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Financial Derivatives as Social Policy beyond Crisis

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Abstract

The period since the global financial crisis has seen financial derivatives not only grow quantitatively in financial markets but also expand socially as a calculative logic, giving increasing precision to the concept of capital and hence class relations. The logic of derivatives involves deconstructing 'things' into a spectrum of tradable risks. The article identifies the ways in which this logic is spreading into an increasing range of social, economic and political policy domains. It posits how, through the logic of derivatives, a range of sociological issues can be seen and re-thought through the eyes of financial calculus.

Keywords

derivative logic, financial crisis, financial derivatives, financialization

In the midst of the global financial crisis, with mortgage-backed securities (MBS) losing their backing and credit default swaps defaulting, there was a view that the era of financial derivatives was (or should be) over. The reasons varied. There were technical propositions that derivatives could not be adequately priced because of a new awareness of uncertainty: a view compatible with Nicholas Taleb's *Black Swans* (2007) explanation that unlikely events occur more often than they 'should' and can't be foreseen. In an uncertain world, the argument goes, financial risk is incalculable and derivatives are inherently flawed pricing instruments and therefore dangerous to financial stability. A related but separate proposition is that financial derivatives as economic constructs are 'performative' (Callon and Muniesa, 2005; McKenzie, 2011) or at least depend upon forms of

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cognitive and evaluative practices and cultures which are socially constructed, and that these too are precarious or unstable. This builds reputationally-derived volatility into the operation of derivative markets contrary to conventional arguments linking derivatives to market efficiency.[1] There was also a more sweeping proposition that derivatives are just a manifestation of a speculative bubble and, with the bursting of that bubble, the surge of derivatives (and finance more generally) would be reined in, whether through rejection by wary capitalists or strangulation by contrite state regulators.[2] Any views that derivatives are somehow integral to ongoing finance, and to capital generally, were simply wrong.

The evidence of the last five years is not consistent with those grand claims, for derivative markets are again growing rapidly. In the United States, MBS issuance is almost as large as it was in the years leading up to the financial crisis, as shown in Table 1, albeit that reliance on issuance of securities by state agencies Freddie Mac (FHLMC), Fannie Mae (FNMA) and Ginnie Mae (GNMA) has increased significantly since 2008, but in an uneven manner.

In other derivative markets,[3] volumes and values are at record levels. Evidence from the Bank for International Settlements (BIS) (Figure 1) shows that foreign exchange derivative and interest rate derivative turnover has continued through and beyond the 2008 financial crisis.[4]

These sorts of data were not anticipated in 2008. The critical analytical response has been to attribute the 'reloading' of derivative positions to lax regulation or to regulatory (and fiscal) intent to indulge derivative-issuing and trading institutions. This response is predicated on an understanding of crisis as an expression of excess; its antidote supposedly being a state-led return to moderation. Despite all the 'never again' speeches by global political leaders at the height of the crisis, the regulatory changes have been at best modest in their impacts on derivative trading. Reforms may bring derivative trades on-exchange (for example, FSB, 2013) but derivative positions of investors remain mainly off-balance-sheet and enable institutions to hold opaque financial positions (Greenspan, cited in Tett, 2013). This analytical response readily invokes the power of vested interests to prevent the state from delivering that rightful return.

Invariably also, this critical response is predicated on the proposition that derivative markets are sites of speculation and so deemed 'unproductive'. They transfer titles to ownership without creating any new output and, moreover, appropriate profits, which must be seen as an extraction from wages and profits in the so-called 'real' economy.

The propositions developed in this analysis are essentially silent on these prevalent debates. There are, no doubt, complex reasons why new state regulations have not comprehensively constrained derivative markets, and derivatives may well be tools of speculation. The issue of focus here is the social impact of the imaginary of derivatives: how derivatives embody some imminent development in capitalist markets and society at large, irrespective of how we may evaluate the desirability of this development. To explore this, we borrow the distinction drawn by Lepinay (2011: xvi) between derivatives as a class of economic goods and derivation as a process.[5] For shorthand, we call this imminent development a 'derivative logic', or 'the derivative form' (Martin, 2014).[6]

In developing this analysis, we first situate the derivative logic within wider debates about financialized capitalism, identifying the calculative devices of finance as central. In the subsequent section we identify dimensions of familiar social change which can be

Table 1. US Mortgage-related securities issuance (USD Billions).

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Agency (FNMA, FHLMC, GNMA)	MBS	474	1086	1447	2131	1015	983	923	1189	1170	1734	1420	1239	1731	1597
	CMO	109	394	598	626	378	364	316	276.6	197	289	500	377	285	261
Non-agency	CMBS	44	64	50	72	934	157	184	229	4	9	22	34	36	80
	RMBS	58	149	244	343	430	726	688	510	32	9	12	3	4	8
Mortgage-related issuance	Total	685	1693	2338	3173	1917	2230	2110	2204	1404	2041	1976	1660	2059	1954

Source: SIFMA, 2014 (figures rounded to nearest billion)

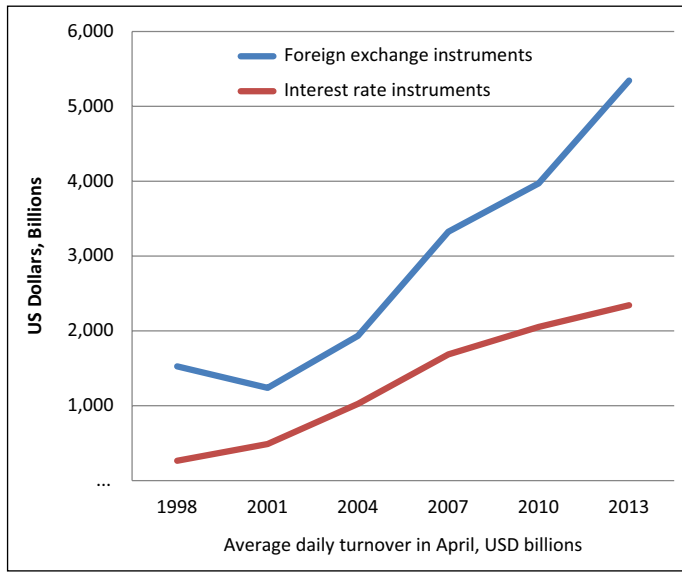

Figure 1. Global interest rate and exchange rate turnover by instrument, 1998–2013.
Source: BIS, 2013, Tables 1 and 6

said to be enabled by and implementing a derivative logic, and in the final section we identify some social domains which are being configured so as to be consistent with the implementation of a derivative logic.

Neoliberalism, Financialization and the Derivative Form

The renewed momentum in derivative trade identified above might be framed as a return to old ways and in some sense a resurgence of neoliberalism. But we contend that that would be an insufficient reading, for the calculative devices embodied in derivatives appear to be acquiring a wider social traction, and one that those critical of neoliberalism need to be attuned to, for it gives us access to the evolving meaning of 'capital' as a class process within financialized capitalism.

Our apprehension about critiques of neoliberalism generally is that they focus on evolving issues of states and markets, and not sufficiently on the evolving calculative devices of capital. Finance's calculative role in giving order (albeit only ever partial and temporary) to capitalist value creation needs attention.

What is this distinctive calculative role? Conventionally, we have defined capital in relation to ownership: capital involves ownership of the means of production; workers are employed by owners. Capital as a social relation involves relations of control and the extraction of a surplus from workers. But derivatives challenge our understanding of this depiction. What do we make of a form of capital that involves ownership of exposures to the performance of means of production, but not necessarily ownership of the means of production themselves? This is what derivatives entail, and in so doing they blur our

conceptions of finance and production. Perhaps the power of capital comes increasingly not just from ownership of corporate assets, but also from the capacity to shift financial and other risks onto people. Perhaps people's subordination to capital comes not just from the extraction of a surplus in the workplace, but also from holding illiquid assets (jobs, houses, health) in a world of liquid assets, leaving workers (households) as systemic 'shock absorbers' in global financial markets (IMF, 2005: 5):[7] itself a variant on 'surplus' extraction.

The notion of owning exposures to the performance of capital rather than owning the means of production is not new: it is the foundation of the joint stock company and the associated stock market, where an equity owner holds rights to changes in the share price and to dividends (and nominally a vote at a shareholders' meeting), but they have no direct ownership of company assets. The joint stock company changed how we understand capital as a class and a form of economic organization. Critically, the growth of derivatives over the past 30 years, and especially the last 15 years, is extending this form of ownership to new domains and, in the process, challenging more widely how we understand 'capital'. Joint stock companies replaced private ownership as the generalized form of capital from the 1850s. Yet it is only in the last 15 years that social analysts came to focus on the imperatives of 'maximizing shareholder value' (Lazonick and O'Sullivan, 2000) as a calculative device.[8] Moreover, the shareholder value literature is not claiming to identify a 150-year-old imperative that has gone hitherto unnoticed: it claims a new momentum in the nature of corporations, as institutional shareholders start to exercise their ownership rights.

This momentum has been symptomatic of a fluidity and flexibility in capital that has come with both deregulation of the mobility of capital and the changing calculative processes of capital. Indeed, the two are related: the more flexible and mobile capital becomes, the more attention comes to be focused on where and why capital might move (or remain in place) and be managed to maximize its rate of return.

Derivatives can be seen as the latest iteration in that flexibility and mobility, because trading exposures to the performance of assets is qualitatively different from the encumbrances (maintenance, valuation and buying/selling costs) that come with ownership of the 'underlying' physical assets. It is not that derivatives are new (just as shareholder value is not new), but critical social conditions have emerged that see their expansion. For the class of capital, the focus here has become how to value a portfolio of liquid assets and to calculate returns in relation to risks. Portfolio theory of the 1950s, recognizing that assets can only be valued in relation to where they sit in a spread of risks, has evolved into technical devices of practical calculation: Black-Scholes options pricing, the Capital Asset Pricing Model (CAPM), Value at Risk (VaR) are the most noted versions (Bernstein, 1992; Bryan and Rafferty, 2013).

Much is written from the social studies of finance perspective about the technical flaws in, and performativity of, such calculative devices, but their widespread application continues, despite recognized flaws. The fact that the calculation process is flawed makes it fragile, but not 'false'.[9] Moreover, these calculative devices and modes of thinking are being applied to domains of society beyond those conventionally defined as 'finance'. This is, we believe, the substantive meaning of 'financialization': not (or not just) that the finance sector is getting bigger, but that financial ways of calculating are becoming more pervasive socially.

Hence, the argument that follows is that the calculative devices of derivatives, to be explained shortly, are being applied to an expanding range of social processes not generally conceived as financially driven. A critic might say that the terms 'profit motive' and 'commodification' could suffice in explaining this expansion, and indeed they do, up to a point. But neither identifies the calculative precision at work that explains how and where the profit motive and commodification become applied in new domains, nor the ways by which these domains are set into competitive relations to generate yield.

As with the literature on shareholder value, we are not claiming to have discovered a new momentum to capital; just a novel coherence to that momentum, seeking to explain why particular developments, which were always potentially profitable and commodifiable, awaited the 21st century to become prominent initiatives for capital.

Abstraction, Unbundling and the Derivative Form

Stripped of mathematical formalism, the idea of derivatives is quite simple. They involve deconstructing a 'thing' (and we use a bland term intentionally) into a set of constituent elements or attributes, and configuring those attributes in a way consistent with quantification. These quantified attributes can be interpreted through the lens of risk and risk-trading in a way that it is unlikely the underlying, original 'thing' will be. Will the measure of the attribute go up or down? How do we put a price on the measure going up or down? In short, how do we trade risk about the movement in the measure(s) of an attribute? These become the key questions.

Thus, with derivatives, one trades in the performance (shift in the quantum) of an attribute of a thing, but without necessarily trading in the 'thing' itself. Hence, derivatives are pure risk contracts: when we refer to the rise of the derivative form, we are identifying the rise of risk and the pricing of risk – the world seen through the eyes of an actuary in which risk is commodified. This is a conception quite different from Ulrich Beck's (1992) depiction of society as 'risky'. The two are not incompatible, for risky societies create opportunities for products to measure and trade risk. The social reason for computing the valuation of risk exposures is to create new business opportunities for insurance and for hedge fund and investment bank trading. In a world increasingly perceived as 'risky', insurance is posed as the antidote. In a world where risk exposures are being measured relative to rate of return on capital, hedge funds and investment banks find readily available tools of risk diversification and opportunities for trading on trends in risk perception.

The most conspicuous attribute of a thing to be traded is change in its price, and especially how price changes over time or across space. In the long history of derivatives in agricultural markets, price was the attribute most commonly traded. Trading on whether the price of wheat will go up or down is different from trading the wheat itself (it invokes the difference between what Marx called use value and exchange value).

In modern financial markets, price variability remains a predominant attribute to be traded. Along with commodity derivatives which trade future price, interest rate and foreign exchange derivatives remain the most traded derivative products: they trade the relationship between the price of money here and now and its price elsewhere in time or space.

But price is not the only attribute being traded in derivative markets. There are many types of derivatives which, while measured in money as a unit of account, are trading some other attributes of 'things' or events. Stock market indices and other economic data indices are commonly traded. Another conspicuous risk traded in financial markets is the weather, where the weather is decomposed into attributes (temperature, rainfall, frosts, snowfall and hurricanes) and each of these measured by an index (degrees, inches/centimetres, etc.) and at different locations.[10] Here, the weather (the underlying 'asset') is, of course, not itself being traded. The products traded concern exposure to change in attributes of the weather via temperature or rainfall futures and options.[11]

These non-price-based derivatives signal the possibility of social indices, measuring a large range of social practices that can be and are increasingly traded. The claim is not that there are always formally constituted markets trading and pricing contracts, although these are more pervasive than at first imagined. Rather it is that the process of decomposing things once thought whole into a spectrum of constituent attributes, measuring these attributes discretely and precisely. Trading movements in those measurements is what we describe as the emerging logic of derivatives. The imaginative act of derivatives inventors is to decompose social practices and events into attributes that can be 'objectively' measured (not easily manipulated), probabilities that can be calculated and prices configured, and for all of which enough 'players' are willing to take each side of a contract to form a market.

Sports betting is an obvious illustration of the application of derivatives to daily life. Betting on football, for example, was once a matter of betting on a final result: who would win, with changing odds on each team securing the market in any contest. But a game of football is now being broken down into a range of attributes which are being configured and priced as 'risks': what will be the score at half time, what will be the difference in the scores, who will score first and a whole lot of other 'sub-contests' within the game. Financially, who wins the overall game is just another attribute of the contest.

The development of this range of bets, while always conceptually conceivable, awaited the recent formation of betting exchanges such as *Betfair* that provide an online trading room where gamblers bet against each other and odds change due to market forces (bids and asks).[12] Many hedge funds now include sports betting as part of their diversified portfolio, for the risks on sports do not correlate closely with other business indicators. According to hedge fund Priomha Capital (2012), 'the use of betting exchanges [such as *Betfair*] allows the astute sports portfolio manager to … use commonly implemented financial risk management strategies such as stop-loss, hedging and the equivalent of short selling'.

Health insurance is another illustration. In modern health insurance product development, the human body is deconstructed into a series of attributes with risks of damage attached: eyesight, hearing, limbs, joints, and even longevity. Treatments too constitute a series of attributes or risks: length of hospitalization, number and complexity of treatments. And patients themselves are identified (abstractly decomposed) as a series of risks or attributes: the desire for a private room, for gym membership, for fancy sports shoes, for cosmetic as opposed to essential surgery etc. Each of these attributes is posed as an option in health insurance – not just an option in the sense of a consumer choice – but in the financial sense of discrete contractual clauses entailing the purchase of the right but not the obligation to new spectacles, a private room, a face lift, and so on.[13] By

the process of 'decomposition' of the individual, a more precise evaluation is made of an individual's health risk profile. This is significant not just for the profitability of health insurance providers, but for financial markets at large.

These health insurance policies are themselves becoming the underlying assets for asset-backed securities (ABS), where health insurance contract payments ('health care receivables') are securitized and sold into international financial markets. ABS are a form of bond, but their derivative dimension is that they trade exposure to health care finance but no exposure to the provision of health care itself.[14] The reason for securitizing health insurance payments is to bring forward the contracted stream of future payments into the present – effectively to cash them out – both for early access to the value of the asset and to sell off the risk of people defaulting on their insurance payments. The securities are bought to provide a regular stream of income (for example, by a pension fund) and estimates of insurance default risk are factored into the security's purchase price. Hence the measurement of that default risk requires increasing precision in health insurance contract issuance and pricing.

These health-insurance-policy ABS are currently not large, but they are growing and anticipated to grow further as health insurance contracts adjust their formulae so as to be securitization compatible (Flaum and Klyman, 2000; Standard and Poor's, 2013[2004]), As with sports betting, the risk of default on health insurance payments will cycle differently from bond prices and exchange rates, and this makes them desirable in a diversified asset portfolio.

Health and sports are two instances from everyday life, but they reflect three critical characteristics which apply to a much wider range of social activities. First, they involve decomposing a single thing or event into a range of attributes, each of which is priced and traded discretely. Second, behind such processes are global finance markets that are looking to price and trade the risks of everyday life. Together, these novel financial processes, while always imminent in commercialized sport and health care, awaited the development of certain market structures and financial techniques associated with trading exposures to performance without trading the underlying asset.

New Frontiers of Derivatives

Derivative markets have developed in some strange domains. In 2003 the Pentagon briefly set up a market trading futures on political assassinations with the aim of eliciting political intelligence via market price movements (Hulse, 2003). Popularly called the 'terrorism futures market', it operated for only a few days and was promptly shut down as a case of financial bad taste. But our focus here is not the development of new, zany markets, though these are indeed occurring. Our focus is, on the contrary, on the emergence of the derivative logic in the more banal domains of life: domains that cast the logic of derivatives as a way of being, incorporated into habitus. In the process, the derivative dimension of social change often goes largely unnoticed, even as its calculative form becomes more pervasive. Three illustrations suffice to make the point.

Mortgage-backed securities (MBS) became infamous as the asset class whose crash triggered the global financial crisis. However, since the financial crisis, not only are MBS a central way of funding housing loans but they are also a key financial asset in

global markets, with the US Federal Reserve investing heavily in these assets as a key to economic recovery. The Federal Reserve now holds 40 percent of its $4 trillion asset portfolio in MBS despite, at various stages over the past five years, announcing an intention to sell off its exposure to MBS (Bernanke, 2013).[15] Accordingly, MBS issuance is growing again; so also is private ABS issuance (SIFMA, 2013; Standard & Poor's, 2013, 2014). We have already identified health insurance receivables as underlying assets of ABS, but securitization also applies to housing rent,[16] auto loans, credit card debt and student loans.[17] These securities involve households conceived as the asset base of derivative products, and these types of securities represent a frontier of financial expansion.

In important respects, financial markets are discovering new attributes of households: a wide range of regular household payments (more than just mortgage payments) can be configured as an asset base onto which financial products can be built. Andreas Jobst (2008) of the IMF contends:

> The landscape of securitization has changed dramatically in the last decade. No longer is it wed to traditional assets with specific terms such as mortgages, bank loans, or consumer loans (called self-liquidating assets). Improved modeling [sic] and risk quantification as well as greater data availability have encouraged issuers to consider a wider variety of asset types.

Many household bills for gas, electricity, water and cell phones – expenditures on life's staples – are now starting to be securitized in global financial markets. As a result, those 'standard' household payments for mortgages and rent, cars, credit cards and utilities are no longer just a contractual relationship between an immediate 'service provider' and customer, they are increasingly the basis of globally traded ABS.

In labour markets, too, a gravitation to a derivative calculus can also be discerned. Whilst there is no secondary market for labour-as-derivative,[18] there is a decided tendency for the worker to be deconstructed into a set of attributes and for work to be deconstructed into a set of discrete risks exposures for employers. Increasingly, these exposures are being considered in as much detail as the attributes and exposures of liquid financial assets.

As employment contracts become less labour market distinctive and more like common law contracts (Fudge, 2006), we see contracts designed explicitly to shift risks to workers, in part by redefining 'employment' via the blurring of the categories of employer, employee, self-employed and small business service provider,[19] and partly by making 'standard' employment contracts increasingly contingent.

The blurring of categories is conceived in part for taxation reasons, but also as a calculated shift of risks from employers to 'workers'. For example, in sectors like building, we see a shift of 'employment' from wage-labour to self-employment. A self-employed contractor will be exposed to the risks associated with (and often the costs of) equipment, of delayed work, sickness, workers compensation, superannuation, holidays, bookkeeping, managing accounts payable, and so on.

The shift from permanent to casual employment is a further conspicuous expression of a derivative calculus. The desire by employers to have workers paid for only the hours where there is work to be performed and more and more tied to tasks and outputs has

transformed the use of employment contracts. Now casual contracts define an absence of employment rights rather than the duration of the work.

Casualization addresses one employer risk but creates another. One of the risks to employers of casual workers is that it may be hard to draw in workers at short notice: the casuals may simply not be available. So one device, which has become prevalent in Britain, is a 'zero hours' employment contract, in which an employment contract specifies that, for a small retainer, a worker is not guaranteed work, but is obliged to attend a workplace when requested. It is an embedded options contract, in which, for the payment of a token fee, the employer acquires the right, but not the obligation to provide work.[20]

A direct effect of the changing nature of employment contracts is that workplace risks are being shifted to workers. That observation of itself is not novel and it is central to Standing's (2011) widely adopted designation of a 'precariat'. Our proposition, following notably Breen (1997), is that we can identify in this process not simply 'neoliberalism', which emphasizes the power balance that makes risk-shifting politically credible, but a calculative method that expresses the derivative form and drives the computation of optimal use of contractual forms for deploying labour (Bryan et al., 2009).[21]

A third illustration of a derivative logic is within the state: an institution popularly, but erroneously, juxtaposed with 'the market'. Contracting out of risk, like the state's use of zero hours contracts noted above, is an expression of a derivative logic, for it involves deconstructing the state into a vast range of activities and means of determining which should be provided in-house and which could be acquired by contract. While it could be said that this is currently just a new form of cost cutting, it bears noting that the logic of unbundling service delivery and funding does not inherently require cost cutting.

A reader might at this point say that the proposition of a derivative logic must involve more than breaking things up and selling some while holding others. Claiming a derivative logic would be trivial if this were the whole of it. But it is *within* this now long-standing shift in the state that there is an emerging calculative logic of derivatives, found in the emergent pricing and trading of state risks.

The British Government's 'Big Society' programme is the embodiment of this logic. The 'Big Society' programme was central to the 2010 UK Conservative Party general election manifesto and, whilst the term may no longer be in currency, its calculative logic remains operational. The stated aim of Big Society was to take power away from politicians and to 'empower' local people and communities, although the same process can be described as an agenda of reducing dependence on the state in the name of individual responsibility. The vision promised to replace the 'passive' receipt of 'state help' with 'a new culture of voluntarism, philanthropy, social action' (Cameron, 2010). The Big Society vision was criticized as a rationale for government austerity, and the term has largely disappeared from public discourse. But critically it opened up the ongoing implementation of a derivative logic. Under the rationale of 'Big Society', private companies,[22] local charities and the voluntary sector are being contracted to perform tasks previously undertaken by central and local government authorities. In effect, activities conducted under the auspices of the state, and their funding, are decomposed to open up space for a financial logic. In the words of Prime Minister Cameron (2010):

> We believe in paying public service providers by results. It encourages value for money and innovation at the same time … government has a crucial role to play in … connecting private capital to investment in social projects. We have already said we will create a Big Society Bank to help finance social enterprises, charities and voluntary groups through intermediaries … the Big Society Bank will – over time – make available hundreds of millions of pounds of new finance to some of our most dynamic social organisations.

A leading development within this logic is found in 'social investment', and especially the formation of social benefit bonds (SBBs). SBBs were first developed in the UK, but now also issued in the United States and Australia.[23] At the core of SBBs are private investors funding a programme or intervention undertaken within or under the auspices of the state and the rate of return on the bond is contingent on the extent to which the programme or intervention achieves its stated aims. But the investor buys only an exposure to the performance of the intervention but has no control over its implementation. The premise here is that there are projects that are anticipated to have positive outcomes and for which state funding cannot (or will not) be found. In this context, a state may leave the project unfunded, and forego the potential benefits, or it could invite private funding.

The specific funding of SBBs means that the private investor takes on the risks of the proposed programme or intervention. If the programme or intervention proves unsuccessful, the state has made no expenditure, and the losses are borne by the private investor. If the intervention is deemed successful, the investor will make a profit which must be paid for by the state. The source of the profit is that the state will be willing to provide funding out of the future dollars it will now not have to expend as a result of the successful intervention. So, for example, the first SBB issued in the UK was in relation to Peterborough Prison, to fund a programme designed to reduce recidivism. If the intervention is successful, a dividend is paid out of the funds that are now saved by having fewer prisoners to house. In this formulation, the state faces no down-side risk (hence they have sometimes been called 'pay-for-success' bonds), although specific contracts consciously allocate risks and funding responsibilities between the parties and many contracts will entail state underwriting.

Here we see the playing out of a derivative logic within the state in which private organizations are trading exposures to the performance of (and funding from) the state but without ownership of the 'underlying' state institutions, policies or practices. Initially, the purchasers of SBBs were philanthropic organizations, but, as more come on stream and the investment modelling becomes more honed, investment banks and hedge funds are starting to buy in (Governing, 2013). Goldman Sachs has developed these sorts of investments as a distinctive risk profile and invested heavily in three SBB issues in the United States (Delevingne, 2014). The company (Goldman Sachs, nd) describes the GS Social Impact Fund as providing investors with 'an opportunity to deploy capital to address a range of pressing social challenges in the US, while also seeking a risk-adjusted financial return'.

Conclusion

On the surface, sociological debates about living standards, inequality, the pricing of household utilities, changes in labour market contracts and the reorganization of state

welfare services have little to do with high finance and are certainly not bracketed together with markets for interest rate futures and options. We have seen utilities pricing, flexible labour markets and the welfare state bundled together, as part of a catch-all critique of 'neoliberalism', or as a part of broader periodization of modernity – late, liquid, second, or otherwise (Bauman, 2000; Beck, 2006; Giddens, 1990).

Our proposition is that there is a sharper, calculative commonality to be identified. Financial derivatives have emerged from an arcane sector of the economy. They are now a way of conceptualizing and organizing social relations. But our point is not simply that we can find a higher-order commonality in a set of apparently discrete changes. It is that the derivative dimension draws these diverse activities into common purpose: the search for yield on financial investment. For investors in liquid assets, the returns on social benefit bonds are being commensurated with returns on subcontracting, and further with those on ABS derived from household auto and student loans and utility payments, and those on health insurance. Within models of VaR and CAPM, their risk-adjusted rates of return must be 'competitive'. Indeed, as these services then become the basis for securitization and other financial instruments, they are drawn explicitly into financial markets. Lepinay (2011: 33) calls it the 'tyranny of the formula':

> Banks are in a race against other financial service firms, but they are also in a race against themselves: they have to survive the tyranny of the formula they have sold and make sure that when the time comes, they can return the client's capital and its formula-based performance.

A critical social consequence is that rate of return enters directly into the determination of service provision and activities and attributes which seemed to be outside capital's reach. The pricing of electricity and the fees on credit cards, and indeed the business model on which many of the services are delivered, is driven not by the costs of service provision, but by a calculation of the required competitive rate of return on the bonds issued on the basis of electricity bills and credit card debt, and so forth. The activities within the state to be funded by social benefit bonds will be those which are discretely and unambiguously measurable and can provide an expected rate of return comparable with utilities-backed securities or private equity investments. Those that cannot be so measured or do not generate a sufficient rate of return, even if they might be unambiguously socially beneficial, will not get funding. And in programmes that do get funding, there need to be the practices of statistical stringency. Even though it may be known ex ante that an intervention will be beneficial (albeit of unknown degree) there must be a control group deprived of the intervention, for statistical verification. Increasingly, the search for yield may come to drive social policy.

For capital, these 'strange' investments potentially offer risks different from those found in the stock exchange and other asset classes that cycle in parallel with the general level of profits and with the overall rate of economic growth. These new assets potentially become part of a more diversified portfolio of risks than investors generally held in 2008 at the time of the market crash. But the critical question, for which there is yet no answer, is whether the risks and returns on these new assets will stay distinct, and fulfil a role as risk diversification (with the current pension fund calls for infrastructure to become a new frontier for long-term investment as an example), or whether financial

innovation will engulf novel domains in a totalizing way, one which sees those assets developing the characteristics of more conventional liquid assets.

For ordinary people, the logic of the derivative reveals that they are being decomposed into a range of risks and a range of assets, and their aggregation is, in the first instance, as bundles of exposures: as an input into a security backed by student debt or electricity bill payments, as much as an input into the workplace. Issues of social inequality in terms of differences in income, housing, education, and so forth are profiled not as objects of state policy, but as differing financial risks, manifesting in the tranches (triple A, B+, junk, etc.) into which people's student debt and electricity bill payments will be classified. Indeed, it can be said that increasingly, in a financialized world, people live in tranches. Moreover, the logic of derivatives also leads to the individual being allocated a social role which includes elevation of that individual's tranch – of becoming more credit-worthy (Beggs et al., 2014) – so increasing the financial yield of the assets of which their attributes form part.

We can observe at the core of social policy, and especially manifest in the dictums of the 'Big Society', the state's intention to ensure that assets backed by household attributes are, and remain, low risk and hence considered in markets as 'safe'. One of the lessons of the global financial crisis was the danger of permitting households to take on mortgages they could not repay, for this practice crashed the MBS market with profound wider ramifications. Part of the regulatory reform packages seen around the world has been the implementation of restrictions on certain lending practices to households. Part also has been to place higher expectations on individual borrowers to meet financial contracts. In most countries, this expectation is framed as an agenda of financial literacy; in some, notably the USA, it has also involved tightening household bankruptcy laws to ensure people are meeting their financial risk management responsibilities and continuing to meet their contractual payments (Beggs et al., 2014).

A critical element here has been the promulgation of a culture of individual responsibility as a moral code. Perhaps this code, leading to higher labour market productivity and keeping people 'on payment' in their debt, insurance and utility repayments, is central to the building of a spectrum of low risk financial assets that it is hoped will buttress financial markets against the next crisis. If so, it would certainly reveal how integral the derivatives logic has become to contemporary social and economic reality, and to what Randy Martin (2002) more than a decade ago presciently called the 'financialization of daily life'.

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Notes

1. Reference here is to notions of both derivatives transmitting information within the efficient markets hypothesis and the risk management (dynamic hedging) attributes of derivatives found in the Black-Scholes model of options pricing.

2. For a significant critique of this, see Knafo (2009).
3. The exception is credit default swaps (CDS). Before the crisis, CDS were treated as insurance against defaults because companies diversified their default risks by swapping exposures. They continue in this role. However in the secondary market that emerged in the 2000s they were a discrete asset class, to be held in diversified portfolios. CDS were effectively a bet that any default would be localized and small; not global and systemic. When banks like Lehman Brothers defaulted largely due to their exposure to CDS, the notion of financial markets offering insurance against their own failure was revealed as incoherent.
4. See King and Rime (2010) for an explanation of the reasons for growth.
5. Lepinay captures the imaginary of the derivative (2011: xvii) '…derivations are shifts and flights from existing frames. The shifts are designed to benefit from the stability engineered by the frame without incurring the costs of instituting this stability.'
6. The social meaning of the derivative form is the subject of Randy Martin's forthcoming book *Knowledge, LTD: Toward a Social Logic of the Derivative* (Duke University Press).
7. In its April 2005 report, the IMF now-famously contended that 'the household sector has increasingly and more directly become the "shock absorber of last resort" in the financial system' (2005: 5).
8. Private equity buyouts – reprivatizing listed companies – are also part of the current trend, where the company is disaggregated into its component elements, and each of these re-sold. This decomposition is an expression of a derivative logic.
9. Butler (2010: 159) suggests that 'performativity not only fails, but that it depends on failure'.
10. The CME Group (formerly the Chicago Mercantile Exchange) currently trades temperature futures and options for 24 US cities, 11 in Europe, six in Canada and three in each of Japan and Australia. Futures and options on frosts, snowfall, hurricanes and rainfall are currently restricted to US cities (CME Group, nd). With vast sums of money riding on weather measurement, in the USA weather monitoring has shifted from the state (the National Weather Service) to an industry with an estimated 350 companies and combined annual revenue of USD3 billion per year (Wharton Business School, 2013).
11. The market was recently estimated at USD12 trillion in outstanding contracts (Wharton Business School, 2013).
12. Along with this development has been the emergence of corporate bookmakers, listed on national stock exchanges.
13. Central here is the development of value-based insurance design and the development of exchanges in the health insurance industry; Buttorff et al. (2013).
14. ABS (and MBS) are like bonds, but they have a critical dimension – they trade the risk of default: the person who buys the security takes on the risk of households defaulting. This is why sub-prime mortgages were issued knowing default was likely – because the organization issuing the mortgage had transferred the costs of default.
15. The Federal Reserve will continue buying MBS at the rate of USD45 billion per month until conditions 'normalize', signalling that MBS purchases are critical to ongoing economic growth (Harding, 2013).
16. Hedge funds and private equity firms have entered the real estate market buying cheap, foreclosed houses and selling securities backed by the rental income stream (Gottesdiener, 2014).
17. In the United States issuance of ABS increased from USD140 billion in 2008 to USD200 billion in 2012, albeit this figure is well short of the $750 billion in 2005 and 2006 (SIFMA, 2013).
18. There are exceptions. Fantex Inc. has started securitizing the incomes of professional athletes. The company 'signs a contract with an athlete to acquire a minority interest in their brand and builds a plan with a goal to increase its value'. It then sells tracking stock in itself 'that is linked to the economic performance and value of the brand of a professional athlete – such

as income earned from contracts, endorsements and appearance fees' (Fantex, nd; see also Isenberg, 2013).

19. The distinctions are by no means clear, and the phenomenon of 'sham contracting' abounds (Bogg, 2012; Wallace, 2009).
20. In Britain, the use of these contracts has grown dramatically. According to Van Wanrooy et al. (2011: 10), 11 percent of workplaces with 100 or more employees used zero hours contracts. Kuchler (2013) reports further that in 2013 'there are now almost 100,000 zero hours contracts used in NHS hospitals, up 24 per cent in the last two years'.
21. These are not stand-alone derivative contracts per se, but in financial markets a convertible bond (which gives the owner the right but not the obligation to convert the bond to a share) is understood as an embedded option.
22. Such as Serco, G4S and Capita.
23. For a summary, see UK Cabinet Office (2013). SBBs also had much to do with the Social Investment Taskforce established in 2000 by Gordon Brown as Chancellor.

References

Bauman Z (2000) *Liquid Modernity*. Cambridge: Polity Press.

Beck U (1992) *Risk Society: Towards a New Modernity*. London: Sage.

Beck U (2006) *The Cosmopolitan Vision*. Transl. C Cronin. Cambridge: Polity Press.

Beggs M, Bryan D and Rafferty M (2014) Shoplifters of the world unite! Law and culture in financialized times. *Cultural Studies*. Available at: http://dx.doi.org/10.1080/09502386.2014.886480

BIS (2013) *Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity in 2013 – Final Results*. Available at: http://www.bis.org/publ/rpfx13.htm

Bernanke B (2013) Transcript of press conference, 19 June. Available at: www.federalreserve.gov/mediacenter/files/FOMCpresconf20130619.pdf (accessed 10 February 2014).

Bernstein P (1992) *Capital Ideas: The Improbable Origins of Modern Wall Street*. New York: Maxwell Macmillan International.

Bogg A (2012) *Sham Self-employment in the Supreme Court*. Oxford Legal Studies Research Paper No. 36/2012. Available at: http://ssrn.com/abstract=2081967

Breen R (1997) Risk, recommodification and stratification. *Sociology* 31(3): 473–89.

Bryan D, Martin R and Rafferty M (2009) Financialisation and Marx: Giving capital and labour a financial makeover. *Review of Radical Political Economy* 41(4): 458–72.

Bryan D and Rafferty M (2013) Fundamental value: A category in transformation. *Economy and Society* 42(1): 130–53.

Butler J (2010) Performative agency. *Journal of Cultural Economy* 3(2): 147–61.

Buttorff C, Tunis S and Weiner J (2013) Encouraging value-based insurance designs in state health insurance exchanges. *American Journal of Managed Care* 19(7): 593–600. Available at: http://www.ajmc.com/publications/issue/2013/2013–1-vol19-n7/Encouraging-Value-Based-Insurance-Designs-in-State-Health-Insurance-Exchanges#sthash.jHjesS1L.dpuf

Callon M and Muniesa F (2005) Economic markets as calculative collective devices. *Organization Studies* 26: 1129–250.

Cameron D (2010) *Our Big Society Agenda*. Speech, 19 July. Available at: http://www.conservatives.com/News/Speeches/2010/07/David_Cameron_Our_Big_Society_Agenda.aspx

CME Group (nd) *Weather Products*. Available at: http://www.cmegroup.com/trading/weather/

Delevingne L (2014) Goldman Sachs, hedge fund billionaire back $27M social impact bond. CNBC, 30 January. Available at: http://www.cnbc.com/id/101377537

Fantex Inc (nd) Available at: https://fantex.com/

Flaum DB and Klyman ML (2000) Health care receivables securitization: Structuring issues and future trends. *Commercial Lending Review* 13(3): 25–9.

FSB (Financial Stability Board) (2013) *OTC Derivative Market Reforms: Sixth Progress Report on Implementation*, 2 September. Available at: https://www.financialstabilityboard.org/publications/r_130902b.pdf

Fudge J (2006) Fragmenting work and fragmenting organizations: The contract of employment and the scope of labour regulation. *Osgoode Hall Law Journal* 44(4): 609–41.

Giddens A (1990) *The Consequences of Modernity*. Cambridge: Polity Press.

Goldman Sachs (nd) *GS Social Investment Fund*. Available at: http://www.goldmansachs.com/our-thinking/focus-on/impact-investing/touts/fact-sheet.pdf

Gottesdiener L (2014) Wall Street's hot new financial product: Your rent check. *Mother Jones*, 10 February. Available at: http://www.motherjones.com/politics/2014/01/blackstone-rental-homes-bundled-derivatives

Governing (2013) *Goldman Sachs Weighs in on Social Impact Bonds*, 14 November. Available at: http://www.governing.com/news/headlines/gov-goldman-sachs-weighs-social-impact-bonds.html

Harding R (2013) Jackson Hole: Fed urged to keep buying mortgage-backed securities. *Financial Times*, 23 August.

Hilton R (ed.) (1976) *The Transition from Feudalism to Capitalism*. London: Verso.

Hulse C (2003) Threats and responses: Plans and criticisms; Pentagon prepares a futures market on terror attacks. *New York Times*, 29 July. Available at: http://www.nytimes.com/2003/07/29/politics/29TERR.html

IMF (International Monetary Fund) (2005) *Financial Stability Report*, April. Available at: https://www.imf.org/external/pubs/ft/gfsr/2005/01/pdf/chp1.pdf

Isenberg M (2013) *The Ultimate Money Player*, 29 October. Available at: http://coachgeorgeraveling.com/the-ultimate-money-player/

Jobst A (2008) What is securitization? *Finance & Development* September: 48–9. Available at: http://www.imf.org/external/pubs/ft/fandd/2008/09/pdf/basics.pdf

King M and Rime D (2010) The $4 trillion question: What explains FX growth since the 2007 survey? *BIS Quarterly Review* December. Available at: http://www.bis.org/publ/qtrpdf/r_qt1012.htm

Knafo S (2009) Liberalisation and the political economy of financial bubbles. *Competition & Change* 13(2): 128–44.

Kuchler H (2013) Employers increase zero hours contracts. *Financial Times*, 7 April. Available at: http://www.ft.com/intl/cms/s/0/04a86a6c-9f8a-11e2-b4b6–00144feabdc0.html#axzz2X2wHOViK

Lazonick W and O'Sullivan M (2000) Maximizing shareholder value: A new ideology for corporate governance. *Economy and Society* 29(1): 13–35.

Lepinay VA (2011) *Codes of Finance: Engineering Derivatives in a Global Bank*. Princeton, NJ: Princeton University Press.

McKenzie D (2011) The credit crisis as a problem in the sociology of knowledge. *American Journal of Sociology* 116(6): 1778–841.

Martin R (2002) *The Financialization of Daily Life*. Philadelphia, PA: Temple University Press.

Martin R (2014) What difference do derivatives make? From the technical to the political conjuncture. *Culture Unbound* 6: 189–210. Available at: http://www.cultureunbound.ep.liu.se

Priomha Capital (2012) *Information Document – Fund 1. Cloney Multi-sport Investment Fund*. January. Available at: http://www.priomha.com/pdf/Priomha%20Capital%20Information_%20January%202012.pdf

SIFMA (Securities Industry and Financial Markets Association) (2013) *US Asset Backed Securities Issuance*. Available at: http://www.sifma.org/uploadedFiles/Research/Statistics/StatisticsFiles/SF-US-ABS-SIFMA.xls?n=21330

SIFMA (2014) *US Mortgage-Related Issuance and Outstanding*. Available at: http://www.sifma.org/research/statistics.aspx

Standard & Poor's (2013) *A Strengthening U.S. Economy is Likely to Bolster U.S. Consumer ABS Fundamentals*, 21 March. Available at: https://www.globalcreditportal.com/ratingsdirect/renderArticle.do?articleId=1099914&SctArtId=170826&from=CM&nsl_code=LIME

Standard & Poor's (2013[2004]) *Trade Receivables Criteria: Special Considerations For Health Care Receivable-Backed Transactions*. (First published 1 September 2004; reviewed and reissued 23 May 2013). Available at: https://www.globalcreditportal.com/ratingsdirect/renderArticle.do?articleId=1148852&SctArtId=175225&from=CM&nsl_code=LIME

Standard & Poor's (2014) *New Structured Finance Opportunities Will Push the Boundaries for Securitization across Latin America in 2014*, 30 January. Available at: https://www.globalcreditportal.com/ratingsdirect/renderArticle.do?articleId=1252568&SctArtId=210845&from=CM&nsl_code=LIME

Standing G (2011) *The Precariat: The New Dangerous Class*. London: Bloomsbury.

Taleb NN (2007) *The Black Swan: The Impact of the Highly Improbable*. London: Random House.

Tett G (2013) *An Interview with Alan Greenspan*, 25 October . Available at: http://www.ft.com/intl/cms/s/2/25ebae9e-3c3a-11e3-b85f-00144feab7de.html#axzz2yYFEgNby

UK Cabinet Office (2013) *Social Impact Bonds*, 16 May. Available at: https://www.gov.uk/social-impact-bonds

Van Wanrooy B, Bewley H, Bryson A et al. (2011) *The 2011 Workplace Employment Relations Study: First Findings*. London: Department of Business, Innovation and Skills. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/175479/13–535-the-2011-workplace-employment-relations-study-first-findings1.pdf

Wallace LLP (2009) *Sham Contracts to Avoid Employment Status*, April. Available at: http://www.wallace.co.uk/employment/legal-employment-updates/sham-contracts-to-avoid-employment-status/

Wharton Business School (2013) *Today's Forecast for the Weather Business: Increased Revenues and a Focus on Innovation*. Available at: http://knowledge.wharton.upenn.edu/article.cfm?articleid=3229

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