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FROM

THE JOINT STOCK COMPANY

TO

FINANCIAL DERIVATIVES*

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INTRODUCTION

The recent growth of financial derivatives has fundamentally transformed the way finance is transacted and the forms in which corporations manage their risk. But derivatives are more than an innovation in risk management, and we refer here not so much to the growth of speculative activity that has accompanied their development, but to their role as capital and ownership. Derivatives are changing the way in which we understand what is meant by 'ownership' because they are changing the way we understand 'capital'.

When we think of ownership of capital, two forms have long been understood: private companies, which are generally, though not necessarily, small (family) firms, and public companies, or joint stock companies, where ownership is dispersed and transferred via the stock market. Derivatives represent a completely different notion of ownership, which involves neither ownership rights to corporate assets nor of corporate shares, but ownership of financial assets whose value varies with the value of corporate (and other) assets. Indeed with financial derivatives, asset ownership is uncoupled from a direct ownership connection to commodities, financial assets and corporations. Taulli (2003) has referred to derivatives as 'meta-rights': the derivative owner does not have a right to ownership of capital as it is conventionally understood, only perhaps the right to buy or sell that capital in the future.[1] As well as raising interesting legal questions of property rights, this derivative form of ownership changes the way we understand the relationship between capital and ownership.

In developing this proposition, this paper compares the growth of the joint stock company in the mid-nineteenth century and the growth of financial derivatives in the late-twentieth century, for the parallels are exceptional. In each case there has been a revolution in the conception of capital, in the nature of ownership and in contemporary

[1] Indeed, measuring the value of derivatives is done in terms of notional values (of the assets being commensurated) rather than the value of ownership titles being transferred. According to Working (1962), recognising that the "traditional main function of markets, transfer of ownership, is not a significant function of a futures market", required that the business of futures markets should be measured differently. It was therefore a major advance when futures activity came to be measured in terms of the notional value of open contracts.

criticisms that each innovation was creating speculation and volatility. It must be said, however, that our claim is perhaps more suggestive than verifiable. It took many decades for the 'meaning' and significance of the joint stock company to become apparent and, by comparison, the intrusion of financial derivatives into the lived realities of capitalism is not far advanced. We are, therefore, really opening up a proposition of a likely possibility and a need for ongoing monitoring, not making formal decrees of a new epoch within capitalism.

DERIVATIVES: A NEW EXPRESSION OF CAPITAL

Think of the relationship between ownership of a stock in company X and a stock derivative (option or future) in company X. The value of the latter clearly (indeed definitionally) depends significantly (ultimately) on the former, but the two imply quite different types of ownership as well as different leveraging. The stock constitutes ownership of a share in the company's profitability (changes in stock value and dividends) and token rights to appoint managers. The stock derivative forgoes the latter, but builds in for the owner preferred guarantees or risks about the share's profitability: guarantees (or degrees of risk) about future stock prices. With stock derivatives, it is thus effectively possible to trade in equities, and participate in corporate profitability, without ever actually owning a share. It is as if the stock market has gone 'inside' the derivative itself: the derivative is defined so as to spontaneously absorb market calculation.

This apparently minor financial technicality actually transforms fundamentally our understanding of the nature of 'capital', for it signals the evolution of a more abstracted, generalised form of capital is now being thrown into circulation as a financial asset. In so doing, derivatives give capital ownership a new flexibility and liquidity, with the effect of converging the categories of capital and money.

In developing this proposition, it is important to go back to consider the nature of 'capital'. This issue involves one of the deepest debates in economics, so our objective is

far from comprehensive. It is to make the simple point that it has been difficult to reconcile concepts of ownership with concepts of capital.

Capital has a range of meanings. It means, concretely, a particular piece of equipment used in industry, and, in abstraction, the shared characteristic that all different pieces of equipment have in common. This latter conception is often made concrete by thinking of capital as a fund of investment assets. Indeed, there is a danger that capital can mean almost anything!

When Marx wrote about 'capital', the emphasis was on the social relations that constitute capital. Capital, as Marx continually emphasised, is not a thing, but a social relation between people. All societies have had 'capital' in the sense of physical productive assets and most have had (a fund of) money to acquire such assets. Within a Marxian framework, capital is distinctive in capitalism (or any other epoch) because of the different social relations within which means of production are activated. Marx put it succinctly in *Wage Labour and Capital* (1847/1969: 159):

> A Negro is a Negro. He only becomes a slave certain relations. A cotton-spinning jenny is a machine for spinning cotton. It becomes capital only in certain relations. Torn away from these relationships, it is no more capital than gold in itself is money, or sugar is the price of sugar.

Capital in capitalism is distinguished by the class relations defined essentially in terms of property ownership: the capitalist class owning the means of production and a class of workers owning their labour power. But more than a tautological proposition, those capitalist class relations are linked to capitalist 'capital', where the critical distinguishing characteristic is that the surplus appropriated by the combination of labour and capital under capitalism is different. Unlike the surplus labour of slavery or feudalism, the class relations of capitalism occur under competitively determined conditions (how much labour and capital is needed to produce a given output, and how much of the output to produce, are all determined competitively) and the output itself is produced because it is

anticipated to be profitable.[2] So ownership of capital is different within capitalism because capital is itself conceived competitively.

This sort of characterisation of capital as profit-driven is not specific to Marx: any standard financial valuation of capital in terms of an expected rate of return embodies the same link to competition. But the Marxist version presents starkly an analytical problem. While we want to see capital as a social relation (the embodiment of competition), we also want to see capital as a 'thing'. In particular, when we talk of the ownership of capital, there is surely reference to a thing that is owned.

Historically, we think of the shift of capital ownership from the owner-entrepreneur to the joint stock company as the decisive shift in the nature of capital ownership under capitalism. Indeed, the shift is widely considered as a central defining moment in capitalist development. Chandler (:16), for instance, comments on the revolutionary nature of the creation of the joint stock company

> Those institutional changes which helped to create the managerial capitalism of the twentieth century were as significant and as revolutionary as those that accompanied the rise of commercial capitalism a half a millennium earlier.

But the effect of this focus on the joint stock company as a decisive shift in the organisation of capitalist production is that it focuses on the shift in the nature of management, with the changing nature of ownership of capital itself relegated to a secondary, and often ignored, issue. The focus implicitly enforces a particular and historically-specific classification of different forms of capital-as-thing (and hence of ownership and of competitive process), and so occludes a recognition of the social relations that all forms of capital share in common.

Accordingly, for instance, we have for more than a century operated comfortably with a dichotomy between ownership (equity) and credit as distinct forms of capital. To raise new investment funds, a corporation could either go to the stock market and raise equity,

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[2] Keynes discusses this aspect at length in terms of what he terms the 'entrepreneur economy' in the collected works, (REF)

or to the bank and raise credit. The former involved the sale of ownership; the latter a monetary claim over the assets of the corporation. But with evolution in capital markets, we need to re-evaluate our understanding of these different forms of capital. The distinction between debt and equity was always based largely on descriptive criteria that related to institutional processes (the bank compared with the stock market). Financial innovation has dissolved this descriptive differentiation.

This paper develops the argument that among other things, financial derivatives have helped to break down any clear distinction between debt and equity and hence between ownership and credit money.[3] One reason for this is that they have transformed the role of capital as property and as social relation and merged the categories of property and finance. In so doing, they have helped to break down the distinctiveness of all particular forms of capital. So they serve to bring to the fore the characteristics that all forms of capitalist capital share in common: the social relations of capitalist competition.

We must first clarify this issue of capitalist ownership before looking in more detail at the parallels between the joint stock company and derivatives.

CAPITAL AND OWNERSHIP: THREE DEGREES OF SEPARATION

We can identify a shift in the form of ownership of capital from owner-capitalists to the joint stock company to financial derivatives as representing the evolution of major stages in the nexus between ownership and competition. We have called the major points in this evolution the three separations of capital from ownership, with each separation representing a different imperative to competition. These are presented here as historical phases, although with no suggestion that each new separation terminates the imperative to competition of the previous stage: owner entrepreneurs exist alongside joint stock

[3] Convertible bonds for instance contain an option to transform a debt instrument into equity, raising the question about whether it should be classified as debt or equity. Financial derivatives offer a myriad of ways to repackaging debt and equity.

companies and both continue to exist alongside financial derivatives[4]. There is, however, the proposition that each subsequent separation presents a sharper and more comprehensive imperative to compete because it adds increased liquidity into the concept of ownership and increased competitiveness into the concept of capital.

The first capital separation involves the process in which the worker is separated from possession of the means of production so that the owner controls production and capital competes as firms.

Historically, this separation involved pre-capitalist capital becoming separated from labour via the transition from feudalism to manufacture and wage labour. With the enclosure movement and the rise of large scale factories in Britain for example, the means of production were no longer in possession of workers, but now confronted them as under the control of 'the capitalist': the factory/farm owner, typically based around a family business or partnership.

This separation introduced competition into the sphere of ownership because capital became more mobile - no longer tied to a particular feudal manor or slave plantation, but with the capacity to move in search of higher rates of return. Accordingly, a surplus was no longer ensured simply by the fact of ownership. The capitalist owner of the factory now had to keep up with innovations and the strategies of management of labour in other factories in order to secure a surplus from labour.

The second capital separation involves the process in which company ownership is separated from production and capital competes as companies.

Historically, this separation involved the formation of the joint stock company: the separation of ownership from the materiality of 'the factory' and the associated

[4] Indeed, an important research agenda by Cowen, and others has shown that actual physical separation of labour from capital (our first separation) is not always necessary. It can also be achieved by leaving labour in place and transforming the terms of that labour and the nature of the production, such as the terms of access to finance, and the way inputs and outputs are mobilised (see for instance Cowen REF).

separation of ownership of capital from control over production. Ownership takes the form of equity in a legal entity, with equity investors entitled to 'share' in the firm's performance (and some formal but indirect rights to control). In contrast with the first separation, corporate ownership is now purely a financial claim, but with no rights to directly attain any bits of the firm's property or output.

This form of ownership, involving financial rights but no necessary direct participation in the administration of the property of the corporation, required the formation of a secondary market to facilitate ownership flexibility and the durability of the corporate entity that came with that separation.[5] Ownership rights became transferable via the stock market. This was also the forum where the profitability of companies could be compared, and the price of the firm established. In this way, the separation of ownership from the physical form of capital was the means for competition to enter into ownership. 'Capital' itself remained specified to a particular company, and via the stock market *ownership* of capital became a bearer of competition. But, in this separation, capital itself is not the bearer of competition: rights to capital are merely bought and sold in the process of competition.

Even at the time the joint stock company was becoming the generalised form of ownership, this separation was referred to by one economist as the development of *abstract property*, defined as rights not to valuable things but to an abstract quantum of value.

> Income from capital (as abstract property) is not acquired by contemporaneous production. *In the case of abstract property income, not the slightest participation in production is required*. The receipt of income from capital, therefore, does not check itself by the labour incident to its receipt. *Hence its accumulation and concentration are not subject to limitation from within*… The development of abstract property income removes this natural limitation on the agglomeration of riches and makes the degree of accumulation more exclusively

[5] The stock market, by providing liquidity to ownership titles, helped overcome what is now termed 'hold up' whereby a partner could undermine the firm by withdrawing capital or services. Creating the firm as a fictional person helped to encourage what is now known as a 'lock in' of capital, so that the firm emerges as the owner of the capital deployed by the firm, and by so doing became a more durable entity than private partnerships (see especially Blair 2003 and Day 2004).

> dependent on commercial instincts…The modern rich are such because of the dominance of capital in production and distribution…The corporate, or stock and bond, form of organisation is adapted to the needs of such investors. Paper property has the relation to large fortunes that the stock organisation has to large scale production. (Watkins 1907: 35-6 emphasis added)

Ownership of shares under the joint stock company adds a level of competition to ownership beyond that in the first separation. In part this is because shares can be sold more easily and via more integrated capital markets than can the physical assets themselves - and in this sense, shares could be seen as a sort of financial derivative of the physical assets of the corporation. The effect is that ownership thereby becomes more liquid and mobile. But the additional level of competitiveness that enters with the joint stock company is that the corporation is run in the knowledge that it *must* seek to maximise shareholder value.[6]

Hence, with the creation of the corporation as a legal person, capital has become both the object and subject of property (Kay 1991). Whereas in the private firm it was possible to mix the personal wishes of the owner with the requirements of accumulation, the joint stock company has a single purpose: to accumulate. Maximum profitability and share appreciation is not just the self-determined preference of the owner entrepreneur, but a driving rationale for corporate managers. This is the sense in which the joint stock company intensified capitalist competition.

A third capital separation involves the process by which capital ownership is separated from company ownership and capital competes as itself.

This stage is now being generated by the growth of derivatives. We have already described this separation in its most obvious form: that ownership of a share derivative (option or futures contract) is a different from ownership of a share itself. We can explore this specific case briefly before generalising.

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[6] For a discussion of the effects of this transformation on changing labour capital relations, see Hearn 1978, Sykes, 1982 and Rule 1986.

Share ownership involves an ownership claim on (part of) the legal entity called the corporation. The share derivative gives its owner exposure to the performance (price and profitability) of the company in a form that is more flexible than direct share ownership. It is this flexibility that is critical to the distinctive nature of derivative ownership. As well as the potential for leveraged exposure to an asset price (such as a corporation's share price), which leads to the focus on derivatives as tools of speculation about price movements, derivatives also provide a means to package ownership rights in a form that ties the owner's exposure to the performance of any particular corporation to some other financial asset. For example, a convertible bond may give the owner a security with debt-like characteristics, but with the right to convert to a share (if the share is performing better than the debt). Thus the derivative element is that it intensifies price relations of one form of capital (corporate debt) to another form of capital (equity), but without any necessary claims to ownership of either, (or of the corporation itself).

The effect of derivative ownership is that one form of capital (eg. related to shares) is tied directly to other forms of capital (eg. related to say interest rates or currency values). Not only does this give derivatives a range of attributes that were once thought distinctive (eg equity versus debt), but the value of the derivative varies in a pre-determined way as the values of various underlying assets vary. A derivative therefore gives its owner exposure to a selected range of different underlying asset values within the one, combined, form of capital, but, and this is critical to this third separation, *it can only provide this selected exposure by being separated from ownership of the underlying assets themselves*.

Accordingly, with derivatives, the very concept of 'capital' and its ownership is separated from the ownership of both direct physical assets (the first separation) and legal representations of those physical assets (the second separation). Derivatives, therefore, represent a form of capital that is inherently competitive, because they embody an intense, market-driven relative valuation of different assets. Derivative markets trade the relative values of different assets without trading the assets themselves. In this sense,

with financial derivatives, capital competes with capital for the determination of rewards for the ownership of capital.

In depicting this change, our temptation has been to pose each separation as giving capital increasing characteristics of abstract capital (infinite flexibility and adaptability), but of course the change is not about actually making capital more abstract. On the contrary, these separations have given to concrete capital the capacities that we have historically considered only in abstraction: the capacities of mobility and to change form in the search for surplus value. Capital as a physical asset and capital as social relation thereby start to merge. That transition is both an extraordinary development in the form of capital, and, predictably, an intensely challenging historical process, in which capital appears to take on more universal (and often threatening) capacities.

In developing our proposition, it is not necessary here to consider further the first separation. It is important only insofar as it highlights that capital is capitalist capital, tied to the surplus value producing process. The focus of this paper is the parallels and contrasts, historical and analytical, between the formation of the joint stock company and financial derivatives, so as to compare and contrast them as different stages in the evolution of 'capital'. The next section therefore reviews the development of the joint stock company in order to make that analysis possible.

THE JOINT STOCK COMPANY

There are several features of the formation of the joint stock company that warrant specific notice: its historical evolution and especially the role of the state therein, the flexibility it gave to 'capital', and contemporary (nineteenth century) debates about its significance.

Evolution

The formation of the joint stock company is often depicted as a quantum leap in the nature of firms and markets. Terms such as the transition from the 'invisible hand' of markets to the 'visible hand' of managerial capitalism (Chandler 1978); the rise of 'the corporate economy' (Hannah 1981) or Robber Barons (Josephson 1978) the 'organisational' economy (Simons 1991), and the 'end of laissez faire' (Keynes 1981) are often drawn on to create the image of a rupture driven by the increased capacity of large corporations to take control over market processes. This image is contrasted with the age of small private firms where the owner/entrepreneur ran the business as a family concern, and so-called 'competitive' markets were the dominant way that economic processes were organised.

However, the emergence of the joint stock company was not sudden. It can rather be seen as a slow historical process, often initiated by the state, in which the demands of large scale production (or commerce), and the associated needs of investor security gradually led to new forms of property in capital.[7]

An important pre-modern form of commercial capital in Britain was the regulated or chartered company, developed under state monopoly privilege. These companies were formed to undertake specific tasks, such as voyages of discovery, or exercise monopoly rights to trade in particular goods or in particular locations. Probably the best known of these firms was the East India Company formed in 1600 (see Baskin and Miranti 1997). Chartered companies usually received their legal status in return for providing substantial financial assistance to the crown, and there was, in this form, often no clear distinction between public and private corporations. That distinction was not clearly demarcated until the nineteenth century (Baskin 1988, 208).

Significantly, some of these chartered trading companies were granted the right to issue shares (joint stock), often with the state as a subscriber (Braudel 1982: 444; Baskin

[7] Significantly, Rule (1993) has observed about the changing relationship between states and markets during this time that "capitalism and the market economy with their associated relations of production were not created by the eighteenth century state, but capitalism as a system triumphs only when it becomes identified with the state".

1988).[8] This gave them resources to grow to a size previously unattainable, and generate market power.[9] Initially, these corporations operated as loose partnership frameworks with 'corporate' activities on a venture-by-venture basis. The capital of a company was not permanent and owners had the right to take their capital out of the firm after each venture. Indeed, the term 'capital' (or 'a capital') at this time was used as an accounting term to refer to the investment in each voyage.

From the mid seventeenth century the chartered companies began to grow in size and take on more durable forms, and the demands for longer-term finance (debt and equity) also began to see financial innovation and the development of secondary markets[10] for trading these instruments.[11] The ongoing management of the risk of committing long-term funds to large investments by chartered companies and secondary markets for ownership therefore emerged together - a process that we see, albeit in a different form, associated with the later growth of financial derivatives.

The direct consequence was the establishment of limited liability - a process which itself required that the company exist as a discrete legal entity. Limited liability required that the capital be owned by a fictional legal 'person' (the company), which is charged with undertaking commercial action on its own account. The firm therefore became the owner of the capital invested in it, and could sue and be sued. Limited liability thus involves the separation of the personal interests and liability of shareholders from those of the firm. In

[8] Often the charters related to a particular voyage or voyages only, and the company dissolved once the venture was completed. While the venture-specific nature of these early corporations helped minimise the risk associated with funding activities in which the investor may not be directly involved, the costs of liquidation were often high (such as dividing unsold merchandise).
[9] Size was in part also related to the fact that companies were often asked to undertake quasi-state (political/military) functions. For instance in pursuing trade and territorial expansion, the East India Company often built fortresses, and protecting trading routes sometimes required it to form what amounted to a *de facto* a standing army.
[10] Secondary markets were, however, not new in themselves. Secondary markets in securities existed in Amsterdam from at least the early 1600's, and even earlier in Italy.
[11] Eklund and Tollison (1980) make the case that the development of the corporation grew out of the benefits of easily-transferable shares. Hence it was not simply the demands of larger scale of investments *per se* that spurred the growth of limited liability. Rather it was also the problems of owner-managed firms in securing organisational durability, especially with limited ability to transfer property rights and guarantee managerial succession.

so doing, an investors' liability to a firm is limited to the amount of their investment in the firm.

This development set the firm up as a distinctly capitalist organisation. Braudel (1982, 439) for instance suggests that:

> The limited partnerships were associations both of individuals and of capital. The joint stock companies or *sociétés par actions* as they were known in France…were associations of capital only. This capital or stock formed a single mass, identified with the firm itself.

But these early joint stock companies were inflexible, with a limited management base.[12] They still often depended on state-provided monopolies, and were often not well attuned to the growth of competition.[13]

The joint-stock company was quite slow to catch on as a general form of legal organisation. The idea of a share as a separate legal title to the firm, and its transferability, were also slow to develop. As they did, they were often caught up in fraud and speculation. Even during the early transition phase in the early 1700s, economists such as Adam Smith and legal scholars questioned the economic value of concentrated property and the joint stock company.

In the seventeenth and early eighteenth centuries there had been periodic booms in corporate and stock market activity. At the peak of one notorious boom, in England in the early eighteenth century (1720), the listed capital of joint stock companies had reached 50

[12] Chandler (1979: 13), emphasising the managerial implications of this transition makes a similar point "Even when partnerships began to incorporate, their capital stock stayed in the hands of a few individuals or families. These corporations remained single-unit enterprises which rarely hired more than two or three managers. The traditional capitalist firm can, therefore, be properly termed a personal enterprise. From its very beginning, however, modern business enterprise required more managers than a family or its associates could provide…".

[13] A debate has emerged recently about whether it was the extraction of monopoly rents or the transaction costs of minimising properties of chartered firms that drove the development of joint stock companies. (See, for instance, Carlos and Nicholas 1996; and Jones and Ville 1996). The dichotomy may be unnecessary. The important point here as Braudel (1982: 443) notes is that "…the monopolies established by the big [trading] companies have at least two, more properly three characteristics: they were the expression of high-intensity capitalist endeavour; they would have been unthinkable without the privilege granted by the state; and they appropriated for themselves whole sectors of overseas trade".

million pounds. With these substantial sums of money involved, the development of government legislation, to give greater certainty and regularity to this new corporate form, was essential. The initial catalyst for this regulatory intervention was, however, a major corporate crash. The collapse of the South Sea Company in England in 1720, a large joint stock company closely tied to the state, was (eventually) a watershed. [14] But instead of formalising the laws of limited liability joint stock companies, the government's response to the crash was to curtail corporate development generally. At this time, political opposition to the emerging capitalist order, combined with the general panic over the collapse of such a large organisation, precipitated a containment of the growth of the joint stock form.

Accordingly, the adoption of the corporate form as a standard organisational entity was restricted by the Bubble Act of 1720, making unincorporated joint stock companies illegal, and imposing a range of regulations on firms seeking incorporation.[15] The Bubble Act was never actively enforced, and so the Act slowed, but did not stop entirely, the development of the corporate form. The Bubble Act was not repealed until the early nineteenth century (1825), after which the joint stock companies rapidly developed. There remained ongoing judicial resistance, but by this time the economic and political landscape had changed significantly. In particular, by the early nineteenth century, it had become clear that the emerging bourgeois order was not going to be compromised by constraints on the corporate form.

Resistance to joint stock was nonetheless significant, especially in the context of a comparison with the era of the growth of derivatives. Even after the repeal of the Bubble Act, there was significant opposition to the corporate form, especially to the granting of

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[14] The collapse became known as the South Sea bubble. The South Sea Company was a firm granted a charter in the early eighteenth century to restructure English public debt, and in return was granted the exclusive rights to trade in Spanish South America. It grew during a period of considerable speculative fervour. With the success of trading companies, public interest in joint stock issues grew rapidly in the early 1700's, and by 1717 the capitalisation of joint stock companies reached 17 million pounds; a fourfold increase in two decades. The collapse occurred after a wave of speculative and often fraudulent company practices, including promoting its own stock price (which increase tenfold in but a few years) (Frankfurter and Wood 1997).

[15] The Bubble Act made every new incorporation subject to Parliamentary approval and declared unincorporated joint stock a common nuisance and its promoters subject to prosecution.

limited liability. Hunt (1935: 14), for instance, reports that British Parliamentary debates revealed "not only legal and mercantile opinion hostile to legislative limitation of liability, they reflect as well serious public concern over the difficulty of fixing the responsibility of shareholders in an unincorporated company in the event of financial embarrassment".[16] Some aspects of these debates are discussed in more detail below.

Gradually,[17] and especially with key legislative and regulatory innovations by the state, secondary markets began to consolidate, and the joint stock company became much more widely accepted.[18] The advent of general limited liability was accepted in the United States by the 1830's but did not occur in Britain until legislation between 1855 and 1862 (Baskin and Miranti: 140-141).[19] In both cases it was the capital and organisational requirements of funding large-scale investment (railroad and canal construction and operation) that made the corporate form, and limited liability in particular, necessary and more widely acceptable. As corporations expanded in scale and scope Chandler (1979) observed that they "grew and dominated major sectors of the economy, [and as they did so] they altered the basic structure of these sectors and of the economy as a whole". It was also around these developments that secondary markets for corporate securities became active[20] and concentrated in major financial centres.[21]

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[16] Significantly, these debates occurred in the context of considerable social upheaval including sometimes violent opposition to mechanisation (Luddisim), the repeal of Elizabethan laws of provision, bread riots, the Peterloo massacre, the Cato Street conspiracy, and the suspension of habeas corpus to suppress public meetings and popular organisations. See for instance REF

[17] According to Chandler (1979:36), "[u]ntil well after 1840, the partnership remained the standard legal form of the commercial enterprise… [Even t]he most powerful business enterprises of the day were international interlocking partnerships".

[18] In particular, there were continuing concerns about the scope for speculation and deception. Tooke continued to express the view that corporations are rarely if ever run with the same care and skill as private establishments, while McCulloch suggested that corporate balance sheets were worse than worthless, being calculated to deceive and mislead. Senior, Peel and others, on the other hand, argued that limited liability would attract more capital from small investors (cited in Hunt 1935).

[19] Limitation of liability, like the corporate form itself, occurred gradually. Liability on transfer of shares, for instance, ended in 1834 in Britain, but, some authors suggest that courts still interpreted limited liability in restrictive ways in the US until the early 1890's (Handlin and Handlin 1945). Others have argued that limited liability in Britain did not become really effective until 1897 (Franks and Meyer 2002: 6-7).

[20] Between 1815 and 1860, around three quarters of the almost $200million invested in canals had been financed through the flotation of state and municipal bonds (Baskin and Miranti 2000: 133). Railroad and canal companies required access to vast tracts of land (often granted by state and municipal governments), and with public distrust about stock markets still high, the acceptability of canal and railroad corporations was contingent on being viewed in part at least as a public improvement program. In the case of the US, their acceptability was also underpinned by the fact that the state invested in opening up new areas of land

So despite the fact that joint stock companies were recognised legal entities from the mid-17th century, it took until the mid-19th century for them to become widely accepted as a standard form of corporation. We conventionally date the impact of the joint stock company to this later period, precisely because its significance lay in its emergence as a new norm for capital.

Corporate 'capital'

One hundred and fifty years ago, our understanding of capital as a class was embodied in the rich, self funded owner/entrepreneur: the feudal lord or mercantile trader turned manufacturer. Class was personified – the rich capitalist appropriated surplus from the wage labour that was employed in his factory or warehouse.

The formation of the joint stock company shattered that image, and it did this in two ways. First, the joint stock company involved, as Marx put it, the "transformation of the actual functioning capitalist into a mere manager, in charge of other people's capital, and of the capital owner into a mere owner, a mere money capitalist" (Marx 1894/1981: 567).

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to agriculture and commerce to help create markets for railroads. Indeed, the state was also often the main source of funds for railway and canal developers, and this 'intimate association' increased public trust in canal and railroad investment.

[21] Chandler ((1979 pp58-9) reports that, in the United States:

> ..[t]he unprecedented capital requirements of constructing the American railroad network led to the centralizing and institutionalizing of the nation's money market in New York. In volume and complexity of operation the New York money market quickly became second to that of London. From the 1850s until the late 1890s the institutions and instruments of finance on Wall Street were used almost exclusively to finance the railroads. In fact, *nearly all the instruments and techniques of modern finance in the United States were perfected in order to fund the construction of railroads and to facilitate growth through merger and acquisition.* (emphasis added)

Significantly also, he observed that the railroads were the first private business enterprises in the United States to acquire large amounts of capital from outside their own regions, and were critical to the development of secondary markets. "The great increase in railroad securities brought trading and speculation on the New York Stock Exchange in its modern form. Before the railroads the volume of stocks in banks, insurance companies and state and federal bonds was tiny. On one day in March 1830, only thirty-one shares were traded on the New York Stock Exchange. By the mid-1850s the securities of railroads, banks and also municipalities from all parts of the United States were being traded in New York. Where earlier hundreds of shares had been traded weekly, hundreds of thousands of shares changed hands weekly. In a four-week period in the 1850s transactions totalled close to a million shares (1979: 92).

Second, the limited liability company changed the concept of 'ownership' fundamentally. As Adolph Berle (1959) observed, the legal entity known as the corporation emerged as the owner of the firm's property. It separated the capitalist (as owner) from the capital invested in the firm and the individual capitalist entrepreneur was transformed into an impersonalized industrial 'capital'.

This development generated a long-standing debate about the tensions between the objectives of managers and owners (growth versus profit), and it must be said that this debate has dominated the interpretation of the historical significance of the joint stock company.[22] But this focus on the divergent incentives and interests of managers and owners has often tended to obscure the underlying issue of the changing nature of property and its connection to competition.

Stockholders now owned monetary claims to a share of the company, not to any specific part of it. Shares could not be converted into a bit of the corporation's buildings, machinery or work-in-progress. This de-personalisation of capital ownership allowed owners to sell shares in the company to others. Company shares came to be bought and sold in secondary markets, providing both new sources of capital and, of growing importance, a vehicle for competition between individual capitals (pricing of corporate capital and a market for corporate control).

A related change was the transformation of private ownership of capital into 'social' ownership, in a process of extending capitalist social relations. This is the point Marx (1894/1981: 567) emphasised about the joint stock company. For example:

> Capital, which is inherently based on a social mode of production and presupposes a social concentration of means of production and labour-power, now receives the form of social capital (capital of directly associated individuals) in contrast to private capital, and its enterprises appear as social enterprises as distinct from private ones. This is the

[22] This literature is extensive, but for seminal contributions see Baumol (1959), Marris (1964), Williamson (1964), Alchian and Demsetz (1972), and Jensen and Meckling (1976). For a recent review see Schleifer and Vishny (1995).

> abolition of capital as private property within the confines of the capitalist mode of production itself.

Many interpreted this to imply the socialisation of property, but another interpretation is that the firm as capital was now a more tangible expression of the social relations of capitalist society, not simply of the personal desires of its owner.[23] The separation of ownership and control of the corporation meant that, in the workplace, workers confronted management, not owners and the surplus was extracted from workers by 'capital' rather than (traditional) capitalists. The class conflict of capitalism became labour's conflict with 'capital' – a system and logic. This logic depended not on the greed of the individual capitalist owner for more wealth: it was driven increasingly by the competitive pressures of corporate balance sheets, with managers having to 'perform' (ie. make competitive profits), and to use a modern euphemism, to 'grow' stock prices.

Contemporary debates

The development of the joint stock company was an issue of open contemporary debate with close parallels to recent debates about the growth of financial derivatives. Two sorts of questions were prominent: would joint stock companies open new scope for fraud and corruption and would they lead to the demise of small business and the concentration of economic power?

The issue of fraud and corruption, we have already seen, was central to the conservative view of capital. The key issue was the separation of ownership from control, and the 'agency problem', as it is now called. Adam Smith's (1776/1979) famous comment, that the managers of firms could not be expected to take the same care of "other people's money" as they would their own, reflected a widely held concern that the corporate form would be an inefficient way of organising economic activity. For Smith and many others it was precisely this de-personalisation of capital that made it such an unstable and inefficient vehicle for conducting business.[24]

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[23] This latter view is adopted notably by Kay (1991).
[24] Smith's view on this is worth quoting at length here:

This same point was central to debate in Britain about the repeal of the Bubble Act in the early nineteenth century. In Parliamentary debate in 1825 for instance, the Lord Chancellor Eldon, supported by the Tories, opposed repeal on the basis that non-tangible holdings, such as shares, encouraged speculation. They were 'paper' transactions, not real trade, and did not contribute to the nation. On the other side was a group of businessmen and bankers who argued that the joint stock company made possible the development of capital-intensive and publicly beneficial projects such as canals and railways. For the pro-corporate parliamentary group, existing laws of business organisation were an anachronism, the common law component was the accumulated residue of a different (pre-commercial) society and the Bubble Act a product of a moment of national frenzy (Harris 1997).

The second point of contemporary debate about the joint stock company concerned the concentration and centralisation of capital. In the United States, Thomas Jefferson and others were also concerned that limited liability would benefit wealthy entrepreneurs and offer little to yeoman farmers. Andrew Jackson and others countered that, by allowing a pooling of multiple small investments, joint stock would enable small-scale, talented entrepreneurs to compete with wealthy entrepreneurs on more equal terms (Baskin and Miranti 1997). Both groups saw that only by reconciling concentrated property with individual endeavour was there a basis for social and political support for the joint stock form of capital. One worried that such a reconciliation would prove difficult. The other saw scope for individual co-operation and initiative through the joint stock form.

"The directors of such companies, however, being the managers rather of *other people's money* than of their own, it cannot well be expected that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master's honour, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company. It is upon this account that joint stock companies for foreign trade have seldom been able to maintain the competition against private adventurers. They have, accordingly, *very seldom succeeded without an exclusive privilege, and frequently have not succeeded with one*. Without an exclusive privilege they have commonly mismanaged the trade. With an exclusive privilege they have both mismanaged and confined it." (1776/1979: 741 emphasis added).

Both, of course, were correct. The legislative reforms of the mid-nineteenth century helped to re-define property rights in a manner consistent with large-scale production and facilitated the concentration and centralisation of capital. With this transformation, the capacity of large capitals to exercise power in the market became more widespread. This became especially apparent in the U.S. merger waves and sharp business practices of the late nineteenth century, characterised by Josephson (1978) as the age of 'Robber Barons'. There is no doubt that this was not only a threat to 'yeoman farmers', it directly confronted all small, owner-managed capitals.[25] And, as Jackson observed, the stock market also gave less wealthy entrepreneurs with a good idea, a desire for risk and powers of persuasion, a capacity to raise new capital and to share the risks, and the dividends, with other investors. What they both reflected was the intensification of competition: that potentially profitable investments could now better attract subscribers and investment became more mobile.[26]

A further debate occurred over the stock market as an institution, and whether it was encouraging destabilising speculation. During the eighteenth and nineteenth centuries, stock markets were riven with fraud and speculative episodes. For many, such as Jefferson, a distinction could be drawn between investment in land, commerce and joint stock and speculation in securities. Thus stock markets were useful vehicles for raising capital, but also places for unhealthy speculation (Sobel 1988, 2000; Gordon 1999). Over time, regulatory regimes evolved not to eliminate speculation, but to harness it

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[25] Geisst (2000: 6), for instance, notes that during the 1840's and 1850's, "(t)he rural America so fondly recalled by Alexis de Tocqueville was rapidly giving way to the railroad baron and the grain plunger".

[26] Marx (1894/1981: 735) observed at a relatively early stage of this process:

> Even where a man without means obtains credit as an industrialist or merchant, it is given in the expectation that he will function as a capitalist, will use the capital borrowed to appropriate unpaid labour. He is given credit as a potential capitalist. And this fact so admired by the economic apologists, that a man without wealth but with energy, determination, ability and business acumen can transform himself into a capitalist in this way . . . much as it constantly drives an unwelcome series of new soldiers of fortune onto the field alongside and against various individual capitalists already present, actually reinforces the rule of capital itself, widens its basis and enables it to recruit ever new forces from the lower strata of society.

(Kindleberger 1989, Day 2004, Geisst 1999).[27] As stock markets have developed, debates over forms of regulation of financial markets have continued. Like the agency debate in the theory of the firm, the appropriate form of regulation of financial markets has never been resolved.[28]

These same themes of debate lasted to the end of the nineteenth century, and it could readily be recognised that both interpretations were historically verified. In *Capital*, Marx referred both to "stock-exchange gambling" (Marx: 1867/1976: 919) and to the formation of joint stock companies facilitating "tremendous expansion in the scale of production, enterprises that was impossible for individual[ly-owned] capitals" (1894/1981: 567). Weber too saw the stock exchange "discharging its most important function . . . of controlling prices" by arbitrage, but that this function was becoming dominated by speculators. Indeed, he extended this insight into derivatives, contending that "the advantages and drawbacks of futures trading are almost inseparably mixed" (1995/1977: 374). Hilferding (1910/1981: 111ff.), who reinterpreted Marx's theory of finance at the beginning of the 20th century, showed the same emphasis, although it was the speculative role, in which he chartacterised money in stocks as 'fictitious capital', to which he gave most emphasis.[29] This has been a profound influence in the way Marxism has associated finance with speculation.

By the late-nineteenth century, the development of large corporations in railways, coal, steel and oil produced a second wave of debates (especially in the U.S.) about the corporate form, this time about the anti-competitive practices associated with trusts and conglomerates. This development also saw the emergence of new forms of state regulation, initially through the Interstate Commerce Commission (ICC) in the US to regulate railroad companies in particular, and then with the growth of other regulatory

[27] The issue of speculation deserves a longer discussion in a separate paper. At this stage we merely wish to build another parallel with the development of financial derivatives.
[28] For two sides of contemporary debate, see for instance, Day (2004), and Pirrong (1995).
[29] For Hilferding, money capital in shares was said to be fictitious in the sense that it involved a double counting of industrial capital; not, as is commonly thought, that the capital is purely a book entry.

institutions associated with what Glaeser and Shleifer (2001) recently termed the rise of the 'regulatory' state.[30]

This development was seized on by many on the left, such as Hilferding, Lenin and Kautsky as signalling the rise of a new and mature phase of capitalist development. Hilferding combined this development of concentrated property with the observation that in Germany at least the rise of financial institutions as major forms of securing credit was creating a form of finance capitalism. "An ever-increasing proportion of the capital used in industry is finance capital, capital at the disposition of the banks which is used by the industrialists". There thus grows alongside the growth of large firms, the increasing presence and control of banks:

> With the development of capitalism and its credit organisations there thus grows the dependence of industry upon the banks. The finance-capital develops with the development of the joint-stock companies and reaches its height with the monopolisation of industry. With cartellisation and trustification, finance-capital reaches the highest stage of its power, while the commercial capital experiences its deepest degradation. (Hilferding 1910/1981: 225).

Here the rise of the joint stock company, the growth of monopolistic industries and the rise of finance capital were taken as signals of a mature stage of capitalism whereby not only are industry and finance merged, the institutional ownership and control of capital are concentrated in the hands of a few large banks. It is at this point that capitalism as a social system becomes vulnerable to the challenge of socialism. As we know, these developments were part of the institutional evolution of capitalism, not the beginning of the end of capitalism. And we know that the joint stock company was not eclipsed by banks.

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[30] The ICC displaced litigation as a way of controlling business practices (such as disputes about pricing) and was thus a forerunner of a changing system of regulation of capital accumulation. The inefficiency of private litigation and its vulnerability to subversion produced demands for alternative institutional arrangements for the social control of business. As Glaesser and Shleifer (2001: 3) argue, during the three decades following the creation of the ICC, "…regulatory agencies at both the state and the federal level took over the *social control of competition*, anti-trust policy, railroad pricing, foods and drug safety and many other areas (emphasis added)." For an excellent introduction to the changes occurring during this period see McCormick (1981), who describes how "the government… began to take explicit account of the clashing interests and to assume the responsibility for mitigating their conflict through regulation, administration and planning".

In summary, the development of the joint stock company showed a number of characteristics, which provide important points of comparison with the recent growth of derivatives. As a once-new form of capital ownership, facilitating new forms of corporate organisation, the joint stock company presented itself initially as a radical innovation, undermining conventional notions of ownership as well as of commercial stability and business prudence. We know, moreover, that the conservative criticisms were well founded. The last 150 years is littered with cases of fraud and corruption, and periods of extreme, market-wide volatility, including booms and depressions. Yet, despite this chequered history, the joint stock company is now a recognised essence of capital as an economic system (Kindleberger 1979, Chandler 1976, Hannah 1984, Hunt 1933, Braudel 1986, Baskin and Miranti 2000; Kohn 2001; Simons 1991).[31] This standing, we argue, is based on the fact that the development of this form of corporate organisation was integral to the development of capitalism. The generalised adoption of the joint stock company, and the associated secondary market for shares (stock exchanges), makes the joint stock company a distinctly capitalist form of organisation of capital, for it brings competition directly into ownership and indirectly into the rationale of corporate management.

FINANCIAL DERIVATIVES

It is historically too early to summarise the history of derivatives that is akin to that of the joint stock company, but there are some clear parallels to be drawn.

Evolution

Just as there is a proclivity to see the joint stock company as an invention of the mid nineteenth century that came into being fully developed, the same is often thought of derivatives: that they are an invention of the 1980s, and that they emerged rapidly, and with their 'role' in accumulation entirely developed and understood.

[31] Chandler (1979, 16), for instance, comments on the revolutionary nature of the creation of the joint stock company: "Those institutional changes which helped to create the managerial capitalism of the twentieth century were as significant and as revolutionary as those that accompanied the rise of commercial capitalism a half a millennium earlier . . .".

Derviatives are not a 1980s invention – indeed the history of derivatives is much longer than the history of corporate shareholding – but, as was the case in the history of the joint stock company, it took a range of economic developments and state regulations to bring derivatives to prominence as a dominant form of capital. So just as we date the significance of the joint stock company as a generalised form of capital ownership only form the mid 19th century, we also date derivatives as a generalised form of capital ownership only from the 1980s.[32]

Derivatives in the form of futures and options are almost as old as monetised exchange itself. A potted history of derivatives will note Aristotle referring to options in Book 1 of *Politics*, and of the forward selling of rice in China in 2000BC. It will also highlight the extensive medieval use of futures contracts in rural market places and the role options in the famous Dutch tulip bubble of the seventeenth century.[33]

Specifically organised institutions for trading futures and options however, date from the mid-seventeenth century in Japan, and the mid-nineteenth century in England and the United States. In this way, the first period of derivatives development parallels the generalised emergence of the joint stock company. And at some points their development intersected. The development of stock exchanges in the late eighteenth and early nineteenth century led virtually immediately to the formation of options markets for company stocks. In the United States, for instance, put and call options on stocks were being traded from the 1790s, in the early years of the institution that later became the New York Stock Exchange (Bernstein 1996: 307).

But the predominant history of derivatives within capitalism is found in agricultural markets, which date from the early to mid nineteenth century. In 1848 the Chicago Board of Trade (CBOT) established an organised grain market, and some time thereafter began

[32] The rapid growth of financial derivatives, rather than commodity derivatives around this time, that we take as the beginning of the era of derivatives.

[33] For more on the role of options in this event, and on the historical development of derivatives see Swan 2000. For a counter argument about the tulip bubble, see Garber 2001.

trading wheat forward (for future delivery). Here, as with the joint stock company, the development was associated with the expanding scale of capitalist accumulation. According to Emery (1899), one of the key factors in the development of United States grain futures markets was the expansion and increasing national integration of agricultural production and distribution that occurred during this time.[34] With the extension of railways, urbanisation and industrialisation,[35] Chicago emerged as a crucial railway hub and commercial centre for many types of agricultural produce, and it was here, in particular, that formal agricultural derivatives markets originated. Emery also argued that with the growth of an increasing international market for grains and cotton, the more severe became the trade risks. Market participants increasingly could not afford to ignore futures markets, and even before the turn of the century it was being argued that, "(h)edging has become so common a practice that in the main a dealer who does not hedge, that is who carries his own risks is looked upon as extremely reckless. Paradoxical as it may sound, the man who avoids the speculative market is the greatest speculator of them all." (Emery 1899, 48). [36]

The range of commodities that were subject to futures markets grew steadily over the next century. In Chicago for instance, commodity exchanges like the Egg and Butter Board (which would later become the Chicago Mercantile Exchange) developed futures markets for a range of agricultural commodities, and in New York, an options market on grain began on the New York Produce Exchange in 1877. These became the early basis of exchange-traded derivative markets for agricultural commodities and later financial instruments.

[34] For instance, between 1854 and 1864 the amount of wheat shipped from the Midwest in America more than quadrupled (Geisst 200).
[35] For a useful overview of this process, see Gray and Peterson (1974).
[36] Another factor that led to the development of commodity futures markets in the United States was the civil war, which increased price volatility and therefore risks and also changed social attitudes to the accumulation of wealth. This released speculative activity on the prices of gold and staples (Geisst 2000, Rees 1972).

The growth and reorganisation of international cotton trading based around England also generated an important cotton derivatives markets.[37] By the mid-nineteenth century a futures market in the Liverpool Cotton Exchange[38] emerged as a crucial pricing and credit institution for international (especially colonial) cotton trade,[39] and as an important source of commercial relations with the Manchester cotton industry (Engdhal 1999). As the Liverpool exchange developed, two distinct markets emerged: one on arrival and the other yet to be shipped, with the derivative market (yet to be shipped) increasingly dealing with rights that were settled less and less by any actual exchange of cotton and more and more in cash (Rees 1972). While for a time the most important business remained spot markets, Marsh (1911: 589) argued that, by the early part of the twentieth century, spot markets had:

> become subsidiary and ancillary to this main business (of futures trading). It may almost be said that as the main business of banks today is not dealing in money, so the main business of the cotton exchanges is now in credit transactions in cotton, towards which the actual cotton 'on the spot' stands in much the same relation as the money in the banks to the sum total of their transactions in credits.

With the development of cotton futures markets, merchants, banks and other commercial institutions changed and intensified their relations with the cotton industry (Toms 2002). The affinity between derivatives and money was clearly apparent even then.

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[37] It is worth recalling that in the nineteenth century cotton occupied a place in international trade that is in some ways analogous to oil today. Marsh (1911: 573) reminds us there was a saying in the financial world at the time that 'cotton is gold' in the sense that "no matter where it may be, (it) can always be turned into money". He also argues that merchants in the financing and trading of cotton "…have completely covered the earth with a network of commercial and credit connections, they have provided means of practically instantaneous communication between markets and agencies for gathering and disseminating information... Their operations are among the most important factors in the daily life of the world's finance".

[38] Until the late eighteenth century, London had been the main port of entry into England. But with the opening of the Liverpool to Manchester railway, trading through the port of Liverpool became more important. A market in forward prices (known as 'to arrive') emerged as dealers sought to hedge against international price changes (Rees 1972).

[39] Especially with the improved international communication links made possible by the laying of a partial cable to India (Rees 1972). By the early 1930's Forrester (1931) reports that "(t)he basis for all the spot cotton prices in England is Liverpool futures".

There were regular revelations of speculation and manipulation of futures and options markets (especially attempts at cornering markets),[40] and some of these episodes helped change market behaviour[41] and public perceptions of these markets.[42] Generally, however, futures exchanges confined their own regulatory activities to contractual enforcement between members and took little or no action to deter manipulation of prices (Pirong 1995, Geisst 2002). Sometimes, but quite rarely, speculative scandals led changes in existing regulations, ranging from transactions taxes (such as the Capper-Tichner Act of 1921in the United States[43]), to attempts to impose controls on short selling (by the 'anti-optionists' in the United States [44]), to outright bans (in Germany in 1897[45]). From the early part of the twentieth century, derivatives markets in the U.S. were subject to increasing regulation, subjecting them to federal supervision, closing some exchanges and driving others abroad. From the 1920's legislative bodies considered proposals to tax, regulate and even ban futures trading. While most of the proposals were defeated, some form of federal regulation of futures markets existed from 1922.[46]

But while such circumstances that saw the development of the joint stock company repressed for about a century (in Britain, epitomised in the hundred-year Bubble Act)

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[40] Cornering is simply the use of cash or derivative markets in a way that permits price manipulation. According to one study of the Chicago Board of Trade, there was at least one corner nearly every year during the period 1865 to 1921 (Pirrong 1995).

[41] Toms (2002), for instance, reports that in Liverpool one response the market corner of the September 1889 cotton futures contract was for several individual companies to form the Cotton Buying Company.

[42] Periodic criticism by farmers about price instability in wheat directed farmer opposition to the Chicago futures trading pits, and the Grange movement as it came to be known soon realised that co-operative attempts to stabilise incomes could not prevent price volatility. So they increasingly joined progressive attempts to increase government regulation of derivatives exchanges through parliamentary means (Nordin 1974).

[43] An earlier tax on futures and options, the Hatch Bill, which was passed by Congress in 1893 never became law (Geisst 2000).

[44] See Emery (1899).

[45] Weber (1895/1977: 376) contended that it was in the international political interests of Germany that there be policies to control trade on the stock exchange, including the market for grain futures. His primary recommendation was that evidence of wealth should be required before admission, and that all transactions be in cash. The objective was to exclude the small speculators who he thought were using the leverage provided by derivatives to speculate heavily in the market.

[46] According to Pashigian (1986) many who opposed futures trading did so because they felt it encouraged speculation, which was directly analogous to gambling. But he argues that the primary purpose of successful regulation has been directed to eliminating the alleged manipulation of markets by traders, that is to make the markets work better rather than to shut them down. He also shows that areas where opposition by farmers for futures was highest were characterised by grain growing areas where buyers (such as grain elevators) were thought to be using futures markets to carry out collusive buying (Pashigian 1988). See also Easterbrook (1986).

there was no equivalent impact in derivatives regulation. There are probably two central reasons for the different treatment. The first is that, by the late nineteenth century, the question of containing the rise of capitalism had been almost completely resolved. Certainly, the ruling class in most nation states were unlikely to see their interests advanced by containing the growth of derivatives exchanges. Indeed, even critics of futures exchanges conceded that they had quickly come to play an important economic role. And secondly, derivatives pertaining just to particular commodities were not transforming the nature of capital ownership in the way that the joint stock company (or later financial derivatives) did. Single commodity derivatives had helped to reduce certain risks associated with the expanding scale and scope of commodity trade and finance. But at this stage, single commodity derivatives were largely internal to those markets. Even though, by intensifying price relations between the present and future for these commodities, they served to permit changes in the financial integration of accumulation, they rarely became the basis for comparing capital *per se*. In our terms, therefore, they were not yet elevated to their current role of capitalist capital, in the sense that they were not being used to commensurate different forms of capital. It was sufficient, at this stage of their development, only to regulate derivatives so as to establish fair market practice between buyers and sellers.

Derivatives: Becoming Capital

Derivatives markets relating to money and other financial instruments, rather than physical commodities, are much more recent. It is this development that has changed the general nature of capital and ownership, for it has seen derivatives used to hedge all forms of capital rather than just particular commodity transactions.

Apart from isolated innovative financial transactions scattered through history,[47] it was not until 1972 that the Chicago Mercantile Exchange introduced the first currency futures contract and until 1975 that the Chicago Board of Trade introduced the first interest rate

[47] Bernstein (2000: 307-08), for example, refers the Confederate States of America issuing bonds in 1863 that could be redeemed in Sterling or French Francs, or even in cotton. Telser (1986) reports that foreign exchange futures were traded for a short time in the 1920's.

futures contract. Moreover, exchange traded financial derivatives did not extend outside the United States until 1979, when the Sydney Futures Exchange issued its first exchange traded financial derivative contracts. Similarly for options. Prior to the creation of the Chicago Board Options Exchange (CBOE) in 1973, options contracts were largely over the counter instruments: that is, contracts privately negotiated between two parties.[48] They were non-standardised contracts and accordingly, attracted no significant secondary market. But since the opening of the CBOE, options exchanges have opened up in all major financial centres.

The generalised growth of the joint stock company related to the needs of large-scale production for both large-scale funds and the spread of the risks of ownership, and the generalised growth of derivatives related to parallel concerns in a different historical context. *Rather than adapting ownership to the risks of large-scale investment (as with the joint stock company), derivatives have adapted ownership to the risks of 'large-space' and 'large-time' finance.* The evolution of financial derivatives in the 1980s can be tied to the rapid development of the international financial system in the wake of the ending of the Bretton Woods agreement, particularly to the development of Euro-finance markets, the growth of international scales of accumulation by individual firms (MNCs), and the collapse of national commodity price stabilisation schemes in the 1970's (Ackland 2002, Rawls and Smithson 2003).

Suffice it here to say that Eurofinance markets were the foreign exchange and debt markets that developed slowly in the 1950's and 1960's, based first on the hard currency (especially US dollar) reserves of the Soviet bloc held by European banks, later enhanced by the US dollar savings of the middle east oil-exporting countries in the 1970's. In both cases, state-owned currency reserves became available for loan in 'unofficial' (and hence unregulated) currency and bond markets. These short-term foreign (Euro) currency loans were attractive because of very low interest rates to borrowers, and the capacity for both

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[48] From at least the 1870's in Chicago, options or 'privileges' as they also came to be known at the time, had been the subject of bans and restrictions.

borrowers and lenders to avoid the tight capital controls that ruled the post-World-War II global economy (Marr and Trimble 1993).[49]

But foreign currency loans also entailed risks of exchange rate and interest rate change, and as the post-War global financial system (based around the Bretton Woods Agreement) started to unravel at the end of the 1960s, the risks of exchange rate and interest rate variability grew accordingly. With the end of Bretton Woods, the floating of exchange rates, and the lifting of many national controls on the cross-national movement of finance and investment, the conditions were right for derivatives to emerge as a genaralised form of financial risk management. As Rawls and Smithson (2003: 350) observed:

> With the breakdown of Bretton Woods, the rules (of international exchange) changed. Each party wanted to transact in his own currency to prevent being "whipsawed" by the market…. Foreign exchange forward contracts had been available for decades. But it was only in the early 1970's that this market took on its own existence.

In 1972, the Chicago Mercantile began trading futures contracts on a range of currencies. But it was really the 1980's when financial derivatives began to become integral to corporate finance. As we argue below, the critical point at which derivatives become 'capital' so it needs to be explained institutionally here.

Once financial derivatives emerged, they rapidly changed the face of derivatives markets, especially in the United States. Initially, financial derivatives were dominated by exchange traded futures and options. During the 1960's financial futures markets in the United States doubled in size. Between 1970 and 1980 activity grew seven fold. In a three year period in the early 1980's they tripled in size. As a consequence, financial futures quickly came to dominate futures trading, surpassing all other futures markets. Whereas in 1960, foodstuffs, grain and oilseeds accounted for 94 percent of futures trading activity in the U.S, and as late as 1970 they still accounted for 63 percent of

[49] The prefix 'Euro' refers to the fact that currencies were circulating outside of the legal borders and/or regulation of the nation-state of the currency. It was called Euro because most early trading was of US dollars traded in European financial centres such as London, Zurich and Paris.

activity on futures markets in the U.S., by 1983 they represented less than a third of trading activity (Carlton 1984).[50] By 1990, futures contracts on financial instruments represented around 60 percent of total turnover on United States exchanges (Parsons 1995).

While exchange traded financial derivatives therefore continued to grow rapidly throughout the 1980's and 1990's, alongside them grew over-the-counter (OTC) traded financial derivatives. Indeed, it was ironically, only really from the early 1980's, when interest rate volatility caught many large firms and especially banks off guard, that financial derivative activity, and particularly OTC products such as swaps, took off (Brewer et. al. 2001).

With contemporaneous innovations in risk management and monitoring and the demand for individually tailored products, there has been what Kroeszner (1999) described as a disintegration of the exchange traded clearinghouse system. In the 1980's and 1990's, it was these OTC derivatives that came to dominate derivative markets. It was the OTC markets where the explosive growth of derivatives occurred in the 1990's, so much so that by the late 1990's of the $US 33 trillion of derivatives outstanding in the United States, only $US 4 trillion were exchange traded. This development was also global, so that by the late 1990's the notional value of outstanding global OTC derivatives was estimated to be in the order of $US 70 trillion (Greenspan 1999). It has been estimated that the total notional value of outstanding contracts of all derivatives, both exchange traded and OTC is about $214 trillion (Dodd 2003). These markets are dominated by the activities of large financial institutions, such as the large commercial banks, mutual funds and hedge funds.[51]

Corporate 'capital' and Derivative 'capital'

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[50] This transformation was so great that by the early 1980's some former agricultural futures markets such as the Chicago Mercantile Exchange had completely given up trading these and had specialised in financial futures, industrial materials and metals.

[51] Ashley and Bliss (1999) report that in 1998 the 25 largest banks in the U.S. held 99 percent of bank held derivatives.

The initial use of financial derivatives was as one-off tools for hedging exposure in commodity markets. In this ad-hoc role, derivatives were not yet 'capital' in a generalised sense. Even when derivatives first developed in finance, to hedge exchange rates and variable interest rates on particular loans in the context of new exposures in international finance, they were not yet 'capital'. They were traded in relation to particular, individual financial transactions, closing off individual financial exposures, just as commodity derivatives were generally used to hedge a particular commodity order.[52]

It was not until derivative markets were sufficiently comprehensive that they could be thought of as 'capital' tied to 'ownership'. The critical development was that derivatives started being acquired for their flexibility and mobility: their capacity to blend different forms of capital with different characteristics into part of integrated 'capital'. In this sense of 'capital', we see that derivatives, like the joint stock company, lay dormant until their generalised need for accumulation became apparent and, indeed, was facilitated by state regulatory reform, which lifted restrictions on or ratified the growth of these new forms of capital.

How, have derivatives changed capital? We saw above that the joint stock company initiated two changes in 'capital': it 'socialised' capital and gave it a legal standing outside of its particular owners. If the joint stock company constituted the corporation as an 'individual person', and thereby separated capital from 'real' individuals, what have derivatives done?

They have taken the logic of capital beyond the bottom line (annual profit rates) and into the details of each phase of production and distribution, because they permit the corporation as legal entity to continually verify the market value of its component pieces of capital. They have provided a form of capital in which competition has, to use a popular legal phrase, 'pierced the corporate veil'. With derivatives, the ability to commensurate the value of capital assets within and between companies at any point in

[52] They were also circumventing national regulations, and this no doubt motivated much of the early use of derivatives, but they were discrete transactions, without the characteristics of 'capital' we are now identifying.

time has been added as a measure of capital's performance alongside and perhaps above the capacity to produce surplus over time.

Derivatives separate the capital of firms into financial assets that can be priced and traded or 'repackaged', without having to either move them physically, or even change their ownership. In so doing they allow scrutiny of the parts of the firm that were pooled by the joint stock process, and so allow a more intensive scrutiny of its capacity for profit making. It has to be noted here that the measures for such scrutiny are still developing, and in part this is because derivatives are undermining normal on-balance sheet forms of scrutiny and calculation.[53] While there have been several corporate scandals that have exploited this off-balance-sheet nature of financial derivatives (such as Enron and Worldcom), there is little or no sign that restricting the use of derivatives is a serious proposal under discussion. Rather, it is accepted that derivatives are now integral to the accumulation process. In this sense, derivatives are extending and deepening the 'socialisation' of capital that Marx had identified with the formation of the joint stock company.

While the joint stock company transformed private firms into social corporations, they remain(ed) largely 'private' in their internal operations and calculations. The corporation as legal individual makes effectively 'private' calculations in its 'internal' decision-making. The stock market attempts to value the effects of these decisions, but because the stock market is not a major way that firms finance themselves, its role is largely to attempt to price whole firms[54]. But derivatives are socialising calculation within and between corporations. There are, in some senses, elements of the return to the form of capital which cohered just for particular ventures, before the joint stock company established the corporation as a large, durable monolithic, administered institution. We have with derivatives a potential akin to a return to corporate operations as a temporary and flexible coalescence of assets that can readily be liquidated after each venture.

[53] Currently also, the attention to reporting the financial soundness implications of derivatives has focused especially on financial firms that produce and trade derivatives.
[54] Because stock markets are only a relatively source from which firms obtain their finance, Stiglitz (1994) has referred to them as an 'interesting and fun sideshow', but not really at the heart of the action even in the United States and United Kingdom. See also REF from transition paper.

Contemporary debates

Since the growth of derivatives in the 1980s, and especially derivatives relating to finance, there has been a widespread debate about their contribution to accumulation. Some have hailed them as tools of risk management in an unavoidably risky global market; others have condemned their economic and political role as tools of speculation, accentuating rather than managing risk and volatility.

This debate is requires an analysis in its own right. Here, a simple but central point is to be drawn in parallel with the 19th century debate on the growth of the joint stock company. In that 19th century debate, it will be recalled, some saw the joint stock company as a means to secure the expansion of the scale of capital; some saw it as the opportunity for entrepreneurs with good ideas but without wealth to mobilise new capital. Derivatives carry the same characterisation: they permit companies to hedge exposures across numbers of currencies and different forms of capital raising. They also permit smaller companies to insure against unwanted risk, so that their fortunes depend just on their surplus value-creating capacities.

In the 19th century debate over the joint stock company, claims abounded of the stock market as a site of gambling and manipulation, and the joint stock company itself as facilitating irresponsible management of capital. At the beginning of the 21st century, we see the same criticism made of derivatives. Critics of derivatives point to famous corporate crashes, like Long Term Capital Management, Enron, or Barings as representing the inevitable consequence of derivatives. For them, these cases will hopefully assume the status of the South Seas Bubble almost 300 years earlier, and provoke legislation to stifle derivative growth. Eatwell (1996:18-20), for instance has argued that financial derivatives, which are meant to help firms manage risk, may have actually increased risk:

> The development of new derivative products to manage the risk that the liberal financial system has itself created has in turn produced new

> systemic risks. Indeed, the complexity of such instruments leaves them vulnerable to sudden loss of liquidity as opinion swings in one direction or another.[55]

Susan Strange (1998) makes the case that the growth of global finance (including derivatives) has been associated with facilities to make it easier for organised crime to transfer money across the globe. She has contended that "the theoretical implication of the closer links between finance and crime, however, go deeper into the structures of power in the international political economy . . . (including) the amazingly permissive market for transnational banking services, including the laundering of dirty money". Proposals to restrict capital flows and impose tighter restrictions on derivatives use follow as a consequence.

The point to be emphasised here is how the debates about the generalisation of the joint stock company one hundred and fifty years ago and the generalised role of derivatives today are directly parallel. In their nascent stage, the joint stock company and financial derivatives have been condemned and praised for basically the same reasons. History shows that the joint stock company is now an established and integral part of capitalist economy and the standard form of large units of accumulation. We cannot imagine the past 150 years of capitalist development without it.

It is inappropriate to 'predict' a parallel 150-year future for derivatives. All that we can say at this early stage is that the criticisms currently made of derivatives exist alongside, and with little impact on, their emerging role as an established and integral part of corporate management. This analysis has developed the proposition that understanding

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[55] See also Eatwell and Taylor (1998a 1998b, and 1999). This work is also associated with the work of the CEPA project on International Capital Markets at the New School of Economics including D'Arista 1998, Dodd 2000, Helleiner 2000, Palma 2000. In particular, Dodd (2000:4) argues that:

> While the risk shifting function of derivatives serves the useful role of hedging and thereby facilitating capital flows, the enlarged presence of derivatives also raises concerns about the stability of the economy as a whole. The use of derivatives can lead to lower levels of transparency . . . They can be used for unproductive activities such as avoiding capital requirements, manipulating accounting rules and credit ratings, and evading taxation. They can also be used to raise the level of market risk exposure . . .

their role as capital is an important foundation for explaining future developments in capital accumulation.

CONCLUSION

We are not the first to draw parallels between the transformations brought on by the joint stock company and financial derivatives. Some legal scholars have suggested that financial derivatives are challenging existing concepts of the firm since they challenge the nature of capital ownership and competition (eg. Krawiec 1998, Partnoy 1999). Partnoy (2000: 2), for instance, has suggested that with the integration of financial derivatives into business practice, "…corporate law has been left in the dust. For the study and practice of corporate law, the consequences of the derivatives revolution are devastating. Many of the traditional building blocks no longer exist." [56] The argument developed in this paper have hopefully persuaded readers others than lawyers that this conclusion needs to be taken seriously.

The joint stock company has taken 'capital' from the physical form of the factory to a financial claim on the corporation. Derivatives have taken 'capital' from that claim on the corporation to a claim on assets that is infinitely convertible (contingent) within and across firms. The result is an increase in the imperative of competition under derivative ownership: the corporation now potentially faces an on-going market valuation (in relative terms) of each of its own assets - its inputs, its outputs and its various financial assets. While in 1907, Watkins had depicted shares as 'abstract property' we identify derivatives as abstract or meta (but empirically real) capital.

The consequences are profound. On the one hand, the competitive pressure that follows is vastly intensified from that faced by capital in the first and second separation. On the other hand, derivatives show that the process by which capital is valued has become increasingly divorced from direct ownership of the means of production.

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[56] Partnoy also makes the case that whereas in the past it was possible to teach corporate law using almost entirely nineteenth century railway cases, it is becoming possible today to do so using almost entirely derivatives related cases.

But derivatives are being widely condemned. The same sorts of arguments that were made 150 years ago about the joint stock company are now being made against financial derivatives. They are being widely criticised as a diversion of finance from its key role in funding production. They are widely thought to be driven by speculation and they are seen as adding liquidity to corporate gambling. They are undermining the integrity of capitalist accumulation and should be regulated into insignificance.

In both periods, the arguments have not been without foundation. Since the formation of the joint stock company there have been massive stock market booms and busts, and, in the short recent history of derivatives, there have also been some significant speculative crises and frauds. But today as we look at the joint stock company, along with an awareness of booms and bust, we recognise it as an epochal change in the way capitalism 'works' and in the nature of capital and ownership. We suggest that the same will be the impact of derivatives. In both eras, the issue of speculation and crisis sits under that recognition.

References

Not yet available