

UNSTABLE FUTURES: CONTROLLING AND CREATING RISKS IN INTERNATIONAL MONEY

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Introduction

The essential building block of all markets, known as a risk, will remain a permanent fixture in the business world. The history of finance has demonstrated an unswerving ability to innovate in order to minimise risk and uncertainty. Derivatives, in all forms, are another example of this progression. While the products of innovation are susceptible to abuse, it is far worse to stunt the creative process through misguided regulatory practices (Burns, 1994, 9).

During the past two decades the global financial system has been transformed. Markets have opened, exchange controls have been removed, interest rates have become more volatile and financial institutions have become among the most important arbiters in the global political economy. These processes have, undoubtedly, contributed to the relative success of the liberal **growth** model which, although far more brutal to its losers than its Keynesian predecessor, is putting deep roots down into the capitalist earth. Yet these transformations in the financial arena have been accompanied by a sweeping away of many of the old securities that underwrote the Keynesian model. Increasingly volatile interest and exchange rates turn profits into losses as entirely external forces transform the cost of borrowing or the 'value' of their products. For example, a firm which priced exports at one exchange rate may see substantial profits turn into losses solely on the basis of revaluation of currencies. Banks and brokers **responded** to this environment by developing products which allow firms to 'hedge' their financial exposure and protect themselves against adverse market moves.

This essay explores the growth and implications of derivatives, arguing that although individual institutions tend to use them to offset or control risk, the aggregate impact of derivatives for the financial

system is to increase it. The essay goes on to explore the emergence of concern among regulatory authorities, particularly following the collapse of Barings Bank, that derivatives have the potential to undermine global finance. While the putative **regulatory** order enhances control, I argue that ultimately it is based on a liberal logic which eviscerates itself.

Managing risk? The development of the derivatives markets

Derivatives have a relatively long history with sporadic examples of **buying** and selling commodities in the future dating back at least to London in the 1630s during the Dutch Tulip Bulb mania, and rice markets in Osaka in the 1650s (Chance, 1995). The development of modern derivatives, however, stems back to 1848. In the year that much of **Europe** was in turmoil as the emergent middle class flexed its muscles against the aristocratic remnants of feudalism, the inauguration of the Chicago Board of Trade (CBOT) laid the foundations for much of the late twentieth century financial system. As William Cronon's (1991) magisterial analysis of Chicago demonstrates, that city, at the centre of a vast agricultural hinterland, saw the development of 'to arrive' contracts which allowed grain traders to sell their grain at an agreed price and deliver it later. Such contracts rapidly became widespread as both farmers and traders realised that the contracts allowed them to hedge against the risk that prices would move against them, and in 1865 the CBOT adopted the first formal rules governing these futures contracts. Even in these early days, however, the Chicago futures market was a place where contracts were traded speculatively and 'men who don't own something are selling that something to men who don't really want it' (Rothstein, 1982, quoted in Cronon, 1991, 125).

While derivatives markets continued to develop fitfully during the late nineteenth century and for most of the twentieth, encountering prohibition, mild regulation and fraud along the way, it was not until global financial markets became more integrated and the most important international currencies floated freely that derivatives began to transmute into the complex variety seen today.' In 1972 the Chicago Mercantile **Exchange**² created the International Monetary Market which permitted trading in currency futures: these were the first derivatives contracts not to be based on physical products and laid the basis for the development of more esoteric and abstract contracts later on.

Although they have a series of common features, in that their

principal rationale is to enable investors to manage risk by offsetting the effects of volatility in the financial markets, and also in that their value is 'derived' from the value of underlying assets, derivatives are really a large number of different financial **instruments**.³ The most basic form of derivative is a variant of the form that developed in Chicago in the 1860s: the **future**.⁴ A buyer of a future agrees to pay a given price on an agreed date for an asset (ranging from agricultural commodities to **foreign** currency), while the seller of a future agrees to sell on the same terms. Futures enable a **buyer** to lock into a given price and provide certainty. If, for example, a US firm planned to import \$50,000 worth of goods from Germany in three months time, they could buy \$50,000 worth of Deutsche Mark futures to protect themselves against any fall in the value of the dollar. In order to ensure that buyers of futures can afford to meet their commitments, they are required to deposit an initial margin payment before they are allowed to trade on an exchange. The margin payment is calculated to be high enough to cover the change in the price of the contract over one day, but varies according to the volatility of the market and the type of asset being traded. For example, trading government securities futures requires smaller margin payments than trading futures based on equities. The 'downside' of futures, as Chew (1996) points out, is that buyers are committed to them, even if prices move in their **favour**.⁵ For example, in 1985 Japan Airlines contracted to buy dollars at a rate of ¥165.97/\$1.00 but as the exchange rate was ¥99.4/\$1.00 by the end of 1994, by purchasing the futures contracts the company paid ¥176 billion (US \$1.8 billion) more than they would have done if they had **bought** foreign exchange when it was **needed**.⁶

A swap is an agreement to exchange cashflows between two parties and is effectively made up of a series of futures contracts. Interest rate swaps dominate the market and typically involve the 'counterparties' to the trade agreeing to exchange their interest rate liabilities. For example, if Firm A is borrowing money at variable interest rates it may wish to protect itself against rising interest rates. It can then agree to pay fixed interest rates by 'swapping' its borrowing for fixed interest rates with Bank B. Theoretically, at the start of the swap neither party is better off because the advantage either way is priced into the structure of the instrument. If interest rates begin to move upwards, Firm A has made a saving in its interest rate payments (and Bank B has lost money). If, on the other hand, interest rates fall, Firm A has committed itself to paying higher interest rates than it would have had to do so and makes a nominal loss.

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The third common derivative tool is the 'option'. In exchange for a premium, options give buyers the right either to buy (in the case of a 'call option') or sell (in the case of a 'put option') an asset at a predetermined price. Buyers will exercise that right if – and only if – interest rates move in their favour. If interest rate moves are disadvantageous they can decide not to buy the assets. Sellers, on the other hand, expose themselves to theoretically unlimited risks in exchange for a premium (and will therefore hedge their exposure themselves). Sellers of options receive premium income for potentially limitless losses and for this reason most sophisticated options traders both assume that they need to trade sufficient options for premium income to be able to cover inevitable losses (in the same way as household insurance companies pay for claims by pooling the risk), and also limit their exposure to any one event (by, for example, hedging their own risk profile). For these reasons, options trading is not for the financial novice.

Banks and brokers have developed these three basic forms of derivative instrument into more complex variants, largely by combining features of each. Swaptions, for example, are options to buy swaps and allow purchasers flexibility effectively to terminate another swap contract. For example, if a firm has a ten year swap A which it believes it might wish to end **after** five years, it could buy the option to buy a swap (a swaption) which had the opposite characteristics of its original swap A and would therefore cancel the costs of A. However, if circumstances mean that it wishes to continue with its **original** swap, then it will not exercise its swaption. Other, more complex, derivatives include exotically named instruments such as 'butterflies', 'differential swaps', 'strangles', 'condors' and 'straddles' (Tickell, 1996).

Creating risk? The wider implications of derivatives growth

Since the early 1970s, and particularly during the closing two decades of the twentieth century, the use of derivatives has mushroomed and in a short period of time derivatives have gone from being an arcane and little-used instrument to becoming a ubiquitous feature of business life.' As Table 1 shows, the nominal value of derivatives contracts outstanding in 1995 was estimated at \$30,602 billion, representing a **growth** of over 2,800% over a ten year period. Furthermore, these data under-estimate the total value of derivatives and a survey in April 1995 calculated the notional value of contracts at \$47,500 billion, with an average daily turnover of \$880 billion. Two thirds of transactions took place between counterparties based in different countries (Group of

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Thirty, 1997). Care needs to be taken with these data. The statistics collected by central banks are not always comparable, either in definitional terms or in terms of the level of detail collected, while by expressing the statistics in terms of notional **outstanding** value a false impression of the risk profile of the instruments may be obtained (BIS, 1996a, 1996b). In particular, the Bank for International Settlements estimates that the cost of all of the over-the-counter derivatives contracts would 'only' be approximately 4% of the notional value.

This rapid growth has taken place because, as we have seen, derivatives allow institutional investors, corporate treasury departments, and bank risk management departments to hedge risk. Although in principle this is a zero-sum game at the level of the financial system, because if company A gains from a futures contract, company B loses, the reallocation of individual risks among a larger number of firms means that one-off shocks may be more easily coped with. Second, some derivatives provide signals to the wider financial markets which, advocates claim, reduces uncertainty and offers potential benefits of specialised knowledge. In the case of commodities, rising futures prices may be a stimulus for increased production (Parsons, 1988), while differences between the prices of options and the underlying asset reveal to participants in the financial markets what informed opinion is about the expected volatility of the asset price. Third, derivatives significantly reduce the costs of diversifying portfolios, because investment managers can expose themselves to derivatives based on baskets of stocks rather than on a smaller number of more volatile stocks. Fourth, derivatives are relatively cheap because they effectively operate on leverage. Until the completion date of the contract, investors only need to pay a small fraction of the value of the underlying assets, in the form of the margin payment. US Treasury futures, for example, require an initial margin payment of only 1.5% of the value of the Treasury Bonds. This means that **buying** \$1 million of Treasury **futures** costs only \$15,000 up front. If Treasury Bonds appreciate in value **during** the lifetime of the contract, the investor realises the gains for a very small initial payment. If, however, the bonds fall in value during the contract period, the purchaser of the derivatives has to make extra margin payments in order to prove that they can cover any losses. Furthermore, futures are a risky purchase because if the value of the underlying instrument moves against the buyer, they are legally committed to buying them at what could turn out to be a considerable loss (see Chew, 1996; Parsons, 1988; Grossman, 1988; Gibson and Zimmermann, 1994).

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However, despite their risk management function, derivatives have managed to achieve something of a bogey status since they first entered the public consciousness during the early 1990s. This is because they not only allow institutions to offset risk, but have also been implicated in a series of high-profile losses which have undermined the financial viability of companies, banks and government entities (see Table 2). Kelly and Hudson (1994, 2) for example, have argued that institutions 'do not use [derivatives] markets merely to reduce their exposure to risk, but are assuming risk in the hope of financial gain, placing in jeopardy our homes, our retirement incomes and the money we set aside' (see also GAO, 1994a, b). In one sense, much of the public concern is misplaced. In conditions of a perfect market derivatives are unable to effect the price of underlying assets (such as exchange or interest rates); all they can do is to allocate risk between different players in the market and as they spread that risk more widely they should provide a wider systemic stability.

Yet perfect markets do not, of course, exist.⁸ Derivatives are traded in real markets where some players have some specialist knowledge, for example, that others do not have, while the very complexity of some instruments may lead to 'market risk' (Merton, 1995). Market risk develops because the value of a derivative depends on the price of a number of different underlying variables (such as exchange rates, interest rates and commodity prices). This means that it is difficult to predict what the impact of changes in the prices of these variables will be on the derivative without knowing the detail of the instrument's structure. Despite the increasing sophistication of models, there continue to be inaccuracies in the measurement of risks inherent in specific instruments (Duffee, 1996), and institutions expose themselves to changes in value which may not be easy to predict. Furthermore, derivatives are more prone than other financial products to liquidity and credit risks. Liquidity risk arises from the potential that a derivative will not easily be traded during times of particular volatility in the markets, although there is little evidence that it has been a major problem to date. Credit risk, on the other hand, is more common and occurs when the counterparty to a trade is unable to meet its obligations. Although this is a feature of any bi-lateral contract, the opacity of some derivatives, the potential for high gearing and the non-linear risk structure implicit in many of them (Bond et al, 1994) means that credit risk is a particular problem of derivatives. These difficulties can be exacerbated if institutions are unable to specify their total exposure to particular events and also, as Cohen

(1995, 2011) argues: 'given the complexity of some instruments, it is economically feasible for only a relatively few individuals at a company to understand such transactions, and if one or more leave, the company's ability to manage its risk will be compounded.'

In spite of these extra risks that the increased use of derivatives represents to individual institutions, liberal commentators have scorned suggestions that additional controls need to be introduced. While practitioners and regulators have argued that they are analogous to electricity, because they are necessary to modern life but dangerous in the wrong hands (see Lackritz, 1995; Levitt, 1995), The *Economist* magazine maintains that:

derivatives are simply another financial and managerial tool which financiers and managers need to use properly. True, some of those instruments are too powerful for inexperienced or unsupervised hands. Their innards can sometimes be complicated. But then the same could be said for motor cars, and few people would advance that as an argument for more traffic lights.'

This is a seductive argument but it is, for two reasons, fallacious. First, the **analogy** is a poor one: the powerful and potentially dangerous nature of cars does not call for traffic lights, but for driving tests and speed restrictions and laws, conventions and mores which regulate drivers. Second, and more important, calls for derivatives to be further regulated stem not from their capacity to undermine an individual financial institution (the equivalent of a car crashing into a tree), but from the potential for more widespread financial problems (a multiple high-speed pile-up). As an IMF study put it, derivatives reinforce the on-going process of global financial integration:

Derivative instruments tend to strengthen market linkages between individual financial institutions in ways which are difficult to quantify. Consequently, disruptions or increased uncertainty in one market may now be more likely to spill over into other derivative markets and into cash markets (quoted in Gibson and Zimmerman, 1994, 10; see also GAO, 1994a; Group of Thirty, 1997).

A systemic crisis could be **triggered** by one of three things: default by a major player; a sudden shift in the prices of derivatives in the financial markets sufficient to undermine the viability of a major player; or the inability to net out **obligations** and receipts. Derivatives are traded in two ways: on organised and regulated exchanges, such as the London International Financial Futures Exchange (LIFFE) or the Chicago Mercantile Exchange (CME), and 'over-the-counter' (OTC). Exchange-traded derivatives are less flexible than OTC products, have standard structures, require that money is placed with the exchange as

a guarantee and that extra margin payments are made against adverse market moves. Furthermore, the **organised** exchanges cooperate closely with clearing houses in attempts to ensure financial stability in such a way that margin payments by traders are made when deals go against them so that, in effect, the exchanges become counterparties to the trades. Although this has not always proved effective, most spectacularly in the Barings case, it remains a considerable strength of exchange, as opposed to OTC trading of derivatives.

Over-the-counter derivatives are tailored products which have no protection from the exchanges and are held off balance sheet. As a result, they are cheaper and more flexible, but their risk profile is higher and the products can be less easily sold to third parties. To liberal commentators, critics of OTC markets miss the point:

the nimble nature of the OTC markets readily permits – indeed actively encourages – the introduction of new products... Any attempt to stifle the innovative thinking of the many highly intelligent figures involved... is an utterly moronic piece of reactionary thought worthy of the worst moments of twentieth century socialism. If a company wishes to risk its capital by creating a new product, then let it (Black and Young, 1997, 2).

However, concern about the absolute and relative growth of the OTC markets is not confined to left-wing commentators (such as **Atkinson** and **Kelly**, 1994; **Kelly** and **Hudson**, 1994), but includes senior regulators and participants on organised exchanges. This is because the OTC markets are less **liquid** than exchanges and during periods of turbulence they have enhanced the potential for a widespread collapse of market liquidity and backwash **throughout** the whole financial system.

If derivatives have increased potential instability in the international financial system, they are not alone in **doing** so. The breakdown of Bretton Woods and the development of a liberal, market-dominated system since has also contributed to growing connections between financial markets, which has resulted in local perturbations being rapidly transmitted throughout the world. In October and November 1997, for example, successive bursts in the bubble economies of east and southeast **Asia** came to a head when shares on the Hong Kong stock market collapsed, precipitating large falls in all the world's stock exchanges and stimulating fears of a global financial **meltdown**.¹⁰ Furthermore, during the 1990s it has become clear that other factors have exacerbated the levels of systemic risk in the international financial system.

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First, there has been the emergence of large, integrated financial conglomerates with highly complex financial and corporate structures. One of the contributory factors in the collapse of Barings, for example, was the lack of clarity in the reporting lines engendered by the complex nature of the bank's corporate structure (Board of Banking Supervision, 1995; Ministry of Finance, 1995). Second, an increasing share of international financial transactions is dominated by a small number of institutions from a small number of countries which have the geographical networks, specialist knowledge and technological expertise to command market power and manage internal risk. There is heavy industrial concentration across a range of different international market sectors and that some firms have a strong presence in many markets." Furthermore, the trend is towards greater concentration, as the costs of running an integrated global presence (in terms of technology and labour costs) squeeze out smaller participants. In foreign exchange, for example, the top ten dealers have increased their market share from 31% in 1990 to 43% in 1997 and by the end of the century over 75% of the market is expected to be controlled by the top 15 firms.¹² Such concentration contributes to instability because if one of the dominant institutions were to get into difficulty the contagion effect would be more serious than in a less concentrated market:

These institutions tend not just to be each other's largest counterparties, but also to have extensive dealings with many of the same customers around the world and to be members of the same clearing houses and exchanges. While mutual credit exposures with individual firms may not be excessive, direct and indirect credit risk exposures within this group are so complicated and opaque and change so rapidly that it is virtually impossible to monitor them in anything like real time. Accounting and disclosure practices have not begun to keep pace. Risk exposures can build up undetected by existing monitoring systems (Group of Thirty, 1997, 8).

Such developments have not occurred in a vacuum and there have been a series of parallel developments which have acted as buffers for the financial system and prevented a systemic meltdown at the first sight of crisis. At the level of the firm, risk management systems have become much more sophisticated, some derivatives have become better understood and some of the lessons of the collapse of Barings have been learnt. Furthermore, there is some evidence that financial companies have sought to diversify their derivative portfolios in order to reduce their exposure to particular events (see, for example, Group of Thirty, 1997). At the level of the financial markets, too, there have

been developments which offset derivative risks. Technological development has enabled the exchanges to monitor exposure levels more effectively while private sector solutions, both sublime and ridiculous, are emerging which aim both to root out rogue traders (for example, Arthur Andersen have a unit which, as a sideline, provides an investigation into potentially fraudulent trading activity) and offset the impact (through, for example, specialist insurance policies).

Controlling risk? Regulating derivatives markets

While firm- and market-level measures are reducing the potential risks in the system, it is incumbent on bank supervisors to attempt to control the excesses of the financial markets. Although it is true that the **globalising** tendencies in finance have undermined some of the authority and power of national regulators, this is only a partial process and supervisors remain active in attempting to prevent crises in the financial markets. However, while they have retained this power, it is also important to remember that national-states actively encouraged the internationalisation of finance in general, and the development of derivative markets in particular, which is contributing to increased levels of systemic risk.

The collapse of the post-war financial order, when money was largely national in character and currencies were little traded and largely at fixed exchange rates, undermined the basis of the international regulatory environment (Leyshon and Tickell, 1994). From the development of the Eurodollar markets, in which banks could evade US regulatory jurisdiction of their dollar holdings, in London in the 1960s, international banking began to cease being solely an ancillary to trade and investment and began to develop its own dynamic. In the **United States** these pressures, as well as intensified competition from non-bank financial institutions that had been stimulated by the 'May Day' deregulation of the New York Stock Exchange in 1975, encouraged banks to lobby Congress to relax the regulatory 'burden', in the face of opposition from the Federal Reserve Board (see Helleiner, 1994; Hawley, 1984). The lobbying was hugely successful, leading to the Depository Institutions Deregulation and Monetary Control Act (1980) and the Garn-St Germain Depository Institutions Act (1982), both of which dismantled bank regulations, and the establishment of international **banking** facilities (**IBFs**) in 1981 as a direct challenge to the Euromarkets. As Eric Helleiner has emphasised, the failure of the Federal Reserve to dictate the US regulatory environment was a

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defining moment in the history of international finance for three reasons. First, it demonstrated that financial institutions could arbitrage between national regulatory systems and choose the one most conducive to their business aims. If one state attempted to impose a more burdensome regime than was to be found in other major financial arenas, it could find its business progressively seeping to other states. Second, the establishment of **IBFs**, free from tax and domestic US regulatory restrictions, led directly to competitive deregulation in countries which wished to compete with the US and UK as hosts for financial institutions. Third, the failure of a conservative approach to bank regulation and macro-economic management heralded the development of neo-liberal financial regulation. Therefore, by the early 1980s the three pillars of the emergent 'pro-market' regulatory order were born: regulatory arbitrage; regulatory competition; and regulatory neo-liberalism.

Although the thrust of regulatory change during the 1980s and 1990s was to remove domestic restrictions," the period since the breakdown of the Bretton Woods system has also seen the fitful emergence of international supervisory co-operation. Under the auspices of the Bank for International Settlements, which was founded in 1930 to manage the international payment system but has since emerged as the 'central banker's central bank' and as the pre-eminent body for international monetary collaboration, bank supervisors agreed where ultimate responsibility for international banks lay under the Basle Concordat of 1975 (Kapstein, 1994; Helleiner, 1994; Roberts, 1998). More importantly, concern in London and Washington that the quality of bank assets had deteriorated as a result of liberalisation led them to draw up proposals for minimum capital adequacy standards. As Helleiner (1996) points out, if the UK and US had imposed new rules unilaterally it would have materially harmed the competitive position of their national institutions in the capital markets, particularly vis à vis Japanese institutions. They were, in this respect, as vulnerable to the effects of geographically uneven regulation as any other state. However, because both London and New York occupied pivotal roles in the international financial system, US and British officials were able to threaten other nations with exclusion from the two cities unless they adopted similar measures. The result was that the BIS issued the Basle Accord on capital standards in 1987 (BIS, 1997b) which, according to Ethan Kapstein, became the 'cornerstone of a new regulatory order' (1992, 283).

In many respects the Basle Accord was indicative of the new

regulatory order. First, although the committee which set it up had no status under international law and their agreement was not legally binding on signatories, its sponsorship by leading financial nations gave it *de facto* power and it rapidly became set in national regulations (Roberts, 1998).¹⁴ Second, the Basle Accord 'was only brought about because two of the key nation states in international finance were able to impose their beliefs on others. Countries without their privileged locations in the international financial system would not have been able to do so,¹⁵ nor would unilateral action by the UK and the USA have proved effective. Finally, it underwrote the 'pro-market' nature of international regulatory co-operation. This is limited in expectations and aims, as Helleiner points out:

... increasingly specific norms, rules, and decision-making procedures were established concerning lender-of-last-resort, regulatory and supervisory activities in order to prevent further crises. These provisions greatly assisted central banks in co-operating by altering expectations, **making** information available, and **institutionalising** patterns of co-operation. Equally important, they did much to alter market behaviour and instilled confidence among private operators by demonstrating the seriousness with which financial officials were attempting to handle potential problems. Still, the regime's strength should not be overstated. It was focused only on the narrow task of preserving global stability through lender-of-last-resort, regulatory and supervisory activities... (1994, 190).

This new supervisory regime, therefore, embodies a broadly liberal assessment of how governments can and should intervene in an era of financial openness. In an era of open financial markets, regulatory arbitrage means that unilateral intervention is likely to be ineffective, while the emergent hegemony of liberal ideas means that any more radical proposals for intervention, such as the 'Tobin Tax' (see Eichengreen et al., 1995) on foreign exchange transactions, were easily dismissed during the 1980s and early 1990s.¹⁶

Until the collapse of Barings Bank, however, regulators were seemingly unconcerned by the growth of the derivatives markets. What regulations there were tended to be variable, subject to undercutting and not always legally binding (see Group of Thirty, 1997). While regulators were clearly aware of the growth of derivatives, critical voices about the capacity of supervisors to understand it tended to be marginalised. For example, no action followed the recognition by Charles **Bowsher**, US Comptroller General, that:

[The] nature of derivatives activities clearly demonstrates that [regulation] has not kept pace with the dramatic and rapid changes that are occurring in domestic and

global financial markets. Banking, securities, futures and insurance are no longer separate and distinct industries that can be well regulated by the existing patchwork quilt of Federal and State agencies."

Similarly, a **highly** critical report by the General Accounting Office in 1994 was **shrugged** off by the Federal Reserve and dismissed by the ISDA as representing **'good** facts and bad conclusions' (see GAO, 1994a, b; ISDA, 1994). Indeed, as derivatives were the fastest growth component of the financial sector, supervisory authorities positively encouraged product innovation in the exchanges within their jurisdiction while also promoting exchanges internationally (Cerny, 1993). For example, when in 1991 the House of Lords ruled that debts incurred by British local authorities in the swaps market had been illegally incurred, the governor of the Bank of England lobbied ministers to introduce retrospective legislation in order to preserve the integrity of the markets (see Tickell, forthcoming).

At least part of the explanation for this regulatory neglect has been the growth of **practices** which made it genuinely difficult for regulators to dictate the rules of the game. Since the development of the Euromarkets, financial institutions have **practised** 'regulatory arbitrage' (Cerny, 1993; Leyshon and Thrift, 1997; Moran, 1990). There are two components to this. On the one hand, they have developed new products which attempt to circumvent the existing rules while on the other **they** have **sought** out jurisdictions with a relatively light supervisory touch in order to reduce the costs of compliance or to carry out activities that are restricted elsewhere. The avoidance of **regulation** is a major spur to product innovation (McBarnet and Whelan, 1991; Shah, 1996b; Miller, 1986) and means that as fast as regulations are framed to deal with one product, another product may be devised which evades the new rules. Furthermore, the complicated internal structure of such products means that supervisors may face problems in determining their risk structure (to firms and at the systemic level) and, therefore, be unsure about the appropriate response. Until the collapse of **Barings**, supervisors were increasingly sanguine about financial innovation as a means of **regulatory** avoidance. For example, Peter Cooke, who for years was one of the most influential architects of the post-Bretton Woods regulatory era, recently said that:

I do not think [regulatory] avoidance is important at all. At the end of the day, these are all tricks that one would expect banks to play, seeking to probe or bend the law in their favour. [New products] are developed by clever lawyers and bankers seeking to sell new products so that they can earn their fees and commissions. If the

new instrument patently breached the rules, then one would have to take steps to stop it, but I think the degree of difference between various tiers is pretty marginal in terms of the broad brush of capital regulation (quoted in Shah, 1996c, 381-382).

Firms also avoid regulation by exploiting space: that is, they locate activities in markets where regulation is less, rather than more, restrictive or where the levels of monitoring are lower. While in rare cases this may reflect a cavalier attitude to risk, it more usually reflects the ideological near-hegemony of liberal approaches to regulation (see, for examples, Kaufman, 1997; Kaufman and Benston, 1995; Fox, 1995) and the intensely competitive nature of some product areas. Even after two decades of regulatory change, geographical arbitrage remains a potent force. For example, it was widely reported during early 1998 that a major American bank was planning to relocate its wholesale banking and dealing activities to London because the New York regulatory environment was proving so burdensome (Warner, 1998). Whether the press briefings for the stories reflected real plans or pressure on US authorities to remove **regulation** is, to some extent, irrelevant. In a very real sense they represented a set of political pressures on national authorities to **deregulate further**.

The collapse of **Barings Bank** in 1995, when a **single** trader managed to evade both internal controls and external supervision in order to effect a series of disastrous derivatives trades, proved to be a defining moment in international approaches to derivatives regulation. Although the British authorities initially attempted to isolate the impact of the event by claiming both that it was unique to Barings and that the involvement of derivatives was incidental (see **Tickell, 1996**), less publicly, supervisors began to take the potential threat from derivatives far more seriously. Within Britain, criticisms of the Bank of England's supervision of Barings by its own official inquiry and, more trenchantly, the inquiries by Singapore's authorities and the House of Commons Treasury Select Committee (**BoBS, 1995; Ministry of Finance 1995; Treasury Committee, 1996**) led to an audit of the Bank's internal supervisory culture. This review was carried out by external consultants and recommended a series of changes which strengthened the analytical basis on which judgements were founded (**Davis, 1996; Bank of England 1996, 1997a, 1997b**). In the longer term, however, a perception that the Bank of England was in part responsible for the events at Barings undoubtedly contributed to the wholesale restructuring of the supervisory systems as one of the first actions of the incoming Labour government in 1997.

If the collapse of Barings presaged a widespread restructuring of financial service regulation in Britain, its impact on the international regulatory arena was no less important. For arguably the first time, standing bodies of international regulators began to take seriously the possibility that Barings may have been a warning of worse things to **come**.¹⁸ As Andrew Large, the chairman of the Securities and Investment Board, mused at **the** conference of the International Organisation of Securities Commissions (IOSCO):

Fortunately the systemic impact of the Barings collapse was kept to a minimum by official actions and by the presence of a willing buyer... But what if Barings had had a balance sheet 10 times or 50 times its size?... What would have happened then? (see Large, July 1995, 7).

Within three months of the Barings incident, regulators of the major financial centres issued the '**Windsor** declaration' which signalled their willingness to force greater disclosure of information about derivatives exposure, to ensure that derivatives exchanges shared information, and to develop co-operative structures so that regulators could successfully intervene during emergencies (BIS, 1996; Corcoran, 1997). Since 1995, the shape of the emergent regulatory framework for derivatives has become clearer and involves regulatory co-operation and moves towards harmonisation; an increased emphasis on risk management; and an increased emphasis on market disclosure.

First, national regulators have built upon the experience of co-operation over the capital standards and the 1992 'minimum standards **agreement**'¹⁹ with agreements to share information about large exposures in order to gain a **global** picture of firms' activities. At a minimum, such co-operation should ensure that, if banks are honest in their reporting, supervisors are aware of any potential problems before they arise. For example, in 1996, 149 derivatives exchanges signed a memorandum of **understanding** which agreed the trigger points at which information would be shared. Implicit in regulatory co-operation is that regulators should eventually begin to harmonise their approaches to derivatives, in much the same way as the capital adequacy accord led to a de facto norm. One of the governors of the Federal Reserve Board, for example, has recently argued that:

We need some level of regulatory **conformity**... **Otherwise**, the inconsistencies and incompatibility of rules and regulations across countries may make it difficult, if not impossible, for some firms to engage in global business activities... We must also recognise that technology and financial innovation are permitting banks today to become ever more adept at avoiding regulatory barriers. . . (Phillips, 1997, 2).

Any such harmonisation will be difficult to achieve and it is important to recognise that regulatory reform remains contested. At the international level, national regulators **play** off their own sectional interests against their perception of systemic risks and against competitor nations. The **global** dominance of markets in the UK and the USA remains, in part, a regulatory creation and supervisors in those countries are acutely aware of the risks of harmonisation to nationally important industries."

Second, national supervisors are increasingly beginning to emphasise risk management (for example, the BIS and IOSCO, 1995a; SIB, 1996; Bank of England, 1997b). This approach attempts to cover all types of derivative instruments and situate them within the total portfolio of the firm in order to assess the net value of the firm's exposure that would be jeopardised in the event of credit, liquidity or market problems. Furthermore, the BIS and IOSCO have issued a joint paper which sets out how supervisors should assess these risks, explicitly stating that qualitative as well as quantitative judgements need to be made. However, it would be a mistake to interpret such moves as being against the grain of pro-market regulation. The BIS/IOSCO paper emphasised that the 'two committees are aware of the potential costs associated with requests for additional information on institutions derivatives activities and recognise that additional information requirements should only arise where there is a clear supervisory need' (1995a, para 14).

Third, supervisors argue that there is a need for firms to disclose their derivatives activities to the market. This, it is argued, will benefit firms because they will be able to assess the credit-worthiness of their counter parties. As formalised in another joint report by BIS and IOSCO (1995b), during the latter half of the 1980s and 1990s it appeared as if any problem could be solved through market disclosure (see, for example, Casson, 1996; Financial Regulation Report, 1997). As Susan Phillips, of the Federal Reserve Board, has argued, this is a voluntaristic approach: 'Each institution should tailor its risk measurement and management process to its own needs. While adhering to basic principles, each institution must determine for itself the proper incentives and techniques for managing its affairs' (1997, 3). Although such disclosure is voluntary, the report maintained that:

An institution that provides little information about its risk profile may be susceptible to market rumours and misunderstandings by market participants in times of stress, which could possibly result in a loss of business with counter parties, a higher cost of capital and funding difficulties (BIS and IOSCO 1995b, 54).

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How, then, should we interpret the emergence of international cooperation in **regulating** derivatives? Since the demise of the Bretton Woods era it is clear that financial markets have undermined the material and intellectual capacity of states to control them. In his examination of the ways in which **globalisation** and arbitrage undermined regulatory systems after 1975, Phil Cerny suggested that:

States are like lumbering giants, vastly powerful when roused, but often easy to get around, disable with a hundred darting blows from different directions (or a few well-aimed stones from a sling shot) and topple over in a dazed condition. This is especially true given that the state is not true Leviathan, but an unevenly developed and organised structure in which the right hand does not usually know what the left hand is doing and the co-ordinating function does not usually resemble a brain (1993, 79).

Yet perhaps we should understand the new cooperative spirit as being an incremental attempt to wrest power back from these markets. While the scope for regulators is limited, such an analysis would suggest that they have accepted that any intervention must work with the grain of the market. To extend **Cerny's** metaphor, perhaps the crises at Barings and elsewhere finally roused the giants who, even if they cannot finally defeat their foes, can hold them in check. There is some truth in this analysis. The emergent framework of pro-market regulation undoubtedly strengthens the international financial system and makes it more resilient in the face of systemic problems. While not undermining the competition state, the regulatory framework is increasingly setting standards below which national rules must not fall (although at the same time this baseline normalises the standards of liberal participants). And yet, this explanation remains partial for two reasons.

First, it is important to recognise that pro-market regulation is inscribed with a series of ideological understandings about the role of the state. It is not just that the **state's** capacity to intervene effectively in financial (and other) markets has been eroded (although this is the case, [Clark, 19981]); so have the ways of thinking about the state's role. In this sense discourses which emphasise that states have little power end up **naturalising** the very processes they describe. Therefore, the development of a transnational **financial** policy community centred on the BIS, which is largely technocratic and free from democratic accountability, serves not only to set the tone for the international cooperation, it also sets the parameters of thinking. In the case of derivatives trading, the policy discourse still largely adheres to liberal understandings of market rationality (exemplified by the emphasis on

disclosure as a means of overcoming market imperfections).²¹ A recent example of the way in which technocrats have internalised a liberal logic was shown by the response to moves to increase the supervision of over-the-counter derivatives by the Commodity Futures Trading Commission – a Federal Government agency. Echoing industry claims that even a review of OTC markets would raise serious problems, Alan Greenspan, chairman of the Federal Reserve Board, argued that:

There appears to be no reason for government regulation of off-exchange derivative transactions between institutional counterparties. Private market regulation appears to be achieving public policy objectives quite effectively and efficiently... Participants in these markets have been savvy enough to limit their activity to contracts that are very difficult to manipulate. Institutional participants in the off-exchange derivative markets also have demonstrated their ability to protect themselves from losses of fraud and counterparty insolvencies.²²

Second, despite the progress made, derivatives regulation remains timid. **Regulators** continue to rely on firms opting to disclose information to the markets and on peer pressure to force companies to do it. However, although there is evidence that large firms are conforming (see, for example, BIS and IOSCO, 1996a), progress is slow. Furthermore, there is evidence of 'creative compliance' in the interpretation of accountancy rules (Smith, 1992; Shah, 1996a). Finally, the emphasis on disclosure means that credit 'rating agencies are likely to play a major role in helping the market to enforce standards' (BIS 1997b, 168-67). These organisations, particularly Moody's Investment Services' and 'Standard and Poor's', are rooted in an Anglo-American financial orthodoxy and make judgements on the integrity of debt issued by financial institutions, corporations and local and national governments, summed up in an investment grade. Credit rating agencies have increasingly assumed a governance role in international finance and effectively pass judgement on the soundness of managerial practices. This exercises a **powerful** disciplinary force on institutions which stray from the norm. Yet, as Sinclair (1994) has **argued**, it is a form of governance which may be fragile, is unaccountable, and excludes alternative ways of seeing the world. It is, of course, entirely in keeping with a regulatory order which understands markets as being essentially rational. There is one problem with relying too heavily on the credit rating agencies: their predictive capacity. While the agencies have proved adept at making judgements in the majority of cases, when faced with less predictable events or fraud, the grades are less reliable. For example, shortly before the

bankruptcy of **Orange** County in 1995, both Moody's and Standard and Poor's issued very strong grades for the **municipality**;²³ while high **grades** were also issued on the sovereign, financial institution and corporate debt of East and South East Asian countries prior to the crisis of 1997. To rely on such institutions as the cornerstone of international derivatives regulation is taking great risks with the integrity of the international financial system.

Conclusion

This essay has **argued** that supervisors were late to wake up to the increased instability engendered by the phenomenal growth of derivatives markets and that the shock waves from the collapse of Barings finally created a sense of urgency. The regulatory 'solution' to the derivatives problem, which is simultaneously being promulgated in national and international fora, is based on three principles: increased co-operation; risk management; and market disclosure. While this approach has undoubtedly strengthened the system compared with its predecessor (*i.e.* benign neglect), it remains to be seen whether it is adequate to the task. Arguably, however, the rule-based framework is problematic, in part, because it fails to take account of a qualitative shift in the broader culture of finance where power has shifted towards traders (as they account for a greater proportion of profits), while simultaneously this group has become more risk tolerant (Clark, 1997; Tickell, 1998b; Hilton, 1998).

In privileging non-state authority, the international policy community has internalised an (accurate) assessment of the difficulties of reining in the markets and their belief in the desirability and rationality of efficient markets, and concluded that strong regulation is impossible. Although the over-arching presumption of free trade to the detriment of cultural specificity or environmental interests within the World Trade Organisation may be deplorable, its fast and effective dispute resolution mechanisms, and its strongly-framed laws, suggest that alternative models for financial **regulation** are possible. Coming in the wake of the derivatives debacles of the 1990s, the Asian financial crisis truly shook the mantra of liberal economists and during 1998 the builders of the international disorder fell over themselves to call for a 'new architecture for the international financial system' (see, for example, Alan Greenspan [Chair of the US Federal Reserve Board], 1998; Michael Camdessus [Managing Director of the IMF], 1998; Robert **Rubin** [US Treasury Secretary], 1998). And yet it is clear that

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the foundations will be shallow and follow the model set in derivatives regulation. As a paper by the G-7 finance ministers – the most powerful finance ministers in the world – put it in May 1998:

We have identified the need for action in five key areas:

- enhanced transparency;
- ~~helping~~ *countries prepare for integration into the world economy and for free global capital flows;*
- strengthening national financial systems;
- ensuring that the private sector takes responsibility for its lending decisions;
- enhancing further the role of the International Financial Institutions and co-operation between them (G-7, 1998, 1, emphasis added).

In other words, the solution to the problems created by the inappropriate application of liberal economic **dogma** is more of the same.

An alternative approach would recognise that the changes in the international financial system did not appear from nowhere but, following from the logic of the argument of this essay, were politically and economically constructed; that powerful national states positively encouraged the growth of derivatives markets; and that such markets are potentially destabilising. While it is true that once these decisions **have** been made it is **hard** to push the genie back into the bottle, it is not impossible to restrict the ease with which money can flow and to prevent the speculative trading of derivatives. National governments and their representatives in international bodies must tackle the emergent culture of finance which rewards traders with astronomical bonuses – encouraging risk-taking – by setting punitive rates of tax; and, in general, priorities that set the needs of finance over the needs of people must be challenged. Even modest proposals are not trivial tasks, they require that the most powerful forces in capitalist countries be undermined; that the discourses accepted even by social democrats be exposed for the camouflage for liberal ideology **that** they are; and that the inevitable job losses in finance be accepted as a price worth paying for the long-term benefit of society. As William Lyon **McKenzie King**, Canada's long-serving Prime Minister recognised in 1935:

Once a nation parts with its currency and credit, it matters not who makes the nation's laws. Usury, once in control, will **wreck** any nation. Until the control of currency and credit is restored to government and recognised as its most conspicuous and sacred responsibility, all talk of **the** sovereignty of parliament and of democracy is idle and futile (quoted in Stewart, 1997).

Table 1: Market for selected financial derivatives (billion US dollars)

	1986	1987	1990	1991	1992	1993	1994	1995	1996	1997
Futures	583	724	1541	2251	3019	5103	5945	6074	6180	7752
Swaps	500	867	3450	4449	5346	8475	11303	17713	20730	23700
Options	with futures		750	1268	1615	2668	2918	3112	3704	4429
Swap		180	561	577	635	1398	1573	3705	4722	5033
Total	1083	1771	6302	8546	10615	17643	21739	30602	35337	40914

Notes:

Only includes ISDA data and under-reports. Only reports one side of contract.

Data for 1995 are not **fully** comparable with earlier **periods** due to a broadening of the reporting **population**.

Source: Bank for International Settlements (1990-7) *International banking and financial market developments* (Basle, BIS); International Monetary Fund (1996) *International capital markets: developments, prospects and key policy issues* (Washington, IMF).

Table 2: High profile derivative losses

Date	Organisation	Estimated cost	Ostensible cause
1994	Glaxo	£115 m	Bond losses after getting into derivatives contracts 'without knowing what they meant'.
	Alied Lyons	£150 million	Gambled that the dollar would fall during and after the Gulf War. It rose.
	Kashima Oil	Y152.5 billion (US\$1.57bn)	Foreign exchange loss.
1994	Atlantic Richfield Co	\$23m	Derivative-related losses incurred by its Money Market Plus Fund.
	IG Metall-gewerkschaft	\$2.2 billion	Losses on energy products-linked derivatives.
	Gibson Greetings	\$23 million	Sued Bankers Trust claiming poor advice on swaps dealings. Bankers Trust New York Corp settled the suit.
1994	Orange County	\$1.5 billion	Betting against rising interest rates.
1995	Barings	£900m	Betting against changing stock markets and failure to disclose.
	Chile Copper Corp	\$175 million	The trader responsible said he initially made a mistake and the losses mounted as he played the markets to try to recoup his losses.
	Proctor and Gamble	\$102m	Sued Bankers Trust after lost money on two interest rate swaps.
'early 1990s'	Union Bank of Switzerland	£500,000	Trader disobeyed instructions forbidding him to increase market positions in warrants and convertibles and then hid illicit trades.
1996	Sumitomol London Metal Exchange	£1.6 billion	Illegal trading of copper futures. Sumitomo admits liability.

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March 1997	SBC Warburg	'multi-million'	SFA investigate Warburg over an apparent mishandling of the sale of £300m of European shares for an investment trust.
March 1997	Government of Belgium	\$1 billion	Trading exotic instruments in London.
March 1997	NatWest	£90m	Trader made a series of disastrous trades in interest rate options. Bank admits that there were errors in its control systems.
Jan. 1998	Union Bank of Switzerland	\$690m (est.)	Sold securities which gave investors the right to force UBS to buy bank shares at a set price (which would fall if prices edged down). Prices collapsed as result of Asian banking crisis.

Source: author's database.

NOTES

An earlier version of this paper was given at the annual conference of the RGS/IBG in Guilford, 1998 and at seminars in Aberystwyth, Kings College London, Portsmouth and York University, Toronto. I would like to thank participants on these occasions for their comments and ESRC for its support.

- 1 Trading futures and options was variously banned in Japan, parts of Europe and in some states in the USA (including in Illinois for a very brief period in 1867); the US government laid down limited restrictions on grain futures in 1922 and banned trading options on futures in 1936; Congressman Gerald Ford successfully introduced legislation in the 1950s which continues to prohibit trading futures contracts on onions; and during the early 1900s America was beset by a spate of fraudulent bucket shops which took money from private customers for futures transactions and then closed (see Chance, 1995).
- 2 The CME was formed in 1919, but its predecessor organisation – the Chicago Produce Exchange – dates back to 1874.
- 3 Among the large body of literature which explores the derivatives markets see, for example Wall and Pringle, 1988; Cooper and Mello, 1991; Chew, 1996; Winstone, 1995. There are also some excellent Web sites which provide relatively non-technical descriptions of derivatives (see particularly 'Derivatives Research Unincorporated' (<http://www.vt.edu:1002llbusinesslfinanceldmldru>) or, for a 'leave the markets to run themselves' spin, see 'Applied Derivatives Trading' at <http://www.adtrading.com>).
- 4 Futures are traded on major exchanges, such as the Chicago Mercantile Exchange or the London International Financial Futures Exchange (LIFFE) and have standard contractual terms. Similar contracts, known as 'forwards' are traded over-the-counter (OTC) and customised according to agreements between buyers and sellers.
- 5 Indeed, this is the reason that futures contracts are sold. Sellers simply take a different view of the likely movement of the underlying asset.
- 6 J. Kelly 'Accountancy: the risk that lurk off the balance sheet' *Financial Times* July 18, 1996, page 22.
- 7 Indeed, firms in the USA have even been sued for *not* using derivatives to manage their risks. In 1992 the Indiana Court of Appeal ruled that the directors of a grain

elevator co-operative had breached their fiduciary duty by not selling the co-operatives' grain in order to hedge their product against any potential fall in prices (Chew, 1996).

Because markets are not perfect, some derivative instruments do affect underlying asset prices. However, contrary to expectation, most **evidence** suggests that options contracts and, at least, equity index futures simultaneously increase the price of underlying assets and reduce price volatility (see **De Temple** and Jorion, 1990; **De Temple** and Selden, 1991; Robinson, 1993; **Bach**, 1994; Elfakhani and **Chaudhury**, 1995). However, as I argue below, perhaps a more important and less benign **impact** is that increased use of derivatives may help to explain greater risk tolerance among market participants which increases market volatility overall (see also Gibson and Zimmerman, 1994).

9 'Derivatives: the beauty in the beast' *The Economist* 14 May 1994.

10 See, for example, 'Rescuing Asia' *Business Week* 17 November 1997.

11 In 1997, the transactions of the ten largest financial institutions comprised over 42% of all foreign exchange deals, over 67% of all bookrunning for international equities, over 52% of all bookrunning for international bonds, and over 31% of issuing and management of international bonds. These statistics are based on data from *Euromoney*, November 1997, except the estimate on foreign exchange dealings, which is based on the Euromoney Foreign Exchange dealing poll, May 1997 (calculated from a sample of 194 of the largest institutions and based on volume of business placed).

12 'Foreign exchange dealing poll' *Euromoney* 1997.

13 It continues to be so. For example, the IMF continues to pressure countries to **liberalise** their financial markets, while the General Agreement on Trade in Services, negotiated under the auspices of the World Trade Organisation, is providing a baseline for regulatory reform (see **WTO**, 1997; Sorsa, 1997).

14 For example, it formed the basis for European capital standards under the single market programme (see **Tickell**, 1998a).

15 The capital standards were set at a level which most US and UK banks had already met and which effectively penalised more cautious institutional environments such as Germany and Switzerland.

16 Although it remains the case that regulators do not share the views of extreme free-marketeers, who advocate minimal regulation (i.e. Kaufman, 1997) and criticise international co-operation as **being** monopolistic and anti-competitive (**Duffield** and Giddy, 1993; **Meltzer**, 1988).

17 Charles A Bowsher, *Risks and regulation of financial derivatives: hearing before the Senate Committee on Banking, Housing and Financial Affairs* 103d Congress, 2nd Session, May 29, 1994. The speaker was the Comptroller General of the US.

18 The BIS had in fact, begun to address the question, but most suggestions had argued that whatever **problems** there were would best be addressed within the markets, rather than through active regulatory **intervention** (see Group of Thirty, 1993; ISDA, 1994). Even a BIS economist has recently admitted that the 'private sector has played the leading role' (White, 1996, 12).

19 This agreement set a baseline for regulatory standards in supervising international banks (see **BIS**, 1997b; White 1996).

20 Compare, for example, the rhetoric of Tietmeyer (1997), the head of the Bundesbank, with that of Arthur Levitt, chairman of the Securities and Exchange Commission, in *The Insurance Accountant*, (1997).

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- 21 Of course, it remains the case that discursive representations become effective through their mediation with extra-discursive mechanisms (for example, Jessop, 1990; Sayer, 1993).
- 22 Quoted in J. **Seiberg** 'Fed chief hints favor for a bill that limits derivatives regulation' *The American Banker* February 24, 1997, p. 2; 'Deregulating futures trade wins backing of Greenspan' *Baltimore Sun* February 22, 1997, p. 20C.
- 23 'SEC says ex-assistant treasurer lied to Moody's, **Standard and Poor's**' *The Bond Buyer* February, 1997

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