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## Instability of the Economy and Fragility of the Financial Structure

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## **Instability of the Economy and Fragility of the Financial Structure**

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JEL Classification: G1, N22

**SUMMARY:** This paper seeks to extend Coase's explanation of the existence of firms in general to financial firms and the financial markets in particular. Financial firms are defined as "producing prices" of financial assets. It also seeks to describe market structure in terms of constellations of different types of financial firms, leading to a continuum of market configurations ranging from less to more internal integration of financial transactions within financial firms. Against this background different national financial market structures are compared and assessed. Finally, the symbiosis between manufacturing and financial structures is discussed.



### A "manageable and realistic" Theory of "Financial" Firms<sup>1</sup>

In his now famous 1937 article, Ronald Coase noted that while economic theory presumes that the allocation of resources is determined by relative prices in competitive markets, in fact in a "large sphere in our economic system" this system is superseded by formal economic planning. Coase identified this "large sphere" with the formal organisation of production within the firm (although there seems to be no reason to exclude government and the family). To remedy this anomaly he proposes to construct a "manageable" and "realistic" theory of the firm based on assumptions that "correspond to reality".

In a retrospective consideration of this theory (see Williamson and Winter, 1991) Coase notes that his emphasis on the purchase of labour inputs by the firm had led economists to neglect what he considered his "key idea: ... the comparison of the costs of coordinating the activities of factors of production within the firm with the costs of bringing about the same result by market transactions" (Ibid., p. 65). He thus reiterates that in his view the "basic reason" for the existence of firms is "the avoidance of the costs of contracting **between factors** of production" (Ibid., p.67, emphasis added), an idea he distinguishes from the reduction of the costs of transactions "between the organisers of the firm and the factors of production it uses" (p. 68) which might derive from long-term contracts which do not specify the particulars of the employment relationship.<sup>2</sup>

Coase also notes that as a result of his original emphasis on the "employee-employer" relationship, the "contracts that enable the organisers of the firm to direct the use of capital (equipment or money) by acquiring, leasing, or borrowing it were not examined" (Ibid., p. 65). The tendency to overlook the costs of coordinating capital with other resources via the market relative to coordination within the firm has meant that the natural extension of Coase's approach to an explanation of the organisation of the financial system in terms of the

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<sup>1</sup> Professor of Political Economy, University of Bologna, Italy. This paper was presented at the American Economics Association Session: Financial Market Form and Economic System Performance" held at the Allied Social Sciences Associations Annual Meeting in Anaheim, Calif., 6th January, 1993, 10.15 am. Financial support from the Italian Consiglio Nazionale delle Ricerche grant 92.01868CT10 is gratefully acknowledged.

<sup>2</sup> Coase draws this distinction in order to criticise explanations linked to "asset specificity" on the grounds that any factors which would cause long-term contracting to reduce the costs of specific factors for the organisers would not be independent of the factors which cause the organisation of a firm to reduce the "costs of contracting **between factors**", and as such cannot be considered as an independent explanation. (emphasis added)

relative costs of production of financial services via markets or within firms has also been overlooked. Although banks have long been analysed as business firms, the factors indicated by Coase have been extensively used to explain their existence.<sup>3</sup> It is now commonplace to distinguish between "market-based" and "bank-based" financial systems with reference to differences between "Anglo-Saxon" financial systems in which firms' long-term capital requirements are financed through the sale of securities in financial markets and the "Continental" or German system in which firms' capital requirements are primarily financed through borrowing from multi-functional, or "universal" banks. The relative advantages between these structures has become a popular topic of discussion ever since empirical studies appeared suggesting that capital costs were lower in "bank-based" systems. This result appeared to be counter-intuitive to economists who believed that the "market-based" system should be more efficient. This is a discussion which might benefit from an analysis of the relative costs of alternative organisational forms.

Coase's analysis treats the choice between "internal" or market organisation of production of physical outputs as a binary choice, yet there are substantial complexities in the way markets (and firms) themselves are organised. There is thus the possibility of a Coasean "meta" theory to determine the combination of different types of market and firm organisations which might compose a financial (industrial) system. Such analysis might explain why some organisational forms are more, and some less, "market-based", than others.

The justification for such an approach may be found in Coase's observation that the analysis of "market form", which usually runs in linear fashion from pure competition, through a number of intermediate cases such as oligopoly and duopoly, to pure monopoly is misplaced. He suggests that more appropriate limiting cases might be Lenin's representation of his plans to operate the Soviet economy as "one big factory" (p. 39) and a perfectly competitive inter-temporal general equilibrium system in which there are no firms (or perhaps it is better to consider each individual agent as a firm) and all transactions take place at equilibrium prices in daily exchanges through the market; that is between a full centralised and a fully decentralised organisational system.

In his original 1937 article Coase points out that the range between the two extremes is not linear, that some "firms" may use "markets" as the basis for part of their "internal" organisation of production. There is no reason why this relationship should not be symmetrical, with some "markets" basing their organisation on internal organisation with

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<sup>3</sup> Indeed, the *New Palgrave Dictionary on Money and Finance* entry on "banking firms" makes no reference to the Coase criterion.

firms! It is this non-linearity that suggests the definition of the "structure" of financial markets in terms of the degree of "non-market" organisation which is required for their operation. To use Coase's terminology, the financial structure may be defined by the position of the margin between "non-market" (firm-based) and "market-based" transactions within the market itself.

### **Financial Firms and Financial Markets**

Coase defines the costs of operating through the market as the costs of "discovering what the relevant prices are", or what is now called the "price discovery" process of the market. He goes on to mention that "This cost may be reduced but it will not be eliminated by the emergence of specialists who will sell this information. (p.21)".

These "specialist" organisations provide what Clower (1975, p. 198) calls the "coordination of economic activities" via the "role of the middleman as links between producer and consumer". Clower's concern is to explain why, contrary to the indications of economic theory, the economic system in reality "fails to work", while Coase is concerned to explain why, contrary to the indications of economic theory, a large proportion of economic activity takes place outside the market. But, their criticism of economic theory is similar for Clower identifies the absence of intermediaries from Walrasian theory with the same factors Coase cites for the absence of an explanation of the existence of firms, the failure to recognise the "costs associated with trade" via the market (Clower, p. 199).

It is clear that Coase's "specialists" are meant to be similar to Clower's middleman, rather than to the "assigned dealers" called "specialists" operating on the New York Stock Exchange; nonetheless they provide an excellent example of the point that the production of prices in organisations designed to "sell this information" will also be required in financial markets. These organisations of "middlemen" can then be thought of as "financial firms".

Chandler (1990) provides a clear explanation of how changes in costs transformed the organisation of distribution by in product markets from agents working solely on a "sale or return commission" basis, to wholesale firms taking title to goods and reselling them at a mark-up (Clower's middleman), to a final stage in which manufacturing firm internalised the sales and distribution functions, eliminating wholesalers, and occasionally also retailers. On the other hand, financial "firms" acting to organise financial markets as market intermediaries have been much more persistent.

### **The Costs of "Using the Financial Market"**

Just as there are different possible organisations for product markets, there will be a range of different types of financial firms, "making" market prices in different ways, representing different types of financial market organisation. The organisation most familiar

to economists is the Walrasian auction market. As Clower has pointed out, the problem with this conception is that when it is used in economics "every relevant aspect of individual behavior is costlessly monitored and controlled" .. "thanks to the freely provided services of a *deus ex machina* called 'the auctioneer'" (Clower, p. 195).

Although not precisely equivalent to Walras' description of the "tâtonnement", auction markets have, until recently, dominated the organisation of financial markets. Instead of providing free services, auctioneer firms charge for their services in organising the market. The direct costs of organising such a market, while not zero, are primarily composed of labour costs. The costs of using an auction market, in addition to the commissions paid to the auctioneer firm, will include time spent at the auction, as well as the cost of holding goods between auctions. The costs of attending auctions of multiple goods are clearly subject to scale economies and usually "broker" firms will offer to attend as agent for a number of clients, operating on a commission basis. The auction market is thus usually best known as a pure brokers or agency market.

The brokers may eventually collude to exclude the "auctioneer" firm and other traders (as happened in the US when a group of brokers signed the famous "Buttonwood Tree" agreement to found the New York Stock Exchange), taking on the "organisation" of trading themselves within a restricted entry institution which became the basis for what is today defined as a securities "Exchange".

The agency (or brokers) auction (or Call) market is a discrete market, which discovers prices by means of an official call of prices for individual stocks to which brokers respond with clients' buy and sell orders until the maximum number of bargains may be executed at what is then "fixed" as the official price for the stock. Not only are all orders to buy above and sell below that can be matched executed at this price, it becomes the official price for legal purposes, such as evaluating the performance of the broker's agency agreement with his client.

This is also what, following Braudel, may be called a "public" market [cf. Kregel, 1990] because all information, including orders to buy and sell at prices other than the equilibrium "fix", is exposed to all participants. It is this exposure of the public's partial supply and demand schedules, in the form of public limit orders, which produces liquidity in the market. This "public liquidity", is independent of the purchasing power of the auctioneer or broker "firms" that organise the market. This form of organisation provides market liquidity without cost to the organiser of the market.

Some form of discrete call market was the first type of financial market organisation

in early industrialising countries (with the exception of England). It is clearly a close approximation to what is meant by "organisation" via the "market". It has now been abandoned in almost all official securities markets, although recently a number of electronic auction systems have been set up which provide market matching and price discovery via computer link up [cf. Kregel, 1992b]. Here direct computer access by principals makes physical presence at the auctions, and thus the services of an agent, unnecessary.

The opposite extreme in the range of financial market organisation is the "market-making" function which is exercised by an investment or merchant bank in raising capital for a business firm via an initial public offering or a primary distribution of securities in the market. This is close to the complete internal organisation of production found in a manufacturing firm. In a primary distribution of securities the investment bank, or a group of banks forming an underwriting syndicate, organises both the demand and supply side and fixes the issue price -- it internalises the market and official regulations meant to insure competitive market trading are suspended. After insuring sufficient initial demand, and adjusting the supply to meet it at the proffered price, the lead bank will intervene on both sides of the market as required to insure price stability during a fixed period to protect the commitments of both the buyers and sellers. Remuneration is usually in terms of a percentage of the value of the funds raised. The fee, however, has to cover a much wider range of services than provided by the "auctioneer" or broker, for the normal investment bank will require as a minimum the resources of an investment banking section, a securities trading section, a sales section and a research department. In addition to these more extensive labour costs, the bank will also have to take position with its own or borrowed capital if it has to buy in to support the market price, or if the bank operates as a principal, rather than simply as an underwriter, via a bought deal under Rule 415 in arranging the issue. This means that capital costs will also be a substantial proportion of the "costs" of producing prices. Own capital will determine the ability to "fix" price at a constant value during the primary distribution period. This is what would be defined as a purely "private" market, with information limited to a group of principals.

In between these two extremes there is a wide range of organisational form which runs from "broker" firms to "dealer" firms, with stock exchange specialists falling between. It also runs the range from "discrete" to "continuous" trading markets. As already noted, brokers are simply agents who seek to complete bargains according to instructions given by principals. The move to continuous trading in agency auction markets produced a hybrid firm in the form of the New York Stock Exchange's "assigned dealer" or "specialist", who acts



both for his own account and as an agent for other brokers, and thus indirectly for principals.<sup>4</sup>

Dealers, on the other hand, come close to the role Clower assigns to the middleman wholesaler in the distribution of goods, buying title to goods which are intended for resale (or vice versa) at a higher (lower) price. In difference from broker firms who represent principals, dealer firms are principals trading for their own account. In doing so, they offer to buy and sell securities at prices they "fix" for their own "individual, private markets, thus producing or "making" prices which need not be uniform across the market. The primary costs of dealer firms are represented by their committed capital.

Dealer firms can be further divided into "traders" and "investors". The trader-dealer is simply seeking to profit from price changes, he has no investment portfolio which he chooses according to some set criteria, so he is always "in the market". The forerunner of the specialist, the floor trader, and the market "local" are examples of this type of firm. The local goes home at night with an even book and thus needs only minimal capital. The investor-dealer, on the other hand, has capital to invest and maximises its return by his ability to choose its component parts; to do so he will have to engage in portfolio adjustments which involve transactions costs. By offering to trade in a wide range of securities which are of general interest to his investment strategy he reduces transactions costs of portfolio adjustment at the same time as he provides market prices for third parties.<sup>5</sup>

While the dealer "makes" or produces prices by offering to buy and sell at announced prices, his return is determined not by the spread between bid and ask prices but by the prices at which he actually buys and sells and his throughput of bargains. The balance of buys and sells will determine his inventory position, which then determines his adjustments to his announced prices. The primary cost is the capital cost of carrying the inventory position. In difference from call auction markets, which are discrete, dealer markets are continuous markets because the dealer always stands ready to buy and sell at his posted prices and standard trade size. Dealer markets are the secondary market equivalent of the

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<sup>4</sup> The reasons for the change to continuous trading are not well-understood. Garbade and Silber (1979) cite the increased illiquidity costs brought on by the increased volatility of prices caused by the Civil War as leading to an increase in trading frequency, while Kregel (1992) suggests that inefficiencies of large size in the number of brokers and the number of stocks as a result of the railway boom increased the costs of a centralised call organisation; the broker-dealer being a cost reducing response to decentralisation of calls at separate posts.

<sup>5</sup> A number of "third-market" houses operate in this way. The trades in securities which are not required as part of the investment strategy are either "traded" or "hedged". Cf. Kregel, 1992b.

investment bank in the primary market, but without the obligation to stabilise prices (although Japanese firms seem to do this); they are also "private" markets, based on the bilateral negotiation between the dealer and his client not being made public in order to preserve secrecy concerning the dealer's inventory position.<sup>6</sup> In a dealer market liquidity is a function of the firm's capital, and its cost determined by market rates of return.

The operations of these three basic types of "financial firms" (auctioneers, brokers and dealers), whose costs of price discovery represent the costs of organisation via the market, and the operations of banks are similar. The primary "market maker", which is a special type of dealer, as defined above, is usually called an "investment" or "merchant" bank. A commercial (or ordinary) bank (as defined in the US) is also similar to a "dealer firm", except that a commercial "bank firm", trades its own liabilities, in the form of deposits, rather than the liabilities of its clients, in the form of commercial and industrial loans, or the liabilities of third parties. Banks that issue their own deposit liabilities usually provide a clearing house service which serves as a mechanism for making payments; the successful operation of the clearing house requires that the member banks "make a market" for their own liabilities by guaranteeing their price in terms of the deposit liabilities of other banks, or of the central bank. This means that just like a dealer, they have to employ capital to finance inventory positions in the form of other banks' (usually the central bank's) liabilities. They differ from an investment bank in that there is no "discovery" of the price of the liabilities it sells, they are pledged to be equal to unity and the bank will operate in the market to hold price fixed. In this sense the commercial bank is very similar to the investment bank or dealer firm. Thus, we can include banks within a range of financial market firms which runs from auctioneers to brokers to dealers to market makers representing both investment and commercial banks. Banks differ only because of the restriction on the liabilities in which they deal.

From Coase's perspective, there is nothing special or peculiar about "bank firms" as compared to other "financial firms" in the operation of the financial "markets". Indeed, all of the "integration" in the form of "non-market" organisation which is required in order for financial markets to function (i.e. to produce price discovery) could conceivably take place within a single institution combining the functions of "price fixing" for its own liabilities and "price discovery" for the liabilities of other firms. Such an institution would combine the full range of "price discovery" organisational forms listed above, from broker to dealer. This is

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<sup>6</sup> The International Stock Exchange (as it was then called) in London first attempted to regulate its new dealer market as if it were a competitive public market. The difficulties that this caused, including substantial losses for market-makers, soon led to the suspension of simultaneous trade and price reporting. Cf. Kregel, 1990

what would now be called a "universal" bank.

### **The "Structure" of the Financial Market**

The "structure" of the financial system might then be defined as the combination of different types of integrated, but independent, organisational types of financial firm. The definition of the "universal bank" just given suggests one such possibility in which there is a single integrated organisation which plays the role of providing fixed prices for its own liabilities and produces price discovery for the new and existing liabilities issued for other "firms". This is the so-called "Continental" model.

On the other extreme would be a system in which all liability prices are determined in call auction markets. This would include liabilities used as means of payment. But this is not an accurate description of the "Anglo-Saxon" model. The costs involved with the use of the market for liabilities used as means of payment suggest why their price determination has been internalised in "market maker" banking firms. Similar arguments apply to the organisation of primary distribution in market-making dealer firms and secondary trading via broker organised continuous auction markets. The Anglo-Saxon model might best be described as one in which there are banks operating clearing houses, and investment-merchant banks operating as pure dealer market-makers in new issues and operating as broker-dealers in secondary markets. According to Coase, this structural difference should be due to differential costs of organisation. In particular the volatility of market pricing of bank issued liabilities used as means of payment. Such conditions existed in the US through much of the 19th century.

However, in the US today these costs are represented by the New Deal Banking legislation of 1933 which prevents commercial banks from dealing in all but the short-term liabilities of particular types (collateralised commercial and industrial loans) of third parties, and precludes market makers and dealer-broker institutions from fixing the price of their own liabilities via the clearing house or any other mechanism. The 1934 Securities Exchange legislation also laid down precise definitions and strict boundaries between market and non-market operations. In Coase's terms we might say that legislation froze the financial structure by fixing the "regulatory" boundaries between market organisation and internal integrated organisation. But, the "economic" margins could not be frozen at the financial structure represented by those boundaries, and when the two diverged sufficiently financial institutions started to place pressure on the regulatory agencies to shift the boundaries and to seek ways to circumvent them.

### **The Reciprocity between Manufacturing and Financial "Firms"**

As noted above, Coase rejects "asset specificity" as an explanation of the existence of the firm because it can be subsumed under other costs of using the market. This decision did, however, lead to inadequate attention being given to the relative costs of organisation of capital and financial resources. This observation provides an insight into how money and capital inputs might be introduced into Coase's analysis. In an unpublished paper, "A Theory of Contract", written at about the same time as "The Nature of the Firm", Coase notes that while long-term contracts could accomplish nearly everything that internalisation within a firm could do, they had one deficiency: "the other party may die or cease to be effective, whereas integration means that the contractual relationship is guaranteed for the life of the entity concerned" (p. 57).

Coase does not provide further elaboration of the point, but we may extend it by recognising that any firm based on specialised knowledge embodied in fixed capital equipment will have either to own or hire capital on a long-term basis. To arrange for mechanised production embodying this knowledge through the market would require forward contracting and contingent markets for hedging equivalent to those hypothesised in an intertemporal general equilibrium. It would be incorrect to say that this would be impossible, however the "financial firms" that would be required to provide such services would require returns which would render organisation through the market exorbitantly costly; the costs of relying on the operation of the market would be too high relative to internal organisation or long-term contract.

This means that the cost advantage of the firm is based on a long-term contract between the owners of the firm to provide capital. There are a number of different forms this relationship may take. In a single proprietorship, there is one owner who is the firm. Here the fact that the contract lapses with death is trivial. In a partnership, however, the contract is between two or more providers of capital and the other factors used in the firm. The death or retirement of one partner may cause operations to cease. This is what may be called [Kregel, 1992c] the "Peabody problem".<sup>7</sup>

One way around this problem is found in a charter of incorporation which is a long-term contract which stipulates relations between the owners of the firm and the chartering entity, usually the government. It also represents a contract between the owners and the

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<sup>7</sup> From George Peabody's decision, after promising his partner, J.S. Morgan, that he would leave his name and capital in their counting-house partnership, to withdraw his share, leaving Morgan short of capital and causing him to found the forerunner to J.P. Morgan.

other factors and between the managers and the owners.<sup>8</sup> Original charters were nominative and permanent; they are indeed long-term contracts between the owners of capital and between them and the organisers or managers.

The corporate form, however, provided a way to ensure that the long-term contract to provide capital between the owners and the firm would be honoured by making the contractual relations alienable and transferable. But, it was not sufficient that the contractual commitment to provide capital on a long-term basis could be sold; there had to be buyers willing to accept the contractual obligations. This was achieved by means of a limited liability clause attached to the contract which limited the capital commitment to the secondary market transfer price of the contract. Finally, there must be an active market for the purchase and sale of the contracts. If firms are to be able to internalise fixed capital within the firm, or to contract for its use on a long-term basis, the owners of capital must have a means of "retiring from the firm" without causing it to cease operations in the form of market transactions of the ownership rights.<sup>9</sup>

The corporate form based on equity ownership also removed retained earnings from allocation via the market and kept the decision within the firm, usually in the hands of managers. Thus, it was technically trained management that controlled the investment of the majority of funds available for investment, rather than the market or professional money managers.<sup>10</sup> Since, according to Chandler, the basic dynamism of industry derives from either expansion of scale in new production, distribution or management techniques, or exploiting advantages of scope related to management governance structures, there would be an information asymmetry which insider managers could exploit on behalf of the owners.

The reduction in organisation costs due to the internalisation of the control of fixed

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<sup>8</sup> Additional contracts may then be written between the "corporate body" and the factors it acquires. These are the costs of contracting between the organiser and the factors which Coase distinguishes from the costs of contracting between factors.

<sup>9</sup> In addition, the corporate form made it easier for the firms to make the transition from management structures dominated by owners and "inside" shareholders, to professional managers when offspring were either incapable or of insufficient number to allow for expansion of the firm. This meant a more rapid introduction of new, and more cost efficient corporate governance structures, reducing the costs of "internal" organisation relative to the market.

<sup>10</sup> To gain perspective, in the post-war period from 1946 to 1981 retained earnings accounted for an average of 65% of the sources of funds available to non-financial corporate business in the US. Common equity contributed 4%, preferred equity 1.5% and bonds and notes 20%.

capital within the firm is thus inseparable from the existence of liquid financial markets for the exchange of the long-term commitments to provide financial capital. It is the low cost of organisation of the market for contracts in providing liquidity which resolves the contracting problem for fixed capital which bothered Coase. To put the point another way, it is cheaper for financial firms to organise liquid markets for financial assets than for fixed capital assets. The conditions which lead to the cost-effective internal organisation of firms are then not independent of the conditions which lead to the organisation of financial firms and which determine the "costs" of transacting ownership contracts through the financial markets.

The Anglo-Saxon model thus solves the "Peabody problem" of contracting for long-term capital supply within firms by relying on broker financial firms to provide liquidity for corporate equity. It would be inappropriate to conclude that this "market-based" solution is clearly more efficient than other forms of organisation, since it is primarily the result of anti-trust and New Deal regulation which prevents any other type of organisation, i.e. by forbidding banks from internally organising the required long-term capital commitments.

In the Continental system<sup>11</sup> firms' needs for long-term financing for fixed capital are satisfied by long-term lending by bank firms who fund this lending by issuing long-term bonds to other financial institutions with relatively stable savings deposits and sight deposits. The firms' demand for long-term capital is matched to households' demands for liquidity via maturity transformation within the banking system. Since price variability of financial assets, which is the same thing as interest rate variability, represents much greater risk when financial institutions hold mismatched assets and liabilities the risks of free market determination of prices is higher in the German system, making a higher degree of internalisation of financial markets organisation desirable.

The basic difference between the two forms of financial structure is then that the Anglo-Saxon system resolves the "Peabody problem" by financial firms insuring liquidity of secondary markets, while the German system resolves the problem by means of maturity transformation on the balance sheets of a small number of large, integrated organisations creating liquidity by fixing prices, not only of their short-term liabilities, but also of their long-term liabilities. The relative advantages of the two systems may be found in the relative costs of the two different organisations.

This way of comparing the two systems suggests that the arguments which are usually made concerning the superiority of the Anglo-Saxon "market-based" system because of the operation of "competition" appears misplaced, if not meaningless. As Coase laments,

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<sup>11</sup> To be precise, this applies only after 1950.

usually one justifies the superiority of the market system by failing to consider the "costs" of using alternative forms of organisation to the market.

### **Changes in Financial Market "Structure"**

While the US regulatory boundary between commercial banks and other types of financial firm remained fixed by regulation, the economic margins between market and firm organisation of manufacturing business and financial firms continued to change. Many firms "internalised" the organisation, production and distribution of their liabilities in internal financial units which thus came to compete in areas which had been reserved to commercial banks such as consumer finance (automobile and other installment credits) and the short-term financing of business working capital needs via direct issue of short-term paper. Thus, irrespective of the legislation which allowed savings and loan banks to encroach on commercial banks domination in payment services, the internalisation of financing within manufacturing firms was forcing banks to look outside traditional areas of lending.

At the same time, changes were taking place within "financial firms". Just as economies of scale and scope transformed firms into giants, the same factors were at work in financial firms. In 1949, Merrill Lynch already handled almost 10% of round lot trading on the New York Stock Exchange, and had a management organisation which resembled any large manufacturing corporation of the period. In addition to its system of wire offices around the country, it included a commodity trading division, and underwriting division and a trading department in the sales division (which also included an "on" and "off board" sales unit (Stephan, p. 299 reprints Merrill's organization chart). Merrill had recognised the value of both the economies of scale in its retail brokerage and of scope in the financial products which it could package and sell. It is not surprising that Merrill was among the first to suggest that an automated over-the-counter market could do everything that was done on the Stock Exchange Floor more cheaply (Mayer, 1988, p. 224). When discussions were taking place concerning replacing New York Stock Exchange Rule 394 (now revised as Rule 390), which prohibited member firms from dealing with non-members as principal or agent (see Mayer, *ibid*, p. 222), Merrill favoured of abolition because this would permit buying and selling stock as principal in relation to its own customers, without having to take the bargains to the Floor of the New York Stock Exchange (cf. Carrington, p. 97). This would mean the "internalisation" of market trading via the creation of a private market composed of Merrill's retail customers on the buy side and its business customers on the sell side, with Merrill acting as a pure dealer, setting bid and ask prices, free to play on either side trading for its

own account.<sup>12</sup> It also would have produced severe problems of conflict of interest for the Merrill account representative, as agent for his private client, would be working with a Merrill trader acting as a dealer in the best interests of Merrill's bottom line. Merrill was not typical of financial firms in the 1950's, but it was a model which was eventually adopted in the consolidation period which took place in the 1970's, leaving in its wake large, financial corporations which had internalised the production of prices.

At the same time as "financial firms" were acting to internalise market organisation, institutional investors, pension funds, mutual funds, insurance companies, trusts and endowments, came to dominate the "buy" side of the securities market. The first impact of the increasing dominance of institutions was the rise of "private placements" of securities in which the underwriter arranges the direct sale of corporate liabilities to an institutional investor. From 1946 to 1961 the proportion of all publicly offered corporate securities which were privately placed ranged from a low of 27% to a high of 44%. For debt issues the figures are 38% and 58%. More important than the fact that they were traded outside the market, private placements effectively eliminated the need for the investment bank market maker. If "financial firms" are not required for initial distributions, why should broker-dealers be required for secondary market trading for institutions portfolio readjustments? Institutions thus started to bypass brokers, moving their business "off board".

The other significant aspect of the dominance of institutional traders was that as the size of their portfolios increased, so did the size of their trades. With fixed brokerage commissions this meant operating on organised markets became particularly onerous, and increased pressure to eliminate the fixed commissions which had provided the cushion against organisational change. The increased size of average trades also meant "price erosion" when placed directly for sale in a large "block" via the auction market, creating additional incentives to move trading off the Floor of the Exchange. As large blocks were increasingly traded "off Board" in upstairs markets with market makers of large investment banks this meant financial firms had to be large enough, and sufficiently capitalised, to act as "block dealers". Institutions also found that they could trade directly amongst themselves, eliminating the "middleman". They thus introduced internal "trading desks" for this purpose. A number of small firms, such as Instinet and Jeffries started to offer "crossing" services to facilitate the direct trading between large institutional investors. All of this served to decrease the order flow through the central market, reducing liquidity, and increased the capital

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<sup>12</sup> With the addition of Cash Management the result would have been the equivalent of a "universal bank".



requirements of dealers, increasing organisational costs. A conflict of interest thus developed, for both the institutions and the financial corporations sought to "internalise" primary and secondary market distribution in their own organisational structures.<sup>13</sup>

In terms of the spectrum of financial organisation, there has been a shift towards dealers and market makers in the financial firms that organise the financial market. This has accompanied increased size and capital requirements, and thus the move to corporate form of nearly all major financial institutions. It has also meant greater potential for abuse of market position and outright fraud. In Martin Mayer's view, the internalisation of price production by the giant brokerage firms represented "Stealing the Market" from investors. From the Coasean viewpoint, market trading has simply been "internalised" within the large financial firms, to the dismay of the large institutions, who would have liked to "steal" it for themselves in the name of investors.

The two basic changes which have occurred in the structure of financial markets are the shift to dealers as the predominant organisational form and the associated increase in capital required for operation. Dealer earnings are determined by the ability to trade simultaneously at both his bid and ask prices, without committing capital to excessive inventory. As such, a dealer is little concerned with price levels. Further, if large size gives an ability to influence the market, the price paid is a matter of indifference if the securities can always be sold off at a higher price to an in-house managed mutual fund, or to an internal network of private clients. The important thing is getting the throughput.

In general, the same thing is true of the large institutional investors. Burned by the high commissions on trading, and then on the negative price impact of trading large blocks through brokers, they have become convinced acolytes of the modern theory of finance which says that the best they can do is to buy the entire market. The underlying or fundamental value of the stocks which compose the portfolio is irrelevant, all that counts is its movement relative to the market portfolio. If you buy the market you have insured this relation. But, buying all the stocks is costly and inefficient, so that indexes are substituted. Mayer (1992, p. 83) quotes Lazlo Birinyi to the effect that eventually institutions won't own any stock at all, just derivatives. Institutions become what are called "informationless" traders. Thus, neither the financial firms, nor the institutional portfolio managers, are interested in the efficiency of "producing" prices in organising market exchange. Which in general means that the "costs" of using the market for corporate firms becomes excessively high, leading firms

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<sup>13</sup> The situation in financial markets is the equivalent to having consumers organised in large buying cooperatives which deal directly with producers in product markets.

to internalise financial transactions. This is what is occurring, with poison pills and anti-take over measures only a peculiar response. But, it does suggest that manufacturing firms will be spending their organisational ability attempting to operate in financial markets, rather than in organising production, which is perhaps the greatest damage.

### **Changes in the organisational costs of providing liquidity**

The result of these changes in the US market are that while the structure of the German system has remained relatively stable, the US financial system has shifted the provision of liquidity in the market from a system based on low capital, broker markets to highly capitalised, dealer firms. The provision of public liquidity in a broker organised public market is cheaper than in a private liquidity dealer organised private market because the dealers have to earn the market rate of return on their committed capital and they bear the risk of price volatility. Thus the costs of the way the US system organises the financial system to provide long-term capital to industry has increased, relative to that in Germany. The natural result, according to Coase, is the internalisation of the market.

What can we say about the stability of the two systems? As Keynes emphasised, there is no such thing as liquidity for the system as a whole. The shift to a large institution, dealer dominated market, will mean that the system liquidity comes much closer to the liquidity offered to any individual trader, as institutions have discovered. The capital of dealers is of about the same magnitude as that of central banks in international currency markets. A system wide demand for liquidity cannot be averted without insolvencies.

In the German system, however, a shift to liquidity is simply a question of clearing amongst the larger bank giro institutions or the creation of central bank money. A short-term system wide demand for liquidity can easily be absorbed without violent fluctuations in asset prices and solvency of the financial institutions. The German central banks systematically acts in this way in the foreign exchange markets, it has not yet had to in domestic deposit markets because the price risk is perceived to be so low.