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The Ontology of Finance: Price, Power, and the Arkhéderivative

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1. FINANCE POWER?

The 2008 financial crisis presented two overt lessons: Lesson One is that the derivatives markets presents a *systemic* risk to national and world economies; Lesson Two is that the relative *size* of these markets is a fundamental risk to geopolitical as well as economic security. The numbers are indeed remarkable: the notional total value of the derivatives market at the end of 2012 was $694.4 trillion.[1] Compare this to the $71.7tn global market value of the 'real economy' of goods and services, Gross Domestic Product (GDP), for 2012—just over one-tenth of the face value of the

1. Bank of International Settlements (BIS), 'Table 23A: Derivative financial instruments traded on organised exchanges', June 2013 [www.bis.org/statistics/extderiv.htm] and 'Table 19: Amounts outstanding of over-the-counter (OTC) derivatives', May 2013, www.bis.org/statistics/dt1920a.pdf.

derivatives market, give or take a couple of trillion dollars.[2] The notional value of directly-traded off-exchange derivative markets—Over-the-Counter (OTC) trading—alone amounted to $642.1tn, a sum about seven times greater than global GDP.[3] While impressive, these headline figures need to be qualified: they represent the sum total of claims *traded* on the market, not how much would have to be paid were everyone in the market to immediately cash-out. This latter 'gross market value' at end-2012 is estimated at $24.7tn,[4] just under four percent of the notional value of the market or just under a third of global GDP; or, for further comparison, slightly more than the combined GDP of the two largest national economies that year, the USA ($15.7tn) and China ($8.2tn). Furthermore, since contracts on the derivatives markets often cancel each other out, for reasons presented later, the *net* credit exposure of the OTC derivatives market and its 'cash' value is estimated to be $3.6tn at end-2012—about 0.6

2. The World Bank, 'World Development Indicators: Gross domestic product 2012', databank.worldbank.org/data/download/GDP.pdf.

3. International Swaps and Derivatives Association (ISDA), *OTC Derivatives Market Analysis Year-End 2012*, June 2013 (Updated 9 August 2013), www2.isda.org/functional-areas/research/studies/. Removing foreign exchange (FX) contracts and accounting for double reporting, ISDA reports that the net face value of the global OTC derivatives market at end-2012 was $417.4tn. The notional value for options and futures exchanges for 2012 are estimated to be $35.8tn and $26tn respectively.

4. BIS, 'Table 19'.

percent of the notional value; a sum comparable with Germany's $3.4tn GDP, the fourth largest in the world.[5]

These figures and comparisons are striking. What they index is a key feature of the derivatives market: that the notional value of traded contracts amplifies their credit exposure by two orders of magnitude. This multiplication is in part explained by the trade being one of contracts of ownership *claims* rather than direct ownership at full cost: similar to buying a lottery ticket for a multi-million jackpot at the price of a couple of local currency units, the claimed or notional worth of a derivatives contract can be any multiple of its cost.[6] Yet, even at this latter amount of net 'exposure', the political issue brought into relief by these figures is that the pecuniary magnitude of derivatives markets in total is on a par with all but the most economically powerful national jurisdictions in which they are nominally located and which, assuming the power supremacy of state sovereignty, legislate over them.

To return to Lesson One, however, that final authority is precisely what is weakened—if it is not in fact

5. O. Kaya, 'Reforming OTC derivatives markets', Deutsche Bank Research, 7 August 2013, 14, www.dbresearch.com/PROD/DBR_INTERNET_EN-PROD/PROD0000000000318054.pdf.

6. The analogy follows Stephen Figlewski's popularising explanation: 'Saying there's $668 trillion in derivatives floating out there [in 2008] is like saying every lottery ticket sold is worth the full value of the jackpot. If the jackpot is $100 million and lottery organizers sell 2 million tickets, "that's $200 trillion worth of lottery wealth that's circulating!" jokes Figlewski' (B. Sheridan, '600,000,000,000,000?', *Newsweek*, 17 Oct 2008, www.newsweek.com/600-trillion-derivatives-market-92275.

upended (as this article will demonstrate)—by these markets' systemic risk. Two moments of the 2008 financial crisis exemplify the systemic reach of that risk. Firstly, according to the now-standard narrative of the causes of that crisis, the complexity of derivative instruments distributing the risk of interest-bearing loans across the international financial architecture led to systemic and uncontained uncertainty in the credit-worthiness of such instruments as well as the guarantees against their defaulting.[7] Because financial instruments and their risk could not be securely priced across the sector or even per firm, financial institutions withdrew credit and liquidity from interfinancial trading from 2006, culminating in the collapse of major financial corporations in 2008. Credit also shrunk back in the wider economy of production, services, and consumption from 2006; sectors which, in the Euro-American economies from the 90s onward, had themselves been increasingly sustained by a growing debt-dependency rather than by revenue.[8] Consequently, the uncertainty

7. M. Hudson, *The Bubble and Beyond* (Dresden: ISLET, 2012); J. C. Hull, 'The Credit Crunch of 2007: What Went Wrong? Why? What Lessons Can Be Learned?', *Journal of Credit Risk*, 5.2, 2009, 3–18; C. Lapavitsas, *Profiting Without Producing: How Finance Exploits Us All* (London: Verso, 2013), 277-81; N. Roubini & S. Mihm, *Crisis Economics* (New York: Penguin, 2010), Ch.3; E. Stockhammer, 'Neoliberalism, Income Distribution and the Causes of the Crisis', *investigación económica*, LXXI.279, enero-marzo, esp. 42–5, eprints.kingston.ac.uk/23226/1/Stockhammer-E-23226.pdf.

8. About 80 percent of the global derivatives market is in the jurisdictions of the US and the EU (Kaya, 'Reforming', 4). On increasing household and corporate debt see M. Hudson, 'Government Debt and Deficits Are Not the Problem. Private Debt Is', Remarks at The Atlantic's Economy Summit,

as to the creditworthiness of all financial institutions led in 2008 to a rapid contraction not only of that sector but of the overall economy. The resulting severe economic downturn, exacerbated by 'austerity' measures in several regions, exposed the systemic centrality of modern financial arrangements to the nonfinancial economy.

The second demonstration of the systemic integration of financial markets is provided by the transnational response by states to the financial crisis. The pecuniary amounts involved pushed the crisis outside of the conventional scales and terms of operation of state financial institutions.[9] The transnational state

13 March 2013, Washington DC [michael-hudson.com/2013/03/government-debt-and-deficits-are-not-the-problem-private-debt-is/]; S. Keen, *Debunking Economics*, Second Edition (London: Zed, 2011), Ch.13; Stockhammer, 'Neoliberalism', 59–63.

9. Namely, Quantitative Easing (QE) in the US and UK, and the combination of the European Stability Mechanism (ESM) and Securities Market Programme (SMP) for the Eurozone. These policies are unconventional in terms of both magnitude and policy. With regard to magnitude, QE has resulted in a 450 percent increase in 'the Federal Reserve's balance sheet [...] rising from $920bn at the end of December 2007 to over $4.2tn at the end of February 2014'—continuing with $65bn per month rolling forward indefinitely from September 2013 (quoting from T.I. Palley, 'Monetary policy after quantitative easing: The case for asset based reserve requirements (ABRR)', PERI Working Paper Series 350, May 2014, www.peri.umass.edu/fileadmin/pdf/working_papers/working_papers_301-350/WP350.pdf). The ESM has facilitated a reserve of €500bn (about five percent of Eurozone GDP) since October 2012 for bond buy-outs and loan-provision by the EU ('Gearing up for business', *The Economist*, 12 October 2013). In addition the SMP established by the European Central Bank (ECB) in May 2010 provides unlimited purchases of government bonds via secondary markets. While both measures seem to contravene the prohibition against any form of central monetary financing of governments stipulated by the 1992 Maastricht treaty founding the EU,

the SMP circumvents this core injunction by providing a guarantee for markets of government debt (and their concomitant fiscal policies) such that the ECB's monetary provision does not directly underwrite any state's fiscal policy. Similarly, the EMS constructs a Eurowide monetary provision by centrally formalising a set of bilateral loan guarantees channeled through the EU and IMF via a dedicated Luxembourg-based finance institution. On the EMS, see C. Panico and F. Purificato, 'The Debt Crisis and the European Central Bank's Role of Lender of Last Resort', January 2013, PERI Working Papers Series 306, www.peri.umass.edu/fileadmin/pdf/working_papers/working_papers_301-350/WP306.pdf. For the SMP, see D. Gros and T. Mayer, 'Liquidity in times of crisis: Even the ESM needs it', *CEPS Policy Brief* 265 (March 2012), www.dbresearch.com/PROD/DBR_INTERNET_DE-PROD/PROD0000000000287245/Liquidity+in+times+of+crisis%3A+Even+the+ESM+needs+it.PDF; a detailed analysis of the 'bounded rationality' (250) of institutional constraints and mobility in the transnational state construction of these unprecedented provisions is given in L. Gocaj and S. Meunier, 'Time Will Tell: The EFSF, the ESM, and the Euro Crisis', *European Integration*, 35.3 (2013), 239–253.

Unconstrained by the Eurozone's institutional distinction between monetary authority and fiscal policy, QE in the US and UK follows the model set by the Bank of Japan in the early 2000s, which faced similar conditions to those confronting the central banks of major Euro-American economies after 2008: shrinking demand lowers prices, and that deflation itself leads to an effective increase in the price of debt (because deflation means the cost of pecuniary assets including debts *increases* in real terms, as then does the size of debt-servicing as a proportion of the overall economy, in turn further reducing demand and exacerbating the initial problem). With interest rates at close to zero in order to reduce bank liabilities (effectively a state subsidy for commercial banks [Lapavitsas, *Profiting*, 282]), central banks cannot further encourage lending via this mechanism and so look to stimulate the economy by direct purchasing of highly-graded financial assets such as sovereign debt bonds (also issued by the state) in order to reduce their yield and shift private credit and liquidity to elsewhere in the economy, such as equities in firms thereby providing investment. Alongside this intervention the US Fed reduced federal funds rate for borrowing by commercial banks from over five percent in mid-2007 to near-zero in December 2008 in order to stimulate market liquidity. However, because commercial banks were cautious about further downturns and credit exposure risks after the 2008 crisis, their reserves at the Fed increased from a 2001–07 level of around $19bn to $860bn in 2007–08 to $1.6tn by 2011, or 'more than 10 percent of US annual GDP' for that year compared to reserve levels of less that two percent of GDP in previous crises since the 1970s (R. Pollin, 'The Great U.S. Liquidity Trap of 2009–11: Are We Stuck Pushing on Strings?', *Review of Keynesian Economics* 1.0 (2012), 55–76, www.peri.umass.edu/fileadmin/pdf/working_papers/working_papers_251-300/WP284.pdf]).

directives formulated by the G20 in 2009 sought to systematise transparency and reduce scalar risk by requiring greater capital reserves for financial institutions or, equally, capping market exposure for firms dealing with OTC contracts.[10] But these stipulations only serve to capture and organize better the operational framework of the derivatives markets' 'efficient' allocation of capital without proscribing or fundamentally inhibiting their operations. And the reason is clear: with credit rather than revenues providing the conditions for economic expansion, finance markets are now a *condition* of national GDP. While the official sanction for the growth of finance markets is framed in terms

While that reserve reduced the Fed's balance sheet at the time of its own rapid expenditure thanks to QE, the 0.25 percent interest rate on such deposits it offered for the first time on such reserves meant that these accounts provided a direct annual subsidy of $400bn annually for commercial banks borrowing Fed funds on the one hand and parking it back in the Fed with the other. The channeling of state-generated funds to the financial sector extends beyond banking institutions: because QE mainly supports the prices of financial assets while keeping interest rates at near-zero and relying on banks to provide liquidity to business in a contracted economy with small if any increases in wages, employment levels, and savings, the net effect is a relative increase in income to those holding financial assets—preponderantly the wealthiest five percent of the population, and more emphatically so for riskier asset portfolios than for conservative ones. QE thereby sustained the primary dynamic of neoliberalism since the late-1990s of increasing concentration of income-share towards the very wealthiest via financialization (Bank of England, 'The Distributional Effects of Asset Purchases', 12 July 2012, www.bankofengland.co.uk/publications/Documents/news/2012/nr073.pdf; M.A. Gayed, 'What Wealth Effect? QE Has Helped the Rich More Than the Poor', 21 October 2013, www.minyanville.com/articles/print.php?a=52334).

10. Financial Stability Board (FSB), OTC Derivatives Market Reforms: Fifth Progress Report on Implementation, 15 April 2013, www.financialstabilityboard.org/publications/r_130415.pdf. Cf. also Kaya, 'Reforming', 4–6.

of risk-management and the provision of liquidity to all markets,[11] what the crisis itself made palpable was that it is financial markets themselves that impose the systemic entrenchment and expansion of uncontained financial risk—contagion, as it is called—and in the service of that systemic requirement the reduction of liquidity within those markets in the 2008 crisis required significant intervention by state agencies in order to maintain their general economic functioning. For example, Euro-American state support for banks in the year 2008–9 alone amounted to $14tn (about 25 percent of global GDP). Furthermore, these quantitative factors have a categorial corollary: whereas sovereign monarchs presented the greatest threat to banks in the early capitalist banking system (that of defaulting on war loans), 'today, perhaps the biggest risk to the sovereign comes from the banks. Causality has reversed'.[12] States are now subject to the distinct power of finance in a way they are to no other terrestrial entity (apart from other states, and climate change).

Even as finance and the state system constitute a nexus of power, it is nonetheless internally riven by the threat presented by the power of finance *against* state sovereignty.

11. FSB, *Implementing OTC Derivatives Market Reforms*, 25 October 2010, 8, www.financialstabilityboard.org/publications/r_101025.pdf.

12. A. Haldane and P. Alessandri, 'Banking on the state', first presented at The International Financial Crisis: Have the Rules of Finance Changed?, Federal Reserve Bank of Chicago twelfth annual International Banking Conference, Chicago, 25 September 2009, www.bis.org/review/r091111e.pdf.

If finance (represented by banking or derivatives markets) presents a threat to states, the leading questions are: Why? What is finance power distinct from modern state sovereignty? Since 'finance' here is a euphemism for a systemic market-led dynamic organization of capital accumulation, these questions cannot be taken up in terms of the motivations, gains, and losses of those individuals who effectuate financial power and its vicissitudes. Such accounts render opaque the structural and consistent operations of capital accumulation via financial markets by personifying and pathologising the logic and imperatives of capital accumulation, looking past the particular technical and juridical innovations in structure and operation that advance market capitalization. What is required is instead a *power theory of finance* that must take its lead from the operational complexity of financial markets. Most of the following article is devoted to constructing such a theory by synthesising several heterodox theories of pricing, modifying each to fabricate a nonstandard general theory of price and of the political economy of finance. The primary matrix of the argument is Jonathan Nitzan and Shimshom Bichler's identification of *capital as power*, the outline of which is followed by a mainly descriptive summary of basic derivatives construction and operations sufficient to explain how derivatives structures led to the 2008 financial crisis and, specifically, to the two Lessons elaborated above.

That overview also presents the primary features of derivatives operations in general, leading to the primary contention here, which is the identification of the schematic logic of derivative pricing as a variant of Jacques Derrida's quasiconcept of *différance*. The theory of derivative pricing thereby formulated is then contrasted to a series of other accounts which serve to elaborate and give specificity to the historical and operational institutionalization of derivatives markets which mobilise a différantial logic, not least via the praxis of capitalization they inaugurate by constructing time and price relations through one another. Most significant here is the reorganization of the relation to the future via price in general—not just within the circumscribed arena of derivatives markets, but across the entire social order. The comparative analysis also serves to modify the Derridean determination of différance, the theorization mutating with the increasingly specific elaboration of derivative operation. In particular, derivatives are shown to systemically operationalise an unprecedented modality of the wager that is intrinsic to the standard notion of betting but is theoretically and practically unavailable upon the basis of that standard notion. The specific determination of the financial condition of price returns to the initial power theory of price as instance of capitalization, therewith providing a comprehensive theory of the real of price determined not in relation to subjective or

sectorial terms but according to the universalising yet différantiating logic of capital-order's construction and operation of power—*finance-power*. The general theory of price requires the theoretical articulation of the *arkhéderivative*, on which basis the basic categories of modern political economy are then reverse-engineered as manifestations of finance-power, concluding with the redetermination of the state-finance nexus and of political futurity in terms of price magnitudes.

In the identification of the complex practices, mechanisms, and institutions of contemporary capitalism in order to revector them purposefully out of it, the argument is broadly sympathetic to Left Accelerationism.[13] That said, the general theory of price developed here is largely dedicated to the identification of capital-power's complex constitution and organization, formulating its predication on finance, and to what that entails. The revectoring required to provide the requisite political tasks is left to another occasion. Moreover, in addition to providing the comprehensive theory of capital-power necessary for any adequate formulation of a politics of Left Accelerationism (or, indeed, any politics at all adequate to capital-power now), the following argument stipulates two significant reservations as to its current formulation that together serve to retrieve

13. See R. Mackay and A. Avanessian (eds.), *#Accelerate: The Accelerationist Reader* (Falmouth and Berlin: Urbanomic and Merve, 2014). The premises and ambitions of Left Accelerationism are proposed by Alex Williams and Nick Srnicek in '#Accelerate: Manifesto for Accelerationist Politics' (347–62).

Left Accelerationism from its neohumanist tendencies: firstly, that Left Accelerationism must abandon its (admittedly ambivalent) attachment to Marxian and labour-based determinations of capitalism and political economy, because these are not the prerequisites of capital-power in general but tendentious misapprehensions of it (if such positions are not wholly incorrect with regard to the anthropological concerns they serve to articulate, nevertheless they are only incidental and partial consequences of capitalization, and not at all its operative or theoretical truth).[14] The proposition advanced here is rather that the routes to postcapitalism, and what that condition and its political economy can be, need to be instead determined in relation to 'the most advanced theoretical tools available today'. In practical terms, this now means finance in general, and derivatives in particular—not Marxism.[15]

Secondly, though more ambivalently, the following theorization of the extirpation of social norms by capital-power (a normativity that does not entail the destruction of social order but the chronic reinstitutionalisation of a risk order) casts significant doubt upon the political and theoretical adequacy of a 'neorationalist' programme to the ambitions of Left Accelerationism. That is, if neorationalism contends that social and

14. Accelerationism's ambivalence towards Marx(ism) is clearly presented in Mackay and Avanessian's 'Introduction' to *#Accelerate* (37–42).

15. Quote from Williams and Srnicek, 'Manifesto', *#Accelerate*, 353, in reference to Marx.

subjective norms can be progressively transformed by the pragmatic universalism of self-revising rational norms, that contention supposes both the authority of reason not only over conceptual thought but also over social norms, and also the revisability of social norms.[16] Yet, for reasons deduced below under the name of the risk-order as capitalization, both of these neorationalist prerequisites are at best questionable: for capital-power, though certainly not directed by theoretical reason, revises social norms to the point at which social norms lose efficacy altogether; authority of any kind is not a prevalent power-modality in the risk-order; and risk itself proscribes any tendential organization or universalist determination, however rationally determined and revisable, other than that of greater capitalization (whose rationality is not that of theoretical reason). In other words, without an accurate and complex enough account of the transformability of social norms on the side of the social itself, neorationalism is left propounding a doctrine without traction. This is not to dismiss the neorationalist proposition altogether, but it does effect an injunction: that neorationalism substantiate the relation between the construction and implementation of rational norms on the one side, and the vitiation of normativity on

16. The neorationalist position is espoused notably by R. Brassier, 'Prometheanism and Its Critics' (*#Accelerate*, 467–87) and R. Negarestani, 'The Labor of the Inhuman' (ibid., 425–66) and, elsewhere, by Peter Wolfendale. See n.89 and 133 below.

the other side—the side of the social order constituted by capital-power. If that articulation can be made, the argument here provides a basis for it.

2. THE POWER THEORY OF CAPITALIZATION

The power determination of finance sought here is theorized by Jonathan Nitzan and Shimshom Bichler. In broad terms, Nitzan and Bichler propose that capital is *directly* power because it is 'neither a material entity, nor a productive process, but rather the very ability of absentee owners to control, shape, and restructure society more broadly'—a control of productivity that involves the 'entire spectrum of power institutions', not least because the absentee ownership at its core requires complex and enforceable institutional structures across a society.[17] Capital accumulation is at once and necessarily a political fact. However, crucially for Nitzan and Bichler, the 'spectrum of power institutions' controlling productivity are not a well-organized and unified capitalist class, as a caricatural notion of a bourgeoisie might propose. On the contrary, the main conflict and power struggle in capitalism is *between* those accumulating capital, each of whom looks to do better than the other owners of capital. Capitalists do not just seek to accumulate capital nor (as liberal

17. J. Nitzan and S. Bichler, *The Global Political Economy of Israel* (London: Pluto, 2002), 10.

business dogma has it) to maximize profits, but rather to 'beat the average' represented by the normal rate of return.[18] That rate is set not just by the standard instruments such as interest rates, but also by the rate of accumulation of every company and absentee owner, who are therefore competitors for capital. Nitzan and Bichler's shorthand for accumulation by intracapitalist rivalry is *differential accumulation*, which also posits that accumulation for any one firm is locked into the spectrum of institutional arrangements at local, sectorial, or global scales.[19] The normal rate of return represents the last-mentioned global benchmark for differential accumulation, the index against which any capitalist can measure whether they are 'beating the average' or not. And, to return to its necessarily political dimension, it also indexes how the 'economic' activity of capital accumulation requires broad social cohesion: a normal rate of return supposes that 'the underlying power institutions [...] remain stable; the more stable these institutions, the more normal the rate of return, and vice versa'.[20]

Differential accumulation is a deceptively minimal axiom for what capitalism is extensively—as a system and method of capital accumulation, how it operates

18. Ibid., 11.

19. For a summary of differential accumulation, see S. Bichler and J. Nitzan, 'Differential Accumulation', in *Dissident Voice*, 28 December 2011 [bnarchives.yorku.ca/324/02/20111228_bn_da_ft_lexicon_dv.htm].

20. Nitzan and Bichler, *Israel*, 13.

systemically and in its aggregate or micro tendencies—as well as intensively, per transaction and in the sectorial and individual (corporate or personal) instantiations of intracapitalist conflict. The general explanatory theory and logic it provides for capitalization is however mostly based on geospatially organized and historical industrial-corporate capital accumulation and power agglomeration, formations to which Nitzan and Bichler's analyses are mostly dedicated. The question of the types and magnitudes of power combinations between financially-formulated capital and state sovereignty requires that this analysis and its terms be extended to the current operations and structures of finance markets. Nitzan and Bichler's framework accommodates such an extension because, as noted above, for them capital is determined through absentee ownership, and this institutionally organized claim underpins not only bonds and corporate stock but also the derivatives contract. However, a more exact determination of the power theory of finance requires specification of the operational conditions of the logic of intracapitalist conflict on the basis of the two primary aspects of its systemic ordering: *price* and *sabotage*. Taking these in turn:

Price. Following Thorstein Veblen, Nitzan and Bichler propose that capitalists' primary grasp of capital is only in relation to anticipated business earnings,

'the discounted value of future earnings capacity'.[21] Future earnings capacity is the expected flow of future revenues; the price paid now for that future income against the normal rate of return 'discount[s] this flow into present value'. As already noted, the normal rate of return is set by 'the entire spectrum of power institutions', while future earnings capacity is 'the consequence not of productivity as such, but of the *control* [emphasis added] of productivity', which in turn relies upon the particular historical and legal configuration of that power spectrum. The discount price formula thus reformulates differential accumulation as a specific magnitude, given as a price. Irving Fisher's (1907) generalisation of discounting formulas provides this last identification: price is the 'abstract financial magnitude' of a 'pecuniary asset', the latter being 'merely a claim on earnings'. In short, price 'tells us how much a capitalist would be prepared to pay now to receive a flow of money later'.[22]

Price, then, is core to the capitalist cosmology as an organising index of differential accumulation. It is 'merely the unit with which capitalism is ordered', capitalization being the pattern of that order. This cosmology is not just ordered but moreover *constituted*

21. This and two following quotations are from Nitzan and Bichler, *Israel*, 10–11. The outline of Veblen's argument from the early 1900s is from *Israel*, 31–34.

22. This quotation and those following in this subsection are from J. Nitzan and S. Bichler, *Capital as Power: A Study of Order and Creorder* (London: Routledge, 2009), 151–6.

by price and pricing rather than being the substantial source of the revenue that is priced: 'bonds, corporate shares, preferred stocks, mortgages, bank accounts, personal loans, or the registered ownership of an apartment block are simply different incarnations of the same thing: they are all income-generating entities', as is production capacity, fixed or variable capital, corporate structures, and other material terms. Capital accumulation is on each occasion organized only by and for its final cause: anticipated earnings. ('Final cause' is not Nitzan and Bichler's formulation.) All conditions for those earnings are primarily apprehended as pecuniary assets. The fungibility of the pecuniary asset as condition for capitalization will be taken up below in the elaboration of derivatives contracts. More immediately, Nitzan and Bichler's theory of price explains three primary characteristics of capitalization central to the political economy of derivatives and their markets:

> (i) Indexing the power of ownership indifferently to the specifics of what is owned, prices qua abstract financial magnitudes are 'uniform across space and time': prices from one region at one time can be compared and translated to prices from another time and place. Thanks to the fungibility of what is thereby priced, price provides a universal and transhistorical equivalence; and, in thereby presenting a 'single

quantitative architecture that cuts across time and space', capitalization is world-historical.

(ii) As the measure of an ownership claim on future revenues, price is an exact index of differential accumulation, which is to say: of social power. Through price, capitalists understand their exact place in the order of power, which is thereby quantitatively organized: price is *the* ordering element of capitalization. Such ordering should not, however, be confused with stasis or structural fixity. To the contrary: because what matters in capitalization is not what is priced but rather increasing the magnitude of price qua financial abstraction, for all its ordering and universality price structures the dynamic *re*ordering of power, countermanding traditional (notions of) social order:

> Prices enable entirely new ways of reordering society. What previously required military conquest can now be done through currency devaluation[…]. [T]he highly malleable nature of prices—i.e., their remarkable ability to go up and down—makes capitalism by far the most dynamic of all historical orders. In fact, in capitalism change itself has become the key moment of order.[23]

23. Nitzan and Bichler, *Power*, 153.

> (iii) Price is then *the* medium of power in capitalism. Capitalism is, in short, a dynamic power-ordering organized through price as its measure/medium of order and reordering (a doubling that Nitzan and Bichler call capitalism's creative order or 'creorder'). Put otherwise, price is the index and medium of a transformative power-rationality whose specific historical organization is a result of intracapitalist conflict. That always sociohistorically specific struggle is fought through the abstracting universality of price as much as through given and sought-for social arrangements, all of which are therefore transitional.

In every instance, the delocalising and dematerialising abstraction wrought by capitalization is the condition for, and the effect of, the universal and dynamic social reordering of *power* qua differential accumulation. On this account, 'all that is solid' does not 'melt into air', but is ordered via abstract financial magnitudes in and as a power-rationality that is the political real of capitalization.[24] All political mobilisation consequently

24. 'All that is solid' refers to the characterization of capitalism's abstracting and deracinating effects in *The Communist Manifesto*, Ch.1. Capitalism's abstraction of material conditions is characterized as the spiritualization or ghost dance of fetishism in the commodity analysis presented in *Capital* 1, Ch.1 §4. While both instances exemplify at source a general Marxist tendency, explicitly articulated in this section of Capital 1, to accuse capitalism of mystifying the labour theory of value that is its concrete truth, such theories are in fact themselves obfuscations of capitalization qua pricing. The tendentiously spectral-literary characterization of capitalism has been revived in relation to Marx by Jacques Derrida's *Specters of Marx*, tr. P. Kamuf (New York: Routledge, 1994 [1993]), and in relation to finance

has to determine its real and its own capacity with regard to the quantification of power as price—an initial indication of how the power theory of capitalization adapted here takes leave of Marxian doctrine, a divergence that will become more emphatic as the analysis proceeds through the specifics of derivative structures and operations.

Sabotage. Differential accumulation names the logic and dynamic of intracapitalist conflicts, more colloquially formulated as 'beating the average'. There are two effectively equivalent ways to meet this imperative: increasing ownership over future earnings—which is what pricing does—and/or ensuring that other firms do not accumulate as much as they otherwise could. The latter operation happens in two ways: sectorially,

by J. Vogl, *Specter of Capital*, tr. J. Reder and R. Savage (Stanford: Stanford University Press, 2015 [2010]).

Alfred Sohn-Rethel proposes that capitalism is a 'real abstraction' or 'real subsumption' constituting a material-social-cognitive real that it also indifferently deracinates. See *Intellectual and Manual Labour*, tr. M. Sohn-Rethel (Atlantic Highlands, NJ: Humanities Press, 1979), a thesis extended by Maurizio Lazzarato in the mid-1990s to affect ('Immaterial Labor', tr. P. Colilli and E. Emory, in P. Virno and M. Hardt [eds.], *Radical Thought in Italy* [Minneapolis: University of Minnesota Press, 1996]), and influentially taken up by Michael Hardt and Antonio Negri in *Empire* (Cambridge, MA: Harvard University Press, 2001), 254ff. A variant of the formal abstraction thesis—in which capitalism transforms a preexisting reality that is more authentically constituted in other, more immediate terms—is upheld by Nitzan and Bichler themselves in their affirmation of Cornelius Castoriadis's notion of the 'magma' of human creativity irreducible to capitalization as the condition for a political counterpower to the latter (*Power*, 20ff.). That said, it is however also Castoriadis's theorization of the nomos as the semantically organized institutional order of a society that provides the basis for identifying capitalization axiomatically rather than by material particularities, labour, or consumption (*Power*, 148–50).

competing firms' capital accumulation has to be diminished compared to one's own; globally, it requires 'limiting the average rate of growth of profit' in order to secure a differentially greater accumulation per firm *against* the average rate. Nitzan and Bichler identify this intrinsic and necessary diminution of overall growth as the *sabotage* wrought by business, the latter term meaning ownership of capital accumulation.[25]

Sabotage is the socioindustrial correlate to pricing, a systemic characteristic of capitalization, which now has to be understood as the diminishing of aggregate social productivity (that Veblen calls 'industry'): for example, taking out competitors or limiting technical or institutional capacities with patent restrictions. This holds for interfirm rivalry per sector as it does in the global and sectorial dimensions, which are all thereby interlinked: sabotage is a determinant of the normal rate of return, which indexes the systemic organization of the spectrum of power. Extending sabotage to encompass broader social organization and pricing:

> the very existence of this 'normal' [rate of return] enables even the most insignificant actors to exercise their 'natural right' for universal sabotage. Since individual capitalists, however small, can always earn the normal rate of return by simply owning a diversified portfolio, they have no reason to produce at less than

25. Nitzan and Bichler, *Power*, 246–7.

> that rate. [...] In accepting the normal rate of return as a minimum yardstick below which production should not be extended, they effectively propagate sabotage—even when they themselves do not have the differential power to back it up. Sabotage becomes invisible, 'business as usual' as they say.[26]

As a systemic condition, differential sabotage manifests itself in diverse social arrangements including unemployment, inflation, wage restraint, social fragility, education policy, immigration regulation, etc. In general terms, the normal rate of return indexes the fact that, contra Marxist and Neoclassical accounts, capitalists do *not* accumulate capital by seeking to maximize profits by increasing production, innovation, and consumption, but that differential accumulation requires compromising production as such. Business is then not just unproductive but, moreover, necessarily *counterproductive*—as are capitalist societies overall and in general.[27]

Price and sabotage, then, are respectively the financial and industrial operators of differential accumulation. It is core to Nitzan and Bichler's theorization that these aspects are not held apart as distinct dimensions of the social totality, with the first being treated by economics and the second under the banner of a politics

26. Nitzan and Bichler, *Israel*, 38.

27. Nitzan and Bichler, *Power*, 249.

incommensurate with the former. Rather, price and sabotage are coeval and mutually determining, directly constituting the organization of power across society at every scale as a necessarily integrated *political economy*.[28] This point will prove to be a primary determinant of the ontology of finance and so requires further attention.

Nitzan and Bichler establish that price directly indexes the political economy of capitalization by generalising Gardiner Means's observations of how businesses fared in the Great Depression.[29] Means demonstrated that concentrated industries, which are inflexible and set 'administered prices' relatively unresponsive to market conditions, increase their share of differential accumulation against competitive firms, whose 'market prices' are more responsive to changing market conditions. This because the prices and profits of the former 'respond[ed] only partly or not at all to market conditions', instead fixing a 'long-term target rate of profit and then back-calculat[ing] the mark-up necessary to realize this rate of return over the long haul'. Consequently, prices and profit for such firms during the Great Depression resulted in relatively small declines in prices correlated to sharp drops in productivity and employment. In contrast, firms setting 'market prices' had smaller relative drops in employment

28. Distinct in this to both Neoclassical liberalism and Marxism: cf. Nitzan and Bichler, *Power*, 13 and Ch.8.

29. This paragraph paraphrases Nitzan and Bichler, *Power*, 241–2.

and productivity, but took a larger hit on profits. For Nitzan and Bichler, this demonstration of differential accumulation via price-setting strategies makes explicit that the administering price according to mark-ups 'already embodies the power to incapacitate' the social order. That power of fiat pricing can be identified with Michal Kalecki's notion of a 'degree of monopoly', which 'measures the consequence for relative profit margins of monopolistic institutions and forces', that is, the degree of power concentrated in a firm relative to the entire spectrum of social institutions.[30] The mark-up of 'administered prices' is then not only directly the power to incapacitate by competition and the ability or not to own at a given price; it is also the direct measure of the firm's concentration of power in the entire social spectrum. The key theoretical consequence is that if price-setting advances differential accumulation via both accumulation and the concentration of social power, then *prices set the market*.

3. GENERAL OUTLINE OF FINANCE POWER

Administered prices make explicit that price is the medium of capital accumulation *qua* power-ordering. Accumulation/sabotage is organized by the absentee ownership of assets, which is not ownership of production but of price-setting. This is what power

30. See too Nitzan and Bichler, *Israel*, 39n.11

is in capitalism. By definition, such power is held by capitalists; more salient than this sociological truism is the fact that *finance* is the structural and constitutive condition for that power. Determined initially as the absentee ownership and pricing of assets, finance is also the basis for capitalism's durable yet dynamic *revision* of ownership and pricing of assets, as well as the broader institutional structures of capitalization, at three levels simultaneously:

> at the most basic level, it allows owners to lever technical change [...] as a tool of power. At a higher level it lets them use the monetary symbols of prices and inflation to restructure power. And at a still higher level, and perhaps most importantly, it permits them to reorganize power directly, by buying and selling vendible ownership claims.[31]

In contrast to other manifestations of social power, the market of vendible ownership claims—financial markets, whether or not they are explicitly characterized as such—structure institutions according to the primary 'generative order' of capitalization, a 'formula [that] is special in that it doesn't specify what [capital-power] should look like'. Indifferent to the specifics and qualitative particularities of how power is organized, markets and pricing predicated on finance enable social

31. Quotes in this paragraph are from Nitzan and Bichler, *Power*, 306–7.

reshaping and reformatting 'in innumerable ways' that 'no other ruling class has ever been able' to undertake. It is thanks to finance that the market is the condition, instantiation, and medium of the indefinitely variable, anonymising, and fungible capital-power. Or: finance is the condition and means of capital-power, and capital 'is finance, and only finance'.[32]

As the structural condition of capitalization, finance logically precedes it; and capitalization itself precedes (and exceeds) economics as the constitutive and necessary politics of that restricted regime. Or, inversely: economic practice is a restricted theoretical and practical rendition of capitalization, and capitalism is only a particular order of financialisation, meaning that it is *not the only possible one*. The analysis and politics of capitalization advanced here requires that it is *finance* that is the a priori of all historical and theoretical determinations of 'industrial capital'. Contrary to how Marxian and Neoclassical doctrines determine prices to be set by interfirm rivalry given exogenous conditions (such as supply-demand, labour and capital costs, consumption, etc.),[33] such that the supposed priority of the latter casts finance capital as parasitical, supplementary, or 'fictitious',[34] according to the power

32. Nitzan and Bichler, *Power*, 262; see too *Israel*, 36.

33. Nitzan and Bichler, *Power*, 239.

34. Marx adopted the common if ill-defined mid-nineteenth century term 'fictitious capital' in his notes from the 1860s–80s, edited by Engels as *Capital* 3 (M. Perelman, *Marx's Crises Theory: Scarcity, Labor, and Finance* [New York:

theory of price, financially-set prices are the *primary* elements for the dynamic organization of capital-power.

Praeger, 1987], Ch.6). Introduced in Chapter 25 of *Capital* 3 to designate bills of exchange contrasted against trade or exchange, fictitious capital is distinguished in kind from real capital via the paradigmatic example of interest-bearing capital (Ch.21). The owner of an interest-bearing loan does not transform the lent money into productive capital via commoditization or trade, nor is ownership of the money transferred to the borrower who makes use of it. Without commodity or monetary 'metamorphosis' in the M–C–M' concatenation, or the promulgation of social reproduction (that is, channeled through labour), for Marx the initial sum 'ceases to function as capital' in its 'reflux' back to its original owner with interest. As such, even if the borrowed money is real capital because it is transformed via commoditization, the initial loaned money is but a fictitious capital (which is also why money itself is not necessarily capital but only when it is in the process of social reproduction). Marx generalises the distinction to all prognostications of future income that do not proceed via the commodity form under the name 'capitalization', which is the 'formation of fictional capital' (Ch.29). The danger of capitalization for Marx is that the money-owner does not recognize that income is accrued from social processes but takes it wholly formally, 'something with automatic self-expansion properties'. Accordingly, Lapavitsas follows Marx in differentiating between interest-bearing loanable capital, which is 'a hard reality of the capitalist economy', and fictitious capital, by which he takes Marx to mean capitalization via the discount price formula (*Profiting*, 28–9, 161), but he also thereby discards that either route is an equally valid modality of capitalization *for the money-owner* seeking returns primarily with a view to where greater returns can be made—a process that, pace Marx, is not desocialised but, precisely, sociohistorically immersed in differential accumulation. Loren Goldner, for whom capitalization is the current value of future income, argues that fictitious capital is the primary determination of capitalism since the 1970s because of the effective marginalization of labour in dominant economies over the period. Consequently, overcoming capitalism requires not a labour-based struggle but the abolition of fictitious capital and the value-form, a proposal shared with Endnotes' call for communization (n.129 below) despite Goldner's other theoretical disagreements with them ('Fictitious Capital and the Transition Out of Capitalism', 2005, home.earthlink.net/~lrgoldner/ and 'Once Again, On Fictitious Capital', 2003, home.earthlink.net/~lrgoldner/onceagain.html). While not a Marxist, Hudson deploys the notion of fictitious capital mainly to describe the growth of 'paper wealth' over the interests of the capitalism of industrial production ('From Marx to Goldman Sachs: The Fictions of Fictitious Capital', 30 July 2010, michael-hudson.com/2010/07/from-marx-to-goldman-sachs-the-fictions-of-fictitious-capital1/).

That this renders untenable any distinction between finance capital and a putative 'real capital' ostensibly predicated on conditions exogenous to finance does not prevent analysis of how the financial sector impacts the nonfinancial sector. Quite the opposite, in fact: finance necessarily promulgates sabotage *in general*, meaning that it is an inherently counterproductive power. The capitalization of business earnings 'represents nothing but incapacitation'; or, contrasted to price as an abstract financial magnitude, 'capital is a negative industrial magnitude'.[35] To extend Nitzan and Bichler's formulation, the *positive* determination of price *qua* 'abstract financial magnitude' is on the other hand that it directly indexes capital-power's ordering and reordering.

Taking GDP to be a proxy of the aggregate representation of earnings at a state scale, the comparisons presented in the introduction above indicate that the power magnitude of derivatives markets as a whole have now exceeded that of most nation-states. States have of course been the principal matrix of political modernity since the establishment of the power supremacy of state sovereignty with the 1648 Treaty of Westphalia. If derivatives markets and states are now of the same order of magnitude of capital-power, this signals that sovereignty is no longer the supreme power in the quantitative regime of capitalization, but

35. Nitzan and Bichler, *Power*, 249.

must contend with finance power on a more or less equal footing—and states are increasingly outpriced. As Haldane and Allessandri recognise, at this historical juncture dominant power consists in the power of finance-markets as much as (if not more than) in state sovereignty (the 'as much as' here is meant literally: their respective capital-powers can be gauged by the magnitude of each as aggregate 'pecuniary assets'). That combination forms an organizational and operational nexus of dominant power that can, for ease of recognition, be called neoliberal governmentality. Such governmentality is a quasi-statist power formation which, while it is in part constituted by the established configuration of modern statehood, at the same time corrodes its primacy, as exemplified by two interrelated transformations in its primary structures: firstly, the size of contemporary finance capital, as well as its 'interconnectedness', require a transnational organization of legislative and regulatory conditions for finance. Consequently, territory as the spatial extension of state power is not an adequate basis upon which to contend with finance-power today. Put otherwise, the jurisdictional powers of nation-states are interlocked with the transnationality of contemporary finance power, corroding the boundedness and autonomy of their sovereignty (hence the importance of interstate organizations such as the Bank of International Settlements and the Financial Stability Board, which are

at the forefront of these transformations). Secondly, the power supremacy of sovereignty in authority, up to and including military and police powers, is now subject to the reordering wrought by capital-power and conditioned by finance. The magnitudes of this latter power are now large enough to substantially supervene on sovereignty as the final term of statehood and regulatory institutions.

The state-capital nexus transforming modern statehood is but one consequence of the dynamic power-rationality wrought by capitalization. Finance, to repeat, is the structural and operational a priori of capital-power's reordering—an aprioricity here called capitalization's *financiality*, operationally tantamount to prices being set only as a mark-up against other prices. The trading of contracts for future exchange of the 'absentee ownership of assets' in financial derivatives markets explicitly demonstrates this condition. While it therefore seems that the operations of finance markets concretely instantiate the a priori financiality of capital-power, now transactionally liberated from the alibi or convention of the commodity, service, or income stream as exogenous condition for pricing, any such identification has to be cautiously made. While the a priori financiality of capital-power is the *systemic* condition for capitalization, the finance markets are practical and institutional operating mechanisms and facts of capital accumulation. That is, though finance

markets are certainly constituted by the financiality that conditions capitalization and its power-rationality (its transcendental condition, in critical philosophical terminology), finance markets cannot be *directly* identified with financiality in general without category error or subreption, because the former are an institutionally specific sector of capitalization. However, maintaining the distinction between financiality as condition of capitalization and financial operations presents a problem for the argument regarding the redistribution of power between finance markets and states: the categorical distinction between financiality and financial operations advanced here means that the shifts in the relative power magnitudes between the finance markets and states do not necessarily index transformations in *what* power is, in power types. Consequently, the state-finance nexus could be deemed to be wholly coherent and to mark no significant change in power: just more of the same in another guise. But the caution here is not a proscription: the task of this essay is to articulate and integrate the two dimensions of finance—as a priori condition *and* as a historical fact—without directly identifying them. Yet it also seeks to demonstrate that finance markets and derivatives in particular *are* the truth of capital-power as endogenous capitalization made explicit in practice. And it is on this basis that the typological mutations of dominant power between finance markets and states can be explicitly identified.

In order to do that, more detailed elaboration of the operations, logic, and structure of derivatives markets is required.

4.1. DERIVATIVES: TRADING

The myriad derivatives structures prevalent in finance markets are of course only constructed and deployed in the service of accumulation by trading. Apprehending the principal strategies of trading provides an operational basis for understanding their construction, outlined in the next section, leading in turn to the determination of the specific logic that has reordered political economy and power ontology in the wake of the growth of finance markets since the early 1970s. But in advance of that, some basic structure and terminology need to be elaborated.

In their simplest standard (Neoclassical) formulation, derivatives are contracts between two parties whereby one side pays out a mutually agreed amount (the 'delivery price') if circumstances specified in the contract take place at a designated termination date ('maturity' or 'expiration').[36] The eventualities may be those of prices (of a commodity, company stock, interest rates) at some determined point in the

36. The technical account in this section paraphrases elements of the leading derivatives textbook in English: J. C. Hull, *Options, Futures, and Other Derivatives: Seventh Edition* (Upper Saddle River, NJ: Pearson Prentice Hall, 2009), Ch.1.

future, of cash flows or payment defaults, or other non-monetary eventualities—for example, the weather (snowfall determining skiing conditions and therefore revenue for a resort, a month of rain for agricultural production), livestock populations and disease, technological innovations, and so on. The contracted claim is contingent in a double sense: firstly, it depends upon an eventuality independent from and external to the contracted price, which is known as the underlying asset (sometimes reduced to 'the underlying'); secondly, in the prevalent sense in which the term is understood in derivatives markets, the eventuality upon which the payout depends may or may not be occasioned, meaning that the contract will lead to a gain or a loss by one party or another, but without certainty as to who will be the gaining/losing party. Gains or losses are made dependent on whether the price agreed in the contract, the delivery price, is higher or lower than the market price of the underlying (the 'spot price') at maturity. There are three principal distinct strategies of derivatives trading: arbitrage, hedging, and speculating.

Arbitrage is trading across markets in order to secure riskless gains. For example, buying an asset in one country to sell in another to take advantage of the price differentials and exchange rate across the markets. There are no costs for the arbitrageur other than transaction costs. Such trading, however, quickly eliminates the

differentials from which gains can be made, meaning that arbitrage opportunities are self-limiting.

Hedging reduces risks on a given investment either by locking down prices of assets on a future transaction with a 'forward contract', or by offsetting risks of price movement of owned assets in one direction by making gains from counter-movements of price. Hedging insures against variations in fluctuating financial rates and contingencies in supply-demand levels (crop yields, fuel prices, interest rates, monetary instability, etc.) and stabilizes contract prices.[37] Hedging also introduces a risk, because the delivery price set by the forward contract may not be equal to the spot price at maturity, to the cost of one of the signatories.

Speculation, by contrast, is accumulation by trading on market-generated price movements. The speculator buys or sells derivatives contracts in view of the gains to be made on the interplay of the current prices of the underlying, a corresponding derivative, and the difference between the delivery price and the spot price at expiration (the 'strike price'), doing so sometimes to acquire assets at less than market price. The latter strategy gives the speculator much greater leverage than the investor or shareholder who trades in the underlying asset or security at market price. Furthermore, because speculators make gains by market trading,

37. For hedging as a market-based insurance mechanism see R.L. McDonald, *Fundamentals of Derivative Markets* (Boston: Pearson Addison Wesley, 2009), §2.5.

their primary interest is in the *prices* of the assets and financial instruments rather than the underlying assets, the latter being immediately resold in order to realize them as only 'pecuniary assets'.

As speculation demonstrates especially clearly, derivatives markets in general are not markets for vending underlying assets external to them at their 'live' price, nor for investment, which looks to make gains by taking a share of profits or revenues made by the underlying asset as an element of industry, agriculture, and production (in short, in the 'real economy'). This is often the basis for criticism of speculation, along with its maximising market leverage of financial instruments over the non-financial sector, leading to distortions in pricing across all markets as well as a disregard for the fate of the underlying asset and 'the real economy' it represents. Defenses of speculation are based on its 'absorption of risk' since (i) the vending of financial instruments is based on anticipating higher returns, and (ii) speculation is the other side of hedging: the hedge that anticipates and insures against prices movement presumes a speculator who accepts the risk of the differential between spot and delivery prices as worth bearing. Moreover, since speculation exploits the price differentials (spreads) over time as well as between buyers and sellers prices, speculation 'bridges' these differentials, providing liquidity to markets where exchange and trade would otherwise diminish.

What is important here is that the derivative contract and therefore its market is dependent on the underlying in one regard only: whether or not the conditions stipulated in the contract are met. While the prices of the shares or equities of a company—and therefore investment in it—depend on the history and pathway of its profitability, productivity, growth, energy and resource costs, and so on, the payout of a derivative is determined solely by the terms set up by the contract. Unlike in investment, in speculation gains can be made from decreasing profits, a market crash, or a food shortage, if that is what the contract stipulates and regardless of any other consequences. Moreover, the underlying is but an occasion for drawing up derivatives contracts, their anonymous material. The historical, material, or qualitative particularity of the underlying is irrelevant beyond the *price* conditions set in the contract, as is its fate once the contract expires. By virtue of this endogeneity of accumulation by pricing contracts, and despite the frequent use of the terms 'investor' or 'hedge fund' to designate activity on derivatives markets, ultimately it is speculation that is the defining category for *all* derivatives contracts and their markets.

4.2. DERIVATIVES: STRUCTURES

Trading in derivatives markets relies on the operationalisation of financial instruments that practically compose them. This section presents a rudimentary elaboration of the primary mechanisms of derivative contracts, from which the general operational logic of finance markets can be extracted. It is this latter logic that will permit the institutional operation of finance markets to be articulated with financiality as the a priori condition for capitalization, in turn allowing the transformation of power wrought by these markets to be grasped. Four basic structures are presented here in order of increasing complexity: forward contracts, futures, options, and swaps. Though swaps were key instruments in the systemic dynamics leading to the 2008 financial crisis, for reasons given below, the speculative logic of finance is most evidently demonstrated by forward contracts and options, which will therefore be the main analytical focus.

A *forward contract* is the most straightforward financial derivative mechanism: the agreement to buy or sell an asset at a certain price in the future.[38] The contract itself is traded off-exchange and costs are borne at maturity. Agreeing to buy the asset is called the long position, while agreeing to sell it is the short position. The agreed price is called the delivery price (denoted K);

38. Hull, *Options*, Ch.2.

the actual price of the asset at maturity, when it will be traded, is the forward price (denoted S). In its standard account, the contract is made in view of the likely difference between delivery and forward prices yielding a profit or loss for one of the parties. In general, if the spot price is more than the delivery price then the long position makes a gain and the short position a loss. The gains and losses are reversed if the spot price is less than the delivery price. Put schematically, if the spot price of the asset at time t is S_t, then:

—the long position (having agreed to buy the asset) at time t is worth $S_t - K$

—the short position (having agreed to sell the asset) at time t is worth $K - S_t$

Illustration

Imagine the cover price of Collapse is set in response to demand.

A forward contract is made at time t_0 for delivery of 25 copies of Collapse with a delivery price of 500 Local Currency Units (lcu), anticipating a market price of 20lcu on its long-awaited publication.

Over time t the spot price S_t of Collapse increases from 20lcu to 24lcu because that issue of Collapse will include a new essay by Quentin Meillassoux.

At maturity, the long position immediately sells all 25 copies at the market price at time t, making a gain of $25 \times (24-20) = 100$lcu, a profit of 20 percent (excluding transaction costs for setting up the contract).

> Equally, at maturity the short position sells an asset then priced at 600lcus for the forward price of 500lcus, bearing a loss of 100lcu at the current market rate.

This straightforward illustration demonstrates that derivatives are so-called because they stipulate a price in relation to the spot price which is itself set by the market in the underlying (here, the impending issue of Collapse). What the relative simplicity of the forward contract also exposes is the exogeneity of the underlying to speculative accumulation: while the cover price of Collapse in the illustration is set by content-related demand, the speculator taking the long position has no interest in Meillassoux's essay itself, as demonstrated by her immediately selling the acquired copies of Collapse at the market rate at maturity. This is a necessity of speculative accumulation: there is no pecuniary gain unless the acquired asset is converted into revenue (taking an interest in the content of the publication by holding a copy of Collapse back from the market to read it reduces the overall income). That is, while in this case it is Meillassoux's reputation that drives up the price of the underlying of the forward contract in the imagined competitive market, the speculator is interested only in the increase in price for *whatever* reason. For example, increases in printing costs could lead to the same gains for the speculator even if they mean a reduced net income for Urbanomic. The derivative is

exogenous to the causes for price movements of the underlying other than how they shape the *pricing* of the underlying. Speculation by derivatives is in general content-indifferent, which, again, is why it is not investment. It depends *only* on the spread between the forward price and the spot price at maturity, the latter being set by the market for the underlying.

Futures contracts are forward contracts whose trade is guaranteed not by the counterparties but by the exchange on which the contract is made, as is delivery date (to the month). Traded on an exchange, prices of futures contracts vary according to 'market forces':[39] the delivery price of an asset (K) goes up if more traders take a long position (that is, agree to buy an asset at a future date at delivery price) than short positions on it. The contract is then less profitable for the long position in relation to an anticipated increase in the spot price ($S_t - K$ decreases or is negative), but more profitable for the short position ($K - S_t$ increases). Equally, the preponderance of short over long positions (i.e., more selling than buying of contracts at a given delivery price in expectation that K is too high) drives the delivery price down.

In other words, futures markets price forward contracts according to the derivative markets' price movements as well as those of the underlying in its own market. Because of this 'self-correction', the futures

39. Hull, *Options*, §2.3.

market is speculative in the sense that it 'rewards' risk-taking on contingent claims: greater gains are to be made betting on a delivery price before there is a preponderant view that it is set too low and before the price of the underlying asset rises to meet it. In the standard account (which will be usurped below), both long and short positions are taken in their respective *expectations* of making a gain by advantage of this spread. As for forward contracts, these anticipations are obviously contradictory (they cannot both be right), but their common condition is that the eventuality upon which a gain or loss is occasioned depends upon the strike price which is necessarily and constitutively unknown at the time the contract is made. Insofar as that unknown comes to be determined by the pricing of the underlying in its primary market, the derivative's *exogenous* relation to that price is that of a traditionally-conceived wager: the throw of the dice does not depend on the bet made upon it, nor does the speed of the raindrop dripping down a window. By this account, derivatives are then but wagers on a price differential over time, an interpersonal and subjectively-constituted reckoning on circumstances external to the wager itself, predicated upon the non-knowledge of the future.[40]

40. See J.M. Keynes, *A Treatise on Probability* (London: Macmillan, 1921), Ch.2, for probability as a determination of the degree of rationality of a subjective 'belief' in an as-yet-uncertain proposition given known propositions (evidence). Following the early analytical philosophy of his immediate milieu, probability for Keynes is however the degree of rational belief between propositions (as 'objects of knowledge and belief') and not,

The endogenous price movement of the futures markets is akin to odds on a bet getting shorter or longer depending on what other bets are placed.

As will be seen below, whether derivatives are wagers and, if so, what kind of wagers they are, is a primary determinant of the power ontology concomitant to capitalization's financiality. By way of previewing that extended discussion, it need only be noted that condemnation of derivatives markets as nothing but 'wagers on the movement of prices', prevalent after the 2008 crisis, was common enough at the time of the establishment of the Chicago Mercantile Exchange (CME) and its institutionalisation of futures trading in 1973 (elaborated further below).[41] Gambling—legally defined as a contract settled in cash only—was however proscribed in Illinois at the time, a restriction circumvented with paradigmatic consequences by specifying that any futures contract must be able to be settled by physical delivery of the underlying itself, even if in practice 'delivery was seldom demanded'.[42] That is, derivatives were legally sanctioned by securing them

as with the wager on future contingencies proposes, between propositions and events.

41. D. MacKenzie, *An Engine Not a Camera: How Financial Models Shape Markets* (Cambridge, MA: MIT Press, 2006), 14–15, 144–5, and 252 for the quoted characterisation.

42. MacKenzie, *Engine*, 145. The vicissitudes of establishing institutional derivatives market in the United States and the struggles of its proponents—notably, founder of the CME Leo Melamed—to differentiate it from gambling is presented in MacKenzie, *Engine*, Ch.6.

as an attenuated mode of trade in the underlying to which they refer, thereby recusing the exogeneity of the derivatives contract to the trade in the underlying. This inhibition to the development of derivatives markets was removed in the US with a 1982 Senate ruling that it was precisely the cash settlement of derivatives trading that demarcated futures contracts from trading on stock indices such as the Dow Jones, a distinction correlative to their regulation by the Commodity Futures Commission rather than the Securities and Exchange Commission (SEC), which itself cleared the way for the regulatory variances between derivatives markets and stock markets.[43]

Options are contracts for the right to buy (call) or sell (put) underlying assets without necessarily having to trade the underlying asset at the agreed price (now called the 'exercise price' or 'strike price') by the agreed date (the 'exercise date' or expiration).[44] Unlike forward contracts, there is a contract fee for making an option which is lost if the option is not taken. Options are primarily instruments for hedging. The call option (the right to buy) on the underlying is purchased (long position) in anticipation of the price of the underlying asset increasing from the strike price. If it does not, the trader has to make the calculation as to whether the loss from taking the long position is

43. MacKenzie, *Engine*, 172.

44. Hull, *Options*, Ch.1.

greater or less than the loss made from the difference between the spot price and the strike price. The put option (the right to sell) is purchased anticipating a fall in price. To take the short position—to sell either call or put option at a later date—is to *write* the option: cash is taken upfront in exchange for the counterparty's right to buy/sell the option, taking the consequence of losing out on the gains (or not taking what would be losses) of the underlying at the option's expiration. For the trader writing the option, it is more profitable to sell the option for a gain then hold on to the security and sell it at a lower price. However, it may be that if the increase in the price of the security is less than that in making the initial option trade, the option is not exercised and the trader writing the option holds both the initial contract fee and the asset at an increased price, which they can then immediately sell.

Illustration

Anticipating Collapse will publish a new essay by Quentin Meillassoux in three months and generate an upward surge in Urbanomic's share prices (listed as URB), a trader takes a long position on 100 call options (that is, purchases the right to buy) for URB shares at a strike price of 50lcu a share. The exercise date is four months from taking the position.

URB's current share price is 45lcu and the option price is 2lcu. The notional value of the option is 5000lcu but the actual credit exposure of the derivative contract—the price of the option itself—is 200lcu.

Four months later: Meillassoux's article proves to be of great importance and URB's equity price rises to 55lcu per share at the option's expiration date.

Exercising the right to buy URB shares at the exercise date (and immediately selling them on the market on which it is listed) results in a gain of 500lcu (the gain per share is 55–50 = 5lcu × 100 shares). Subtracting the option price of 200lcu and excluding transaction costs, the net gain for the trader taking the long position on the call option on URB is 300lcu. That is, the trader makes a 150 percent profit on the option after four months.

The counter scenario is that if, say, Meillassoux's article is superannuated before the option's expiration by the publication of a devastating pre-critique of his long-anticipated *L'Inexistence Divine*, URB's equity price drops to 43lcu per share.

Having taken the long position on the call option with a strike price of 50lcu per share, the trader faces the prospect of then making 43–50 = –7lcu per share.

With the option having been taken for 100 shares, this would lead to a net loss of 700lcu. At that point, it is a smaller loss for the trader to not exercise the call option and just lose the initial outlay of 200lcu.

If the loss from exercising the call option is less than the loss from not doing so, then it is still worth exercising the call option:

Even though Meillassoux's article is theoretically redundant, continuing interest in it and other material in Collapse leads to URB's share price climbing to 51.25lcu by the expiration date.

The trader then makes 125lcu (51.25–50 = 1.25 per share × 100 shares) if the call option is exercised.

Though this is less than the 200lcu to take the long position on the call option, the net loss of 75lcu (125lcu from exercising the call option at a market price of 51.25lcu less the 200lcu for taking the long position) is still a smaller loss than *not* exercising the call option (200lcu).

This illustration is formulated with the trader taking the long position on the right to buy the security (the call option), but there are four basic combinations for option positions: long or short positions on call or put options on the underlying.

Though fully established as financial instruments since the inauguration of derivatives exchange trading in mid-seventeenth century Amsterdam and in London half a century later, option pricing was the key instrument for sanctioning the institutionalization of derivatives markets with the establishment of the Chicago Board Options Exchange in 1973 and the standardisation of pricing with the Black-Scholes-Merton

model (elaborated in §5 below). That institutional consolidation overcame the 'close correspondence between option contracts and gambling', wherein legislation on the latter, dating as far back as the Romans, set precedent for legislation on the former.[45] The multiple routes for payout on the option are initial indications of the multiplying paths constructible with this class of derivative, the fabrication of which broadly constitutes the field of financial engineering. Options with straightforward payoff schedules are designated 'plain vanilla'; 'exotic options' have more complex payoff structures structured by more or less elaborate composite of sequenced expiration dates, conditional

45. G. Poitras, 'The Early History of Options Contracts', in W. Hafner and H. Zimmermann (eds.), *Vinzenz Bronzin's Option Pricing Models* (Berlin: Springer, 2009); see also MacKenzie, *Engine*, Ch. 5. The first modern legislation on options was passed in 1697 to address various manipulations of price-setting on exchanges in London, and to distinguish it as a regulated market against its Amsterdam rival. The history of these derivatives can however be tracked back to before these modern mercantile institutions to Thales of Miletus who, in Aristotle's account (*Politics* 1259a), demonstrated that rational philosophy at its origin could generate wealth if the philosopher so chose. Thales reserved olive presses in the winter ahead of what he predicted by the rational calculation of astronomy would be a large harvest, renting them in the subsequent harvest 'on what terms he liked' thanks to the indeed bounteous yield of olives. For Thales, the purpose of this early demonstration of speculative hedging was that philosophers have other interests than wealth generation, a lesson that continues to be observed in the hostility to instrumental rationality; for Aristotle, precursor here to Kalecki, it serves as an example of 'taking an opportunity to secure a monopoly [that] is a universal principle of business', a determination that gives priority to the political economic result of Thales's demonstration and overlooks his primary lesson that reason is posits a contingent relation to the future *qua* financialisation in the service of capital-power, exposing at the origin of philosophy the latter's identity with instrumental reason from which philosophy is then only contingently and not necessarily distinguished.

expirations, linkages between different assets, options, and criteria, the locking in and out of exit routes from the option, and so on.[46]

Swaps are highly complex off-exchange (OTC) futures contracts whose underlying is not asset prices but cashflows.[47] Invented in the early 1980s, swaps exchange advantageous rates in different markets to hedge income streams by each party effectively paying for the other's cashflow via an intermediary financial institution. Example: a firm able to obtain preferential terms in fixed interest rate markets wants to borrow funds at a variable rate or for a shorter term than is available in the fixed-rate market. Swapping the preferential loan in the fixed-rate market for a loan obtained by another agency in the variable-rate market advantages not only the first company but also a counterparty seeking what, for it, is a preferable rate on the fixed-rate market. Because both comparative advantages are compounded in a swap, the net cost of the swap is less than that of the total notional amount; in the example above, both parties pay a lower rate of interest than that on the loans each has originated,

46. The vanilla/exotic terminology is attributed to Marc Rubinstein and Eric Reiner's 1992 detailed inventory of complexly structured options. See *Exotic Options, Research Program in Finance Working Papers* RPF-220 (Stanford: University of California at Berkeley), www.haas.berkeley.edu/groups/finance/WP/rpf220.pdf.

47. Hull, *Options*, Ch.5. See also M. Greenberger 'The Role of Derivatives in the Financial Crisis', Testimony to the Financial Crisis Inquiry Commission Hearing, US Senate, 30 June 2010, fcic-static.law.stanford.edu/cdn_media/fcic-testimony/2010-0630-Greenberger.pdf.

resulting in an effective saving or income equal to the difference between the preswap cashflow and the swapped cashflows. This gain is split between the swap's counterparties. Currency swaps similarly take advantage of varying terms in different currencies, and swap contracts extend also to commodity markets, exchanging variable spot prices over a duration with a stable fixed price.

Calculated only in terms of their notional amount, swaps are detached from any relation to nonfinancial assets. Swaps make explicit qua market instruments the abstraction and exogeneity of derivatives from the nonfinancial dimension of the underlying, a structural condition of the 2008 financial crisis. Exchanging repayments across financial markets, swaps interconnect those markets at the point of their primary revenue: a credit-based income stream into the future. Unlike forward contracts or options, the loan generating the cashflow of one party of the swap has to be in place before the swap is made. A position in a swap can be 'warehoused' by the intermediary financial institution until a suitable counterparty is secured as its second 'leg'. A default on that initial loan by one of the counterparties transfers liability of the credit risk to the financial intermediary. The intermediary institution, which takes on a structural role, also composes the swap, thereby providing an ersatz insurance to either party in case of a default in the cashflow of the

counterparty, and taking a systemic role in the emergence and consolidation of the swaps market.

Despite the exchange-like properties of the swaps markets, their insurance-like operation, and the 'financial calamities' generated by unregulated swaps markets, including the default of California's Orange County in 1994 and the collapse of the Long-Term Capital Management hedge fund in 1998,[48] extensive political pressure in the US leading to the Commodities Futures Modernization Act of 2000 exempted swaps

48. Orange County, California, declared bankruptcy in 1994 after suffering losses to its various funds from large, unhedged positions in interest rate derivatives (Mackenzie, *Engine*, 223; the following account paraphrases Ch.8 of Mackenzie's book). Long Term Capital management (LTCM) was the poster-child of financial trading in the mid-90s, boasting Scholes and Merton on its Board and generating annualized returns of up to 40 percent (after fees) via arbitrage of small differentials between fixed-income long-term bonds such as government debt. The Russian financial crisis of Summer 1998 caused a market-wide 'flight to safety', to 'safe' long-term government and corporate bonds that formed the backbone of LTCM's trading strategy. Its positions were pressured both by extant widespread mimicry of its strategies across the financial sector, reducing its trading advantage, and by self-replicating divestments across the market in response to the crisis. Despite advanced hedging and risk-diversification strategies, the combination of these factors led to highly correlated losses across its portfolio. Providing liquidity to cover those losses from a leveraged position—that is, borrowing money to make trades and returning it (with interest) upon their completion—of about 27:1 (which, while large, was typical of large investment banks at the time) required it to divest from other positions at the wrong moment in the structured portfolio. Counterparty trading and divestment by LTCM's clients (which included most of the large investment banks) led to yet further losses. By late-September 1998, LTCM's capitalization was unsustainable, with liabilities of $100bn on an equity dropping from $2.3bn to $400m over that month. Because immediate liquidation of LTCM's securities would have led to a significant and systemic drop in market prices, the New York Fed orchestrated a $3.6bn recapitalization and buy-out of LTCM by the major American investment banks in September 1998.

from being traded on exchanges, proscribed their standardisation by statute in favour of regulation by trade bodies, and even excluded the statute itself as a basis for legal challenges to swaps.[49] Consequently, swaps did not have meet any of the requirements of more formal insurance (a sector regulated by statutory bodies)—in particular, the requirement that the seller have adequate capital to service the default payment. The result of this sectorial activism was threefold: the increasing systemic centrality and interconnectedness of financial intermediary institutions in providing credit in general, the lowering of the price of credit swap arrangements which reduced its net cost, and the expansion of credit beyond any limitations imposed by reserve requirements.

The mid-2000s financial crisis was a direct consequence of the expanded role and systematicity of the intermediary-led systematisation of credit in which the role of Credit Default Swaps (CDS) was crucial. Invented by JP Morgan in 1994, a CDS is a form of insurance against default on a loan and the consequent loss of income for the lender.[50] The buyer of a CDS pays a premium to a seller to take on an underlying loan

49. Greenberger, 'Derivatives', 5–6.

50. Details of JP Morgan's invention of the CDS are given in G. Tett, *Fool's Gold* (New York: Free Press, 2009), Ch.3. Tett notes how, by 1996, JP Morgan had persuaded the leading US Federal Reserves to reduce the credit reserve requirements of major financial institutions on the basis that the derivatives dispersed risk, making any one institution less susceptible to credit default (49).

in case a 'credit event' (such as default) leaves the lender carrying the credit exposure. That is, the buyer displaces the costs of the default of some designated credit to another party, and removes the loan as a liability from the buyer's balance book. If there is a default, the seller of the CDS takes possession of that credit and the buyer receives compensation equal to its stated cost. In this eventuality, the buyer of the CDS gets reimbursed for the underlying loan—the insurance against default—and the seller pays to take the credit off the buyer's hands, leaving the seller with a double cost: the unpaid debt itself and the payout to the buyer. In case of no credit event, the seller receives the premium payments to maturity. In short, the credit risk is hedged. The CDS is similar to insurance in case of loan defaults, except that (i) the seller of the CDS holds the risk of credit default without holding the credit itself; (ii) the seller can sell the protection without capital reserves to compensate the buyer; and (iii) the buyer need not have any ownership claims over the underlying loan nor any direct insurable interest in it. These latter positions are 'naked' CDSs, the buyer and seller constructing the swap around a 'reference bond' that is owned by *neither* party of the swap, doing so in order to speculate on the reference bond's financial viability. Without any ownership requirements, one underlying can be the reference bond for multiple naked CDSs. Despite the evident credit risks of such

structures, financial establishments and regulators supported the development of the naked CDS market, again in the interest of increasing liquidity for the reference bonds: the increased number of sellers and insurance-like structures against credit defaults enabled a greater number of credit event risks to be bought, and also greater flexibility (and therefore efficiency) in the market for risk, increasing the overall size—now meaning the credit exposure—of the market.

To return to the introductory comments above, then, the 2008 financial crisis was generated by the 'credit event' of defaults on CDSs, the underlying of which consisted of interlocked mortgages, the latter being by far the largest credit market in the US and UK. The amplification of this latter credit default by naked CDS derivatives which themselves could not be settled—the financial intermediaries not having to provide capital reserves to do so—explains in part the size of the crisis;[51] its systemic nature is a result of the interlocking of credit by financial intermediaries via swaps, exposing

51. Greenberger notes that though only three percent of the notional amount of a swaps transaction is at risk as credit exposure, 'a credit default swap's insurance-like aspects mean that if a default is triggered, the entire amount of the sum guaranteed is at risk' ('Derivatives', 11)—which is why the diminishing of the size of the derivatives markets from its 'face value' to its credit exposure, as in the introductory comments above, is not always warranted. Combining the lower estimate of $35tn of outstanding CDSs in September 2008 with three percent of the rest of the remaining swaps market ($565tn), Greenberger arrives at a total sum for the credit exposure of the swaps market alone at the time of the financial crisis, wryly adding that 'even using the most conservative figures for the sake of argument, $52tn is a very large figure'—equal to world GDP that year.

the credit risk thereby built into the financial system as distributed, uncontained, and without adequate capital backing. The result: systemic default. Furthermore, the deregulation of the OTC sector in 2000 stripped out its supervisory containment and capacity to prosecute, making it, in the words of the chair of the SEC in 2008, a 'regulatory black hole'.[52]

4.3. DERIVATIVES: CONSTITUTIVE LOGIC

This rudimentary exposition of the derivative mechanisms leading to the 2008 financial crisis provides some operational explanation of its causes and outlines the material conditions for the two Lessons identified in the introduction. Yet this is not sufficient in itself to address the questions posed by the analysis of capital-power: What mutation in modern power-rationality, if any, is instituted by finance-power? And to what extent is capital-power's constitutive financiality instantiated by these facts of financial operation, whose magnitude and global systemicity became explicit only in 2008 as an incontrovertible problem of power determination for the modern state settlement? To address these questions a formulation of the *logic* of finance is required that at once schematises its variety of practices and instruments in relation to the constitutive financiality of capital-power, and also delineates their common

52. Christopher Cox, cited in Greenberger, 'Derivatives', 10.

power ontology with respect to state formation. As will be seen, that determination is directly instantiated as *pricing*.

The distinctive feature of all derivative structures, a feature explicitly demonstrated by forward and futures contracts, is that they are constructed and traded on the basis of a price differential. Trading strategies also exploit price differentials—across markets in arbitrage, but also in time across one market for hedging. At the simplest level of derivative construction, the delivery price of the forward contract (K) anticipates the future price of the underlying asset (S_t); more complex derivative structures take other factors into account (option cost, cashflow dynamics, etc.). The primary question for derivative pricing, then, is how the delivery prices K are set for derivatives, given that they can only be anticipations of future eventualities that must be unknown at the time the price is set but which, per the doctrine of market rationality, are nonetheless supposed to determine the asset price. The answer is straightforward but wholly counterconventional. It is not that markets set the delivery/exercise price but, as with Means's administered prices, that the contract *constitutes the price differential* between delivery and strike prices at a specified future moment in time. Or, in another, equivalent formulation: the contract defers the trade of the underlying in order to institute the price differential *and*, conversely, the price

differential specified by the forward contract is simultaneously a deferral of the exchange of the underlying asset. Put schematically: the forward contract defers exchange to constitute a price differential for an underlying asset in time or across markets, just as its positing of that differential defers immediate vending of the asset. A deferred differential, a differentiating deferral: *différance*, in Jacques Derrida's terminology.

Taken out of its native philosophical element, Derrida's term and its logic serve here only to crystallize the operational constitution of derivative pricing. In formal terms, this logic is as follows: as noted, différance combines difference and deferral. Each term is constituted by the other: difference here is not a difference between already established positive terms (A and B) that assumes their presence, which is, for Derrida, the metaphysical mistake of Western thought. Rather, différance emphasises 'one of the two themes of the Latin *differre*' in a way that the more conventional 'difference' does not: namely, 'the action of putting off until later, of taking into account, of taking account of time and of the forces of an operation that implies an economic calculation, a detour, a delay, a reserve, a representation—[in short]: temporization [*temporisation*]'.[53] Constituted by their différantiation,

53. J. Derrida, 'Différance', in *Margins—of Philosophy*, tr. A. Bass (Chicago: University of Chicago Press 1982 [first delivered 1968]), 8, for this and the next two quotes. Translations here and elsewhere are slightly modified. Temporization looks to capture the sense of delaying or time-passing rather

differentiated terms 'detour' through one another to establish their quasi-positive but necessarily incomplete determination, a deferral of their self-identification that is a delaying or spacing (*espacement*) of any alleged selfpresence to itself, an 'itself' that therefore never arrives as such. The differentiated terms are only ever quasiestablished because of the constitutive deferment of their distinct identities (qua plenitudinous presence). 'The *a* [of différance] comes more immediately from the present participle (*différant*) and brings us closer to the action of "differing" that is *in progress* [emphasis added], even before it has produced an effect that is constituted as different or as difference'. Derivatives *constitute* price differentials precisely according to this différantial logic of temporization, which is no less their operation: the delivery or exercise price is not the price as and when the contract is drawn up, and without the *noncoincidence* of the delivery price with the strike price there could be no derivative but only spontaneous vending. Addressing the différantial constitution of the present, Derrida remarks that 'an interval must separate the present from what it is not for it to be itself, but that interval which constitutes it as present must also in the same blow divide the present

than the general order of time (temporality). The 'economic calculation' Derrida mentions in this quotation is in the general sense of the term of a dynamic configuration of interdependent diverse and varied elements, not any specific determination of monetary or fiscal economy such as, here, finance capitalism.

in itself'.[54] Substituting 'price' for 'the present', the identical scheme holds for the derivative: an interval must separate the price of the underlying from what it is not (that is, the delivery price) for the derivative to be itself, but that interval constituting the derivative (as distinct from exchange of the underlying) divides/defers/detours the present of the derivative between/across its signing and maturity. Consequently,

> différance is what makes the movement of the derivative market [Derrida has 'signification'] possible only if each element that is said to be 'priced' [Derrida: present], appearing on the stage of price [presence], is related to something other than itself but retains the mark of a past element and already lets itself be hollowed out by the mark of its relation to a future element. This trace relates no less to what is called the future than to what is called the past, and it constitutes what is called the present by this very relation to what it is not.

For Derrida, that trace of différance is the necessarily ineffable temporising constitution of the present; here, in the dimension of finance, it is the derivative contract. The identification of its logic takes a further step with the substitution of price for 'space' in the elaboration of the temporising trace: 'constituting

54. This and the next two quotes: Derrida, 'Différance', 13.

itself, dynamically dividing itself, this interval is what could be called pricing [Derrida: spacing]; the becoming-price of time or the becoming-time of price'. That is, the 'interval itself' is the derivative qua pricing contract: the becoming-price of time or the becoming-time of price. In short, derivative pricing is différantial; or, derivatives are a différantial pricing.[55] It is not that

55. Samuel Weber proposes a religiohistorical deconstruction of money as credit-implement in the view of the 2008 crisis in *Geld ist Zeit: Gedanken zu Kredit und Krise* (Zurich-Berlin: Diaphanes, 2009; English version available at www.complit.u-szeged.hu/images/weber_-_money_is_time.pdf). Weber's hybridisation of money, temporization, and modern finance as inheritor of a (Max) Weberian Protestant ethic in order to spiritualise the determination of finance (as a secularized perpetuation of Protestant Christianity, per Walter Benjamin's half-thesis on capitalism) is discarded here for reasons stated in n.24 above. More salient is Brian Rotman's identification of the deconstructive conditions of finance in the proliferation of 'xenomoney' of offshore American currency—Eurodollars—that precipitated the exit from the Bretton Woods monetary regime in August 1971 when the US took the dollar of the goldpeg that had anchored the post-war Euro-American settlement (*Signifying Nothing: The Semiotics of Zero* [New York: St Martin's Press, 1987]). For Rotman, the inconvertibility of money to anything outside of itself leaves it 'signifying' only in relation to future states of itself, including the 'purely financial dynamics' of futures currency markets (93–96). Rotman identifies such endogenously constituted signification with Derrida's excision of a 'transcendental signified' as condition for the sign opening the space of language qua world of floating signification. The identification is however at best only analogical for Rotman, a 'structural morphism' (103). The contention of the present essay, however, is that while the size, growth, and intensity of modern derivatives markets were monetarily facilitated by the removal of the gold barrier (as recognized by Milton Friedman in his 1971 paper sponsored by the founders of the Chicago futures market and dedicated to legitimating its establishment [MacKenzie, *Engine*, 145–48]), the Derridean logic is *directly* that of the derivative contract and its market operationalisation; and then is it the truth of money qua creditory relation (see §11.3 below). The latter truth is espoused by Modern Money Theory, for which the common establishment of creditory basis of money, as its 'unit of account', is uniquely a state operation, its fiscal sovereignty: see É. Tymoigne and L. R. Wray, 'Money: An Alternative Story', in P. Arestis and M.C. Sawyer (eds.), *A Handbook of Alternative Monetary Economics* (Cheltenham: Edward Elgar, 2006).

the derivative records a price movement against a calibrating price—a theorization which, as will be seen, dominates their institutional practice maintaining as it does the supposed secondariness of derivatives to pricing in the 'real economy'—but that it instantiates/implements the intervallic differentiation characteristic of différance in terms of pricing. Here temporization is the condition for speculative accumulation.

The proposed identification is not, however, total. Derrida follows Levinas in extending the past of the trace into an absolute past, an alterity that is constitutive of the present, but irrecuperable to any self-present and hence irremediably anterior to it. Such a past is a necessity because the différantial constitution of the present is a logically anterior condition to presence and therefore temporally precedes it. The trace *qua* derivative contract is, by contrast, only the finite and instituted différantial organization of pricing, organized and utilized for capital accumulation without the sacrality guaranteed by the absolute past. Furthermore, while presence-constituting différance is a general metaphysical condition corroding any paradigm privileging or presupposing presence as its condition—for example, in the Western tradition, (phenomenological and psychoanalytical) consciousness, semiotics, idealism, empiricism, etc.—derivatives are but regional manifestations of différantial price-constitution. In particular, if ontology in the Western tradition presumes

presence as its condition and term, derivatives are not preontological (that anteriority being one of Derrida's primary claims for différance); rather, their ontology consists of a binding and enforceable contract that is constituted by statute. That is, the institution of derivatives is the constitution of price différantiation.

4.4. INSTITUTING DIFFÉRANTIAL PRICING

The logic of derivatives *qua* différantial pricing is that of their institutional construction. The schematic form of différantial pricing just presented consequently facilitates several praxical implementions of capital accumulation. Though some of these configurations may affirm the différantial organization of pricing as such, others effectively delimit it by coding it in abnegating formats. These various historical-institutional determinations of derivative pricing are advantageous to the present analysis because they give a specific shape to the schematic account of the constitutive logic of derivatives just outlined, thereby enabling both that logic and those particular configurations to be analytically and politically situated rather than taken for granted. In turn, the power-ordering of capitalization as constructed (which is not yet to say constituted) by finance will then be able to be similarly situated.

There are four stages in the demonstration of the politics of différantial pricing: 1. Its standard account, in

which derivatives are but speculative tracking descriptions of the price-development of a referent external to the derivative—an *anticipatory* constative model of exogenous pricing that commences from the present; 2. Its constitution of complex modes of intrinsically temporal *and* social binding of the present in which the necessary uncertainty and ignorance of the future takes priority, instituting a sociorational ordering of risk in which all price determinations are continually revised; 3. As a wholly endogenous pricing and operationalisation of an unprecedented mode of betting, in which derivative pricing refers only to its own market in a *counterperformative* act that makes explicit the occasional condition of its exogenous reference and of the 'real economy' for price and capital-power; 4. As *absolute*, when the endogeneity of différantial pricing is extended to exogenous pricing processes external and putatively 'primary' in relation to derivative markets. It is with this last step that the derivatives pricing operations of financial markets are articulated with the a priori financiality of capitalization. With that final step, the identification of the specificity of capital-power's reordering of power is made explicit—not only in the conceptual-philosophical determination of price temporization, but also in two praxical renditions: firstly, that derivatives are a new kind of wager; and, secondly, that the key technical term 'price volatility' indexes the ontology of derivatives pricing within and beyond its

institutional operations. As will be seen, each of these coextensive determinants of pricing—temporization, the wager, volatility—undergo substantial modification in the course of the analysis, because modern financial institutions inaugurate unprecedented modalities and practices of each, not just reordering power in the state-finance nexus as they do so, but actually reconstituting it.

5. ANTICIPATORY PRICING: THE BLACK-SCHOLES-MERTON REGIME

Markets for financial rather than commodity derivatives have been massively operationalised since their institutionalization with the Chicago Mercantile Exchange (CME) and Chicago Board Options Exchange (CBOE) in 1972–73, almost contemporary with Derrida's theoretico-philosophical identification of the logic of différance. As mentioned, the CME could only be sanctioned by the Illinois regulatory bodies if futures trading was not a form of gambling, a stipulation which required settlement by delivery of the underlying rather than cash.[56] CME executives obviated the injunction with a three-pronged response: firstly, the underlying *could* be delivered if it was anyway a financial object such as foreign money in currency trading (Deutschmarks to a

56. The institutional history in this section paraphrases MacKenzie, *Engine*, Ch.6.

trader's German bank, for example), as advocated by the CME (a market that was historically inaugurated precisely by the flexible exchange rates consequent upon the decline of the fixed-rate Bretton Woods system), or a market in stock options, the certificates of which could in principle be delivered to the trader, a route preferred by the CBOE. Secondly, legitimating the proposals through personal and political-academic validation, eagerly provided by Milton Friedman at the University of Chicago; and, thirdly, formalising the pricing process in order to remove the guesswork, characteristic of gambling, as to what unknown future prices will be. This formalisation was developed by Fisher Black and Myron Scholes from the late 1960s, and mathematically extended by Robert C. Merton in the early 1970s. Even though it is highly restricted in its assumptions and applicability, the Black-Scholes-Merton (BSM) equation has been the orthodox, integrally acknowledged, and massively operationalised pricing model of derivatives markets since the inauguration of the modern derivatives exchanges.[57] That institutional consolidation has been warranted specifically by the formalisation's determination of derivatives as constative predictions of price movements exogenous to the derivative, for which the price that the

57. MacKenzie, *Engine*, Ch.5 presents a nuanced appreciation of BSM's theoretical development of precedents formulated by Louis Bachelier in 1900 and Edward O. Thorp in the 1960s, as well as the contingencies leading to its institutional innovation and ramifications.

derivative is written is an initial boundary condition. The putative predictability of options price movement—that is, as ahead of but secondary to the 'real' movement of prices happening elsewhere—was thus key to obviating the statutory objections to the political institution of derivative exchanges. The following schematic overview of the BSM equation not only serves to explicate the standard options pricing model, allowing its countertheorization to be better located; it also directly exposes the praxical instantiation of the standard economic doctrine of modern capital-power in its ordering of différantial pricing and temporization. Each aspect of the exposition informs the other: the countertheory of price being established here proposes that the standard *ratio* of pricing is in fact vitiated by the very financial operations that are supposed to be constituted by it, doing so, as will be demonstrated, even beyond the confines of institutionalised derivatives markets—that is, at *every* instance of pricing,

The assumption of BSM is that price is a variable measure of what wares are worth to their users.[58]

58. In the technical terms of marginal utility theory, value is derived from 'the utility that an individual derives from the consumption of a quantity of a particular good [...] determined by his or her subjective assessment of the pleasure, or satisfaction, derived from consumption', its price being given by the monetization of that exchange (J.E. King and M. McLure, 'History of the Concept of Value', preprint from *International Encyclopedia of the Social and Behavioural Sciences* [Amsterdam: Elsevier, forthcoming], 6, www.business.uwa.edu.au/___data/assets/pdf_file/0004/2478883/14-06-History-of-the-Concept-of-Value.pdf). Inaugurated by Jevons, Walras, and Menger in the early 1870s, and institutionalized in Western Europe and

Meaning that prices are measures—that is, descriptors—of changing conditions external to prices themselves over time (what Means called 'market prices'). However, derivatives prices explicitly factor the uncertainty of future prices into the pricing calculation as their precondition—no gains or losses could be made with a derivative if the delivery price could be guaranteed. According to this account, future prices are at best calculated guesses constructed from the known price at the time the derivative contract is made. They are a constative anticipation of the price development of the underlying (exogenous to the derivative's pricing) in

the US a generation later by Pareto, Marshall, Böhm-Bawerk, and others, marginal utility theory forms the basic premises of Neoclassical doctrine by formulating price setting as a dynamically constituted equilibrium through exchanges made by a subjectively-constituted referent whose 'desires' are exogenous to the market (namely, the utility of the good to the consumer who is maximising their utility outside of the market itself). The utility of a particular item qua subjective demand for it tapers out with increasingly ready availability while, on the supply side, artificially high prices on readily available wares can always be undercut by rival suppliers. Equally, scarce goods are highly priced because their scarcity makes them more desirable to a consumer wanting to maximise her or his utility qua consumption, and so each such good requires the consumer to exchange her or his other wares having less marginal utility in order to acquire the good with greater marginal utility (the bartering of many ubiquitous goods for a small number of precious items is a basic example of this exchange). The market is then dynamic and flexible, changing according to the interests of the consumers and quantitative provision of wares until equilibrium is reached as prices meet demand. Adaptable as the theory is to changing situations and needs of consumers and provision to determine price-setting, its presumptions—the utility-maximising consumer for whom exchange is but barter in however attenuated a fashion—contrast starkly with Nitzan and Bichler's formulation for which the luxury good is a luxury only because it is highly priced, irrespective of its use-value, production costs, or—as will be seen in §10 below—even its exchange 'value'.

the period up to expiration.[59] The insurmountable yet structuring difficulty of this formulation is that such anticipatory pricing is in each instance only a reckoning with the 'next step' of a price development that is *in fact* unknown. The problem is resolved by formulating différantial pricing as a stochastic process, for which the fluctuations of a *particular* element of the system cannot be predicted (in this case, the 'next' price of the underlying; in physics, paradigmatically, the position or velocity of an individual particle in a gas). The account of aggregate systems-development given the 'random walk' of its elementary units places two stipulations on its formalisation: that succeeding states of elements in the system are discontinuous from preceding conditions, and that the future states of the system cannot be exactly predicted but only described *probabilistically*, meaning a statistical determination of the path development of the system both in its individual elements and in aggregate. Such processes require a calculative model distinct from Laplacian systems, for which the

59. Although the BSM formula is the paradigmatic model for this regime of pricing, the operationally equivalent Cox-Ross-Rubinstein (CRR) binomial tree is the more widely-used formalisation (J.C. Cox, S. Ross, and M. Rubenstein, 'Option pricing: A simplified approach', *Journal of Financial Economics*, 7.3, 1979, 229–63). Option price movements in this model are calculated by a discrete-time branching (a 'lattice') of probabilities of prices increasing or decreasing at a certain time increment. Each resulting probability is a new node for the further calculation of price movements. Consequently, after a few iterations, several branches in the probability tree can lead to a given price. While the paths actually taken by the option can only be specified upon expiration, the increasing or decreasing probability of price movement gives the trader a predictive range of routes.

path development of every element in the system can be directly predicted if the initial conditions are known, as in Newtonian mechanics.

The first stipulation of 'memoryless' path development is known as the system's *Markov property*, which means broadly that the system's past does not influence the operations and dynamics of its current state;[60] the second stipulation is characteristic of Wiener processes (after Norbert Wiener, cybernetic pioneer), the best known of which is Brownian motion of particles. Taking market pricing as a Wiener process, the uncertainty of the actual movement of a price in the future is rendered as a probability—a bounded and calculated anticipation—which, by necessity of its mathematical modeling, can only go up or down by a certain bounded percentage at 'the next step' given the initial price. Thus the trader exchanges contracts on the basis of probabilities that say nothing about the past or future in fact or in principle. The anticipation of price movement, the measure of changing 'market forces', is both memoryless and, given its unpredictability, futureless.

60. For example: the boiling point of water remains the same under constant external conditions irrespective of whether it has previously boiled or been frozen or neither; similarly for the next coin toss, dice throw, or spin of the roulette wheel, if they are not loaded. Or, in the standard caveat of financial funds, 'past performance is no indication of future results'. Put otherwise, knowledge of any state of a Markov process is adequate for knowledge of its history because that history presents no further information than the present provides. As Hull notes, the Markov property is then a weak form of market efficiency in that for the latter the present price of an equity or stock captures all the information contained in the record of past prices and the market (*Options*, §12.1).

It is only the *present* probability of what the future might be, a calculated 'perhaps' which bears all the information of the system's history. This then is the reduction of différantial pricing that was necessary in order to operationally distinguish options pricing from gambling, the latter being explicitly predicated on the present ignorance of the future.

The salient feature of Wiener processes for the construction of the BSM model is that the system equation is composed of two parts, one representing the linear development of the system in time, a drift rate that in finance is the normal rate of return, the second containing a random term indexing the stochastic yet bounded 'memoryless' condition of the system's development. In its standard formation, this second term is provided by a random coefficient drawn from within the standard deviation of a regular probability distribution (a limitation that is not considered overly restrictive because, even if the next step of the random variable is unknown, it is nonetheless bounded). This random term is called the *variance* of the system, and indexes its 'noise' against the standard growth rate. Expressing the random walk of the variable more usefully as a function of a continuous time variable (in which the drift rate of the system is expressed) requires the index of its constrained randomness to be given by its *volatility*.[61] Volatility is, for example, the measure of

61. Following the mathematical derivation, the variance of the standard

the uncertainty of returns from investment in a given stock. It is nontrivial in magnitude, since the effect of volatility upon price can sometimes far exceed that of the drift rate over a given time. And it is nontrivial in the formulation of BSM: securing an acceptable level of return requires the reduction, if not the elimination, of the volatility intrinsic to the very formulation of the price development as a Markov process. Given that the derivative price is determined to be strictly exogenous to the *price* of the underlying, the BSM formula structures a portfolio that cancels out volatility by combining a long/short position on the price of the underlying (usually equity stock) with a position on an option on that underlying such that the volatility of one offsets that of the other.[62] That is, the formula engineers a return on the portfolio at its drift rate, which is the risk-free rate of return of the market, by hedging the price of the underlying against the price of a derivative based on it, a process called 'delta hedging'.[63] The linking of the two prices and respective

deviation of the probabilistic determination is the square of volatility. See Hull, *Options*, §13.4 for mathematical account of volatility.

62. For a mathematical derivation of BSM see Hull, *Options*, §13.6

63. The Efficient Market Hypothesis, summarised in Eugene Fama's 1970 formulation that 'prices always "fully reflect" available information' (cited in Mackenzie, *Engine*, 65), follows directly from marginal utility theory: all market-makers use the available information to trade with one another leading to a unique market price. Price thereby reflects an equilibrium that is a 'rational' settlement and disrupted only by further new information. The risk-free rate of return is a result of the Capital Asset Pricing Model (CAPM) developed in the 1960s, in which risks on items of a stock portfolio arriving

volatilities is not entirely arbitrary, in that each price is 'affected by the same source of uncertainty: stock price movements'.[64]

It is intrinsic to the Wiener process that the solutions to the equation change with time and also with the initial conditions of the primary variable, in this case the spot price of the underlying. Consequently, (i) the solution for the price process of the derivative changes with the price development of the underlying, and (ii) the delta hedge portfolio is only valid for theoretically infinitesimal (but in practice very short) durations; furthermore, (iii) the BSM model can only be constructed if idealized stable background conditions and parameters are assumed, though these are infeasible in practice.[65] But given these severe constraints, the

at their respective equilibrium prices are counteracted by diversifying the scope of the portfolio (Mackenzie, *Engine*, Ch.2). The 'risk-free' portfolio is therefore the stock portfolio with the greatest diversity: the market itself (excepting disruptions to the market as a whole). It follows that higher returns than the market average require portfolios with greater risk—at the limit, the price movement of just one stock. In Mackenzie's words, CAPM is 'finance theory's canonical account of the way stock prices reflect a tradeoff between expected [emphasis added] return and risk (in the sense of sensitivity to overall market fluctuations)' (*Engine*, 28).

64. Hull, *Options*, §13.5

65. Including: stable borrowing costs (i.e., constant background interest rates), no transaction costs, no dividends during the lifetime of the security (which payout will have repercussive effects on returns on the option), no trading of the securities, no arbitrage opportunities (no external advantage or pressure for monetary reasons), and that trading is continuous (Hull, *Options*, §13.5)—none of which in fact hold. Later developments of the BSM equation allow several of these constraints to be relaxed. For a broad, technically informed dismissal of BSM as institutionally and theoretically underdetermining more practically viable precursors (such as Thorp and Bachelier) thanks to its misguided Neoclassical and therefore idealised

'equal and opposite' construction of the portfolio in the BSM model means that the position of the portfolio at the end of a short enough time period can supposedly be known with certainty: it is the expected rate of return of the combined positions in the underlying and the option. And given the expected rate of return, the model and its stipulations can be manipulated to find the right price for options so as to secure a risk-free return over short-enough periods irrespective of the risk class of the underlying. By excising volatility, the BSM portfolio generates returns at the market rate independently of what the underlying is, i.e., independently of the risk preferences of the trader; so it lowers the barrier to riskier underlying assets, thus diversifying and consolidating the market in these asset classes. Such 'risk neutrality' is a strategic articulation of the anticipatory model of pricing in the BSM regime. Thanks to the probabilistic standardization of pricing in options markets—quite distinct, then, from betting and its ineliminable risk—the institutional effect of BSM has been to operationally legitimate the establishment of the CBOE and to increase the size of the options markets. Furthermore, in its risk-neutral coupling of options market with those of their underlying, it also enabled an increase in the size of the underlying financial markets too.

determination of pricing, see E.G. Haug and N.N. Taleb, 'Option traders use (very) sophisticated heuristics, never the Black–Scholes–Merton formula', in *Journal of Economic Behavior and Organization* 77 (2011), 97–106.

Ineliminable Volatility

The BSM anticipatory pricing equation and its concomitant risk neutrality presume the stability of the background conditions—an idealization which is not only operationally false but which in any case is theoretically constrained to the vanishingly small timespans for which the delta hedge portfolio is valid (i.e., until the 'next step' in the random walk of the spot price). Over any 'extended' time in which the spot price changes 'unpredictably', as it must do according to the initial assumption of the model, different solutions to the BSM equations are required. Consequently, the proportion of derivative securities to the underlying in the portfolio needs to continually change in order to maintain risk-neutrality. That continued recomposition of the portfolio, known as 'dynamic replication', follows the price development of the underlying in order to maintain both the risk-neutrality of the portfolio and also the removal of volatility from its return. Yet the development of the portfolio through dynamic replication, which also prices the option component on each iteration, conveys the quasi-random price movement of the underlying—the very volatility that the BSM portfolio is constructed to excise. Two methods make volatility apparent after its theoretical elimination in the BSM model: the historical record of the asset price and the method of implied volatility.[66]

66. Hull, *Options*, §13.12.

Aggregate implied volatility represents asset price volatility as it is manifest through the price development of different options based on a single underlying; a method that permits the price of one option to be used to calculate the price of another option based in the same underlying asset.

The simultaneous occlusion *and* manifestation of volatility from the BSM regime does not necessarily present a problem in practice: priced in time rather than as a punctual theoretical formulation, the price volatilities of the underlying and the attendant option are *indexed* by the dynamic replication of the BSM portfolio. But the theoretical quandary is insurmountable: even though volatility is the very condition for the recomposition of the BSM portfolio, its formulating equation proscribes any explicit determination of price volatility, rendering it unobservable within the terms of that formula and preventing the causes of volatility from being established within the limited determination of those solutions.[67] In fact, implied volatility is of primary significance in determining derivatives in terms of différantial pricing, as can be drawn out by reformulating the preceding result: the requirement for constant iteration of the BSM equation implies that volatility is generated not by factors external to the financial market, but rather by the trading itself.[68]

67. Ibid., §13.13

68. With regard to stock prices, see K. R. French and R. Roll, 'Stock return

But if, in this model, the price volatility of the underlying informs the corresponding option's volatility, and if the BSM portfolio is constructed in order to remove volatility effects, then, contrary to the primary assumption that BSM relies only upon the constative (because exogenous) pricing of the underlying, the volatility of the price of the underlying is in fact *endogenous* to its market, as then is the option pricing. Furthermore, since the delta hedge portfolio is composed of both the underlying and the option, volatility in the option price requires trading in the underlying, generating volatility.

Options pricing in the BSM model does not then in fact refer to an exogenous price. Rather, pricing is constituted endogenously to both the derivatives market and that of the underlying, which are now interlinked.[69] Options pricing Is itself also a market 'force', as is pricing of the underlying in its own market. The BSM regime of option pricing as constative or merely anticipatory

variances: The arrival of information and the reaction of traders', *Journal of Financial Economics*, 17:1 (September 1986), 5–26. With regard to volatility of stock prices, systemically observed to 'be negatively correlated with lagged [unexpected] returns', see D. Avramov, T. Chordia, A. Goyal, 'The Impact of Trades on Daily Volatility', *Review of Financial Studies*, 19:4 (2006), 1241–77. Avramov et al's thesis that such asymmetric volatility is 'governed by the trading dynamics of informed traders and uninformed traders' is extended to the futures market and confirmed in J. Kittiakarasakun, Y. Tse, G.H.K. Wang, 'The impact of trades by traders on asymmetric volatility for Nasdaq 100 index futures', *Managerial Finance*, 38.8 (2012), 752–67.

69. As confirmed and compounded by indices of implied volatility such as the CBOE VIX that then enables the pricing of volatility as itself an underlying for derivative construction.

of exogenous price movements starting from the initial price and hence calculable qua probability cannot then be maintained other than by its static and therefore highly constrained determination. That anticipatory model provides only the instantaneous composition of the delta-hedge portfolio, a falsification of the pricing process of both options and the underlying that is consequent upon that regime's *presentism*. Evidence that the BSM model is wrong is empirically provided by 'volatility smiles' and skews: within the modeling parameters of BSM, the price of a vanilla option only increases linearly with its volatility, and the implied volatility should be independent of expiration and strike price; yet, since the October 1987 stock market crash, prices have taken nonlinear paths in all three regards.[70] That such curves are manifest after the 1987

70. Specifically, charting implied volatility against strike price yields a valley-like curve whose turning point is the at-the-money option (that is, options whose delivery price is the spot price of the underlying), a curve known as the volatility smile. More systemically, the implied volatility of at-the-money options is also observed to be slightly lower than options in- or out-of-the-money (those with delivery prices respectively above or below that of the spot price, netting a gain or loss). Furthermore, implied volatility of an option changes not just with the strike price but also with expiration, meaning that it is better charted as a volatility surface with a horizontal reference plane having the axes of expiration and strike price. Different markets have different typical curves. Mark Rubinstein was among of the first to model the volatility surface using the CRR formalism he codeveloped ('Implied Binomial Trees', *The Journal of Finance*, 49:3 (July 1994), 771–818) while Bruno Dupire formalized the volatility smile in terms of BSM in the same year ('Pricing with a smile', *Risk* 7 (1994), 18–20), but such 'one factor' models have since been shown to have severe limitations. A multifactor formalism for the development of the volatility surface in conditions where arbitrage across markets is not possible is developed in T. Daglish, J.C. Hull, and W. Suo, 'Volatility surfaces: Theory, rules of thumb, and empirical evidence', *Quantitative Finance*, 7.5 (2007), 507–24.

crash but not before indicates that the pricing process is *not* memoryless: a past event structures all subsequent processes in the system. Bearing a constituting past, options pricing does not observe the Markov property, which is not only the condition for the probabilistic determination of anticipatory pricing, but also for the BSM model tout court. Furthermore, nonlinear implied volatility paths again suggest that volatility is generated by conditions endogenous to markets, including derivative markets—a result leading to the argument, elaborated further below, that if volatility arises from *within* the price process itself, then derivatives pricing has to be distinguished from traditional determinations of betting, in which gains or losses depend on a referent external to the wager itself.

For now, however, the *minimal* result is that options pricing is neither anticipatory nor merely constative. More emphatically—and this is what will move the analysis from the dimension of derivatives as institutional financial operators to the dimension of the power-rationality of capitalization's financiality—implied volatility manifests the différantial logic of derivative pricing, which is exorbitant to the presentist determinations of the BSM regime. Instantiating différantial pricing and its temporization in fact, the institutional praxes of BSM misidentify and constrain that logic within the stasis of the calculable 'maybe' of anticipation: price development as probabilistic.

Standard financial praxes thereby proscribe the complete account of their own operation as both logically predicated on *and* operationally constituting the volatility (and its pricing) that they institutionalise—that is, an account of price as more than merely constative of conditions and 'forces' acting elsewhere. Given the dominance (in theory and pecuniary magnitude) of these standard financial praxes, what is theoretico-politically exigent is a countertheorization of différantial pricing that does not presume either the present price as the basis or inauguration of the pricing process, nor the constitution of price as exogenous to its own institutional process.

6. COUNTERPERFORMATIVE PRICING

Key elements of the required countertheory are provided by the sociological accounts of finance markets given by Donald MacKenzie and Elena Esposito.[71] Both propose that derivatives markets are not constative but performative—in MacKenzie's words, 'an engine not a camera'—because derivatives pricing is shaped by the fact and method of pricing itself, rather than exogenous factors such as the vicissitudes of the underlying prior to pricing. MacKenzie's mainly historical-institutional account identifies two

71. MacKenzie, *Engine*, and E. Esposito, *The Future of Futures: The Time of Money in Financing and Society* (Cheltenham: Edward Elgar, 2011 [Italian: 2009]).

salient regimes of performativity for options markets. The first is 'Barnesian perfomativity' (after Barry Barnes's sociology of science) in which economic processes and outcomes transform to better fit the theoretical model, in a 'self-validating feedback loop':[72] consequent on the establishment of the CME and widespread use of BSM, 'the financial markets changed in a way that made the [BSM] model's assumptions, which at first were grossly at variance with market conditions, more realistic'.[73] That 'realism' was undone (most intensely in the US) by the October 1987 crash, after which the persistence of regular volatility skews meant that 'no analysis now finds the [BSM] model to fit the observed pattern of prices of options well'.[74] Such is the second regime of performativity for which 'the practical use of finance theory sometimes undermines the market conditions, processes, and patterns of prices that are posited by the theory'.[75] The 'undermining' of

72. MacKenzie, *Engine*, 19.

73. Ibid., 256.

74. Ibid., 202.

75. Ibid., 24. More specifically, while options markets still deploy offshoots of the BSM model for pricing, the risk-management of option pricing now accommodate the 'wild randomness' of discontinuous jumps in pricing and volatility that such models gave rise to but can not theorise. Risk-management in this second regime of performative pricing requires an increase the 'margin requirements'—the initial price of the option deposited with the exchange—so that 'catastrophic events' do not force further selling of options and exacerbate price volatility. It also requires a shift from the assumed normal distribution of the BSM model, in which outlier 'extreme' events in the tails of the distribution are unlikely, toward the Lévy family of variable distributions with thicker tails, developed in relation to finance

the conditions and results occasioned by and for the very theory that constitutes them more exactly marks out its 'practical' use in this second regime as being *counterperformative:* pricing takes place *against* the constative determination of pricing. For Esposito, distinct from MacKenzie in her adoption of a Luhmannian systems-theoretical approach, such counterperformativity is not an episodic occurrence of financial pricing but rather, and in fact, the primary characteristic of such markets: derivatives markets are necessarily and intrinsically set to run against their theoretical models because volatility is endogenous to pricing itself.[76] In Esposito's terms, the volatility of derivatives markets indicates how the future stipulated by the derivatives contract 'is unpredictable *because* it is produced by the very present that tries to predict it'.[77] As implied volatility indicates, the probabilistic anticipation of price development is vitiated in its very instantiation because derivative pricing shifts the price away from the magnitude it putatively predicts as an exogenous referent. In short, derivatives markets *constitute* prices. To understand how and why requires a more detailed exposition of Esposito's argument, which has the

by Benoit Mandelbrot, for which the standard requirements of statistics such as standard deviation and variance can be infinite, meaning that while the techniques developed on the basis of such models are probabilistic nonetheless 'standard statistical techniques evaporat[e]' (Ibid, 108ff.).

76. For the 'wild variation' of the market destroying its regular statistical distribution see Esposito, *Future*, 148–51.

77. Esposito, *Future*, 128, emphasis added.

advantage of leading back to the articulation of the institutional financial operations of derivative markets in terms of pricing qua temporization, which will in turn be the basis upon which the particular determination of finance-power can be made.

Time is the leading category in Esposito's theory of derivatives pricing because for her derivatives are complex time relations fabricated by institutional methods of social organization. Specifically, derivatives mobilise the distinction between the present future, which is 'our current anticipation of the future', and the future present, or the 'present that will become actual in the future'.[78] What is traded on derivative exchanges is not the future given (the then unknown strike price of the underlying) but the present *risk* of that price against the delivery price.[79] Derivative pricing consequently refers 'to the present way of seeing the future, not to the unknowable future that will come about later'.[80] It is constituted in the 'management' of the price movement between present future and the future present. What is managed qua pricing is the

78. Esposito, *Future*, 23–4. There is similarly a past present that is the present as it was in the past but is now passed and inactual.

79. Terminological caution is needed here: what Esposito identifies as 'risk' is called 'uncertainty' in finance markets; see Esposito, *Future*, 36n.26. Standard finance theory follows Frank Knight's 1921 distinction between futures that are measurable/containable (risk) and those that are not (uncertainty). See Knight's *Risk, Uncertainty, and Profit* (Mineola, NY: Dover, 2006 [1921]).

80. Esposito, *Future*, 151; emphasis added.

convolution of the uncertainty of the strike price in the future present anticipated as a present future. And what is priced as volatility in derivatives markets is not then the variability of price at expiration stemming from the present—as proposed in the BSM model—but the *uncertainty* of price given the present inactuality of the future present. That is, derivative pricing makes explicit in the present the relation to an inactual and necessarily uncertain future present—as a present future. As such, it indexes the core characteristic of time in Esposito's systems-theoretical method, namely that because they are never (the) present, the 'past and future are never given, but become actualized as horizons of inactuality for a present that does not last'.[81] In the general pragmatic terms of systems theory, a relation such as the management of price movements between the present and the future constitute 'the unity of actuality and inactuality' which is time. Time, on this account, is always system-specific, in that the maintenance within the present of past and future presents depends entirely on the structure, organization, and capacities of any given system.[82] Derivative pricing and its volatility are, in short, constructions of time.

81. Ibid., 21.

82. The outline of time presented here condenses and quotes from the salient argument in Esposito, *Future*, Ch.2, especially 21–8.

The specifics of this broad determination can be determined against the general systems theory of time-relation presented by Esposito. Summarily:

—Time is specific to a system, 'produced in order to organize its operations and make them more complex' by incorporating the inactual past and future presents into its present actuality. As this paradoxical unity, the present is the primary manifestation of time.
—Because the 'time binding' that is the relation between the actual and the inactual depends entirely on the system in question, there is no absolute, 'objective' time.
—Rather, the pragmatic incorporation of inactuality into the present enables the system 'to structure its present operations' in view of that inactuality. Time therefore permits the complexification of a system to a degree greater than its actuality allows (as with debt in regard to fiscal conditions, for example).
—Thanks to time, the actual and the inactual inform one another, albeit asymmetrically; through anticipation of the inactual and unknown future in the present, and by organising the actual present in view of the future.
—Generally, 'time allows the system to separate itself from its own operations and its situation, linking it with other (past and future) situations in a complex framework of connections' that attest to and acknowledge its contingency amongst other possibilities.

The 'possibilities' of a system—its unactualised states—are only theoretically and practically available to it because of its time qua relation to the inactual.

—In particular, the revision of plans for the future and reconsideration of the (once future) present is the 'internal reflexivity of time'. Operators in a system with time know that they can make decisions for an anticipated future which, while itself unknown, permits 'the freedom to decide differently once that future has become present (a present they will have contributed to and where they know how to intervene)'. Such is the 'flexibility and freedom' granted by time. Emancipation is a time relation.

—The freedom of time for an operator in a system is the freedom to choose 'in a non-random way', and to re-choose in view of the consequences of the preceding choices. Similarly, the past offers a selectivity of remembrance: 'everything could be possible, but only some possibilities come about, and these condition the possibilities that are made available for the future'.

—Time's unity is asymmetric: the past present can only be understood for what it was and wasn't (qua condition and projection to the future that is now present) in its future, while the future present continues to be strictly unknown but can be anticipated and prepared-for. Furthermore, operations *in the future* condition the future but do not determine it; past operations do determine their future, which is the present.

In these terms, systems have freedom *qua* possibilities constructed via their relations to inactualities of its *present* state.

Esposito's theory of derivatives pricing as counter-performative exemplifies this general theory of systems time and freedom of future revision. As options in particular demonstrate, derivatives build in revisability of trading the underlying at expiration into their contract. Trading of the options contract on derivatives markets 'allows one to make decisions today that affect the way the future will be, while preserving the freedom to decide one way or the other when this future will be present'.[83] As opposed to the BSM model, in this case derivative pricing is not constative with regard to an exogenous referent of that process. Rather, it refers to the 'contingency of future events' not only as regards the strike price, which is ostensible (exogenous) content, but primarily as a reflexive (endogenous) consequence pricing itself as a mode of time engineering. That is, the reflexivity or revisability of derivative pricing means 'that future-oriented expectations and decisions [on price] affect what will become present in the future'.[84] Taking the modality of the 'maybe' up to their expiration, derivatives 'leave the indeterminacy of the future open, and,

83. Esposito, *Future*, 105.

84. Ibid., 127.

at the same time, produce it with their decisions'.[85] Generating indeterminacies upon which they subsequently act, derivatives are counterperformative. Consequently, these indeterminacies are not random (within the parameter of the standard deviation of a normal distribution, as the BSM model stipulates); rather, they are structured by the 'minimal continuity' of derivatives pricing in the present, a pricing which is predicated on the contingency of revision.

Derivatives are in general thereby devices of arbitrage in time.[86] As an endogenous process, the reflexive measure of the necessary uncertainty of pricing movement in the present is given within the terms of that pricing system itself: it is volatility, the index of the presence of inactuality in present actualities. And it is priced. What volatility measures in its pricing is the uncertainty of price *given pricing as a time relation*. BSM's presentist and therefore static and anticipatory determination of derivatives pricing proscribes the time relation qua unity of actuality and inactuality that is derivatives pricing from explicitly entering price determinations. It instead reproduces the time relations that derivatives are (vectored *qua* pricing) only as an implicit aftereffect of its probabilistic formulation.

85. Ibid., 105.

86. Ibid., 117.

Risk Order

This partial result marks the way to the political-economic determination of derivatives in terms of différantial pricing. However, the logic of différance imposes important modifications upon the theorization of such pricing as counterperformative. Crucial to this redetermination is the irreducible sociological dimension of the time relation in Esposito's account, in which it is a corollary of her determination of risk: 'all forms of time binding have social costs, because they [...] also bind the opportunities and perspectives of all other operators'.[87] That is, since the agents bound in and by the system's time relations can avail themselves of the systemic contingency of revision, the possibilities inherent to a system with time are not only those of its capacity *in toto* but are distributed differentially across elements of that system, in this case the market constituted of participants in the pricing system. Time binding thereby constitutes possibility and limitation with regard to others, which is to say that it constitutes social binding as such, which is in each instance organized and comprehended as the norms of a given social order. Contrary to traditionally-ordered societies, for which norms are determined according to the constraints that have determined and stabilise the present on the basis of the selectivity of the past, social binding

87. This section mainly paraphrases Esposito, *Future*, 30–35 from which all quotations are taken unless otherwise noted.

constituted in view of the inactuality of the future stipulates a reflexive and revisable relation between the actual (present) and inactual (past and future). That is, social binding *qua* time binding requires the revision of social norms. Esposito illustrates by way of an example: 'the reflexivity of time introduces a future contingency into the present that cannot be bound [...]. How can one accept the production of GMOs (even if it is legal) if one cannot dismiss the possibility that [...] they produce unpredictable genetic damages?' Such damages are a future uncertainty, necessarily indeterminate in the present yet indexed in it as a risk—now meaning the uncertainty of the future in the present. Consequently, the necessarily social dimension of time binding complexifies the actuality and rationale of social organization—the available justifications of social norms—because the latter are subject to the revisability of the present in view of the future. Time is not a background through which revision of social norms is undertaken; it is that which imposes the necessity of the revision of norms in societies constituted with a view to ordering for future uncertainties. It constrains social orders to effectuate their norms in their contingent and future-facing contemporaneity. As such, societies of reflexive time-binding are definitionally modern. What is characteristic of them is that 'the current constraint, which should [*qua* norm] neutralize future uncertainties [...] comes to depend

on these same uncertainties', making the ordering itself uncertain in its binding and 'depriving the [social order of the] very meaning of normativity'.

The coeval constitution of social and temporal uncertainties that is modernity is, then, 'a generalized condition of uncontrolled exposure to future contingency'. Given that its norms are contingent and are apprehended as such, any such 'society at risk (*Risikogesellschaft*)' has weak social bonds; it is flexible and adaptable, risk-rich.[88] To be modern means having no stable and binding criteria to guide actions, either now or in the future. Apparently stable solutions (for example, savings as a secure reserve for money) may lose out on gains elsewhere (the growth of equities markets), but the latter make the gains they do *because* they present a greater risk than the former. A stable judgement on what to do in the present could only be made in the future, not the historically organized actuality of the present. But the future is inactual and itself unknown, which is why all judgements now are themselves only risks. That judgements are made on condition of a necessarily inactual and unknown future and suppose their revision, such that there is no certainty as to what may come to be a gain or a loss, security or damage, is what Esposito calls 'the rationality of risk'—a rationality constituted by the

88. *Risikogesellschaft* is better known in translation through the influential work of Ulrich Beck as 'risk society'.

double necessity of an ignorance of the future and the insufficiency of the past to guide judgements made in the present.[89]

The rationality of risk does not however disable all criteria for judgement. Even though norms as such are deprived of any final authority and legitimating sanction, the rationality of risk nonetheless generates a 'recursive, circular and revisable' quasi-order of

89. Esposito, *Future*, 105 for 'rationality of risk'. This dynamic construction of reason is homologous to Robert Brandom's 'strong semantic inferentialism' (SSI) that provides the basic schema of neorationalism. With Brandom, SSI is a sufficient condition of conceptual contentfulness because inferential relations 'alte[r] our commitments and entitlements in ways that depend on what is a reason for what', meaning that the basic operation of reason is the revision of extant propositional content (*Reason in Philosophy* [Cambridge, MA: Harvard University Press, 2009], 13 for the quote; all emphases are added, Brandom's own emphases being removed throughout.) Moreover, for Brandom reason is primarily deontological because 'judging and acting—endorsing claims and maxims, committing ourselves as to what is or shall be true— [...] mak[es] ourselves subject to assessment according to rules that articulate the contents of those commitments' (33). Kant calls these rules 'concepts' but Brandom identifies their more general discursive applicability as being primarily the norms to and for which those making inferences are responsible. That responsibility distinguishes the 'exercise of a distinctive kind of consciousness' that is 'sapient, rather than merely sentient, consciousness[,] or awareness' (9). Moreover, concept formation qua normative rationality is not sui generis to the thinking subject as rational self (Kant) but also social (Hegel), involving extant histories and nonratiocinative languages (Ch.3). Like SSI, then, risk rationality is a necessary and chronic socially constituted revision of norms 'consisting in practically knowing one's way about in the inferentially articulated space of reasons and concepts' (9) according to the 'bindingness' (33) of the norms actively and provisionally established by the reasons intrinsic to that recursive process rather than past or future conventions. In the risk-order, the 'inferentially articulated space of reasons' is specifically determined as calculative yet open-ended time-binding. Consequently, neither reason nor (anthropological) sentience nor then price are established epistemological terms but come to be known and have traction on social norms thanks only to their respective rational revisions. However, for reasons presented taken up in n.133 below, such an alignment is only hypothetical or formal but is in fact incompatible.

binding uncertainties. That quasi-order is the 'minimal continuity' of sociotemporal binding, a binding 'between the contingency of time and the contingency of observers' that is enough to form decisions and give the capacity for control, revision, and correction 'in a non-random way'. Control not over what the future will be as such (per planning), but control as the construction of *possibilities* for the future 'without knowing or having to know' whether those possibilities will come to pass. Disestablishing social norms while constructing a binding social reality predicated on uncertainty and constitutive ignorance, the rationality of risk requires and fabricates increasingly 'complex forms of time management'. Derivatives markets epitomise such complexity by 'allow[ing] one to make decisions today that affect the way the future will be, while preserving the freedom to decide one way or the other when this future will be present'.[90] Specifically, by constructing a deferral of the vending of the underlying in view of taking advantage of changes in price once that contract is made and others react to it, the derivatives trader 'buys contingency (i.e., the freedom to decide otherwise starting from the decision taken today)'. Derivative prices are set not primarily in relation to the underlying or to other market-exogenous conditions, but by expectations and indexes of price movement.

90. Esposito, *Future*, 105.

For Esposito, whatever quasi-order persists in the rationality of risk is 'governed by reference to the uncertainty of the behaviour of others', given that their uncertainty is also attributable to the horizon of a future that is inactual to them. Not only do judgements and actions take place within the constitutive ignorance of reflexive time-binding but, for that reason, 'observers do very well in observing each other because the world is not a primary given [...], but comes into play when one observes what and how other observers observe'.[91] In Esposito's systems-theoretical account, such 'second-order observation' is the primary characteristic of modernity: it is 'the only form of reality still viable' in modernity, in which 'descriptions of the world change the world described'.[92] The 'minimal continuity' of reflexive time-binding and counternormative social binding resolves for Esposito into the constructivism of reality constituted by and as the integrated sociology of second-order observation that is antithetical to conventionalism. This broad constructivist determination of the quasi-order of societies at risk—of the risk order (the term is not Esposito's)—is the general sense in which *all* judgements and observations in the risk order are necessarily counterperfomative. As modern practices of complex time-binding, derivatives markets are counterperformative *per se*, and

91. Ibid., 104.

92. Ibid., 93.

not only when those markets lurch into crises (as MacKenzie holds); and they are systems of second-order observation.[93] Consequently, financial markets are not directed to or organized for the 'satisfaction of needs' insofar as these are external to market determinations. Rather, they require

> the abandonment of any reference to a given external world, even in the form of the discourses about the difference between investment (which should operate in the real economy) and speculation (which should be a mere financial transaction), where the second should refer sooner or later to the first. Otherwise we have to deal with a pathological development,

93. The account of second-order observation paraphrases and quotes from Esposito, *Future*, 102–4, unless otherwise noted. As Esposito notes (*Future*, Ch.5, n.28) second-order observation is a variant of John Maynard Keynes's beauty contest model in which contestants in a newspaper prize choose the six publicly selected 'prettiest' faces out of a hundred. Rational agents do not select according to their own preferences but according to those that they think popular opinion would select (*The General Theory of Employment, Interest and Money* [New York: Harcourt Bruce, 1964 (1936)], Ch.12, §5). Keynes characterised the professional investor of his time as having reached 'the third degree where we devote our intelligences to anticipating what average opinion expects the average opinion to be' in a 'battle of wits to anticipate the basis of conventional valuation a few months hence'. In this, financial interests in markets are distinct from the medium-long term investment characteristic of enterprise, the 'social object' of which 'should be to defeat the dark forces of time and ignorance which envelop our future'. Against this injunction, second-order observation as Esposito derives it complexifies Keynes's recursive rational-model further because (i) the observer includes the knowledge that she or he is observed by others as well as observing them, and (ii) the second-order observer is also attentive to the risks and volatility of price movement, thereby including counterconventional combinations in their time-binding calculation (*Future*, 11).

> with a crazy economy, with gambling and a total lack of control.

Supposing that investment is badly (if at all) served by speculative finance would lead to the criticism of the latter as a 'casino capitalism'; a gambling without constraint or external reference that is destructive of the production that should be its true purpose. This is a commonplace criticism of financial markets, often accompanied by the complaint that risk rationality is distinct from calculative-predictive rationality. The former has no clear results or direct and known consequences; nor does it have any rational or social normative core, only the construction of possibilities that countermand the actuality in which they are conceived. Systems-theory constructivism obviates such criticisms of finance in favour of comprehending the ways in which 'the financial economy binds itself and its operations, not to a correspondence with an alleged given world'. On this basis, the risk-rationality of financial markets is not that of production or of 'the real economy' (exogenous referents for those markets) but rather and only that of risk—that is, the possibilities fabricated by the system for its own counterperformative development via emancipation from extant norms. And such risk has two dimensions to it: generally, what are instantiated in the present are the uncertainties of the unknown future, a making-ignorant of the present

and its constative determinations; and specifically, per instance of pricing, counterperformative pricing generates profits from 'bucking the trend' of the market as a system of second-order observation.

Such countermanding possibilities cannot be conceived on the basis of the actuality of the present alone, vitiating the very condition for the probabilistic account of price development in the anticipatory model of BSM. Consequently, to reiterate the argument of endogenous counterperformative pricing from another angle, derivative pricing is constitutive of price movement, and instantiates its own 'ignorance':

> [P]rice movements always produce surprises that would not arise if there had been no speculation about the future in financial markets. The future projections to which operators are oriented are correct and incorrect at the same time. If done well, they anticipate the way the future would have come about if there had been no attempt to foresee it. In this sense, they sabotage themselves.[94]

Prices *necessarily* go in unexpected directions because their anticipations (in the future present) are necessarily wrong—and only by virtue of the anticipatory price (in the present future). That is, as well as factors exogenous to the pricing system and trade in the underlying,

94. Esposito, *Future*, 128.

pricing as such generates volatility. Implied volatility is for Esposito an effect and measure of the reflexivity of the risk-order itself, with the underlying as a quasi-arbitrary heuristic device to facilitate that measure.[95] The succinct formulation is that implied volatility 'indicates the prevailing opinion on the prevailing opinion'. The elaborate version is that, as a measure, volatility is an observation of the systemic dynamics of second-order observation. Such an observation is not external to second-order observation but is itself an endogenously generated manifestation of second-order observation that estimates its own effects on the pricing mechanism that it is—yet another instance of the recursive revisability of such systems. As such, and because it is itself priced and traded on derivatives markets (enabling gains to be made while the markets for the underlying derivative make losses), implied volatility explicitly demonstrates the reality of the financial risk-order. It is an endogenously constituted measure of the rationality and constructedness of the system in and by which it is manifest. What is important in this result is that volatility is 'not a datum'; rather, 'it refers to the future', to the inactuality that constitutes the uncertainty of pricing *qua* risk order. For Esposito, this means that volatility measures only 'what the changes in the expectations of the operators

95. Ibid., 139.

about these movements are' and affecting the latter as part of its reality.[96]

Esposito's systems-theoretical account of derivatives pricing surpasses the constraints of the BSM model, positively capturing price volatility as a direct and necessary effect of pricing via the notion of counterperformativity, exposing that derivative pricing instantiates the kind of minimal continuity between time binding and social binding typical of risk-order societies. In short, it shows that risk ordering is intrinsic to derivatives pricing. In these terms, the BSM model is a mistaken because unilateral determination of the integrated sociotemporal constitution of price. A more complete account of derivative pricing requires that it be apprehended as *at once* a political economy: the market endogeneity of derivative pricing is at once a complex form of time management and *as such* a complex form of social organization. It is this injunction that returns the overall argument back to Nitzan and Bichler's contention that capitalization constituted via pricing is a political economy of accumulation; but three further steps need to be taken in order to make the two otherwise divergent theories of pricing congruent.

Firstly, the immanent sociality of pricing for Esposito is restricted to traders as the second-order observers who make up the market, and does not extend to the

96. Ibid.

entire and universalisable social complex that is for Nitzan and Bichler the purview of price as organising term for the 'single quantitative architecture' of capital-power. In view of the latter, the endogeneity of the political economy of market pricing must be extended beyond the confines of its immanent social determination. Secondly, Esposito's entire theorization revolves around the primacy of observers and their systematic intradetermination of price. This sociological determination accords with the Neoclassical paradigm in supposing traders' subjectivity as the condition and term of analysis, as indicated by Esposito's reliance on G.L.S. Shackle's theorization of the uncertainty of economics for the economic agent who relies upon her or his imagination in entrepreneurial endeavors.[97] The argument of counterperfomative pricing is anti-realist not just because of this assumed primacy of the sociosubjective dimension, but also owing to the theoretical basis of its constructivism: for Esposito, the volatility of pricing demonstrates that the reality of the derivatives market is indifferent and detached from any referent exogenous to the derivatives markets: (i) volatility does not refer to a reality beyond the system of observation, and (ii) even when it seems to (with, say, the movement of prices putatively in relation to an underlying), that exteriority *qua* real

97. See for example J. L. Ford (ed.), *Time, Expectations and Uncertainty in Economics: Selected Essays of G.L.S. Shackle* (Aldershot: Edward Elgar, 1990).

is in fact predicated on the (system of) observation in its ontology, semantics, and rationality. As such, volatility in this account is an index of what Quentin Meillassoux has influentially called 'correlationism', verging here on idealism.[98] By contrast, for Nitzan and Bichler, all market entrepreneurs follow the logic of differential accumulation that is capitalization's

98. Correlationism as Meillassoux defines it for noetic cognition is not to be confused with the various correlations of derivatives pricing structures, not least because the latter are derived on the basis of normalised probability calculations whereas noetic-cognitive correlation is the putatively ineliminable subjective structuring condition of knowledge, as instantiated by second-order observers. For Meillassoux the noncorrelational real, the real beyond thought that it yet comprehends, can only be determined by rational thought to be entirely contingent—that is, without cause or reason—meaning that the real of thought is only the contingency of the fact of thinking, which contingency of the real is therefore its absolute condition (*After Finitude*, tr. R. Brassier [London: Continuum, 2008], Ch.3). Consequently, it is Meillassoux's noncorrelational realism that is schematically analogical to the dyadic contingency of abstraction and revision structuring the underlying of derivative structures even though its content is directly contrary to it. On the basis of the anticipatory pricing model, Meillassoux's 'Principle of Insufficient Reason'—that the unique and supreme necessity for thought of the absolute contingency of the real means that nothing of the real is necessary, including physical laws—can be characterised as rational thought's determination of the real as having the Markov property of memorylessness. But the analogical coherence of the two schema should not belie their substantial divergence: while anticipatory financial models of speculative pricing delimit the contingency of the price of the underlying by probabilistic normalization, for Meillassoux the absolute contingency of reason prevents the establishment of an upper-bound or circumscribed set of possibilities necessary to establish probabilistic calculation (*After Finitude*, Ch.5).

For a relatively nontechnical introduction to financial correlations and their central role in the structuring of the collateralized risk portfolios central to the 2008 financial crisis, despite recognition of their theoretical failure as well as that of delta-hedging in the 'correlation crisis' of May 2005, see P. Triana, *Lecturing Birds on Flying: Can Mathematical Theories Destroy the Financial Markets?* (Hoboken, NJ: Wiley, 2009), Ch.4.

dynamic reordering. Determined by that logic, price is 'a calculable measure' that is systemic, ordering, and external to the subjective observation and action which it shapes.[99] Taking up Esposito's words about implied volatility, then, price 'has its own objectivity to which one can refer', one that overdetermines the trader's subjectivity: the objectivity of its market-endogenous constitution. As Esposito proffers in passing, it is necessary to deduce

> a form of rationality that includes the volatility smile and its consequences for markets. According to this rationality, paper markets are not unreal, and their operations are (often) not irrational at all. We should, however, find out what kind of reality and what kind of rationality are at stake.[100]

In terms of the systemic objectivity of pricing, such rationality and reality are those of capital accumulation's finance power, but now determined as an *objective* risk order. The systemic objectivity and logic of capital accumulation then require a noncorrelationist theory of derivatives pricing that accommodates both the endogeneity of market making and the sociosubjective dimension mandating Esposito's constructivism. Such a realist theory of pricing is at once also a theory of its

99. Esposito, *Future*, 140.

100. Ibid., 151.

rationality, the latter term incorporating the dimension of both power (from Nitzan and Bichler) and risk (from Esposito). The required theory is therefore a realist ontology of price *qua* rational risk order of capital accumulation. As will be seen, it is this ontology that permits the specific determination of finance power.

Thirdly, Esposito's 'pragmatic' theory or practice of time *qua* freedom upon which the theory of risk is constructed supposes and requires that the present is only actual and the future wholly inactual, the two remaining firmly distinct. In this theory, any derivative's price is the price of 'today's risk', risk in the 'present future', strictly distinct from a 'future present'. Implied volatility is for her 'the projection of the future from the considered present', and risk the anticipation of the inactual future present as a distinct present future.[101] Consequently, even if derivative pricing qua différantial temporization is partially comprehended within the constructivist account of derivatives markets *qua* the reflexivity of time binding and the risk order it inaugurates, the differential organization of that pragmatism (and its counterperformative freedom) remains an attenuated if complex and recursive form of presentism. As such, it is inadequate to the différantial organization of derivative pricing that is the mechanism for the relation between the actual and the inactual in Esposito's theory of present pricing of risk as 'management':

101. Esposito, *Future*, 139.

if 'the future is not the present future or the future present, but the difference between the two',[102] then the pricing of risk by derivatives 'manages' the future *qua* inactuality in the present. The present/pricing is then no longer present to itself, but is deferred from itself qua futurity. What is deferred from the present in pricing risk is the future: the uncertainty and inactuality that the present maintains. Equally, risk is the present manifestation of future uncertainty and, as such, displaces the actuality of the present into an inactuality within the present. Possibility, the freedom occasioned by the distinction in kind between actuality and inactuality in time binding, is then granted by différantial temporization. But différantial temporization also immediately constrains possibility, not because of the limitations of the given actuality of the present but because the constitutive imbrication of future and present means that the future present is not wholly distinct from the present. That is, possibility and the freedoms of the present are constrained because the deferral of the present future from itself opens to the future present *in* the present (which intrinsic condition is also why there can be a present future at all). In the complexity of the partial indistinction of present and future that is the temporization of both, possibility cannot be wholly distinguished from actuality; freedom qua possibility is granted by the circumstances of the present. The real of

102. Ibid., 127.

derivative pricing is its actual-inactual temporization, a liberation from the present in priced risk.

Given the minimal continuity of the integrated sociotemporal binding that is risk order, the three redeterminations of derivatives pricing remarked here are coextensive: the real of différantial pricing is that of the noncorrelational real of endogenous pricing in its systemic and objective logic of differential capitalization. Elaborating the three redeterminations of risk order in reverse leads to the explicit formulation of this comprehensive identity of the real of derivative pricing, which is in fact finance power in its dual dimensions of financial operations and the a priori of capitalization.

7. PRICE PLASTICITY

The price of an asset in capitalization is *only* a financially formulated magnitude of anticipated earnings. The contention here is that derivatives pricing dilates and makes explicitly manifest the process of that formulation and, insofar as the underlying asset is only a contingency upon which that process is occasioned, its primacy for capitalization. While constraints may be imposed on derivatives construction by jurisdictional authorities regulating contract law, such pricing construction is anyway constructed qua legally-binding arrangement. Consequently, regulatory regimes per se are not an external obstacle to the structuring of

derivative pricing, but an implement determining its construction. Put otherwise, derivatives construction and therefore pricing is variable without *intrinsic* or necessary determination as regards either the mobilisation of the price differences it constitutes or its time-binding. Limitations imposed on derivative construction are wholly contingent and malleable (via changes in regulation, or the invention of alegal or quasilegal derivatives structures—or both, as with the invention of swaps), structuring pricing by constraining their pathways in a dimension that is endogenously constituted, differentiating, and universalisable thanks to the contingency of its abstraction with respect to the underlying occasions. The variability of derivative pricing is only ever realised in locatable and circumscribed contracts specifying particular pricing conditionality and temporization structures.

Exotic options are an operational index of the indefinite variability of derivatives pricing, yet they are constrained by the requirements of the currently prevailing standard model of capitalization. But this standard determination, while dominant, is *not necessary*. Theoretically, the liberation of business from its industrial determination by derivatives pricing (to adopt Veblen's terminology) is a dynamic power-ordering that is simultaneously more extensive and more intensive than the geospatial and industry-based business variants of differential accumulation to which

Veblen remains bound and from which Nitzan and Bichler draw their analysis. It is more extensive because the 'single quantitative architecture' of price, coupled to the risk-rationality of derivatives pricing—as a claim on earnings that are *explicitly* unknown, inactual, and constituted by a futurity that is in principle unconstrained—means that financial pricing and claims on earnings can extend transhistorically from the present in which the contract is written to any moment in spacetime, including all futurity, indefinitely (if the legal structures are durable enough). And it is more intensive because, to put the preceding point the other way around, derivatives pricing is endogenously constituted, meaning that the in-principle universal extension of price is operationalised (i) across time (at whatever scale), and (ii) in relation to an underlying that is *therefore* fungible, a contingent conditional for the organization of power qua price. Combined as two aspects of the one instantiation of power-ordering, the universal fungibility of the underlying in derivatives pricing has its systemic correlate in the universal fungibility of pecuniary assets in the dynamic reordering of capital-power—which can, for this reason, be determined as a risk order.

The theoretical consequences extend to the conceptual schema of derivatives pricing, in so far as their in-principle indefinite variation requires a significant divergence from Derrida's determination of the logic

of différance, the elaboration of which requires a last brief return to phenomenology. Unlike Husserl, for whom there is but one single presence even though the lived present as such is an ideal and never any factual lived presence, for Derrida the present is necessarily different from itself, the living present being no less the simultaneity of the lived present *idealiter* (which is infinitely deferred from being manifest as such) *and realiter*.[103] The infinite différance constituting the ideal present takes place *in* the finitude of the real present. The logic of différance is thereby exempted from the opposition of finitude and infinitude. Furthermore, because the ideal lived presence is no fact of lived presence, its only manifestation is *in fact* the absence of a lived present: death. Transposing the *logic* of différantial temporization to the constitutive structuring of derivatives pricing, Derrida's summary of the relation between the factual lived present and its supposed ideality finds its direct analogue in taking the payoff and (where it happens) the exchange of the underlying at maturity not as the terminal point at the outer

103. J. Derrida, *Speech and Phenomena and Other Essays on Husserl's Theory of Signs*, tr. D. B. Allison (Evanston: Northwestern University Press, 1973 [1967]), 99ff. For Derrida, the différantial constitution of the living present in Husserl's phenomenology is instantiated by the deferral of the ideality of that living present (and that of the pure thought Husserl also relies upon) as it is by the non-ideal present which is no less the living present in fact. The living present is different from/to itself (ideal, factual) and is the fact of its deferral. The Ideal living present—what the living present truly is for Husserl—never appears in fact. It is a Kantian ideal, infinitely because constitutively deferred from the presence that it 'is', a present that is then necessarily different from itself.

limit of the contract (its 'expiration' as the terminology for options has it), but rather as one of its intrinsic constitutive and structuring features:

> only a relation to the expiration [Derrida: 'my-death'] could make the infinite différance of pricing [presence] appear. In the same blow, compared to the ideality of the positive infinite, this relation to the expiration [my-death] becomes an accident of empirical finitude. The appearance of infinite différance is itself finite. Consequently, différance, which is nothing outside of this relation, becomes the finitude of the derivative [life] as an essential relation with its expiration [oneself and one's death]. Infinite différance is finite.[104]

That is, the in-principle indefinite variability of différantial pricing, *including its expiration*, is always manifest in the 'empirical finitude' of its pricing, which is the theoretical corollary to the volatility smile: maturity/expiration, which is the constitutive deferral of différantial pricing, is but one variable amongst others in pricing. In philosophical convention: the temporization of différantial pricing up to and including its termination is *immanent* to pricing.[105]

104. Derrida, *Speech*, 102.

105. Once constituted, derivatives markets can be conceptualized as a field of immanent differentiation, for which Deleuzian categories and dynamic schemata provide productive theorization especially of the dual deployment

However, the analogy is not a complete one. The logic of différantial pricing diverges significantly from Derrida's deduction of différance from phenomenological consciousness for two reasons:

1. Death and the absolute past are distinct from any living (self-)presence of a consciousness because of the unity and inexchangeability of that consciousness;[106] whereas there is no such constraint on the différantial pricing of derivatives. In general, a derivatives contract can be terminated before maturity/expiration (for example, with American-style options). The purported exchange of the underlying required for the structure of the particular derivatives contract and, historically, to distinguish derivatives trading from gambling, is only a conditional term providing

of the actual and inactual, the latter being translated in Deleuzian convention to the virtual, which together compose the real—the latter being contrasted for Deleuze to the possible. See B. Lozano, *Of Synthetic Finance* (Abingdon: Routledge, 2015) and Elie Ayache's characterisation of the market a 'pure becoming' (*The Blank Swan* [Chichester: Wiley, 2010], 39). Such accounts however presume and neglect the constituting deferral of the strike price or expiration at maturity as ordering term of the forward contract, ordering it instead as an inactualized virtuality of the market and thus susceptible to the criticisms put to Esposito's systems-theorization and the BSM regime, upon which such theorizations tend to depend. Jakob Arnoldi hybridises Deleuzian and systems-theoretical notions of the virtual as a space of calculative probabilities distinct to the possible in 'Derivatives: Virtual Values and Real Risks', *Theory Culture Society* 21:23 (2004), 23–42.

106. The condition of the unity of consciousness is not limited eidetic phenomenology. That consciousness has a primary unity is proposed in cognitive neuroscience by Thomas Metzinger, *The Ego Tunnel* (New York: Basic Books, 2009). Ch.2, and for semantic inferentialism by Robert Brandom (*Reason*, Ch.2), for whom it is a condition of philosophy and sapience (see n.133).

the terms for the contract's payoff and determining its market price. The time to expiration is, in other words, but one variable among others in the finite construction and pricing of the derivative and its trading. Consequently, the endogenous différantial pricing of any particular derivative, constructed in its finitude thanks to its contractual boundedness, is intrinsically imbricated with its market pricing, which is its exchangeability in advance of its maturity. In distinction to Derrida's phenomenological commitments, the finitude of the différantial temporization of the derivative contract is constituted in its exchangeability.

2. Since this means that the market is not outside of the endogenous construction of derivative pricing**,** a derivative's expiration/maturity is one variable in the more general revisability of derivatives market pricing and their concomitant contingeny. This is to reiterate once again that derivatives are *constituted* in the institutions of différantial pricing (derivatives markets); but it also makes explicit that the finite temporization of pricing is necessarily imbricated with market trading. The contingency of revision characteristic of derivatives pricing supervenes on the terms of the contract's expiration, which determine its finitude. Consequently, if the expiration and payoff are but variables of différantial market pricing, the temporization of pricing is not constrained by its finitude *qua* termination of

the derivative at expiration/maturity, but rather by its termination *qua* marketisation. This is the condition and structure of speculative finance, now distinguished from investment by operationally prioritizing market pricing *qua* the contingency of its revision over its termination in relation to the underlying (meaning the provision of liquidity outside of the market upon expiration/maturity). Moreover, because of the priority of the contingency of revision for différantial pricing, the only constraints for market speculation are regulatory, rather than stemming from a putatively 'real economy' external to it. But because such regulations and the institutionalisation of pricing that they permit and impose are themselves as constructed, variable, and subject to the contingency of revision as the pricing mechanisms they regulate, unlike death for the living consciousness the speculatively organized constraints of derivatives pricing are not uniquely determined but somewhat arbitrary.

Combining these two partial results, the speculatively-organised termination of the derivative via its marketisation means that différantial pricing is constitutively indefinite in two regards: firstly, the derivative can be traded at any point up to its expiration; and, secondly, its price varies with the derivatives market, not just that of the market of the underlying. Constituted and instituted in the finite but also variable contractual terms of any particular derivative, the price variability

of différantial pricing is therefore intrinsically indefinite. In this it diverges from the logic of différance established in Derrida's deconstruction of phenomenological consciousness, for which infinite différance is finite and the différance of the lived present of consciousness is in 'an essential relation' to its finitude *qua* the unique termination that is its death: not only is infinite différance finite for derivatives, finite différance is also *indefinite*.

The two dimensions of variation for différantial pricing—the price-setting schedule of the finite because bounded contract, and its market price variability and trading—are constitutive of one another: the indefinite price-variability depends upon the variable finitude of the contract (its expiration, the payoff schedule, amongst other conditionals) and the speculatively-organised variations in what a derivatives contract might be are constructed with regard to their indefinite market variability, not the payoff. This integrated dual variability of the derivative contract with its pricing constitutes the operational terms of the derivative's price-endogeneity in its intrinsic contingency of revision, which is here designated as the *plasticity* of the derivatives contract. In practice, and to reverse-engineer the argument, the plasticity of the derivative is the condition for the indefinition of derivative pricing without which there could be no operative market *qua* contingent repricing of derivatives, the

bounded pricing structures and schedules of which are fabricated in view of that constitutive and endogenous indefinition. Or, again, market pricing and trading is the operational manifestation of derivatives' intrinsic operational contingency of revision.

That derivatives are constitutively rather than secondarily speculatively organised in their own markets is demonstrated by the 'closing out' of positions. While futures contracts require the buyer to take delivery of the underlying asset at the expiry date, a trader speculating or hedging on the futures market can exit the contract by executing exactly the opposite trade to the initial one, doing so at any time prior to the latter's maturity. The trader then has a long and short position on the one trade, resulting in no net position at maturity. While the position is then 'flat' and the delivery of the underlying need not be made, the trader can still make a gain or loss—or, more likely in the latter case, circumvent anticipated greater losses—in futures prices over the period. The vast majority of futures contracts are closed out, with delivery of the asset being 'relatively rare'.[107]

107. Hull, *Options*, §2.1.

Illustration

The strike price for a futures contract in URB maturing in three months is 50lcu per share. A speculator takes a short position for 100 shares, locking in revenue of 5000lcu at maturity (excluding transaction costs).

After two months, the delivery price of URB shares at expiration is anticipated to be 47lcu at maturity. The trader anticipates a gain of 50– 47 = 3lcu per share, or 300lcu on the contract, provided all the shares are immediately bought at 47lcu at maturity.

The speculator guarantees such a purchase by going long on 100 URB shares priced at 47lcu with the same expiration date as the original trade.

The trader then has a 'flat' position regarding the asset, trade in one position cancelling out the trade in the other, yet gains 3lcu per share by closing out the deal.

If the spot price on maturity looks like it will be greater than the delivery price (say 52lcu), the trader with the short position looks to lose 50–52 = –2lcu per share on the futures contract.

Closing out the deal by going long with a strike price of 52lcu gives more certainty to the net loss of 200lcu, rather than taking the risk of an even greater effective loss by the anticipated rising price of URB stock.

That more than one position is taken on the same asset (and by the same trader) inflates the nominal size of the market beyond its actual credit exposure. This explains in part the operational causes for the sizes of the financial markets that underpin Lesson Two in the introductory comments above. In terms of the general theory of capitalization, that Lesson is instructive as a practical demonstration of the liberty derivatives markets have with regard to the parochial statutory limitations imposed on them at the historical inauguration of the CME in Illinois. Closing out makes it quite explicit that the delivery of the underlying is but a jurisdictional requirement to be circumvented—one that is historically fundamental but operationally trivial. It is one among other requirements structuring the early derivatives markets and which, rather than containing them by imposing a relation to the underlying, expanded them by liberating the endogenous plasticity of derivatives pricing.

8. THE INFRAWAGER: THE REAL OF DERIVATIVES PRICING

Closing out operationally demonstrates that the liberation of différantial pricing from its exogenous referent is tantamount to the delivery price of the underlying being identified as a conditional within the derivative pricing process rather than as being rooted in the

markets of the underlying. This deracination from exogenous markets is imposed, first, by the endogeneity of différantial pricing, which proscribes the exogenous referent from being anything but a variable of the finite temporization constructed by the derivative contract. And it is also imposed because, second, capitalization per Nitzan and Bichler is organised through price *qua* ownership claims and derivative contracts are only juridicofinancial constructions which build in and make explicit the variability of the price over the duration of the contract. That is, the price of the underlying as *object of capitalization* on derivatives markets is determined not on the basis of prices exogenous to those markets, but on the basis of the plasticity of the construction, temporization, and market pricing. That plasticity is the real of derivative pricing. Consequently, the distinction between derivatives markets and gambling is both operationally *and* constitutively rescinded, as the institutional and regulatory development of the derivatives markets demonstrates. What is less directly evident from that history of institutional practices, however, is that while derivatives markets have in more or less attenuated ways formally observed the distinction from received constructions of gambling for regulatory reasons, they have also inaugurated and massively operationalised an unprecedented mode of the wager.

Derivatives pricing cannot be identified with conventional notions of gambling, in that the standard wager depends on an exogenous referent that is uncertain at the time the wager is made (archetypically, the throw of the dice) from which occasion the wager itself (as an if-then payout conditionality) is distinct, and which it cannot affect without vitiating the very meaning of the term (archetypically, loading the dice), a schema designated here with the term *extrowager*. In the extrowager the gambler is constituted by her or his necessarily limited knowledge of an inactual future occurrence, a subjective manifestation of the inadequacy of finite epistemology to ontology. In these terms, the anticipatory BSM regime attempts to bypass the constraints of the extrowager (the prohibition of gambling), while observing them (the constitutive exogeneity of what is priced to the pricing process itself). The contention here is that, in formulating options pricing as an extrowager, as derivatives typically are, the BSM regime apprehends and domesticates the realist constitution and ontology of the wager inaugurated by derivatives markets. This domestication is reiterated in another format by Esposito's systems-theoretical account of derivatives pricing process as a sociosubjective construction. Furthermore, however prevalent and institutionally dominant such accounts of derivatives pricing may be, the latter is distinct in kind to the extrowager because of the constitutively

endogenous operation of différantial pricing and its concomitant indefinite plasticity. To be exact:

—It shares with the extrowager the exogeneity of the underlying as condition of the derivative's pricing process.
—Yet différantial pricing is distinct from the extrowager in that the former is an endogenous operation with an indefinite plasticity until expiration for which the conditional exogenous referent is operationalised as only a contingent abstraction of the pricing process. Derivatives pricing is conditional upon whether the set conditions at expiration will transpire or not, and, if so, what the payoff will be.
—The price of the derivative itself as well as (indirectly) the spot price of the underlying at delivery are themselves then priced in their markets (and its pricing is itself priced in the volatility markets); that is, any instance of derivative pricing is a wager placed not just *in* an indefinite betting process but also *on* it.
—Derivatives markets pricing is thereby akin to odds lengthening or shortening on a bet according to what other bets are placed. However, while the price of odds changes for the extrowager according to what other bets are placed, its changing odds and prices are always in reference to the exogenous circumstances conditioning the payout.
—In contrast, what is unprecedented about derivatives

> pricing is that its plasticity explicitly subordinates that external determinant for pricing to its *own* process, such that the market refers to the changing prices operationalised via that market.
>
> —What is priced by derivatives markets, then, is the pricing process *itself*. Unlike the extrowager, derivatives pricing is an *infrawager*, for which the terms at expiration are not externally determined conditionalities but only parametric constraints.

Displaced to the activities of traders, the processual and referential endogeneity of pricing is what Esposito calls second-order observation. Its determination *qua* infrawager, in contrast, explicates différantial pricing as an impersonal institutional fact, rearticulating its counterperfomativity in terms of the objective dimension of price. It is the real of derivative pricing not as a sociology of derivative pricing but as the ontology of *all* betting as a pricing process. Because the referent of the extrowager is the assumed condition and terminus of the wager, it proscribes identification of the endogenously constituted conditionality of the derivative pricing process as well as the contingency of abstraction with the underlying. This mistake is the consequence of a more or less implicit correlationism, the error of which is in fact exposed and operationally negated by the explicit manifestation of the infrawager in derivative pricing. Put the other way around, the

operational and practical exposure of the infrawager by derivatives markets is the historically unprecedented liberation of both the wager as such and of price from their assumed historical and theoretical subordination to exogenous terms that are not, in fact, conditions of pricing.

Commencing instead from the ontology of the infrawager, as the logic of pricing requires, it is, in Elie Ayache's formulation, 'easiest to withdraw' the underlying 'from underneath the contingent payoff and subsequently to claim that contingency is absolute and no longer derivative on that state'.[108] That is, the derivatives contract is not predicated on the underlying but *entirely* on the indefinite plasticity of the infrawager—including the price at expiration, which is only a structuring parameter. Thus the real of the infrawager, manifest and institutionalised as derivatives pricing, consists solely in its twofold contingency: the contingency of abstraction (the universal fungibility of the underlying) and the contingency of revision (the indefinite plasticity of différantial pricing). Establishing that the infrawager is the endogenously-constituted and -referencing real of derivatives pricing provides the basis for the final steps to complete the present argument; namely, to generalise the determination of pricing beyond the specific institutional practices

108. E. Ayache, 'The Turning', in *Wilmott Magazine*, June 2010, 45, www.ito33.com/sites/default/files/articles/1007_ayache.pdf.

of derivatives markets to price as such (its intensive aspect) which, per Nitzan and Bichler, is the single universal architecture of capitalization (its extensive aspect). The two imperatives for this comprehensive theory of price are, firstly, that it specify the articulation of finance in its practical dimension (institutional operations of capitalization via ownership claims) with financiality (the a priori of capitalization); and consequently, that the theory of price advanced must also provide a specific determination of finance power and thereby the primary characteristics of the state-finance nexus and its cogency (however riven and incoherent it may be in theory). It is Ayache's theorization of pricing that advances the generalisation of pricing required here, thanks to its positive determination of pricing as such as instantiating contingency qua absolute futurity, thereby (to go beyond the terms of Ayache's own argument) specifying the mode of time binding of capitalization not in the dimension of its sociology but of the real of price that is its ontology.

9. ABSOLUTE VOLATILITY

Though Ayache's argument is not directly that of the infrawager, his principal contentions are congruent with it, namely (i) that forward contracts have no price process shadowing a succession of prices outside of the derivative itself. Predicated instead on the

contingency of the underlying as its real, (ii) the price process given by the stochastic model and its elaborations are 'eliminated'. Consequently, (iii) the only reality derivatives prices have is that of the long/short position as the contract is re-entered (or not) every day the market is open, and no less (iv) at expiration. Ayache's claims follow from the observation that the real of the derivatives pricing process *in the present* is not the 'path' of différantial pricing, which is the dynamic actualisation of its temporization. Rather (and this is what Ayache adds to the determination of the real of derivative pricing) 'what exists today' for the forward contract (here a metonym for the derivative structure in general) 'are contingent claims, paying 1 or 0. […] [*B*]*oth belong to the world now* and also to the world "taking place"'.[109] In addition to the contingency of abstraction that is the universal fungibility of the underlying of the forward contract, the derivative is also contingent in that it posits a speculative 'as-yet-unknown' eventuality. That eventuality does not preexist the contract but is fabricated by it; the contract constitutes it in its inactuality and unknowness. The two outcomes are the 'branches' of two different realities only one of which will be actualized at expiration *because of the contract*. It follows that the derivative contract is, in Ayache's terms, always a 'contingent claim'. The contingency identified by Ayache is one

109. Ayache, 'Turning', 41; emph. added.

that the derivative constitutes and inaugurates and, as such, can be designated as its *thetic contingency*.

What this third contingency of the derivative constitutes is its deracination, not with regard to the underlying (from which the derivative is deracinated by the contingency of abstraction) but rather the deracination of price itself in the pricing process: it posits that 'the world is actually what it is in reality'—the derivative has a particular price in fact—'except that it could have been different'—only one of the contingent inactualities is actualised, the other remains inactual.[110] Thetic contingency is the necessary prerequisite of derivatives pricing, in that 'the contingent claim is only conceived as the written formula that it is (pay $1 if S is greater than K, 0 otherwise)', and also that the endogenous variability of pricing in the infrawager supposes price not to be a fixed given but, precisely, revis*able*.[111] Inaugurated and instituted by the derivatives contract, the thetic contingency of pricing is endogenous, real, and absolute for it.

This requires a revised determination of différantial pricing. The thetic contingency of différantial pricing means that:

110. Ayache, 'Turning', 36.

111. The quote is from E. Ayache, 'The End of Probability', *Wilmott Magazine*, October 2010, 41, www.ito33.com/sites/default/files/articles/1011_ayache_0.pdf.

—Derivatives are not just a counterperformative time-binding of the present and the future in which the deferring and displacing of the present into the future prevents the actuality of the present from being constituted as clearly distinct from the inactuality of the future.

—What is to be added to that determination of derivative pricing qua temporization, is that the constitutive futurity of the différantially organised present of risk pricing is that of the splitting of the future payoff—that is, the thetic contingency inaugurated by the derivative contract.

—That eventuality is endogenous to the pricing process, absolute yet presently unknown. The only relation to it in any present is speculative.

—The time-binding of derivatives pricing is consequently a constructed relation of the (thereby deracinated) present to the contingency of the *split* future, which will be both actualised and (with the eventuality that does not transpire) inactualisable.

—The logical a priori of the derivatives contract in the present is the absolute futurity of its thetic contingency.

—That is, to vector Esposito's formulation of the risk order across the dimension of the real of pricing: the inactual dimension of the present of pricing (risk) is ineliminable, even in any future present. The present can never be determined as a full actuality, not even in

> the future present; what is real to derivatives pricing is an absolute future that it endogenously constitutes.

The future present is therefore itself susceptible to revision in the way Esposito describes, as integral to a social binding permitting the future revision of decisions made today, but now with regard to the real of the infrawager. The logical a priori of the contract in the present is the absolute futurity of its thetic contingency. Consequently, the deferral of derivatives pricing is not that of a durational extension of the present (that would be the anticipatory formulation) but an irreconcilable and endogenous splitting of the present. That thetic, futural contingency occasioned in the present is the precise sense in which pricing is necessarily counterperformative: *it* is the positing of a future supervening on any continuity of the present, a futurity that is absolute for différantial pricing. In Ayache's words, the thetic contingency of the forward contract is the 'real thread of the future' in the present qua pricing, up to and including its payoff.[112]

As the absolute of derivatives pricing, thetic contingency is the truth of its counterperformativity. Consequently, three preceding determinations of derivative pricing need to be revisited, the third of which is taken up in the next section.

112. Ayache, 'Turning', 41.

Anticipatory pricing. Future prices cannot ever be predicted or anticipated, because the delivery price qua conditionality structuring the derivative 'collects as one writing the two branches of the alternative incompatible in actual reality'. That is, the pricing process is inaugurated by *positing* a split futurity that then not only refutes but also vitiates the possibility of anticipation qua extension of the present.[113] Which means that anticipatory models of actual price movement, including but not restricted to BSM, are only retrofitted elaborations, provided at maturity, of how the strike price was supposed to have been reached. The counterpossibilities to the actual price development of the derivative are, *qua* probabilities, only idealized, retrofitted reconstructions of a futurity; while once real in their inactuality, they were *never* actualised. Such counterpossibilities are a consequence of the absolute futurity of différantal pricing: just as the future present of différantial temporization is itself revisable because it too is constituted by the absolute thetic contingency of the real of the infrawager, so the past that determines the present as its actual yet revisable future is itself saturated with the unactualised eventualities of the past, of yet-other-futures for the past that are not the present from which they are apprehended. These past inactualised eventualities are only fictive idealizations in that they have not in fact

113. Quoting from Ayache, 'Turning', 41.

been actualized and, unlike future inactualities, they remain perennially inactual given that actuality turned out to be the present from which they are surmised. That is, they are only possible, never real. Furthermore, with derivatives pricing,such past inactualities cannot be predicated on an absolute past in counterpoint to its endogenous absolute futurity because, being logically predicated on that futural contingency and historically inaugurated by the contract, the a priori of the pricing process cannot precede it in time. Or, as Ayache puts it, the anticipatory articulation of the price process always and necessarily comes 'after reality, not before'.[114] Inversely, mistakenly presuming that derivative pricing takes place against a stable time background rather than instituting a temporization of contingent futurity, the probabilistic calculation of price development assumes that 'possibility precedes reality and that the different possibilities facing the world become realized as time passes'.[115] As such, retrospective-anticipatory pricing regimes—which take derivatives pricing to be strictly secondary to price movements and actualities elsewhere—repudiate the futural contingency that is the real of derivative pricing.

114. Both quotes in this paragraph are from Ayache, 'Turning', 37.

115. This is not to refute any and all manifestations of probabilistic formulations of pricing of contingent claims. Ayache supports the 'episodic' deployment of probability and stochastic control in the trader's daily market interventions ('Probability', 42).

Volatility. Previously designated as volatility, the endogenous thetic contingency of derivative pricing can now no longer only be rendered by its 'implied' derivation by which, recall, it can only be reconstructed consequent to its preclusion by the constraints of anticipatory pricing models (BSM), or as an effect of the reflexivity of derivative markets as a risk-order (Esposito). Rather, volatility is the absolute of derivative pricing: there is no derivative pricing without the splitting of the real of price into unknown actual and inactualisable futures; without, that is, a futural contingency that, in the endogeneity of the derivative market pricing, is instantiated in the indefinite plasticity of the infrawager. That contingency of revision is however actualised only by virtue of the operations of derivatives markets: the actuality of derivative pricing is, precisely, its price, instantiated nowhere else but in the dedicated market of the particular derivative. Consequently, 'the reality of the whole market worms its way into every attempt that possibility undertakes to precede the real'.[116] The real of derivative pricing is then endogenously constituted and actualized in its plasticity as a marketised futural contingency. While this is a familiar result, reiterating in other terms that derivative pricing is volatile because it is counterperformative, the formulation advanced here makes explicit that the ontology of price qua différantial temporization

116. Ayache, 'Turning', 49.

is necessarily predicated on an absolute futurity. That is, what is realized in every instantiation of derivative pricing is a volatility that is absolute for it.

The thetic contingency of an ineliminable futurity that splits the present—the absolute futurity inaugurated in différantial pricing—is the real of derivative markets. The innocuous account of the derivatives market as 'the place where contingent claims get prices attached to them'[117]—a put must be met by a call, a short position by a long position—is a prelude to the comprehensive determination of market operationality as the endogenously constituted material occasion—the institution—by which the futural contingency of derivative pricing is actualised and manifest with each reiteration of pricing. As condition of the plasticity of derivatives pricing, the market is the material topology—more exactly, given that in the technical vocabulary of the market, the put option is said to be 'written', it is the *toposcription*—of the absolute volatility that is the actualisation of the futural contingency of derivative pricing. A number of equivalent formulations follow: necessarily instantiated in the derivatives market, the futural contingency of derivatives pricing *requires* its dynamic yet metastable toposcription, meaning that 'only the market preserves contingency in the present';[118] or, as Ayache puts it

117. Ayache, 'Probability', 42.

118. Ayache, 'Turning', 43.

elsewhere, the market is 'the medium of contingency'.[119] Emphasising the endogeneity of pricing, 'the market is its own source of contingency';[120] emphasising instead the absolute volatility instantiated by that institutional toposcription, market pricing can be characterised as a 'technology of the future'.[121]

To be clear, and to draw the argument back to the broader political economy of derivatives markets: the 'preservation' of contingency by derivatives markets, its technology, is necessarily contrary to stability. The ontology of these market institutions is predicated on

119. Ayache, 'In The Middle of The Event', in R. Mackay (ed.), *The Medium of Contingency* (Falmouth: Urbanomic, 2011), and 'The Medium of Contingency', *Pli* 22, 2011, 62–87. While market pricing is a medium of contingency, following Nitzan and Bichler it is also at once the medium of power. The implied codetermination of contingency and power via price is explicated in §11.1 below. The subordinate point is that, determined as these mediations, finance theory is a variant of media studies. Vogl similarly proposes that finance demonstrates the general characteristic of all media, that they 'communicate themselves in their operation' as well as the communicated 'content', in this case because the control over the contingent future sought by finance is betrayed by the 'time-critical processes' that finance markets are ('Taming Time: Media of Financialization', tr. C. Reid, *Grey Room* 46 [Winter 2012], 82). However, Vogl's argument obviates the primacy of volatility in the pricing of risk and, following Keynes, also predicates the contingencies generated by market pricing on time distinct to the 'control' of price. Ayache's and Esposito's otherwise divergent theses are, rather, that the temporization of market pricing is constituted by the latter's contingencies. That is, the market is a medium of contingency and consequently a medium of time qua futurity. Still opaque, however, is what that futurity is with respect to both the contingency and power it posits, and this is what §11.2 below elaborates.

120. Ayache, 'Turning', 49.

121. E. Ayache, 'The Next Question Concerning Technology. Part 1: The Significance of Dynamic Replication', *Wilmott Magazine*, June 2007, 33 [www.ito33.com/sites/default/files/articles/0703_nail.pdf].

the absolute volatility (thetic contingency) and indefinite plasticity (contingency of revision) of derivatives pricing that together constitute such markets as risk-orders. Locating the instantiation of pricing identifies the market as the sociotechnical condition—the institution—for the contract-exchange that determines price on each occasion. Ayache literalises that condition as the trading pit for options, whereas Esposito notes that derivatives markets are, amongst other markets, now geospatially 'distributed [...] as a ubiquitous form of calculation and reasoning', in accordance with the weakening norms of jurisdictional authority in the geospatially attenuated institutional forms of the risk-order.[122] Furthermore, and to begin the redetermination of the contingency of abstraction that will be taken up more fully in the next section, since derivative pricing is liberated from any intrinsic or necessary relation to the underlying, and given that there is no 'cause' for the contingency of pricing outside of the endogenous pricing process, for Ayache that contingency is instantiated primarily by the existential participation of the derivatives trader in the pit who, in Badiousian fashion, is subjectivised by its eventhood[123]—a singularisation effected, without standing in complete contradiction to Badiou's philosophy despite the theoretical-political incongruity with it, as a personalized embodiment

122. Esposito, *Future*, 69.

123. Ayache, *Blank Swan*, §4.3.1–2.

of the second-order observer who is Esposito's systemic agent. But such determinations are again epiphenomenal and inadequate precisely because they are subjectively organised rather than determined by the logic of differential capitalization. Against such correlational determinations, the real of différantial pricing that is the absolute volatility of the infrawager must rather be apprehended in terms of its impersonal, socio-institutional ontology. Taking up that injunction, as the next section does, provides the argument for determining the ontology of price in general to be the real of derivative pricing, a result that in turn permits the operational and a priori dimensions of finance to be coarticulated without subreption.

10. PRICE IN GENERAL, VALUE, ARKHÉDERIVATIVE

That volatility is the absolute of derivatives pricing does not revoke the delivery price as a constitutive conditionality for that process. There can be no derivatives pricing without the delivery price as a structuring parameter. Moreover, in Ayache's formulation, only at the expiration of the derivative pricing process is 'the contingent claim really derivative on its underlying because its price is then settled and rigorously equal to that function of the underlying called the payoff'.[124] That is, maturity/expiration is the one point at which

124. Ayache, 'Turning', 45.

derivative pricing is convertible to the price of the underlying asset, a moment conventionally called the *valuation* of the contract and thereby of the pricing process. In Ayache's terms, valuation is when the 'underlying' of the derivative transfers from the paper on which the contract is written to the asset, a figurative articulation of the conversion of the endogenous plasticity of the pricing process to its determination by the price of the exogenous referent in its own market, a determination cashed out as the payoff. Valuation is the completion, exhaustion, and conclusion of the pricing process.

Because valuation is determined by the difference between the delivery price and the strike price at expiration, the former being a static structuring conditional of the pricing process while the latter is also set in the market of the underlying asset, it seems that valuation is an external, structuring boundary condition for derivatives pricing. The institutional distinctions between derivatives markets and those of the underlying assets (when the latter are nonfinancial) confirm the exteriority of valuation to the plasticity of derivatives pricing. Yet price volatility is operationally generated by activity in any market, including those trading assets to which the derivatives refer (§5 above) and, theoretically, determined as it is by the difference between delivery and strike prices, the valuation of a derivative is precisely what is itself priced and varied

by derivative markets. As such, valuation is an *internal* boundary condition to the derivative pricing process even as it conditional on the price of the underlying asset in *its* own market. The valuation of the underlying is, as Ayache puts it, 'dictated by the programmatic character of the payoff schedule'.[125]

At best, then, valuation is determined on the one side in relation to the price of the underlying in its own market or, on the other, by an internal boundary condition for derivatives pricing. The two sides are constitutively and institutionally distinct and, as such, the determinations of valuation are in opposition. But they are not incoherent or contradictory; nor can the ambivalence of valuation be settled by a more exacting analysis. In Derridean terms, valuation is a *supplement* to derivatives pricing, a term held to be outside of the derivatives pricing process but structuring it as a conditioning origin, principle, or terminus, yet which in fact is only stipulated as an extrinsic determination by that process (for example, for Husserlian phenomenology, the lived present is a supplement of what is in fact a differentially constituted present). That supplementary condition is what permits différantial pricing to be subordinated to the anticipatory regime of pricing, which is premised on valuation; and what permits the infrawager that is the real of price to be correspondingly determined as an extrowager, in which the real

125. Ibid., 47

of pricing is its exogenous referent (in the case of derivatives, the price of the underlying asset). Equally, however, if derivative pricing is instead predicated on the infrawager and its différantial logic as its real, as has been established here, then the supplementary condition loses its prerogative over the pricing process and must instead be determined in terms of its real.

To anticipate the next steps of the argument, and without confusing the specific meaning of derivatives valuation with the generality of value as such, what this 'supplementless' determination of valuation means is that (i) value is in every case an exogenous cipher for pricing, and that (ii) price is in every instance predicated on its absolute volatility, including the price of the underlying in its own market. The argument on value follows from that on price, which is itself a general theory deduced from the comprehensive theory of derivative pricing:

—Valuation is the conversion of the derivative at expiration/maturity in its own market to another market in which the underlying is priced. In valuation, the pecuniary magnitude of the derivative contract payoff is exchanged in its *equivalence qua price* for the asset in its own 'primary' market.

—'Equivalence qua price' across markets supposes the commonality of price for both the derivative and the asset as pecuniary magnitudes. And because value

is the conventional term for the conversion point of one market to another via price (as discussed further below), price itself then being determined as a value because of its exogenous referentiality across markets, 'valuation' is the appropriate conventional term to designate this moment in the derivatives pricing process.

—The valuation of the derivative and therefore of the underlying asset is, however, at once priced by the derivatives pricing process itself and, *qua* volatility, modified by it. Furthermore, valuation cannot be recused from derivative pricing without mistakenly limiting derivative pricing to the standard format of the extrowager—an extrojective circumscription that is in any case proscribed by the logic of the différantial constitution of the infrawager, according to which the identity of terms cannot be preestablished.

—That is, if valuation is an exchange predicated on prices, this now means that the putatively exogenous referent of the derivative's valuation—the price of the underlying in its own market—is not in principle distinct from price as it is constituted by différantial pricing. If it were so distinct, derivative pricing would be inequivalent to price in the markets for the underlying, vitiating valuation in particular and derivative markets in general, as well as fracturing the 'single quantitative architecture' of pricing in capitalization.

—For *this* reason, valuation as the conversion point from one pricing process to another is constituted by

> and manifests the two contingencies—thetic (absolute volatility) and revisability (plasticity)—of derivative pricing. As such, and as already noted, valuation is an internal structural conditionality of the derivative pricing process. But 'internal' now indexes only its institutional formats: the exchangeability of derivative pricing with prices outside of derivative markets via valuation means that the infrawager is the structural and ontological condition of price per se; and the absolute volatility of derivative pricing is the absolute of price within *and* outside of derivatives markets.
>
> —The price of the underlying is thus *institutionally* external to derivatives markets, but *constituted* in their logic. Or, inversely, derivative pricing exposes and makes institutionally and operationally manifest the general condition of pricing as such. Extending outside of the specific institutions of derivatives markets to the fact of price as such, the différantial ontology of derivative pricing is the real of price per se.

On the basis of that general theory, Ayache's characterisation of the absolute volatility of derivative pricing, that the 'written and material character of the contingent claim repeats that value is in fact unsettled and that it could have been different (i.e., it is a price)' holds even for prices outside of the derivative

markets.[126] More broadly, it is intrinsic and necessary to the valuation of derivatives that *all* prices 'could have been different' *because* any price means that another price could have been given thanks to the plasticity and absolute volatility of pricing.

Value

Though this means that price is in general predicated on the real of derivative pricing that is the infrawager and its dyadic contingency, the supplementary determination of valuation persists in the primary sense informing the term 'valuation': that price reflects value (or, at least, it should). As noted above, the value of derivative pricing is its payout, occasioned in its putative exchange for the (price of the) underlying, at which point the derivative pricing process vacates the operating logic of the infrawager and converts into a mercantile exchange; as the terminology for options has it, derivatives and their markets *expire* when they are exchanged for the underlying asset. More generally, value is the exogenous determination of pricing which, in the standard determinations of Neoclassical and Marxian doctrine, also anchors it—the very same conversion of pricing that was operationally imposed by the regulators of the early CME. Formally, the argument against the priority of value over price follows quickly from its différantial logic: what is

126. Ayache, 'Turning', 45.

conventionally supposed as the condition and referent of price is in fact constituted *and* deconstructed by the latter. Price deconstructs value, and that deconstruction is explicitly manifest in derivative pricing. Substantially, the endogenous constitution of price qua infrawager means that the value-referent of price is not established on the basis of circumstances external to the relevant market such as trade, scarcity, demand, use, labour, or any other determinant external to pricing, all of which beg the standard economic question of how these heterogeneous nonpecuniary conditions and specificities can be commonly calibrated via pecuniary magnitudes.[127] As closing out and the universal

127. In obviating even the means of means of production as a prerequisite of pricing, this result goes farther than Ian Steedman's conclusion that 'in general, profits and prices cannot be derived from [Marx's] ordinary value schema' but rather only from the 'physical schema' of physical production and labour costs' ('Value, Price and Profit', *New Left Review* I.90, March-April 1975, 78). Marxist criticism of Steedman's argument focus on the formal idealizations of the static model of production Steedman inherits from Piero Sraffa's *Production of Commodities by Means of Commodities* (1960). While Steedman and Saffra both present NeoRicardian critiques of Marxian value-theory, recuperating the division in kind between price (exchange, distribution) and value (production, labour), with Steedman dispensing with valuation as a necessary mediation between labour and price, the claims of the main argument here correspond more to Samuel Bailey's 1825 criticism of David Ricardo's derivation of value on the basis of labour rather than in terms of exchange alone.

For Marxism, all such results can only be errors: Marx's primary theoretical contribution is the synthesis of production/labour and distribution/exchange with his labour theory of value in Capital 1: that theory is not an account of the generation of value by labour alone (Ricardo's thesis) but of labour as an abstract social form constituted by exchange determined in its universal instance by money. Bailey's thesis is that such exchange is the common term of value. As I.I. Rubin remarked in the 1920s, given the dialectical unity of labour as a social form (exchange) and concrete action

fungibility of the underlying make explicit, the operation and dynamic of price in derivatives markets are

(labour), any separation of its aspects is only a mistaken hypostatization of its comprehensive constitution ('Abstract Labour and Value in Marx's System' tr. K. Gilbert, *Capital and Class* 5 [Summer 1978]). Rubin's resolution however also throws up its own difficulties on how exactly values then change between the input and output of a production process, and how they are converted to prices. The latter is known as 'the transformation problem' and was addressed by Marxist theorists countering Steedman's result by insisting mainly on the intratemporality of value-development and, with regard to price, the dialectical integration of value via the commodity form, constituted on the one hand by labour in its concrete instance (as the yet-to-be-realised form of value, its substance in Hegelian terms) and, on the other, by exchange (as the realized form of value or, per Hegel, its appearance), with money as the (universal) abstract equivalence of value in general (see in particular E. Mandel [ed.], *Ricardo, Marx, Sraffa* [London: Verso, 1984]; G. Carchedi, 'The Logic of Prices as Values', *Economy and Society*, 13.4 [November 1984]; A. Freeman and G. Carchedi [eds.] *Marx and Non-Equilibrium Economics* [Cheltenham: Edward Elgar, 1996]; and A. Freeman, A. Klimam, J. Wells [eds.] *The Value Controversy and the Foundations of Economics* [Cheltenham: Edward Elgar, 2004]).

While the argument of the main text here is congruent with the Marxian criticism of both Bailey and Ricardo as wrongly restricting the formulation of valuation to either exchange alone or labour alone, it also diverges from Marx's explanation of valuation in general as the dialectical integration of these determinants in the commodity-form. What is instead proposed here is that valuation is but pricing in its exogenous conversion. Contrary to what Marx takes from Ricardo, labour then has no particular privilege in constituting value; and contrary to what he takes from Bailey, exchange only involves values as exogenous referents for the mobilization of prices that set the market, not as the ontogenetic condition of prices. On this basis, the extension of valuation to the 'physical schema' of production is not only theoretically trivial, it is necessary: if labour is value-constituting it is not because it is simultaneously constituted by the general social form of value in exchange and concretely constitutes value in particular. Rather, labour is value-constituting only because it is priced. Moreover, with regard to exchange, it is on this basis that market exchange at whatever scale (from individual bartering or obligation) has to be taken as a modality of pricing rather than the latter developing from the former (as per Adam Smith). Constituting valuation with regard to labour as a primary category, as Marx(ism) does, not only misapprehends valuation and therefore what labour is (the prevalent mistake of political Marxism), it also explains how and why dominant capital-power is not thereby troubled.

overtly liberated from these exogenous determinations irrespective of whether they are cast subjectively (in the Neoclassical paradigm) or objectively (in the Marxian paradigm).

In other words, given the contingency of abstraction as a condition of price in relation to value, price in general is not an epiphenomenon or overcoding of values that preexist it, nor an order of marketisation imposed upon them. Rather, in the condition of capitalization, price is the *precondition* of valuation. That is, the condition for the variability, transformation, and equivalence of value—the intrinsic mobility and multiplicity of values synchronically or diachronically—with regard to price is not value, but pricing. As such, price has no intrinsic value. And because value has no basis outside of the pricing process determined as the infrawager constituted in its triadic contingency (thetic contingency together with the contingencies of revision and abstraction), value has no intrinsic value.[128] Value is not then a condition or necessary limitation on pricing and therefore on capitalization, as a real other to them, but only one of the assigned variables of

128. The three main ideas of Nietzsche's later philosophy from the period of composing the *Zarathustra* book (1880s) onwards—the will to power, the revaluation of all values, and the eternal return of equivalences (as an idiomatic translation of *ewige Widerkehr des Gleichen*)—can then be identified as variants of the deconstruction of value by price. In rendering the transmutation of valuation in terms of the philosophico-religious traditions of moral value-formation and their modern weakening, Nietzsche correctly identifies the determination of modernity in non-financial terms yet, for that reason, largely misapprehends its constitutive elements.

the real of price, a real exposed as such by derivatives market operations. On the contrary, value is but the exogenous determination of price, the conversion of one pricing process to others or to what lies outside of price altogether. As such, and as both Marxism and Neoclassical orthodoxy stipulate, value subtracts the contingency of abstraction from the triadic contingency of price in general, now meaning that value is not only a reduction of pricing to the dyadic (thetic and plastic) contingency characteristic of the infrawager but also that, since price, valuation extends the structure and contingencies of the infrawager outside of price and in other terms.

The formal result above is thereby substantially confirmed: assuming the supplementarity of value as the basis of pricing, price deconstructs value. In the condition of capitalization, value (commonly identified with the qualitiative) is a financial term in principle and in fact (it is quantitative). Derivatives pricing exposes, institutes, and operationalises price as the differential variability of value in general, but without delimitation by an exogenous referent, and thus as a valueless process. Equally, the variability of reference characteristic of value, which is indefinite because value has no intrinsic value, is the condition made explicit and exact as 'abstract pecuniary magnitudes' in a universalisable 'single quantitative architecture' organized by and for capitalization: as price, that is,

for which valuation and what is valued (whether or not it is opposed to price, for example as use-value) are only functional occasions for the instantiation of a capital-power.[129]

The Arkhéderivative

That a price 'could have been different' even once it is set and a value given, and that values (are liable to) change are demotic articulations of the general theory of price advanced here: that price is constituted in the triadic contingency of the abstract infrawager. Implicit in the commonplace of price contingency, and now fully exposed, is that, rather than prices arising from exogenously-derived valuation, values

129. Confirming from a completely obverse aspect one of the primary theses of communization theory, that because labour is constituted by the value-form, contrary to orthodox Marxian praxes which vectors class struggle via labour organization the only viable exit from capitalism is rather the (theoretically organised) abolition of labour, establishing in its stead 'immediate social relations between individuals' (Endnotes, 'Communisation and Value-Form Theory', *Endnotes* 2, April 2010, endnotes.org.uk/en/endnotes-communisation-and-value-form-theory). In terms of the logic of the main text here, and to preview later developments, such a claim is a perfectly symmetrical abreaction to the strictly endogenous constitution of pricing, and thereby abets finance-power from a putative 'outside'. Communization is consequently a politics entirely compatible with now-prevalent finance-power, reconstructing in other terms the exclusion of anthropological interests from the endogeneity of the infrawager—if, that is, communization is in any way a politics: the evacuation of power-price determinations in the 'immediate social relations between individuals' abolishes the futurity and calculative risk of abstract sociality by which, as argued below, politics is constituted, proposing instead a countermodern ethical relationality. Or, as Endnotes themselves affirm, the 'radical politics' of their conclusions are in fact strictly and wholly 'anti-political'.

are variable by virtue of their price-ontology. Nitzan and Bichler, Esposito, and Ayache each formulate variants of this primary thesis. Nitzan and Bichler note that price as the elementary unit of capital-power cannot be established because both the anticipated earnings and the future normal rate of return for the asset, meaning that the basic discount price formula can not in fact be known. Accordingly, the price of capitalization in the present, which orders industry, is always and necessarily speculative, variable (plastic), and contingent (abstract) and thereby permit differential accumulation—that is, they are administered prices. For Esposito, derivatives pricing is a particularly complex and advanced form of sociotemporal binding that determines the present as revisable (plastic), maintained primarily with regard to the inactual and unknown future (absolute volatlity), a condition typical of the risk-order constituting modernity in general. And for Ayache, referring to the contingency of the definite uncertainty of the absolute volatility of price explicitly posited by derivative pricing (thetic contingency), each price 'successively repeats the whole genesis of price'.[130]

Each is however only a partial and circumscribed determination of the general theory of price according to which price as such, and value after it, are constituted by and instantiated as différantial pricing

130. Ayache, 'Turning', 42.

wherever and however spontaneously they happen. Furthermore, the ontology of price, which is the general and realist theory of the 'genesis' of price repeated by each price, is explicitly materialized, institutionalized, and operationalised *qua* derivatives in their markets. But, to return to the organizing caveat in the introductory comments above, if the financial operations of derivatives markets are empirical-institutional *manifestations* of the ontology of price per se, the two dimensions referred to—institutional practices and ontology—cannot be directly identified: for all of their transnational systemic integration, derivatives markets are a parochial set of institutional constructions for capital accumulation via complex ownership claims formulated via specific juridical-financial contracts; on the other hand, the ontology of price as such is the a priori of pricing in *every* instance. Following Derridean convention, wherein the writing that is the logically a priori condition for speech, though it may be historically posterior to speech, is demarcated from the historical manifestation of writing by designating the a priori an 'arkhéwriting', the conditional primacy and priority of the derivative for price as such is here designated the *arkhéderivative*.[131] The term is a

131. Though it is not named as such, arkhéwriting is at the core of Derrida's *Edmund Husserl's Origin of Geometry: An Introduction* (tr. J. P. Leavey (Lincoln, NE: University of Nebraska Press, 1989 [1962])), §VII, esp.89), in which a modality of writing is identified as the historical and logical condition of science. That derivation is rehearsed in Chapter Six of Speech and Phenomena, where arkhéwriting is explicitly named (85, translated as

theoretically-organized construction articulating and exposing the two dimensions of pricing via one other, integrating them without direct identification.

That the operations of financial markets are constitutively predicated on the ontology of price is a trivial consequence of identifying the arkhéderivative. The non-trivial corollary is that financiality, the a priori of price in capital power, is also predicated on the arkhéderivative. The arkhéderivative is then the a priori of the *political economy* constituted by the ontology of price. That is, the arkhéderivative is not only manifestly and explicitly operationalised by finance markets for capital accumulation, it is also the ontology of every instantiation of capital-power. As regards the former, it is not just the *fact* of price but also the ontology of price that is made explicit and operationalised by the complexities of the time-binding of derivatives pricing. As regards the latter, the arkhéderivative is the ontological a priori of capitalization, as political

'protowriting'), becoming a primary thematic in *Of Grammatology* as an explanans of the constitutive role of the expressive/extensive dimension of signification in the otherwise idealised accounts of structural linguistics (tr. G.C. Spivak [Baltimore: Johns Hopkins University Press, 1997 (1967)]), 59–61, from which the following quotes are taken). That arkhéwriting is the a priori 'of all linguistic systems' means for Derrida that it cannot be an object in any language nor 'enrich the scientific [or] positive description of the system itself' as the object of a science. Derrida's retreat to transcendental-empirical or essence-appearances disjunctions at the very point that he surpasses them leads to his influential but therefore restricted characterisation of writing per se as primarily literary (59), distinct from the protoscientific synthesis of the real of writing for which Husserl also provides reasons.

economy in general, *and* in its each time particular instantiation qua price. Financiality is, in other words, the power determination of the arkhéderivaitve qua ontology of price.

The complex institutional-practical operations of financial markets are integrated with the a priori financiality of capitalization by the arkhéderivative in the real of price (what could sarcastically be called its common-wealth) as its respectively operational (power) and constitutive (infrawager) dimensions, and this can be stated without making the category error of directly identifying them. Conjoining these otherwise disparate dimensions of financial pricing, the arkhéderivative is the comprehensive realist ontology of finance. In particular, thanks to their complex forms of time-binding, financial markets make explicitly manifest and operationalise not just price but also the ontology of the instantiation of capitalization in general. The irrevocable lesson of the arkhéderivative is that price is at once institutionally and constitutively financial.

11.1. FINANCE-POWER: POLITICS

The arkhéderivative is the ultimate term in this argument or the ontology of price, serving as a summarising metonym for the various determinations contributing to the general theory of price and permitting, by way of conclusion, the redetermination of finance-power

as a risk-order constituted by price contingency. That redetermination is not an arbitrary or parochial issue for theorizing the political economy of capitalization: if the arkhéderivative is the real of finance in its constitutive and operational dimensions, then derivative markets are the truth of market financiality *qua* the dynamic power-ordering of capitalization. Moreover, that dynamism is constituted by the triadic contingency of the arkhéderivative, generally actualized by the universal fungibility of what is priced (contingency of abstraction), the variability of price (contingency of revision), and the futural absolute volatility of pricing (thetic contingency). These are the primary conditions of the risk-order instituted by price; a risk-order determined now not in terms of the sociology of the markets but in terms of the real of price. That risk-order is also and immediately a political economy, because in constituting the financiality of price, the arkhéderivative is no less the ontology of capital-order. As a consequence capital order is necessarily a risk-order.

Distinct from the broad characterisation of modernity as a 'society at risk' (as per Esposito's systems-theoretical determination) social-institutional order in capital power is contingent not because the future is uncertain in the present in general (Esposito) but, more exactly, because the present of capital power—socio-otemporal binding—is split by the absolute volatility of pricing into the realisation of incompatible futures.

Turning now to Nitzan and Bichler's account, capital power is dynamic and transformative not only because of the strategically common conflict between capitalists (which again would be a sociological determination of the political economy of capitalization), but because that conflict is itself only possible via pricing because the latter is constituted in the arkhéderivative *qua* the dyadic contingency of the infrawager, manifest in the standard discount price formula of capitalization as the uncertainty of its inactual variables. And because the arkhéderivative is the condition of capital-power, the absolute volatility of pricing theorised by Ayache per force instantiates capital-power. In general, the actualisation of the arkhéderivative's triadic contingency qua price is in every instance capitalization's dynamic and transformative social (re)ordering (including the stability and preservation of extant power configurations, for which the only absolute is their futural contingency and whose stability thereby needs to be actively maintained by repricing). The arkhéderivative is the dynamic metastability of the capital-order.

The triadic contingency instantiated qua price is not just one of pricing with regard to other prices and value but—precisely because price is the ordering schema of capitalization—also the intrinsic contingency of the constitution and organization of capital-power. It is in other words *price* that necessitates politics. The capital-order, which is a risk-order, is constituted

as a political economy. Even if it is a commonplace that finance, exemplified by derivatives pricing, is necessarily a mode of capitalization qua social ordering, the ontological corollary established here is that, predicated on the arkhéderivative, social power qua capitalization is transformable, mutable, and contingent as a futural unknown.[132] Such is the contingency of revision conditioning the risk-order of finance-power, for which (i) the financiality of the arkhéderivative 'depriv[es] the very meaning of normativity' from the social order, and (ii) capitalization instead implements the continual and nonterminal revision of social order via price. Consequently, the only basis for the dynamic institution of power in capital-order is capital-power, instantiated by price, the logic of which is organized by differential accumulation.

It follows that differential accumulation is not a norm but a politics, the term now futurally determined as the normless revision of power qua risk (that is, instantiating and capitalising on the futural

132. Roberto Mangabeira Unger proposes that the modern social order is an endlessly plastic and transformable 'artifact' by virtue of acknowledging society to be constructed by human imagination and creativity rather than posited as a given (Z. Cui [ed.], *Politics: The Central Texts* [London: Verso, 1997 (1987)], 3–18 and 172–204). That 'negative capability' of social institutions (contrasted against their extant positive terms) is dedicated to emancipating subjective experience from established scripts but is however often practically constrained and circumscribed by extant elite configurations and 'entrenched' social structures. While the latter point is uncontentious, in the terms of the thesis of the main text here Unger's proposition psychonaturalizes and thereby cloaks the sociopolitical plasticity wrought by capitalization as the prevailing condition of modernity.

contingency of price).[133] Such politics is a recusal of

133. This result countermands the political and theoretical adequacy of neorationalist doctrine to the modernity it claims to advocate for and advance via Left Accelerationism. A short detour into Brandom's philosophy demonstrates why: the consistent and thorough synthesis of judgements in Brandom's 'strong semantic inferentialism' (SSI) consists of three simultaneous activities (*Reason*, 36–38): (i) the consistency of critical responsibilities 'requir[ing] judgers to renounce commitment to contents that are incompatible to other commitments' or their consequences, because each can 'serve as a reason to give up the other'; (ii) completion via ampliative responsibilities, requiring the judger to accept other commitments on the basis of what she or he is already committed to; and (iii) the warrant of justificatory responsibilities, requiring the giving of reasons for one's commitments by recourse to prior commitments. The synthesis of judgements in SSI results in the transcendental original synthetic unity of apperception at the base of Kant's account of the epistemological subject: normative revision integrates (= unity) the endorsements intrinsic to inference-making (= synthesis) by the judgement that these norms inaugurate (= original) by a sapient being (= apperception). Furthermore, these conditions are not just those of judgement but necessarily also of what is judged, which is the content of the concept (= transcendental not formal logic). This latter objective dimension of the unity of apperception constitutes a representational relation to the content of the concept that is therefore intrinsically determined by the constraint of consistency, meaning that in its rational validity of no one object or subject in its unity can maintain incompatible properties (principle of non-contradiction), though two different subjects/objects can exhibit the inconsistency between them (45). The subjective dimension of such necessary exclusions and consequences are its deontic or normative relations (responsibilities and liabilities), and the objective corollary is their 'alethic modal' relations, meaning that a 'single object just is what cannot have incompatible properties (at the same time). That is, it is an essential individuating feature of […] objects [that they] have the metaproperty of modally repelling incompatibilities' (48) as a necessary consequence of their having 'objective validity' by inference. Hence, rational inferentialism necessitates a unified and coherently integrated subject and object of judgement that each repudiates incompatibilities.

Against the homology between reason qua SSI and risk-rationality proposed in n.89 above, neither of these two principal conditions of SSI holds for pricing in its thetic contingency and the concomitant future-constituted risk-order, for two reasons: firstly, contrary to the normative performativity of rational inference, pricing is counterperformative and necessarily goes in the 'wrong' direction to any that might be inferred by stipulation of an 'ought'. Secondly, pricing's absolute volatility is precisely and only the positing of a futural contingency qua incompatibilities of what

the future will be even once the contingency they construct is settled (the price 'could have been different'). As such, pricing in its absolute volatility instantiates and maintains incompatibilities rather than repelling them. Consequently, pricing and the risk-order do not comply with the deontic constitution of the subject in its orginary synthetic unity of apperception, or to the alethic modality of the object's noninconsistent validity, or to the thus coordinated inferential consequences and deontic adumbration. In formulating the basic unit of judgement not in the predicative form of <If p then q> but in the contingent formulation <If p then q or r or s or …, where p is insufficient to determine q, r, s….>, the risk-order vitiates reason qua the positive freedom and authority of normative constraints (60).

In Brandom's terms, which have an immediate political overdetermination, it follows that pricing and the risk-order of capitalization are not rational but are conditions of unfreedom (cf. Negarestani, 'Labor'). But such a Brandomian critique of capitalization via pricing is only a doctrinal result, one among several consequences to the incompatibility of the risk-order with the normative synthetic unity posited by philosophical reason. What can also be inferred is:

- that as a discursive social practice with some rules (the logics of differential accumulation and différantial pricing as well as the delimited regulatory requirements for markets), the risk-order is quasirational precisely because it posits an order that maintains incompatibilities;
- that risk-rationality is a nonnormative modality of reason, meaning that the social order of risk is shaped not by rational norms but by inferential processes whose logic surpasses that of the deontic-alethic modalities of unified synthetic judgement;
- given the expansion of inferential pragmatics in the risk-order beyond Brandomian doctrine, the latter is an unnecessary and limiting commitment to philosophical-rational determinations of inference and reason. More assertively, the deontic-alethic modalities of incompatibility-repelling synthetic unity postulated by SSI are undone by the risk-order of capitalization, which socially instituted practice constitutes the very political modernity of which SSI claims to be the philosophy and moral-conceptual authority.

Philosophical adequacy aside, the incompatibility of risk rationality and SSI formulates a schema for the politics of normative reason with regard to the risk-order, botho f these being taken as practices of revision. Affirming SSI, the subjective and objective unity it instantiates as well as its subtending normative constraints mean that SSI necessarily counters the construction of incompatible inferences characteristic of the risk-order of capitalization. But that is to repudiate the primary futurity constituting the risk-order thanks to pricing. This repudiation is evident in Brandom's affirmation of Hegel's configuration of the rational integration of conceptual content by

norms which, thanks to the arkhéderivative's contingency of abstraction, is exacerbated in its scope by the universal fungibility of what may be priced (in contrast, then, to the typical but restricted referent of capitalization—production for Marxism or, in its more recent biopolitical overdetermination, 'life', or for Veblen, 'industry').[134] What is indexed here by the

the process if 'recollection (*Erinnerung*)', which provides a 'genealogical [...] vindication' of inferential commitments 'currently being integrated' (16, and Ch.3)—another variant of synthetic unity of reason now with regard to the sociohistorical fabrication of discourse which, tellingly, is the way that reason 'is the way [reason] moves forward, by looking backward' (23). Inferential reason is then a synthetic traditionalism at a variety of scales and venues—sociohistorical, subjective individual, and objective validity—all of which will come to be integrated with one another. By contrast, asserting the risk-order of capitalization *qua* generation and maintenance of incompatibilities, rationality is not an attribute primarily of sentience but of pricing, reason being here determined with regard to the futural contingency of temporization. That practice prevents retrospective semantic vindication and, concomitantly, the formulation of an original synthetic unity as the organizing term of reason or the quasinorms it posits. In terms of SSI, risk-rationality inaugurates what Meillassoux elsewhere calls the Principle of Insufficient Reason not with regard to the insufficiency of the ontological causal relation as basis for what happens next that concerns Meillassoux (see n.98) but as the constitutive insufficiency of the very establishment and construction of semantic-discursive inference-making itself, vitiating the 'bindingness' of any normative construction.

If, following Brandom, the Enlightenment is the 'development of secular conceptions of legal, political, and moral normativity' predicated on the 'conception of normative positive freedom' as formulated via SSI in its necessary sociohistorical dimension (60)—which is the to-be-vindicated philosophy of political modernity according to neorationalism—that determination of modernity misidentifies it as the coherent generation of retrospectively constituted and integrated semantics rather than the futural positing of incompatibilities. As such, the Enlightenment has little if any salience for apprehending the risk-order of capitalization.

134. These determinations are compounded via the recent emphasis on the 'precarity' of life-work and experience in neoliberalism: see M. Lazzarato, *The Making of the Indebted Man*, tr. J. D. Jordan (Los Angeles: semiotext(e), 2012) and C. Marazzi, *The Violence of Financial Capitalism*, tr. K. Lebedeva

otherwise paradoxical formulation of an order without norms that is universal in principle, is that the real of capitalization is not constituted materially, normatively, or conventionally, but by stable-enough institutions positing a contingent yet power-hierarchical relation to an indefinite future via price.

If differential accumulation means that price variability is the reorganization of power, the redetermination of capitalization in terms of the arkhéderivative means that power is now not only a power over *what* the future may be—the standard criticism that capitalism segments the future in favour of those with the greatest capital, though since finance-power such a segmentation is in fact all that politics is *qua* the power-organization of the future. Predicated on the arkhéderivative, power is moreover power over the organized uncertainty that price posits in the present (thetic contingency). To elaborate: because the real of price is the endogenously constituted infrawager, the futurity of the arkhéderivative is itself priced as its volatility. As such, the futural thetic contingency of pricing is itself subject to the power instantiated on each occasion of price. Consequently, price qua the magnitude of power of social institutions is the paradox of the magnitude of social power over uncertainty, a measure of the size of a futural contingency *instantiated* by price.

and J. F. McGimsey (Los Angeles: semiotext(e), 2011). With respect to finance-power, precarity is but an anthropological-industrial incidental determination of generalised price sabotage.

Capitalization is thereby determined as a risk-order of power not only extensively, across the entire 'spectrum of social institutions' or 'societies at risk', but also intensively in each instance of price. Price indexes the magnitude of the absolute volatility of power in the present. It is not then that risk is to be priced by derivatives markets but, constituted in the arkhéderivative, price itself is the magnitude of risk, which is to say the magnitude of absolute volatility that is posited in the present. It is a measure of the futurity of the present, *a quantification of différantial temporization*. Consequently, the political economy of price since finance-power is immediately the politics of futurity itself.

Finance-power instantiated via price is therefore analytically dual: it is the magnitude of power in the holistically organized present of intracapitalist conflict *and* it is the magnitude of the thetic contingency of power. For all of the analytical distinction, the two determinations are however not operationally or ontologically distinct, and for two closely aligned but operationally distinct reasons:

> (1) In general, risk is *in fact* indistinct from all price *qua* power. It is not just that power involves risk, such that the greater the power the greater the risk. Rather, price is at once the magnitude of power *and* the quantification of the futural contingency concomitant with any instance of power, no matter

what the magnitude. Price is both the magnitude of power and the magnitude of futurity *qua* systemic uncertainty—so price itself is 'systemic risk'. Since price is necessarily determined in regard to capital-power, every price is intrinsically an occasion of *political* economy, of what, where, and how much power over futurity is to be had—a systemic conclusion that is effectively dramatised by the size and consequences of the credit default that comprise Lesson Two of the financial crisis.

(2) Sectorially, as the toposcription of the absolute volatility of price, priced risk is the power magnitude of the futural contingency of power's instantiation. Extensively operationalised qua accumulation by derivatives markets, priced risk is how one sector of the entire spectrum of social institutions assigns a power-magnitude to the futural contingency of price. In doing so it gives the futural contingency of power a power-determination in the present and, at once and for that reason, subjects the *systemic* power-organization of risk-pricing to the triadic contingency of price, which is what is dramatized in Lesson One of the financial crisis.

11.2. FINANCE-POWER: AUTOSABOTAGE

While the pricing of risk by derivatives markets operationally demonstrates that they empirically institute finance-power as an infrawager, the single 'abstract pecuniary magnitude' that is price is at once quantified power (capitalization) and quantified futurity (absolute volatility). That duality of price can only be analytically (rather than ontologically or operationally) demarcated: more emphatically, the constitutive ontology of the risk-order is given in the *unicity* of power and futurity via price. Predicated on the arkhéderivative as political economy is—as all politics is—and taking the power-futurity duality of risk-pricing by derivatives markets to be the explicit historical-institutional manifestation of that constitutive condition, this section elaborates in theoretical terms what the political economy of a risk-order constituted by price entails, providing the basis for the more explicitly institutional-sectoral consequences of the power organization of the state-finance nexus that is taken up in the concluding section.

Operationally, derivatives pricing *qua* infrawager means that prices in derivatives markets are conditions for further pricing and also conditional upon them. Because of the universal fungibility of the exogenous reference of derivatives (its contingency of abstraction), and because price is the instantiation of capital-power,

the endogenous plasticity of derivatives pricing (its contingency of revision) is then primarily the direct dynamic reorganization of capital-power *on itself* according to the logic of differential accumulation, and only incidentally the reorganization of capital-power outside of the pricing process (qua value). Returning to Means's distinction as it is taken up by Nitzan and Bichler, pricing primarily with regard to other prices is to set administered prices rather than market prices. With derivatives markets, it is not that revenues are fixed against the variable cost of production, as in Means's industry-based account, but that derivatives trading *qua* infrawager sets prices only on the basis of 'back-calculat[ing] the mark-up [the price of the derivative] necessary to realize a rate of return'. That is, derivatives are not priced competitively but rather to maintain a mark-up, doing so in real-time rather than the medium-to-long-haul typical of industrial processes. In terms of the arkhéderivative, the infrawager is the plastic reorganization of administered prices, and the market as a whole is comprised of this price setting of the market. But administered prices are set not only via their immediate markets but also by the organization of the spectrum of social institutions, the general name of which, with respect to what Veblen calls industry, is sabotage. Consequently, sabotage is a primary characteristic and necessary effect of financial markets. There are two distinct aspects to this conclusion:

—From the optic of industry exogenous to derivatives pricing, the plasticity of the latter is pure sabotage because derivative pricing is directly a magnitude of endogenously-constituted capital-power. This is just to reiterate from another angle the criticism of the finance sector's siphoning of capital, productivity, and social reproduction in general.[135]

—However, the industrial determination of derivative pricing is strictly speaking only incidental to the latter *qua* infrawager. The endogenous operationalisation of derivatives pricing is primarily the plastic redetermination of prices and therefore of power *within* the price-terms of those markets. Operationalising the arkhéderivative, derivatives markets *directly* redistribute power *qua* capital accumulation in its own terms, rather than those of what, for it, is only the incidental condition of historical precedents or needs (for example, production or consumption).

If sabotage is the vitiation of industry because business implemented via administered prices diminishes social capacity in favour of the price organization of power via capitalization, the infrawager of derivatives pricing is, in contrast, the *intensive* determination of

135. See Lapavitsas, *Profiting*, 146; Marazzi, *Violence*, 44-46; and Hudson, 'Goldman Sachs'. Nitzan and Bichler complicate the basic assumptions of this claim and received assumptions on the global political economy of the finance sector in 'Imperialism and Financialism: A Story of a Nexus', *Journal of Critical Globalisation Studies* 5 (2012), 42–78, www.criticalglobalisation.com/issue5/42_78_IMPERIALISM_AND_FINANCIALISM_JCGS5.pdf.

the operational dynamic of sabotage. It is the sabotage of capital-power by capital-power across time and markets via price plasticity, an autosabotage. To be clear: the intensive autosabotage of capital-power is not operationally distinct from its extensive determination as industrial sabotage; but it is also not reducible to the latter, given the explicitly universalising and abstracting contingencies of the infrawager *qua* real of price. In its most general determination capital-power is not just counterproductive (a 'negative industrial magnitude'); it is also and primarily (as a positive *financial* magnitude) its own intrinsic counterpower: the autosabotage of dynamic price-setting in its own terms which, constituted in the infrawager of the arkhéderivative, is intrinsic to *all* price. Price qua capital-power is then necessarily its own partial countermanding; the very instantiation of capital-power is at once the instantiation of its own counterpower, the sociological corollary of which is the intracapitalist struggle in differential accumulation.[136]

136. The standard reference for the endogenous fragility of economies relying on financial intermediaries (primarily banks) is Hyman Minsky's *Financial Instability Hypothesis* (*Stabilizing an Unstable Economy*) (New York: McGraw-Hill, 2008 [1986]), Chs. 7–10). Minsky notes that the increasing innovation and elasticity of financial instruments by financial intermediaries encourages short-term lending and leverage, fuelling economic booms and expanding balance sheets for financial intermediaries. Short-term borrowing by commercial banks in these conditions are however overextended against their nonfinancial assets and also susceptible to market volatility. Consequently, and counter to the investment-supporting claims legitimising finance, long-term investment undertaken and facilitated by financial intermediaries is driven by short-term price movements on unregulated

Misfortune and Historicity

The real of price qua power is, in sum, extensive and intensive differential sabotage. In its intensive determination of financiality, price endogenously instantiates a power gradient, incapacitating in some respect that which it overpowers by outpricing it. That which is outpriced is also a term of capitalization, just a lesser one. However, if prices set the market then the market is the toposcription not only of capital-power *qua* autosabotage but also, at once, of the thetic contingency instantiated on every occasion of price. That is, pricing is not autosabotage only in respect of the incapacitation of what is thereby outpriced, in relation to other prices in the presently and historically comprised capital-order, but also, as elaborated above, in respect of its intrinsic thetic contingency whereby the extant society-wide organization of power is futurally risked to the degree indexed by the magnitude of a particular price. While the two counterpowers of the arkhéderivative—autosabotage and futural contingency—can be

markets whose instability thereby extends to the entire financial system. For Minsky, the endogenous instability of finance is institutionally formulate rather than located in the fact of price. Minsky's hypothesis has been extensively taken up in theorizations of the 2008 financial crisis. A striking example of this literature discussing the global expansion of the dollarised shadow banking system as condition for both the systemic reach and magnitude of the 2008 financial crisis, paraphrased in the above account of Minsky's hypothesis with regard to the development of financial innovations, is presented in J. Tokunaga and G. Epstein, 'The Endogenous Finance of Global Dollar-Based Financial Fragility in the 2000s: A Minskian Approach', PERI Working Paper Series 340, January 2014, www.peri.umass.edu/fileadmin/pdf/working_papers/working_papers_301-350/WP340.pdf).

analytically demarcated, they are again inextricable and mutually constitutive in the ontological unicity of finance articulated by the arkhéderivative. In that unicity, it follows that price-sabotage risks the market. That is, price is simultaneously the power over present *and* futural disestablishments of power, an autosabotaging futural contingency of capital-power. The several aspects of this unwieldy characterization of finance-power—autosabotage, futural contingency, and capital—are effectively synthesized by the term 'misfortune', but only if it is taken in this precise sense. Instantiated via the misfortune of price, then, capital-power's dynamism necessitates the persistent contingent reorganization and revectoring of capitalization, a reorientation and contingency in time-binding whose direction and gains necessarily cannot be secured.

The determination of the arkhéderivative as a misfortune of power—meaning, to reiterate, an autosabotaging futural contingency of capital-power—is the comprehensive ontology of the market *qua* risk-order. As such, it is a systemic determination of capital-power, providing a diagnostic matrix for its historical development. Taking 'capitalism' as the name for the holistic systemicity of capital-power, the misfortune intrinsic to pricing means that there is no necessary or required direction, orientation, or identity to capitalism; its ordering via price is also the occasion of its contingent reordering. The only sociohistorical constraint for

capitalization, given its organization by differential accumulation, is that one capitalist accumulated more capital-power than another, and some sectors against all others. But that is only a constraint of its reason, not a prescription as to who or what will have the greater capacity for capitalization (meaning setting larger prices), nor for where and to what capitalization will be directed. That is, the duality of price-power's misfortune as regards sabotage and futural contingency is the constitutive condition for the sociohistorical contingency inaugurated by and as capitalism, thanks to which price's contingencies of abstraction and revisability are preserved across capital-power's necessary social-systemic operation.[137]

137. In terms of Aristotelean categories (*Nichomachean Ethics*, Book VI), finance-power is then a *tekhné*, a process whose ends (teloi) are exogenous to that process and which may therefore never be attained by it (example: a building may never be completed). Aristotle distinguishes *tekhné* from *poiésis*, an artificial process with intrinsic ends (example: live music, which is heard as it is played), and *phúsis*, processes which always and necessarily have intrinsic ends (nature). The exogeneity of purpose to process in tekhné is why in general any technical process can be repurposed, and why in particular whatever is repurposed is a technics (including then nature). For Massimo Amato and Luca Fantacci, the problems of modern finance stem precisely from its operational divergence from its intrinsic purpose, which is investment via completed debt promises within given time frames (*The End of Finance* [Cambridge: Polity Press, 2011]). Securitization, intermediation, and large-scale complexity have also anonymised finance, vitiating what for Amato and Fantacci ought to be the intimate purpose of finance but which condition is here recognized as the consequence of its constitutive technicity. The emancipation of technics from the modern category of energy (which is predicated on work and thereby determines ontogenesis via the intrinsic ends or 'entelechy' common to phúsis or poésis, a logic organising both Marxian and Neoclassical economic doctrine) is proposed in S. Malik, 'Tekhné is Fond of Túkhé, and Túkhé of Tekhné: Energy and Aristotle's Ontology', *Tekhnema* 5 (1999), 124–53; an emancipation that

Constituted *qua* finance-power, capitalism is realised only in more or less local, more or less large power conflicts. It has no necessary operational, social, cultural, or institutional identity, nor (*qua* différantial pricing) any constitutive identity in its logic. Contrary to Marxian doctrine, then, internal contradictions do not necessitate its expansion or its demise.[138] Equally, capitalism cannot extinguish or supersede itself at a putative conversion point (the reassuring myth of singularity).[139] The constitutive misfortune of financiality proscribes any terminal or tendential logic or practice of capitalization, instead advancing only increased magnitudes of capitalization (which itself requires more complex, integrated, *and* differentiated forms of social-order *qua* risk-order). The history and future of capitalization is comprised only of the interminably tactical, dynamic reorganization of price, power, and the 'entire spectrum of social institutions' along both external and internal vectors of finance, the latter having ontological, operational, and political precedence. Constituting the identityless increase

implicitly countermands the DeleuzoGuattarian transcendental energetics underpinning Nick Land's convergence thesis (see n.139).

138. That contradictions within the capitalist totality drive the territorial expansion of capitalist countries via colonial and imperial domination is first proposed by Rosa Luxemburg, *The Accumulation of Capital*, tr. A. Schwarzchild (London: Routledge, 2003 [1913]).

139. This is the characteristic claim of Right Accelerationism. See N. Land, 'Meltdown', in R. Mackay and R. Brassier (eds.), *Fanged Noumena* (Falmouth: Urbanomic, 2011 [1994]) and 'Teleoplexy: Notes on Acceleration', *#Accelerate*, 509–20.

in aggregate capital-power, enfuturing the present in the autosabotage of pricing, the misfortune of the arkhéderivative is the historicity of capital-power.

11.3. FINANCE-POWER: THE STATE-FINANCE NEXUS REDUX

Price is the measure of the political economy and the power over misfortune. The operational toposcription of finance-power via the abstraction of the number scheme of price markets means that markets are the basis for the comparison of finance-power in all times and places. Returning then to the contentions of the introductory comments above, the power magnitude and constitution of derivative markets can be directly compared to other organizations of power *in terms of the ontology of finance*—which is to say, by comparison of their respective prices. In particular, taking up Haldane and Alessandri's comments in terms of finance-power, the threat that the finance sector now presents to states is twofold: firstly, if GDP is a proxy for state power in global political economy (for reasons to be presented shortly), then for the most part the transnational derivatives markets outprice state-level GDP, which is to say that, in terms of the power theory of price, these markets overpower states even if the latter have jurisdictional power over them. The political and theoretical question of relative powers then has

to be recast as a question of whether statutory authority, stemming from state sovereignty, is endemically more powerful than finance-power, and sufficiently so as to not be overpowered by the latter's quantitative determination. The second identified threat to state sovereignty from finance markets is that all juridical aspects of state power in Westphalian modernity are territorially constrained, including the typical determinations of what that power is tantamount to: the monopoly over violence, guarantor of security, popular autonomy, legislative centrality, bureaucratic control, the ipseity of authority, the paramount status of popular sanction, and so on. Whatever determination of ultimate power is given to state sovereignty, its reach and legitimacy is necessarily territorially limited and constrained, particular (up to and including its global or extraterrestrial extension, as in some science fiction or political theory). As such, it is unable to attain the universal extension permitted by the 'abstract universality of magnitudes' constituting and actualising finance-power in its price-organization.[140]

140. In Gilles Deleuze and Félix Guattari's terms, such quantitative abstraction is the primary condition and vector of capitalism's 'deterritorialisation' as a countervector to the system of capture that is the State and its particularising-segmenting codifications (*Anti-Oedipus*, tr. R. Hurley, M. Seem, H. R. Lane [Minneapolis: University of Minnesota Press, 1983 (1972)], Ch.10, esp. 251–54). Capitalism's 'lines of flight' from State territorialization are nonetheless fundamentally constrained and 'reterritorialising' for Deleuze and Guattari insofar as capitalism is axiomatically organized by the commodity form and production for the market. That axiomatic is for them the progenitor of capitalism rather than invented by it, and requires the historical institutionalization of various

That is, the (necessarily universal) geospatial extension of finance-power is in principle if not historically in fact greater than the (intrinsically particular) power of state sovereignty.

In terms of finance-power, the territorial exorbitance of finance-power to state sovereignty does not threaten the latter so long as the capacities of their economies and revenues are greater in magnitude than the resources of financial organizations. However, if 'causality has reversed' between states and financial institutions, as Haldane and Alessandri put it, because regular defaults of monarchical loans in early institutional capitalism are replaced today by

organized State forms according to its level of development. Revoking the basic Marxian determinations of capitalism's axiom that Deleuze and Guattari adopt, capitalization in the logic of differential accumulation can instead be construed as a wholly formal axiom that is operationally aterritorial and abstractly constituted (via pecuniary magnitudes) and which, in its intrinsically dynamic constitution of intracapitalist conflict via the infrawager, is therefore unbound in its overall axiomatic production—hence, its extensive and intensive universalism. Equally, as discussed in the closing sections below, insofar as pricing relies on enforceable regulations of money and contract (including the 'convertible abstract rights' that secure private property [Deleuze and Guattari, *A Thousand Plateaus*, tr. B. Massumi (Minneapolis: University of Minnesota Press, 1987 [1980]), 454]), the state form is indispensable to capitalism, which means that capitalization is not so much the reterritorialising deterritorialization Deleuze and Guattari propose as it is an each-time territorially inaugurated deterritorialising. 'Territory' in these formulations is only the limitation imposed by sovereign jurisdiction rather than a geospatial factum: any such factum can be subordinated to the reorganization of jurisdictional authority and is thus not at all intrinsically bound to the figure of the nation-state even if that has been its dominant historical configuration. For the specific transformations of Westphalian jurisdictional and financial institutional infrastructures to facilitate transnational capitalization since the 1970s see S. Sassen, *Territory, Authority, Rights* (Princeton: Princeton University Press, 2006).

crises in financial markets requiring state interventions in order to sustain not just that sector but also the entire social order, then in terms of finance-power this reversal is only a historical transformation: the greater power is determined only by which sector has the greater price. That aggregate magnitude is determined for states primarily by their operational capacity and revenues, which is precisely what GDP indexes. Furthermore, given that nonfinancially generated operational capacity and revenues of states from production and consumption are again constrained in the Westphalian settlement by material and territorial factors determined by the inviolable borders sanctioned in that regime, the pecuniary magnitude of nonfinancially generated annual GDP for even the largest states is necessarily constrained in a way that the plasticity of pricing and market-interconnectedness of finance are not. The 'price magnitude' of finance as an operational sector can then in principle be greater than that of any state—or, because finance-power is endogenously constituted, the sectorial price of finance can always be exorbitant to any of its previous levels including that constrained by state-level organization. The current size and transnationalism of financial markets is an institutional-historical figure of the hybrid configuration of finance-power and state sovereignty, the relative sizes of global derivative markets (by credit exposure) and state GDPs indicating the approximate

equality of their respective finance-powers at the level of most of the wealthiest states, and the greater power of finance market to the majority of nation-states. Which is to say that it is not that power has 'reversed' between states and the finance-sector over the course of modernity, but that while state sovereignty has been the toposcription of the largest financial powers in that period, that historical condition is now in mutation and no longer a historical given. That is, thanks to the increasing aggregate price of derivatives markets, finance is now relatively more emancipated from the primary political configuration of historical modernity and, with that, the state-finance nexus is reorganised and revectored.

To elaborate this reorganization by way of conclusion: as Nitzan and Bichler remark, the sovereign state is but one of the social institutions in the arrangement of capital-order, albeit the one that has been most dominant in securing the normal rate of return against which all differential accumulation is pegged. But that congruence between sovereignty and finance-power is also countermanded by their typological disparity. If sovereignty is constituted by the indivisible unicity and centrality of its decision as much as by the assumed supremacy of its performative diktats, in contrast finance-power is constituted by the primacy of its thetic futural contingency, the plasticity of the infrawager, and its misfortune. For all of the

complexity of the power-misfortune duality of price, its quantitative determination in every instance rescinds qualitative particularity as the term of power, whether that particularity is organized in terms of history, tradition, authority, or the other semantically rich or impoverished meanings typically invoked to warrant sovereignty (up to and including the transcendentality of its theological determination).[141] Minimally, then, finance-power is typologically a counterpower to sovereignty: the primacy and irreducibility of sovereignty *qua* determinant of power is violated by finance-power both in principle (quantity and triadic contingency against the particularity and the insuperability of authority) and socio-institutionally (finance markets outprice states). Finance-power threatens sovereignty not just because its greater financial magnitude and its absolute volatility prevails, but because the splitting of the present by price in the contingency of its irreconcilable futurity overpowers the otherwise assumed and inviolable authority of sovereignty.

That threat is manifest, and state sovereignty is degraded with regard to the arkhéderivative, when states are outpriced by finance markets—as is largely the case today, thanks to neoliberal institutional activism since the early 1970s. Exemplified by the invention of the CME and other derivatives markets, the

141. C. Schmitt, 'All significant concepts of the modern theory of the state are secularized theological concepts', *Political Theology: Four Chapters on the Concept of Sovereignty*, tr. G. Schwab (Cambridge, MA: MIT Press, 1985), 36.

consolidation and expansion of derivatives markets since the 1970s not only operationally liberates the real of price from nonfinancial determinations such as production and material resources (the putative 'real economy'), it moreover concretizes and manifests the countermanding of any necessity or finality of value, price, or other financial measure, per the ontology of price. Consequently, the aggregate price magnitude of the financial institutions operationalising the arkhéderivative in its own terms are limited only by regulatory requirements and the tactical assessments of a risk-rationality—a liberation unavailable to modern state sovereignty. Thanks to finance-power, sovereignty is no longer the supreme power, but is itself now subject to contingency. More exactly, the very conditions of legislation sanctioning and regulating finance is itself now constituted in terms of the contingency of finance-power.[142]

142. The disambiguation of misfortune is politically and analytically crucial here. By an argument similar to Esposito's, Vogl too proposes that thanks to finance capitalism 'danger and chance have returned in an archaic form, as túkhe or fortune' in contrast to the historically preceding welfare societies that sought to 'tame contingency' (*Specter*, 130). Consequently, 'the hazardous whims and caprices (*Launen*) of age-old figures of sovereignty have returned under modern conditions'. The present thesis is precisely the contrary: the arbitrariness of sovereignty is anything but contingent while the contingency of finance-power is highly risk-rationalised and anything but arbitrary. And now the latter dominates the former, further obviating sovereign caprice. Which is also why, for all the vast discrepancies in wealth implemented by neoliberal policy, it ought not to be designated as a neofeudalism (as Hudson or Lazzarato do, for example) nor, for that matter, is it the biopolitics that Vogl mistakenly proposes finance to be in its 'determining [of] the life processes of a society by a single force'.

Ineliminable Statism

What is established here is that, cogent as it may otherwise be, the state-finance nexus is riven in its power ontology. The argument is not primarily that the operational-historical growth of the finance sector deprioritises sovereignty in favour of other modes of power (a Foucauldian variant of the thesis), or that the indebtedness and other financial commitments of the state (whether it be monarchical, or a parliamentary democracy, bureaucratic control, autocracy, etc.) require it to resort to finance markets to maintain itself. Rather, whatever power can be summoned by the state thanks to its sovereignty can be (i) determined as a specific magnitude in any particular instance, and (ii) that magnitude is comprised of the aggregate prices it can command from jurisdictionally-bounded institutions and social organization. The 'command' of prices is not that of a state-controlled economy, but rather the price that the state can raise on the basis of its sovereignty (taxation being the obvious example). While this injunction practically presumes the hierarchy of social institutions and order, the channeling of command via price, qua instance of finance-power, necessarily imposes a dynamic reorganization of social order. In its conservative formulation, this partial conclusion proposes that states are committed to their reorganization in order to sustain their integral role in the general ordering of social institutions by capital-power.

This is, to reiterate, not a reordering *directed* by sovereign command, but a political-economic transformation in which sovereign power has a key, *judicious* role.[143]

And it is this last-mentioned condition that provides the more comprehensive formulation of the reorganising command structure of states in the condition of finance-power: that sovereignty is not the theoretical or operational basis of political *economy* nor exempted from it, but is institutionally and theoretically determined by it. This consequence is partially recognized, in other terms, in Modern Money Theory (MMT), for which state sovereignty is tantamount to the authority to impose and maintain money as legitimate unit of account for creditory relations, generating a demand for those units and also destroying them (by removing them from circulation) via taxation.[144] The immediately relevant argument of MMT is that monetary policy is fiscal policy is social policy, and there is no monetary economy without state debt (which is therefore a public virtue). In terms of the broader argument of power typology advanced here, this would mean that state sovereignty is nothing but a term of political economy,

143. See P. Mirowski, *Never Let a Serious Crisis Go to Waste* (London: Verso, 2013), 56.

144. See n.54 above, L. R. Wray, *Modern Money Theory* (Basingstoke: Macmillan, 2012), Ch. 2, and, for a discussion of the genealogy of MMT, 'From the State Theory of Money to Modern Money Theory', Levy Economics Institute Working Paper 792, March 2014, www.levyinstitute.org/pubs/wp_792.pdf; also P. Tcherneva, 'Chartalism and the tax-driven approach to money', in P. Arestis & M. Sawyer (eds.), *A Handbook of Alternative Monetary Economics*, (Cheltenham: Edward Elgar, 2006), 69–86.

and that, as such, it is not typologically distinct from finance in either its institutional operation or ontology. Yet if the state is a financial institution, it is the only one that fabricates and imposes money on a population that must then use it to pay taxes, and it is for this reason also a distinct and unique financial institution in its sovereign power. Taxation is the state's premonetary but nonetheless financial claim over the power organization of social institutions. In terms of finance-power, taxation is the price of the state—the price of monetisation—for the nonstate sector. Furthermore, as condition of the monetary arrangement of price, the sovereign state is only a subordinated necessity for the chronic reordering of complex modern societies qua risk-orders. Which is only to reiterate through the monetary dimension of finance-power that sovereignty and finance comprise a nexus—modern capitalism—that is at once congruent and also internally disparate, but is in any case constituted as finance-power. As such, the state-finance nexus is a particularly prominent, because systemically ineliminable, example of a general requirement of capital-power: that finance-power maintain institutions in order to advance capitalization, including, for example, sovereign jurisdictions with the authority to sanction and enforce the contracts fabricating derivatives (jurisdictions which in theory need not be nation-states).

The Political Risk of Futurity

In general, then, finance-power is bound to capital-order, an organization of power by which greater and lesser magnitudes of capitalization can be socially implemented—and transformed at every instance thanks to the price indexing of that power-ordering: price *qua* misfortune transforms the order of power it measures. Constituted by the arkhéderivative, the dynamism of capital-power ('the most dynamic of all historical orders') is not reducible to nor predicated on the history or sociology of the capital-order but is a *result* of the thetic futural contingency and auto-sabotage of price. Capital-power is in other words a prevailing risk-order dedicated to the future contingency of the present and, at the same time, to its partial incapacitation. Two mutations to primary categories of modernity can then be identified, serving here as terminal remarks:

Statist futurity. In the political economy of sovereignty, statism and even sovereignty itself cannot be opposed to futural contingency. On the contrary, in the near-equality of aggregate price levels of (necessarily local) states with (necessarily crossbordered) derivative markets the state is a particularly privileged organization in capital-ordering, but one that now has a surmountable price: as noted, because derivative markets operate across borders, their monetary levels are not limited by the monetary constraints

that particular states have to observe, an operational-historical exorbitance that is theoretically warranted. And because states are now explicitly priced (if not outpriced) sovereignties, they too occasion not just the autosabotage of capitalization (which is the standard criticism of the state by advocates of the so-called 'free market'), but also the thetic futural contingency of pricing. To use Ayache's formulas, the state too is a medium of contingency or a technology of the future.

Dynamic and plastic rather than static (despite the etymology, which provides only a lexical rather than semantic constraint here), the state as a political-economic term deposes the inviolability of sovereignty in its actuality and also its theoretical-ideological justifications. The state may be a term of social sabotage, but in this it is not typologically distinct from any other instance of capital-power (which is why the 'free market' is an untenable doctrine); it is distinct only with regard to its still relatively large size in terms of prices it can set, in being an identifiable actor, and the authority to explicitly transmit its finance-power across all social institutions by law and taxation. As the price of monetisation, taxation itself is at once dually sabotage (the standard libertarian complaint) and, typically, a large power over collective thetic futurity.

Political Reason. Requiring an order yet dynamically transforming it without certainty in its thetic futural contingency, finance-power observes and instantiates

a risk rationality to which even sovereign states as prominent modes of power are subordinated. If power in modernity is predominantly organized between states and capitalists, it has been primarily determined across that history according to a risk-rationality. This is a history of sabotage in order to accrue power via price setting. And it is inextricably also politics, the chronic transformation and contestability of power ('it could have been different') predicated on the definitely uncertain future posited each time by price. It is not just that politics is inaugurated with each price qua instantiation of capital-power, apprehended now as a sabotage-contingency duality. Politics itself now means not just *what* the future will be but also the power over the magnitude of futural contingency and who or what owns it across the entire social order, including but not limited to the sovereign state. As such, politics is not predicated on the relation to statedom, although that, also, is not proscribed. Rather, politics is more generally both constituted and determined by risk-rationality, which is to say with a view to the uncertainties generated by the autosabotage of power and the contingencies of abstraction, revision, and thetic futurity of the arkhéderivative that splits the present from itself. Politics in risk-rationality is then occasioned in terms that are not commutative with qualitative determinations of authority and command, and it moreover rescinds any priority conventionally

granted to them—and, with that, it also rescinds reason in its sovereignty (if ever there was such) or social normativity, maintaining both only so as to reorganize the necessary misfortune of price.