest rates’ (cited in *The Economist*, 2007b). The scrutiny and defence of the place of risk-based pricing in the crisis assumes, then, that future uncertainties could indeed be priced through vigorous calculation if sufficient ‘historical data’ was, or could be, stored in databases. From the perspective taken here, what is missing at present is recognition of the contradictions of risk-based pricing.

Risk-based pricing filled the actions of sub-prime lenders with meaning: their actions, it seemed, were grounded in calculations which ensured that it was possible to price for the future uncertainty of whether an individual borrower would meet their obligations. Consider, for example, the ways in which automated underwriting systems were based on the apparent control of the future offered by risk-based pricing. Automated underwriting made it possible in instances where a mortgage applicant was categorized as ‘refer/eligible’ or ‘refer/ineligible’ by underwriting systems – meaning

that, for one reason or another, they could not be considered an ‘investment quality loan’ on the secondary markets – for a lender to approve a loan ‘*without further manual underwriting* by simply offering that applicant a higher interest rate’ (Stuart, 2003, p. 128, *original emphasis*). Speeding-up the mortgage origination process and realising commissions appeared to hold no danger or downside for lenders and brokers on a case-by-case basis (Eggert, 2007). And, yet, the collective future uncertainties of mortgagors necessarily escaped calculation.

It is widely recognized that the credit scoring techniques, from which risk-based pricing is derived, focus only on an individual’s past credit history (see Leyshon & Thrift 1999). They do not take into account the possibility that a future change in economic conditions (e.g. recession, fall in property prices, rising interest rates) will effect not only prospects for an individual borrower, but also the large numbers of borrowers on a lender’s books. Risk-based pricing in sub-prime networks similarly only calculates default rates for individuals within a particular category or ‘thin set’. In the terms of those seeking to develop and perfect techniques of risk-based pricing, then, these techniques do not address so-called ‘default correlation’. Writing prior to the crisis and based upon their analysis of the portfolio of a major US sub-prime mortgage lender, Cowan and Cowan (2004) warn, for instance, that ‘as credit quality declines, the importance of default correlation increases ... ignoring default correlation in the development of credit risk models for subprime portfolios would lead to considerable model risk’ (p. 755). In our terms, the failure of risk-based pricing to take into account ‘default correlation’ led to considerably more than ‘model risk’. It ensured that, when widespread defaults occurred, sub-prime lenders incurred losses that were not only uncalculated but on a much greater scale than could have been predicted.

Given the close relationship between risk-based pricing, on the one hand, and the rating of the instruments that are created through securitization and structured finance, on the other, the contradictions of the former also permeated through to the latter in the sub-prime crisis. While the

credit rating calculations of Moodys, S&P and Fitch are themselves undercut by their incapacity to fully capture an uncertain future, this contradiction was heightened when credit rating rested on the risks calculated for particular categories of sub-prime borrower. The failure of credit rating calculations and agencies in the course of the sub-prime crisis has attracted considerable political and media attention, and representatives of the major agencies, such as Moody's' president and chief operating officer Brian Clarkson (2007), have sought to publically defend their operations. Although rising delinquencies and foreclosure rates amongst sub-prime borrowers were apparent in late 2006, the credit rating agencies did not begin to downgrade the associated securities until the spring of 2007. Moreover, the original rating of some CDOs as 'AAA' - which in bond markets represents an instrument as low risk and highly liquid, comparable with US Treasury bonds - has led to class action lawsuits by institutional investors against the credit rating agencies on the grounds that they misrepresented risk (Essen, 2007). In August 2007, the House Financial Services Committee of the US Congress and the European Commission both announced plans to investigate the role of the credit rating agencies in the crisis (Buck, 2007). However, as statements to the Senate Banking, Housing and Urban Affairs Committee's Hearing of September 2007 on the role of the agencies in sub-prime illustrate (e.g. Dodd, 2007b; Read, 2007), it appears highly unlikely that an acknowledgement of the contradictions of scoring, pricing, and rating risk will figure in these deliberations. Instead, it is the specific ratings assigned to CDOs, and especially the integrity of the relationships between the rating agencies and their clients that will likely form the focus for investigation. The agencies are paid for their services by those issuing MBS and CDOs such that, in the words of former Securities and Exchange Commission (SEC) chair Arthur Levitt, they are 'playing both coach and referee in the debt game' (cited in Read, 2007).

Securitization and systemic uncertainty

The contradictory risk calculations of the devices of securitization also surfaced in the crisis. Securitization can be seen to have created ‘pro-cyclical’ sub-prime lending (Chancellor, 2005). On the one hand, the assembly of agency through securitization calculations encouraged a proliferation in the scale and scope of lending in the ‘good times’, over and above that which would have taken place if loans remained on lenders books. On the other hand, the gradual realization amongst investors that uncertainties had not been calculated for resulted in a sharper tightening of lending in the ‘bad times’. For the lone critical contributor to the Senate Banking, Housing and Urban Affairs Committee’s session on the place of securitization in the crisis, the movement of default risks off-balance sheet meant that fee-hungry lenders paid insufficient attention to the default risks of their borrowers (Eggert, 2007). Similarly, the Bank of England (2007) worry that the sub-prime crisis suggests that ‘the “originate and distribute” model’ of lending dilutes ‘incentives for the effective screening and monitoring of loans’ (p. 22). For us, however, the point is not simply that securitization contributed to the making of more and more sub-prime loans on a case-by-case basis that were not effectively screened. Rather, even the effective screening and securitization of default risks was itself contradictory, and the incapacity of the risk calculations of the capital markets to address collective future uncertainties was always present.

The ‘spreading’ of default sub-prime mortgage risks through the tools and performances of securitization and structured finance is cast in highly-favourable terms by a recent contribution to the IMF’s working paper series (Kiff & Mills, 2007). Published in July 2007, one month prior to the emergence of the credit crunch across capital markets, the paper states that

The dispersion of credit risk to a broader and more diverse group of investors has ... helped to make the U.S. financial system more resilient. The magnitude and scale of losses being currently experienced in subprime mortgage markets would have materially impacted some

systematically-important U.S. financial institutions in the traditional originate-and-retain business model (p. 12).

Kiff and Mill's position is consistent with other financial economists and regulators who also emphasize the efficiencies of disintermediated finance, and the capacity of the capital markets to effectively price risk. For the Bank of England (2006), for instance,

Financial engineering of this type does not alter the financial sector's aggregate credit exposure to the non-financial sector. It does, however, alter the distribution of risk within the financial sector by concentrating it in some securities and reducing it in others. This can improve systemic stability if risk is held by those with the greatest capacity to absorb losses (p. 21).

But, as the Bank notes on the same page, 'investors in these securities are vulnerable to macroeconomic risks that affect many of the underlying ABS at the same time'. The sub-prime mortgage crisis has thus provided the first significant moment when such 'macroeconomic risks' have been felt in asset-backed securities markets, and thereby provided 'an important test of the structure of this market and its performance in response to stress' (Bank of England, 2007, p. 22). That the sub-prime mortgage crisis has fuelled a wider credit crunch would seem to indicate, however, that this 'test' has been failed. 'Risk spreading' did not 'improve systemic stability'. Rather, and in effect, once flaws in risk calculations become apparent to investors and uncertainties come to prevail, 'risk spreading' actually contributed to what we might call 'systemic uncertainty'.

It was during May 2007 that the difficulties experienced by sub-prime borrowers and lenders first began to reverberate through to those who had invested in sub-prime MBS and CDOs, subsequently rippling through to the capital and money markets more broadly. Hedge funds that had invested in

the most risky tranches of sub-prime mortgage CDOs were, perhaps not surprisingly, the first to experience major losses. Needing to liquidate their positions, the funds were unable to find any investors willing to take these instruments off their hands. UBS closed a fund that had lost over \$120 million from investments in sub-prime bonds in May, for example, and two funds owned by major US investment bank and dominant mortgage market player Bear Stearns also suffered a high-profile closure in late June (*The Economist*, 2007a). By early August, French bank BNP Paribas suspended withdrawals from three funds that had significant investments in sub-prime MBS, citing the complete evaporation of liquidity in certain market segments. At the same time, with many of the investors that held sub-prime bonds also holding CDOs issued by private equity firms in the course of the recent buy-out boom, liquidity also began to drain from these market networks (Davies & Scholtes, 2007). Through late 2007 and into early 2008, it slowly became apparent that, with the exception of Goldman Sachs, the major investment banks that had reaped massive profits from MBS and CDOs in the preceding years now had multi-billion dollar losses resulting from holding and trading these instruments. Merrill Lynch, for example, announced what was then the largest known quarterly loss in Wall Street history in October (Bowley & Anderson, 2007). This was surpassed in January 2008 by the near \$10 billion of losses registered by Citigroup for the fourth-quarter of 2007, leading the bank to turn to Asian and Middle-Eastern sovereign wealth funds for new capital to balance their books. What Kiff and Mills term ‘systematically-important U.S. financial institutions’ have indeed been ‘materially impacted’ by the crisis.

Since systemic uncertainty has come to prevail, central bankers and policy-makers have become pre-occupied with restoring liquidity to the money and capital markets. For example, on 9th and 10th August 2007, the European Central Bank (ECB), the Federal Reserve, and central banks in Japan, Canada, and Australia made available emergency loans to the value of \$320 billion in the money markets at rates of interest below prevailing rates. The ECB boosted money markets further on the following Monday, and by Friday 17th the Federal Reserve had lowered the discount rate, that is, the

rate at which it lends to banks. The slow evaporation of liquidity from bond markets over the preceding months had reached a crescendo and, without this pre-emptive intervention, a ‘credit crunch’ seemed likely to lead the money markets to seize up. The commercial banks who dominate the money markets were at this juncture only willing to provide short-term credit to each other at inflated interest rates, unsure precisely which of their number were struggling to deal with the fallout from the sub-prime crisis (Creswell, 2007). It was this tightening of the supply of short-term capital in the wholesale markets that led to the problems experienced by major UK mortgage lender Northern Rock in September.

Where liquidity had almost completely evaporated in MBS markets, meanwhile, Treasury Secretary Hank Paulson and his staff cajoled the big banks to contribute capital to a so-called ‘superfund’ for these ‘distressed assets’ during October and November (Andrews, 2007). Given that securitization has come to feature so strongly in the assembly of both prime and sub-prime mortgage lending in recent decades, such a fund appeared as necessary to stimulating lending and thus to preventing falling house prices from spiralling further. Having staunchly opposed extending the remit of the government-sponsored enterprises Freddie Mac and Fannie Mae in MBS markets earlier in the year, Paulson’s superfund followed a ‘market-led’ model of crisis management that had emerged out of the collapse of hedge fund Long-Term Capital Management in 1998 (see de Goede, 2005).

Exploding ARMs

The place of interest-only adjustable rate mortgage products in the assembly of sub-prime lending - products that summoned up leveraged investors who embraced risk in a rising property market - has ensured that the contradictions of calculative devices of risk have been acutely experienced by borrowers. ARMs exposed sub-prime borrowers to the uncalculated uncertainties of both interest rate and house price changes. A nasty surprise lay in store for those who took out their interest-only

ARMs during 2004 and 2005: interest rates rose and house prices fell during their initial option or ‘teaser’ periods (Bajaj & Nixon, 2006a; *The Economist* 2007c, 2007f). While there can be little doubt that many sub-prime mortgagors signed-up for interest-only ARMs without fully or even partly appreciating their mechanics, it was nonetheless through these contradictory devices that borrowers became severely exposed to interest rate and house price uncertainties. This was not simply a matter of ‘mis-selling’ by predatory lenders and bad timing for borrowers. As reset deadlines loomed and arrived, sub-prime mortgagors were unable to remortgage to either reduce the interest rates payable on their loans, or release equity from their homes. What had once appeared as responsible and entrepreneurial forms of financial self-discipline, making possible owner-occupation and the freedom and security that follows from housing wealth, now exploded into repayment obligations that could not be met and into stark insecurities. The ‘delinquency rate’ - that is, the percentage of borrowers falling behind by two months or more on their repayments - spiked quite sharply in sub-prime mortgage lending in the latter half of 2006. By March 2007, this rate was running at 13%, more than double the already rising 6.2% rate of June 2006 (Bajaj & Nixon, 2006b; *The Economist*, 2007c). The number of foreclosures in sub-prime mortgage lending also began to grow during this period, such that, in March 2007, foreclosure rates on all mortgages reached their highest levels since records were first kept in 1970 (Bajaj, 2007).

It is, of course, not only the contradictions of interest-only ARMs taken up in 2004 and 2005 that are surfacing in the crisis. The assembly of sub-prime lending through these mortgage products continued apace through 2006 and the early part of 2007, ensuring that a large number of mortgagors have, to date, not reached the end of their teaser periods. As such, ever since the crisis began to break, on-going future uncertainties have come to prevail and there remains a strong sense in the worst is yet to come. For instance, an article from *The Financial Times* in March 2007 warns that while roughly \$100 billion worth of sub-prime mortgages are currently ‘bad debts’, defaults will reach \$300 billion by the end of 2008 (White et al., 2007). An article in *The Economist* (2007c)

from the same month suggests that what it terms ‘reset risk’ will ensure that around one-quarter of sub-prime borrowers with ARMs will find themselves in negative equity by 2008, and a further one-third in will be in default.

The exposure to uncertainties created in sub-prime lending by interest-only ARMs - uncertainties that were already starkly apparent in early 2007 and are likely to continue into the foreseeable future – produced a relatively rapid response from regulators. Shortly after the crisis broke, the Federal Deposit Insurance Corporation moved to establish new and more restrictive underwriting standards that apply to banks who offer ARMs (*The Economist* 2007b). But, as centralized lenders or ‘non-banks’, sub-prime lenders do not come within the supervisory remit of the Federal Deposit Insurance Corporation or, for that matter, the regulation that is also provided by the Federal Reserve and the Office of the Comptroller of the Currency. Non-bank sub-prime lenders are only covered by the consumer protection regulations enforced by the Federal Trade Commission, and by secondary mortgage market regulations policed by Department of Housing and Urban Development (Rushton, 2007). Patchy state-level regulations apply to the licensing of sub-prime lenders and brokers, with roughly half of states having laws against predatory lending in 2006.

The key government response to the contradictions of interest-only ARMs and the growing number of sub-prime mortgagors falling behind on their repayments has been, then, Treasury Secretary Paulson’s initiatives on forbearance. Although the aforementioned and influential IMF Working Paper from July 2007 praised what it regarded as the capacity of securitization to ‘spread risk’, it nonetheless drew attention to the problems of renegotiating and rescheduling borrowers’ obligations once loans have been securitized and what are known as ‘servicer’ companies (and not lenders) become responsible for the collection of obligations. As Kiff and Mills (2007) put it, ‘a number of factors may constrain the degree of flexibility servicers can show to avoid foreclosure’ (p. 13). Forbearance is expensive for servicers who tend to receive a flat fee for collecting mortgagors’

repayments, and the typical terms of securitization contracts protect the interests of investors by severely limiting the number of loans within a securitized pool that can be modified. So, given that forbearance is problematic in practical and legal terms under the ‘originate and distribute’ model of lending, government initiatives on forbearance are particularly pressing as the contradictions of interest-only ARMs continue to surface. With the ARMs of around two million sub-prime mortgagors due to reset between the end of 2007 and the middle of 2009, Treasury Secretary Paulson’s initiative divides these borrowers into three groups (*The Economist*, 2007g). Assistance will not be offered to those deemed able to afford their mortgages at their new rates of interest, or to those currently unable to meet their existing repayments at pre-reset rates. Those in the middle who are able to make current repayments but who will be undone by ‘reset risk’, however, are to be targeted. They will qualify for refinancing through the Federal Housing Administration, or fall under the terms of a five-year freeze on the interest rates that they pay which Paulson has attempted to negotiate with lenders. Whilst not challenging the assumption that rational consumers are culpable for their own choices, therefore, Paulson has nonetheless responded to fears on Capitol Hill that ‘reset risk’ will undermine the future housing market and, in effect, the place of the owner-occupation in liberal government and the American dream.

Concluding remarks: politicizing sub-prime

Cultural economists have been criticized for paying insufficient attention to the political in their research (e.g. Miller, 2002), and recent contributions to the cultural economy of finance literature have begun to acknowledge that it is indeed important that analysis does not ‘shun the political’ (Pryke & du Gay, 2007, p. 349). In closing, then, I want to briefly reflect upon the implications of the analysis that has been offered here for how the political might be more explicitly addressed by cultural economists of finance. In short, in what ways does a cultural economy reading serve to politicize sub-prime mortgage lending and open up space for disagreement?

A concern with the assembly/disassembly of agency in sub-prime mortgage lending immediately marks out a cultural economy reading from prevailing attempts that seek to restore the political to this realm of finance by apportioning blame on unscrupulous lenders. As is illustrated by current investigations into lending and foreclosure decisions at the largest independent mortgage lender Countrywide, and into the actions of the brokers who sold their products, there can be little doubt that much sub-prime lending was far from transparent. Yet, the blaming of unscrupulous lenders tends to follow from and reinforce a politicization of finance that, drawing on wide-ranging traditions in political economy, charges Wall Street, as a clearly identifiable and powerful collective interest, with all ills. For example, writing in *The Guardian* newspaper in the UK, Larry Elliott (2007) suggests that sub-prime finance and the ensuing crisis is a direct consequence of the power of Wall Street's 'moneychangers' who 'are back, bigger and badder than ever'. The lure of the assumption that to be political is to oppose power that operates in instrumental terms, wielded by and in the name of collective interests, is indeed a strong one for cultural economists. Pryke and du Gay (2007) propose, for example, that 'accommodating politics' requires 'a form of hybridization' that 'weaves together' a 'range of theoretical influences and methodologies' from 'broader cultural / political economy debates' (pp. 348-9). However, such a proposal somewhat misses the point. Through a concern with the assembly/disassembly of agency and market devices of risk, cultural economy provides a route to politicizing sub-prime lending that, grounded in the complexities and contingencies of power as a constitutive force, challenges its representation as rational and scientific. In Froud, Johal, Leaver and Williams' (2006) terms, addressing infelicity and the 'counterperformativity' (MacKenzie 2004) of market models and devices creates potential for an explicitly cultural political economy that concentrates on the 'discrepancy between promise and outcome' (p. 73; also Erturk et al. 2007). So, while not identifying an unscrupulous or 'bad' collective interest to be clearly and unambiguously opposed, cultural economy nonetheless opens up political space in sub-prime lending.

The stress placed here on the fragilities, tensions and contradictions of the devices of risk at work in sub-prime lending leads, then, to an emphasis on the ambiguous politics of calculation. On the one hand, as Andrew Barry (2002) observes, the legacy of Max Weber's work on rationality has been the awareness amongst social theorists that calculation and measurement in all its forms is 'an essentially anti-political instrument' (p. 272). Calculation re-casts political questions as technical issues to be solved, and is therefore 'thought to reduce the space of the political and to limit the possibility for disagreement' (p. 272). The political, social, and moral questions about whether we should borrow to own a home and how we might go about borrowing are, for instance, cut down to size by calculative devices. They are abstracted and transported into the domain of the market economy and, in the context of contemporary liberal programmes of government in particular, such questions become a matter of which mortgage product will best provide for housing wealth, individual freedom and security. On the other hand, however, as Barry has it, 'Measurement and calculation do not only have anti-political effects. ... They also, at the same time, provide the basis for an opening up of new objects and sites of disagreement (p. 274). Calculation can be politicising precisely because, as has been underlined here, agency in financial market networks is assembled through fallible, contradictory and dynamic calculative tools of risk. In Barry's terms, measurement and calculation are both 'fragile' and 'inventive' (pp. 274-9).

The contesting of predominant calculative tools and performances in sub-prime lending, at once, opens up and closes down possibilities for politicization and disagreement. Consider, for example, the ambiguous politics of calculation currently at play in relation to the consequences that the securitization of lending has for forbearance. Legal activists and organizations, such as Americans For Fairness in Lending and the National Association of Consumer Advocates, are currently drawing attention to these issues. Their campaigns are highlighting that, by privileging investors' interests, securitization contracts undercut possibilities for forbearance. There is now little scope for

co-responsibility between lender and borrower at moments of distress, and the long-standing legal principle that the borrower is primarily responsible for meeting outstanding obligations is enshrined in new ways. Yet, at the same time, focusing dissent on the legal definitions of particular responsibilities of parties within securitization programmes is anti-political. The wider question as to whether borrower and lender should actually be co-responsible for future obligations across financial market networks is reduced and narrowed down to a specific technical and procedural matter.

Moreover, our concern here with the assembly/disassembly of agency in sub-prime mortgage lending suggests that the prevailing tendency to clearly identify unscrupulous and predatory lenders as the cause of the crisis may actually be politically disabling. Apportioning blame in this way contributes to securing a foe as scapegoat, and leads into the belief that the problems created by predatory lenders in the sub-prime sector and by excessively greedy Wall Street financiers can be regulated away. But, clearly apportioning blame also serves to secure the identity of those who are assumed to oppose that foe. Pointing the finger at predatory lenders, or their cosy relationships with the credit rating agencies, for instance, rather conveniently secures the identity of responsible 'prime' lenders and borrowers. Given that the calculative devices of risk that have proved so contradictory in sub-prime lending have also made possible prime networks of mortgage and consumer borrowing over the last few decades (Langley, 2008), the relational representation of a realm occupied by apparently responsible lenders and borrowers is especially problematic. The politicization of sub-prime lending needs to call into question not only those who would seem to be implicated in its excesses, but also the broader and seemingly secure 'prime' networks of mortgage and consumer finance in which the assembly of agency through market devices is also far from unproblematic.

Bibliography

Aizcorbe, A.M., Kennickell, A.B., & Moore, K.B. (2003) Recent changes in U.S. family finances: Evidence from the 1998 and 2001 survey of consumer finances. *Federal Reserve Bulletin*, 89, 1-32.

Amin, A., & Thrift, N. (eds.) (2004) *The Blackwell cultural economy reader*. Oxford: Blackwell

Andrews, E.L. (2007, October 16) Treasury chief moves to stabilize markets; Bernanke is troubled by housing trend. *New York Times*, online edition.

Anderson, J. (2007, March 9) Winners amid doom and gloom. *New York Times*, online edition.

Bajaj, V. (2007, February 28) Freddie Mac tightens standards. *New York Times*, online edition.

Bajaj, V., & Nixon, R. (2006a, July 23) Re-financing, and putting off mortgage pain. *New York Times*, online edition.

Bajaj, V., & Nixon, R. (2006b, December 6) Subprime loans going from boon to housing bane. *New York Times*, online edition.

Bajaj, V., & Haughney, C. (2007, January 26) Tremors at the door. *New York Times*, online edition.

Bank of England (2006) *Financial stability report, July*. Retrieved October 23, 2007, from <http://www.bankofengland.co.uk/publications/fsr/2006/fsrfull0606.pdf>

Bank of England (2007) *Financial stability report, April*. Retrieved October 23, 2007, from <http://www.bankofengland.co.uk/publications/fsr/2007/fsrfull0407.pdf>

Barry, A. (2002) The anti-political economy. *Economy and Society*, 31(2), 268-284.

Blackburn, R. (2006) Finance and the Fourth Dimension, *New Left Review*, 39, 39-70.

Bowley, G., & Anderson, J. (2007, November 4) Where did the buck stop at Merrill?, *New York Times*, online edition.

- Buck, T. (2007, August 16) Rating agencies targeted in EU probe into subprime crisis. *Financial Times*, p.1.
- Burton, D. (1994) *Financial services and the consumer*. London: Routledge.
- Burton, D. (2008) *Credit and consumer society*. London: Routledge.
- Burton, D., Knights, D., Leyshon, A., Alferoff, C., & Signoretta, P. (2004) Making a market: The UK retail financial services industry and the rise of the complex sub-prime credit market. *Competition and Change*, 8(1), 3-25.
- Bush, George W. (2005) State of the Union Address. Retrieved September 19, 2007, from <http://www.whitehouse.gov/news/releases/2005/02/20050202-11.html>
- Callon, M. (1998) Introduction: the embeddedness of economic markets in economics. In M. Callon (Ed.) *The laws of markets* (pp. 1-57). Oxford: Blackwell.
- Callon, M. (1999) Actor-network theory – the market test. In J. Law & J. Hassard (Eds.) *Actor network theory and after* (pp. 181-195). Oxford: Blackwell.
- Callon, Michel (2005) Why virtualism paves the way to political impotence: A reply to Daniel Miller's critique of The Laws of Markets. *Economic Sociology: European Electronic Newsletter*, 6(2), 3-20.
- M. Callon, Y. Millo, & F. Muniesa (Eds.) *Market devices*. Oxford: Blackwell.
- Callon, M., & Muniesa, F. (2005) Economic markets as calculative collective devices. *Organization Studies*, 26(8), 1229-1250.
- Carruthers, B.G., & Stinchcombe, A.L. (1999) The social structure of liquidity: Flexibility, markets, and states. *Theory and Society*, 28(3), 353-382.
- Chancellor, E. (2005) *Crunch time for credit? An inquiry into the state of the credit system in the United States and Great Britain*. Hampshire: Harriman House Ltd.
- Chinloy, P., & MacDonald, N. (2005) Subprime lenders and mortgage market completion. *The Journal of Real Estate Finance and Economics*, 30(2), 153-165.

Clarkson, B. (2007, September 18) Transparency and trust must keep on driving ratings agencies. *The Financial Times*, p. 42.

Cowan, A.M., & Cowan, C.D. (2004) Default correlation: An empirical investigation of a subprime lender. *Journal of Banking and Finance*, 28(4), 753-771.

Creswell, J. (2007, August 10) Shaky markets prompt rumors of who's in trouble. *New York Times*, online edition.

Crews Cutts, A., & Van Order, R. (2003) *On the economics of subprime lending*. Washington, DC: Office of the Chief Economist.

Darlin, D. (2006, July 15) Keep eyes fixed on your variable rate mortgage. *New York Times*, online edition.

Davies, P.J., & Scholtes, S. (2007, July 26) Big deals in trouble over debt take up. *Financial Times*, p.1.

Dean, M. (1999) *Governmentality: Power and rule in modern society*. London: Sage.

de Goede, M. (2004) Repoliticizing financial risk. *Economy and Society*, 33(2), 197-217.

de Goede, M. (2005) *Virtue, fortune, and faith: A genealogy of finance*. Minneapolis, MN: University of Minnesota.

Dodd, C.J. (2007a) Statement of Christopher J. Dodd at Mortgage Market Turmoil: Causes and Consequences. Hearing of US Senate Committee on Banking, Housing, and Urban Affairs, March 22. Retrieved September 15, 2007, from <http://banking.senate.gov/index.cfm?Fuseaction=Hearings.Detail&HearingID=254>

Dodd, C.J (2007b) Statement of Christopher J. Dodd at The Role and Impact of Credit Rating Agencies in the Subprime Credit Markets. Hearing of US Senate Committee on Banking, Housing, and Urban Affairs, September 26. Retrieved January 4, 2008, from http://banking.senate.gov/_files/dodd.pdf

du Gay, P., & Pryke, M. (Eds.) (2002) *Cultural economy: Cultural analysis and commercial life*. London: Sage.

Dymski, G.A. (2005) Financial globalization, social exclusion and financial crisis.

International Review of Applied Economics, 19(4), 439-457.

The Economist (2006, December 13) Subprime subsidence. Online edition.

----- (2007a, June 21) Bearish turns. Online edition.

----- (2007b, February 15) Bleak houses. Online edition.

----- (2007c, March 22) Cracks in the façade. Online edition.

----- (2007d, April 19) Credit derivatives: at the risky end of finance. Online edition.

----- (2007e, February 28) Rethinking risk. Online edition.

----- (2007f, March 10) Rising damp. pp. 93-4.

----- (2007g, December 8) Subprime solutions. p. 92.

Eggert, K. (2007) Testimony at Subprime Mortgage Market Turmoil: Examining the Role of Securitization. Hearing of the Senate Banking, Housing and Urban Affairs Committee's Subcommittee on Securities, Insurance, and Investments, April 17. Retrieved September 12, 2007, from <http://banking.senate.gov/index.cfm?Fuseaction=Hearings.Detail&HearingID=256>

Elliott, L. (2007, March 26) We have nothing to fear but Wall Street. *The Guardian*, online edition.

Erturk, I., Froud, J., Sukhdev, J., Leaver, A., & Williams, K. (2007) The democratization of finance? Promise, outcomes and conditions. *Review of International Political Economy*, 14(4), 553-576.

Essen, Y. (2007, November 26) Shareholders take legal action against rating agencies in US. *Daily Telegraph*, p. B1.

Fannie Mae (2005) *Housing solutions: Working with our partners to meet America's toughest housing needs*. Retrieved September 15, 2007, from <http://www.fanniemae.com/initiatives/pdf/housing/housingsolutionsreport.pdf>

Fraser, S. (2005) *Wall Street: A cultural history*. London: Faber and Faber.

Freddie Mac (2005) *Just the facts: How we make home possible*. Retrieved September 15, 2007, from http://www.freddiemac.com/news/pdf/Just_the_Facts3.pdf

Froud, J., Johal, S., Leaver, A., & Williams, K. (2006) *Financialization and strategy: narrative and numbers*. London: Routledge.

Gotham, K.F. (2006) The secondary circuit of capital reconsidered: Globalization and the U.S. real estate sector. *American Journal of Sociology*, 112(1), 231-275.

Grey, C. (1997) Suburban subjects: Financial services and the new right. In D. Knights & T. Tinker (Eds.) *Financial institutions and social transformations* (pp. 47-67). Basingstoke: MacMillan.

Kiff, J., and Mills, P. (2007) *Money for nothing and checks for free: Recent developments in U.S. subprime mortgage markets*. *International Monetary Fund Working Paper*, WP/07/188, July.

Kirchhoff, S., & Block, S. (2004, July 12) Subprime loan market grows despite troubles. *USA Today*, online edition. Retrieved August 23, 2007, from http://www.usatoday.com/money/perfi/housing/2004-12-07-subprime-day-2-usat_x.htm

Knight, F. (1921) *Risk, uncertainty and profit*. New York: A.M. Kelley.

Knorr-Cetina, K. (2003) From pipes to scopes. *Distinktion*, 7, 7-23.

Kochan, N. (2001, August 1) Turning bad credits into profits. *The Banker*, pp. 3-6.

Langley, P. (2006) Securitising suburbia: the transformation of Anglo-American mortgage finance. *Competition and Change*, 10(3), 283-299.

Langley, P. (2008) *The everyday life of global finance: saving and borrowing in Anglo-America*. Oxford: Oxford University Press.

Latour, B. (1987) *Science in action: How to follow scientists and engineers through society*. Milton Keynes: Open University Press.

Latour, B. (1999) On recalling ANT. In J. Law & J. Hassard (Eds.) *Actor network theory and after* (pp. 15-25). Oxford: Blackwell.

- Latour, B. (2007) *Reassembling the social: An introduction to actor-network theory*. Oxford: Oxford University Press.
- Leyshon, A., & Thrift, N. (1995) Geographies of financial exclusion: financial abandonment in Britain and the United States. *Transactions of the Institute of British Geographers*, 20(2), 312-341.
- Leyshon, A., & Thrift, N. (1999) Lists come alive: electronic systems of knowledge and the rise of credit scoring in retail banking. *Economy and Society*, 28(3), 434-466.
- MacKenzie, D. (2004) The big, bad wolf and the rational market: Portfolio insurance, the 1987 crash and the performativity of economics. *Economy and Society*, 33(3), 303-334.
- MacKenzie, D. (2006) *An engine, not a camera: How financial models shape markets*. Cambridge, MASS: MIT Press.
- Marron, D. (2007) Lending by numbers: credit scoring and the constitution of risk within American consumer credit. *Economy and Society*, 36(1), 103-133.
- Miller, D. (2002) Turning Callon the right way up. *Economy and Society*, 31(2), 218-233.
- Mitchell, T. (2002) *Rule of experts: Egypt, techno-politics, modernity*. Berkley: University of California Press.
- Morgan, G., & Sturdy, A. (2000) *Beyond organizational change: Structure, discourse and power in UK financial services*. Basingstoke: MacMillan.
- Muniesa, F., Millo, Y., & Callon, M. (2007) An introduction to market devices. In M. Callon, Y. Millo, & F. Muniesa (Eds.) *Market Devices* (pp. 1-12). Oxford: Blackwell Publishing.
- Peters, J.W., & Andrews, E.L. (2007, March 29) Manageable threats seen by Fed chief. *New York Times*, online edition.
- Poon, M. (2007) Scorecards as devices for consumer credit: the case of Fair, Isaac & Company Incorporated. In M. Callon, Y. Millo, & F. Muniesa (Eds.) *Market Devices* (pp. 284-306). Oxford: Blackwell.

- Preda, A. (2006) Socio-technical agency in financial markets: the case of the stock ticker. *Social Studies of Science*, 36(5), 753-782.
- Pryke, M. (2007) Geomoney: An option on frost, going long on clouds. *Geoforum*, 38(3), 576-588.
- Pryke, M., & du Gay, P. (2007) Take an issue: Cultural economy and finance. *Economy and Society*, 36(3), 339-354.
- Read, J. (2007) Statement of Jack Read at The Role and Impact of Credit Rating Agencies in the Subprime Credit Markets. Hearing of US Senate Committee on Banking, Housing, and Urban Affairs, September 26. Retrieved January 4, 2008, from http://banking.senate.gov/_files/ACF1CC4.pdf
- Reddy, S. (1996) Claims to expert knowledge and the subversion of democracy: The triumph of risk over uncertainty. *Economy and Society*, 25(2), 222-254
- Rushton, E.W. (2007) Testimony of Emory W. Rushton, Senior Deputy Comptroller and Chief National Bank Examiner, Office of the Comptroller of the Currency, at Mortgage Market Turmoil: Causes and Consequences. Hearing of Senate Committee on Banking, Housing, and Urban Affairs, March 22. Retrieved January 4, 2008, from <http://banking.senate.gov/index.cfm?Fuseaction=Hearings.Detail&HearingID=254>
- Samuels, S. (2007) Testimony of Sandor Samuels, Executive Managing Director, Countrywide Financial Corporation, at Mortgage Market Turmoil: Causes and Consequences. Hearing of Senate Committee on Banking, Housing, and Urban Affairs, March 22. Retrieved January 4, 2008, from <http://banking.senate.gov/index.cfm?Fuseaction=Hearings.Detail&HearingID=254>
- Shlay, A.B. (2006) Low-income homeownership: American dream or delusion. *Urban Studies*, 43(3), 511-531.
- Sinclair, T.J. (2005) *The new masters of capital: American bond rating agencies and the politics of creditworthiness*. Ithaca, NY: Cornell University Press.

Smith, S.J. (2007) Owner occupation: At home with a hybrid of money and materials.

Environment and Planning A, advance online paper, available at:

<http://www.envplan.com/epa/fulltext/aforth/a38423.pdf>

Stuart, G. (2003) *Discriminating risk: The U.S. mortgage lending industry in the twentieth century*. Ithaca, NY: Cornell University Press.

Wyly, E.K., Atia, M., Foxcroft, H., Hammel, D.J., & Phillips-Watts, K. (2006) American home: Predatory mortgage capital and neighbourhood spaces of race and class exploitation in the United States. *Geografiska Annaler*, 88(2), 105-132.