

MANIPULATION OF METALS FUTURES: LESSONS FROM SUMITOMO

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ABSTRACT

Manipulation of Metals Futures: Lessons from Sumitomo*

The Sumitomo Corporation manipulated the London Metal Exchange (LME) copper price, which forms the pricing basis for the world copper market, from at least 1991 until earlier this year. This manipulation has concentrated attention on the functioning and governance of London futures markets, and in particular of the LME. This paper argues that futures market manipulation is not illegal under UK financial services regulation, but that in any case, deterrence is better than prosecution. Manipulation will be best deterred by greater transparency, in particular through mandatory reporting of client positions to exchanges, but also through the publication of suitably aggregated positions data. While there is no evidence that the LME has been insufficiently active in attempting to eliminate manipulations, price discovery on futures markets generates an externality that justifies the regulator seeking even higher standards in the future.

JEL Classification: G13, G18, K22

Keywords: copper, corners, futures, manipulation, over the counter (OTC), regulation, self regulation, squeezes

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The views expressed are mine alone, however.

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NON-TECHNICAL SUMMARY

The London Metal Exchange (LME) is the world's premier futures market for non-ferrous metals. The LME copper settlement price is effectively *the* world copper price. It should represent the balance of supply and demand in a world market the value of which was nearly \$34 bn. in 1995. It has emerged that this price was systematically manipulated by a Sumitomo trader over a period of six years, resulting in substantial departures of the LME price from fundamental values, in particular in the closing months of 1995 and at the start of the current year. These revelations have prompted the Securities and Investments Board (SIB), which oversees regulation of all London financial markets, to undertake a major review of the functioning of the LME. These events also raise important questions about the overall regulation of futures trading in the United Kingdom. These issues form the subject matter of this paper.

Futures manipulation is the activity of cornering or squeezing a futures market. This involves exploiting features of the futures market, in particular the delivery provisions, to create an element of monopoly power which allows manipulators to raise prices to their advantage. This is regarded as an antisocial activity, and is generally made illegal, since it distorts market prices from fundamental values, and because it reduces the value of the futures markets in hedging. Manipulators are parasites of futures markets: by extracting monopoly profits from a thriving market, they sap the strength of the host.

In the United Kingdom, financial markets are regulated under the 1986 Financial Services Act (FSA). The Securities and Investment Board (SIB) is the senior regulatory agency and oversees the sectoral self-regulatory organizations responsible for the implementation of agreed general regulatory principles. The FSA fails to give explicit consideration to futures manipulation, however. The SIB deems futures manipulation illegal under section 47 of the FSA, but this section appears too narrowly directed to sustain these claims. This is in contrast to the position in the United States where manipulation is explicitly prohibited under the Commodity Exchange Act (CEA). The implication is that the UK FSA should be amended to make illegal any exercise of monopoly power in futures markets that generates artificial off-exchange prices.

US experience indicates that, even given clear legislation, it is very difficult to bring successful prosecutions against futures manipulation. The emphasis should therefore be on prevention rather than prosecution. Successful

manipulations require secrecy, and are more difficult the more transparent the market. The key tool which opens the way to enhanced market transparency is client position reporting. The Commodity Futures Trading Commission (CFTC), which regulates US futures markets under the CEA, requires regular reporting of large client positions on all US exchanges, irrespective of the domicile of the client. In the United Kingdom, these procedures currently exist only on a voluntary basis and only on the LME. They should be made statutory, should be extended to include metal in LME warehouses, and should also be extended to other London futures markets.

Position reporting allows the regulator and the exchanges to identify potentially manipulatory positions. The exchanges are then able to take steps to limit the effects of the manipulation – on the LME, this has taken the form of limiting the extent of the ‘backwardation’ (the premium of spot over three-month metal). Perhaps more importantly, publication of suitably aggregated position information can act as a significant impediment to manipulation. This is because market participants can act early to close out positions when they see evidence of the emergence of a potentially manipulative situation. In the United States, the CFTC issues weekly statistics (the *Commitments of Traders in Futures* reports) on aggregated commercial and non-commercial (roughly hedging and speculative) positions with a three-day delay. SIB should introduce this reporting system to London markets. Reporting should cover both futures and options positions, augmented by summary statistics showing concentration of open interest. Reporting should also cover stocks in LME warehouses.

The LME differs in a number of respects from standard futures markets. These differences arise out of the LME’s traditional very close links with the metals industry, which are a significant source of strength for the exchange. Some of these differences, in particular non-cash clearing and the use of historic price carries, are unwise and impose additional risks on LME members; but they do not raise regulatory concerns.

Another important difference between the LME and standard futures markets is the use of day-of-delivery rather than month-of-delivery contracts. If manipulation takes place in a regular month-of-delivery market, this typically affects only the delivery contract, and not the nearbys, which are used as a pricing basis for off-exchange contracts. The effects are therefore largely limited to the ‘consenting adults’ who participate in the ‘delivery end-game’. By contrast, manipulation on the LME distorts the cash price which provides the pricing basis for the entire world copper industry. The consequence is that although manipulation is more difficult on the LME than on standard futures

markets, it is more serious when it does occur. This underlines the importance of the LME and the regulator acting now to ensure that manipulation becomes much more difficult in the future.

The Sumitomo events have focused attention on the question of self-regulation, which forms the basis of the regulation of financial markets in the United Kingdom. There is a general public interest in prices reflecting market fundamentals which goes beyond the narrower interests of exchange members. This may suggest that exchanges should be more vigilant in suppressing manipulation than is implied by the direct interest of their members. Although there is no basis for any charge that the LME has lacked diligence in attempting to identify and control manipulation, it and other London futures markets would benefit from a significant strengthening of the regulatory framework.

1. Introduction

Sumitomo Corporation is one of Japan's oldest, most respected and most conservative trading houses with interest which range from banking, through computer manufacturing to chemicals and mining and machinery businesses. It is also a major metals trader, both in Japan and throughout Pacific Asia (Sumitomo is responsible for around 5% of world copper sales). It is estimated that around one third of Sumitomo's turnover is accounted for by metal trading,¹ although this may over-estimate the contribution to group profits. Sumitomo also manipulated the world copper market over the period 1991-96, and possibly from as early as 1985.

This manipulation was perpetrated by Sumitomo's chief copper trader, Mr. Yasuo Hamanaka, through his operations on the London Metal Exchange (LME) copper futures market, and in the associated OTC ("over the counter") and physical markets. The LME is the major world futures market for all non-ferrous metals,² and LME prices form the basis for trading in physical copper throughout the world, whether or not those particular trades are put through the Exchange. The Sumitomo Corporation claims that Mr. Hamanaka was a Leeson-style "rogue trader", and that the Corporation itself was not guilty of anything more serious than lack of management controls.

The Hamanaka-Sumitomo manipulation was one of the largest in the history of futures trading, but in respects other than size, it broadly conforms to the textbook pattern of futures manipulations. However, particular features of LME trading allowed Mr. Hamanaka to roll his market squeezes over and thereby manipulate the market more or less continuously over an extended period. Over this period, beginning in 1991, but most notably through 1995, he may have been earning significant trading profits for Sumitomo. Market conditions changed in the latter half of 1995 making manipulation significantly more dangerous, and Mr. Hamanaka would have been well-advised to wind down his activities.

The practical problem in all manipulations is, however, how to "bury the corpse", which for Sumitomo was a long physical and futures position at a time of weakening market conditions.

¹ *Financial Times*, 15-16 June 1996, p.2.

² The other copper futures market is NYMEX (previously COMEX) in New York. However, the LME typically captures around 95% of the total volume of copper futures trade. Copper is also traded in Shanghai, and a number of other regional markets, but these are largely confined to cash trading.

This left Sumitomo in a very exposed position when, in May 1996 in response to inquiries initiated (in November 1995) by the LME, the Securities and Investment Board (SIB), which regulates British financial markets, and the Commodity Futures Trading Commission (CFTC), the US futures market regulator, Mr. Hamanaka was removed from day-to-day trading. US-based hedge funds, who correctly interpreted the claimed "promotion" of Mr. Hamanaka, now saw an opportunity to attack the inflated copper price which fell from \$2,700/tonne to \$2,000/tonne in the course of a four week period in May and June 1996. Sumitomo's loss was initially estimated as \$1.8 bn, approximately 10% of the group's capital, but this has now risen to \$2.6 bn and it is estimated that the eventual loss may amount to \$4 bn.²

The Hamanaka-Sumitomo manipulation has prompted major concerns about the management of the LME, about the adequacy of British futures market regulation, and indeed about the entire self-regulatory system which forms the basis for the entire structure of futures market regulation in Britain. The LME is a Recognized Investment Exchange (RIE), acting under rules set out by SIB. In response to criticisms that the LME had not done enough to prevent the Hamanaka-Sumitomo manipulation, the LME invited SIB to review the functioning of the metals markets (SIB, 1996). This paper draws upon a response to that review.

The structure of the paper is as follows: in Section 2, I consider the definition and mechanics of futures market manipulation; in Section 3, I look at the issue of how manipulation can be identified, and in particular the price patterns left by Mr. Hamanaka's operations; in Section 4, I examine the legal definition of and status of futures manipulation in Britain; in Section 5, I consider the adequacy of the LME's powers to monitor, control and prevent potential manipulations and makes proposals for strengthening these powers; in Section 6, I ask whether these events suggest that there should be changes in other aspects of the way in which the LME trades; in Section 7, I consider whether any of this calls self-regulation into question; and Section 8 summarizes the conclusions.

2. Futures Manipulation

Manipulation is not explicitly defined by statute either in Britain or in the United States. Because of the absence of a statutory definition of manipulation in the United States, the courts have been required to provide an interpretation, and the same process would need to take place

² *Financial Times*, 8 October 1996, p.33.

in Britain if prosecutions are initiated. Edwards and Edwards (1984, p.336) summarize the US judgements as interpreting manipulation as

“the creation of an artificial price by planned action, whether by one man or a group of men”;⁴ these actions must be “calculated to produce a price distortion”;⁵ and the “intent of the parties during their trading is a determinative element of a punishable manipulation”.⁶

In perhaps the most systematic treatment of manipulation in the American legal literature (Johnson, 1981, p.730), manipulation is defined as “the elimination of effective price competition in a market for cash commodities and/or futures contracts through the domination of supply or demand, and the exercise of that domination to intentionally produce artificially high or low prices”. Key issues in establishing manipulation in the United States are the “artificiality” of the price and the intentions of the alleged manipulators. The US legal and regulatory environment is summarized in Edwards and Ma (1992, ch.9).

The terms *corner* and *squeeze* tend to be used synonymously, but it is nevertheless useful to follow Kyle (1984) in distinguishing between them. The crux of Kyle’s distinction is whether the manipulator takes positions on the underlying physical market to create an artificial shortage (a *corner*), usually in conjunction with futures market positions; or whether he operates solely in the futures market but exploits the delivery mechanism to distort the price of a particular future away from fundamental values (a *squeeze*). Squeezes, he notes, are over once delivery is made, while corners tend to last longer. In practice, most manipulations share features of both, and this is true of the recent LME manipulations.

In cash markets, manipulation is effectively the creation of an element of monopoly power - cash market manipulations are pure corners. Futures markets enable the manipulator to extend from cash into futures markets, either by obtaining a dominant position in just the futures market (a pure squeeze), or by employing complementary cash and futures strategies. In a pure squeeze, the essential device that enables the manipulator to make profits is the delivery mechanism, and squeezes are a potential feature of all futures markets which specify settlement

⁴ *General Foods Corporation v. Brennan*, 170, F.2d.220, 231 (7th Cir. 1948).

⁵ *Volkart Bros. Inc. v. Freeman*, 311 F.2d.52, 58 (5th Cir. 1960).

⁶ *General Foods Corporation v. Brennan*, 201, F.2d.476, 479 (7th Cir. 1948).

through delivery. It arises across the entire range of commodity futures markets, and also potentially in bond futures.⁷ Futures manipulation is almost invariably long, ie it involves the creation of a shortage which forces prices up to “artificial” levels.⁸

In a delivery-settlement market, shorts who have not previously closed out their positions, are required to deliver the underlying asset, here the physical metal, to the longs on the contract expiry date. The contract specifies a minimum deliverable grade and set of specified delivery locations at which delivery may take place. In a pure squeeze, the manipulator aims to hold a long futures position in excess of the deliverable stock. In a mixed corner-squeeze, he augments his futures strategy by also going long cash in order to reduce the deliverable stock available to the shorts. In either case, the result is that the shorts cannot obtain enough of the asset to satisfy their contractual obligations. In these circumstances, the shorts have then have three possibilities:⁹

- a) Deliver an asset of higher specification than the minimum specified. This can arise on bond futures manipulations when shorts will deliver bonds whose price is higher than the “cheapest to deliver” bond. However, the LME copper contract specifies a very high grade of metal, and so this possibility has little relevance to copper.
- b) Deliver the asset from other locations. In softs (such as coffee and cocoa), this can be done through “grading” non-registered beans in order to make them deliverable. In metals, it might involve flying metal into LME warehouses, although the wide international coverage of LME warehouses makes it difficult to find deliverable metal at

⁷ Manipulation of cash settlement futures markets, such as equity index futures, is more difficult and involves a different mechanism - see Kumar and Seppi (1992).

⁸ Johnson (1981., p.731) and Pirrong (1993, pp.355-60) contain discussions of short manipulations and cite a number of US cases where this was alleged. Since shorts will attempt to avoid being squeezed, manipulations need to be modelled as the outcome of a game between a potential manipulator and other market agents. Kyle (1984) models a situation in which a trader is able to exploit knowledge of his order book to squeeze the market, but this model appears too special to explain large-scale manipulations. Jarrow (1992) develops a model in which manipulation would be the general rather than exceptional case. Pirrong (1995) analyzes a model in which the manipulator exploits randomness of the order flow from the underlying asset to give manipulation as one outcome from a mixed strategy equilibrium. In this model, shorts know that manipulations will occur some of the time but are unable to predict when these will occur, and hence can avoid being squeezed.

⁹ In relation to the discussion in Pirrong (1993), this is a “frictional short manipulation”.

short notice.

- c) Agree to close out their positions at a substantial premium. This has been the normal way that LME manipulations have ended. The LME has, from time to time, been obliged to intervene to limit the size of the backwardation which has the effect of capping the premium payable by the shorts.

There is also the possibility of manipulation involving coordinated on- and off-market strategies. A producer or dealer may profit on his cash market sales by manipulating the cash price on the futures market upwards even if he fails to make profits on his futures market transactions¹⁰. This appears to have been the case in the manipulation of the coffee contract on the CSCE in New York by the so-called Bogota group of producers over the period 1977-79. In this manipulation, the producers bought up the exchange coffee price in order to profit from higher revenues from their sales of physical coffee to dealers at exchange-related prices (Greenstone, 1981). Sumitomo's position as a major Japanese dealer in principle allowed them the same possibility. Sumitomo buys at a price related to the LME three months price and sells at a price related to the cash price, so the profitability of their physical sales is increased if there is a backwardation. Sumitomo also obtains commission on sales and this commission is almost certainly price-related. The implication is that Sumitomo's reported copper trading loss of \$2.6 bn will have been at least partially offset by increased trading profits from their physical market activities. Indeed, it is possible, although unlikely, that Sumitomo actually profited on an overall basis from their LME trades despite the enormous direct trading loss. But even if this were to turn out to be the case, it would not of course follow that Sumitomo deliberately manipulated the market with this intention.¹¹

¹⁰ This comes close to Pirrong's (1993) "pure monopoly manipulations" in which there are no grade or location differences which the manipulator can exploit. The ability to manipulate here derives from the "impatience" (ie relatively high time discount rate) of the metal consumers - see Philips (1983).

¹¹ Because a manipulator is long on both the cash and futures markets, he is at risk if the price falls. The copper price rose fairly steadily over the period (1993-95) in which there is evidence that Sumitomo was manipulating the market in a substantial way, and so few losses were incurred over this period. The copper market weakened during the latter part of 1995 and 1996, and this gave hedge funds the opportunity to successfully attack the manipulation. The substantial fall in price which resulted generated large losses for Sumitomo. However, it is doubtful whether there had been large losses prior to this. The obvious parallel is with the International Tin Council which, under the Sixth International Tin Agreement, was able to

3. How can Manipulation be Identified?

Identification of manipulation (or potential manipulation) may either be through examination of its causes or of its effects. Long manipulation typically involves the creation of an artificial shortage of deliverable supply and hence artificially high prices for nearby delivery dates. The causes of long manipulations are dominant long (futures and often also cash) positions; the effects are high premia for cash or nearby prices over longer term futures prices (ie backwardations). To establish manipulation in a US court, one also needs to show an element of intentionality.

Client (ie beneficial) position information is, in principle, the most reliable guide to potential manipulation, and the LME had access to this information (on a voluntary reporting basis) from November 1995 - see below. However, that information neither was not is available to the public. In examining the historical record retrospectively, therefore, one is confined to the information in the backwardation.

On standard futures markets in which contracts for different delivery months are traded simultaneously, one may look for distortions in the futures price structure (ie the term structure of futures prices) which are not explicable in terms of seasonality.¹² This is the standard method of identifying squeezes in particular delivery months. However, it is not so straightforward on the LME, where contracts have daily expiry ("prompt") dates (see Section 6). Liquidity on the LME is concentrated in the cash and three month contracts, but also on contracts for third Wednesdays, and there is also substantial trade in short term "carries" where brokers lend or borrow metal, typically for periods of up to two weeks, in order to eliminate buy and sell mismatches in their books. This results in a paradoxical situation in which, on any particular day, LME brokers will be able to quote prices for around eighty to ninety different prompt dates, but only two prices (cash and three months) will be reported in the financial press. Published LME price data therefore only give a single reliable observation on the backwardation, and this prohibits analysis of distortions in the structure.

sustain its activities from 1981-85 on the basis of the rising sterling tin price which resulted from dollar appreciation, but rapidly exhausted its resources once the dollar started to fall in February 1985 - see Anderson and Gilbert (1988).

¹² Barnhart *et al.* (1996), for example, analyze spreads on the Chicago Board of Trade (CBOT) soybean contract during the alleged Ferruzzi squeeze in 1989.

An investor (or an academic) looking for LME manipulations is therefore limited to looking for three month backwardations that are not explicable in terms of the availability of physical metal.¹³ Substantial backwardations may also arise from genuine metal shortages and hence a large backwardation can never be conclusive evidence of manipulation. Nevertheless, if a market becomes abnormally prone to move into backwardation, manipulation may be presumed. The problem is to find a suitable comparison by which to judge whether a given market is abnormally prone to backwardations.

Figure 1 charts the copper backwardation (calculated as the percentage premium of the Friday cash settlement price over the three month price on the same day) on a weekly basis from January 1983 to August 1996. For comparison purposes, the aluminium backwardation is charted on the same graph (as the broken line). In periods of abundant metal supply the market is in contango and the cash price is at a discount to the three month price - this appears on the graph as a negative backwardation. The extent of the contango is limited by the rate of interest on short term securities, since carrying hedged stocks is a near riskless activity, and also the warehousing cost of the commodity (very small for non-ferrous metals). When the market is tight the structure inverts and the cash price can be at a substantial premium to the three month price.

Particularly acute backwardations were observed in all metals markets over the period 1987-89. By contrast, the periods 1983-86 and 1991-93 were characterized by over-supply of metal in the face of relatively slack demand growth, exacerbated in the latter period for aluminium (also nickel) by a surge in supplies from the ex-Soviet Union. The market saw renewed tightness in 1994, although in aluminium the substantial stock hangover prevented this from translating into significant backwardations.

When the backwardation is high it tends also to be variable, and high basis (structure) variability results in a poorer quality hedge (Hull, 1995, p.96). Figure 2 charts copper basis volatility, calculated as the weekly standard deviation of the daily backwardation, again over the period January 1983 to August 1996. It is apparent that basis volatility was often high in the period 1984-91, and has again been high since mid-1994.

Against this background, what, if anything, is it possible to say about the evidence of

¹³ In a 1992 public lecture, published as Gilbert (1992), I wrote "... in copper, sharp backwardations emerged in the late spring and autumn [of 1991] ... they were almost certainly due to manipulation, ...".

manipulation in the copper backwardation? In periods of tight supply, such as 1987-89, small movements in the availability of metal can have large effects on the price, both in terms of levels and in terms of the spot premium. Although it is quite possible that copper was manipulated over this period, the backwardation can give little evidence of this since it was too variable for other reasons. It is only possible to detect possible manipulation, therefore, when stocks are sufficiently high that the market should be expected to be in contango. However, the correlation between stock levels and the basis, graphed in Figure 3, is insufficiently strong to support the inference that a high backwardation not associated with a low warehouse stocks is due to manipulation.

More instructive is the plot of the differential of the copper backwardation over the aluminium backwardation, shown in Figure 4 on weekly data from January 1991 to August 1996. Aluminium and copper are the two most liquid contracts on the LME, and since both metals are used widely throughout manufacturing industry and construction, they share broadly common consumption time paths. By contrast with copper, however, there have been very few occasions in which market opinion has taken the view that the LME aluminium contract has been subject to manipulation. This may be because of a much lower level of short hedging in aluminium relative to that in copper, where short and long hedging are broadly balanced,¹⁴ since it is more difficult for a potential manipulator to establish a dominant position in a market in which speculators are net long.

These arguments suggest use of aluminium as a control: one should look carefully at periods of backwardation in copper not associated with comparable effect in aluminium. The following periods stand out from Figure 4:

- | | |
|----------------------------|--------------------------------|
| i) February - May 1991 | iv) April - August 1995 |
| ii) August - December 1991 | v) October 1995 - January 1996 |
| iii) May - September 1993 | vi) April - June 1996 |

(It is not easy to draw any inferences about 1994 and the first few months of 1995 because of tightness of copper demand in conjunction with the large hangover of aluminium stocks resulting

¹⁴ In Europe, secondary production of copper (ie production from scrap) is largely in the hands of small producers, who typically sell their output forward on the LME, and often deliver to LME warehouses. Aluminium scrap, which is largely recycled cans, is remelted by the can producers and generally does not reappear as ingot. It is seldom hedged.

from Russian exports over the previous years).

These periods correspond well with those in which manipulation of copper was identified in the financial press. High copper prices in 1991 have been explicitly linked to “a Japanese company”.¹⁵ A squeeze in the summer of 1993, explicitly linked to Sumitomo,¹⁶ obliged the LME to issue a warning on 14 July, and on 8 September the LME acted to limit the extent of the backwardation. And again, a rise in the copper price in October 1995 was attributed to Sumitomo.¹⁷

This apparent pattern of activity lends credence to the view that Sumitomo manipulated the copper market over at least a six year period from 1991 to 1996, although it is of course impossible to identify the manipulator purely from price evidence. Informal evidence suggests that the manipulation may have started as early as 1985. The manipulations appear to have been intermittent and opportunistic until 1993. It is unclear whether or not Sumitomo was active in 1994, since it is difficult to distinguish attempted manipulations from successful speculation in a bull market. What seems likely is that Sumitomo ran a consistent long position over this period but failed to realize their profits towards the end of 1994 when demand growth started to slacken. This left the company with a highly exposed long position in a market which was prone to fall.

Evidence for this may be seen in Figure 5 which graphs the copper and aluminium cash prices (1994=100) over the period January 1994 to August 1996. The two prices move broadly together through 1994 and the first four months of 1995. Thereafter, the copper price remains above the aluminium price as the latter falls in the weakening market. The differential is

¹⁵ “Restriction on the supply of metal - attributed to a Japanese company - did much to support copper’s price in 1991.” (Martin Thompson of RTZ, quoted in the *Financial Times*, 13 August 1993).

¹⁶ “Mr. Yasuo Hamanaka, the senior manager responsible for Sumitomo Corporation’s copper trading operations, has been described by many London Metal Exchange traders as the single most powerful man in the copper market. So it is not surprising that his name has been mentioned most frequently in discussions about the ‘squeeze’ threatening to create turmoil on the LME’s market in September and October. One trader said yesterday that Sumitomo had reached a position ‘where if it were October today, it would control all the LME stocks’. There have been other widespread suggestions that the copper market is being manipulated to boost the price even though stocks in LME warehouses are at a 15-year peak.”, *Financial Times*, 3 August 1993.

¹⁷ “... rumours that most of the 39,000 tonnes of copper in LME warehouses at Long Beach, California - more than 20 per cent of total LME stocks - had been sold to Sumitomo, the Japanese trading house”, *Financial Times*, 17 October 1995.

substantial in the autumn of 1995 and again in April 1996. The conjecture is that Mr. Hamanaka's earlier successes convinced him that he could buck the market. Like the International Tin Council a decade earlier (see Anderson and Gilbert, 1988), he succeeded for a considerable time but only at the price of increasing his physical position and thereby making his activities obvious to the regulators. It was pressure from these sources which resulted in his removal from active trading, allowing successful speculative attack in June 1996.

4. Futures Manipulation and the Financial Services Act

The concern which motivated the 1986 Financial Services Act (FSA), which is the main act under which the British financial services sector is regulated, was investor protection in the aftermath of a number of scandals in which investment firms misappropriated client money. Although the FSA is undoubtedly a considerable advance relative to the informal system which preceded it,¹⁸ it is open to the criticism that it fails adequately to distinguish between wholesale and retail financial markets, and that, as a consequence, it regards trades between "consenting adults" as requiring the same type of controls as trades which involve "widows and orphans" That may imply that the wholesale markets, of which the LME is one,¹⁹ are, in certain respects over-regulated. It also implies that the FSA may provide insufficient structure for regulation of aspects of the functioning of wholesale markets which do not relate directly to investor protection. I will suggest, that in contrast to the US position, where manipulation is illegal under the Commodity Exchange Act (the CEA) and where the CFTC has an explicit obligation to act against this practice, futures manipulation is not explicitly prohibited by the FSA.²⁰

The SIB regards manipulation as covered by Section 47 of the FSA (SIB, 1996, paragraph 3.16, p.21). Section 47 of the FSA, which does not explicitly refer to manipulation, makes the following activities illegal

¹⁸ Discussed briefly in Miles (1992).

¹⁹ The LME estimates that 0.1% of its trading volume is accounted for by direct investments by private investors.

²⁰ It is occasionally suggested that manipulation is illegal under UK anti-competition law. However, nowhere is futures manipulation explicitly mentioned in any of the relevant acts, and none of the competition agencies have any expertise or personnel competence in these areas. It seems even more unlikely that a successful prosecution could be brought under anti-competition law than under the FSA.

- i) knowingly or recklessly making misleading, false or deceptive statements, promises or forecasts, or dishonestly concealing facts (paragraph 1); and
- ii) engaging in conduct which creates a false or misleading impression as to market prices or values of any investments if done for the purpose of inducing another person to trade in these investments, or to refrain from doing so (paragraph 2);

provided that the party accused of manipulation cannot show that he reasonably believed that these consequences would not follow (paragraph 3).

This provision clearly makes certain forms of equity or bond market manipulation illegal - in particular, so-called "fan club" and "concert party" manipulations in which agents are induced to purchase shares with the effect that their prices exceed underlying values, for example in the context of takeover offers. It might also be extended to trading practices, such as "wash sales" and certain types of "cross trade", made illegal in the USA under the CEA - see SIB (1993) and Edwards and Ma (1992, pp.200-202). It seems doubtful, however, that a court would sustain a more general interpretation of this section of the FSA such as would make futures corners and squeezes illegal. In particular, futures manipulations typically do not involve the manipulator in making statements, promises or forecasts, and since there is no obligation on futures clients to reveal their positions, they cannot be accused of dishonestly concealing facts. Paragraph 1 of Section 47 of the FSA is therefore largely irrelevant to futures markets. The question therefore amounts to

- a) whether a corner or squeeze constitutes conduct which might create a false or misleading impression as to market prices or values; *and*
- b) whether this is being done with the intention of inducing another person to trade in these investments, or to refrain from doing so.

Creation of an "artificial" price is part of the standard US definition of a futures manipulation, and it is therefore arguable that the first part of this condition is satisfied. However, it is more difficult to argue that the intention of a corner or squeeze is to induce or inhibit trades since the shorts are contractually committed to trades with the longs irrespective of the manipulation. It might be argued that the shorts would normally wish to close out their positions, but are obliged by the manipulator to deliver. In practice, however, successful manipulations typically result in the shorts closing out, as in the absence of a manipulation, but on considerably less favourable terms than they had anticipated. It follows that futures manipulations will not in general fall

under paragraph 2 of Section 47 of the FSA since there is no attempt to induce or inhibit trades.²¹

An alternative possibility is that manipulations may be deemed illegal as conflicting with the SIB Principles. In particular, it is suggested²² that there might be a conflict with the third principle which requires “A firm should observe high standards of market conduct” SIB has interpreted this as requiring that the firm engage only in “proper trades”, and has argued that trades aimed at manipulation would be improper. They have argued (SIB, 1993)

“In SIB’s view, the guidance is also relevant to the market manipulation ban in section 47(2) of the Act [the FSA]. That ban is concerned with ensuring that acts and courses of conduct are not intended to create a false or misleading impression as to the market in or the price or value of any investments. In order for the prohibition to be broken, a number of elements need to be fulfilled, including elements concerned with the purpose of the act or the course of conduct. One way in which a false or misleading impression may be created is by effecting some of the improper trades described in this paper. ... However, this guidance does not attempt to provide a legal interpretation of the statutory ban.”

None of the four examples of improper trades that follows is relevant to futures market manipulation. This advice interprets but does not add to Section 47 of the FSA.

These views would need to be tested by the courts. On the interpretation offered above, however, it is difficult to see that any activities of Sumitomo on the LME were illegal under the provisions of the FSA. The Serious Frauds Office (SFO), which is responsible for bringing prosecutions under the FSA, would therefore be ill-advised to attempt to bring a prosecution. At the same time, it is desirable that recurrence should be prevented. This will require amendment of the FSA with the purpose of making it explicit that futures manipulation is illegal.²³

²¹ This relates to the discussion in paragraph 3.17 of SIB (1996) which asserts that “this form of market manipulation is widely regarded as an abuse”. The legal issue, however, is whether this abuse is prohibited by the FSA.

²² See paragraph 3.18 of SIB (1996).

²³ This view is anticipated in Anderson (1986, p.52), writing before the final passage of the FSA: “Manipulation is not explicitly mentioned as an offence under the Bill. The closest it comes to discussing manipulation is Section 44 which prohibits misleading statements and forecasts. A broad interpretation of this language would appear to include futures market manipulations as an offence. However, it remains unclear whether the DTI [the Department of Trade and Industry] and SIB will take such a view.”

5. Control and Prevention of Manipulation

The US experience has been that it is very difficult to bring successful prosecutions for manipulation even when market opinion is clear that manipulation has indeed taken place. This is largely because of the need to prove intentionality.²⁴ It seems likely that, even if the FSA is suitably amended, the SFO would face the same difficulties in Britain. This suggests that, although it is important to amend the FSA to make it explicit that futures manipulation is illegal, greater emphasis should be put on prevention or discouragement of manipulation other than through the deterrent effect of possible prosecution.

	Brokers	Clients
Physical positions	No reporting or jurisdiction.	No reporting or jurisdiction.
Exchange positions	Exchanges have information and jurisdiction.	Large positions are reported on a voluntary basis to the LME; but no jurisdiction.
OTC positions	No reporting or jurisdiction.	No reporting or jurisdiction.

Prevention of manipulation is closely linked to identification, in that exchanges can only take action against potential manipulators whom they have identified. Tables 1 and 2 summarize current reporting practice in respectively the UK and the USA. Monitoring of manipulatory potential requires regulatory authorities to assess the size of client positions. These can comprise exchange, OTC positions in which brokers write contracts directly for clients, and, in principle, positions in the underlying asset (here, physical metal). In the United States, the CEA imposes full reporting of beneficial ownership of exchange futures positions by clients, and this extends to the positions of clients who are not resident in the United States. However, current reporting is confined to on-exchange positions in both the US and the UK. This is a serious limitation since individuals or companies which wish to hide their positions can do so via OTC transactions, although many of these will subsequently translate into exchange transactions as the writers of

²⁴ Markham (1990, p.17) states, "The lack of success in litigation has been due principally to the fact that the CFTC requires that, in order to establish manipulation, it must be shown that the trader acted with the specific intent to create an artificial price and that prices were in fact artificial." See also Markham (1991).

OTC positions offset their positions. There is currently no reporting of physical market positions in either country.

	Brokers	Clients
Physical positions	No reporting or jurisdiction.	No reporting or jurisdiction.
Exchange positions	Exchanges have information and jurisdiction.	Large positions reported to CFTC which has jurisdiction; aggregated figures are published after three days.
OTC positions	No reporting or jurisdiction.	No reporting or jurisdiction.

In the first instance, brokers report positions to the exchanges and this information is available to all futures exchanges in both the UK and the USA, and is also available to the regulatory authorities. This information is useful in monitoring the viability of brokers but is not directly informative about beneficial client ownership, in particular since clients with large positions can spread these across a number of brokers. In the United States, clients with large positions are required to report their exchange positions to the CFTC each Tuesday. Importantly, this requirement extends to clients who are not residents or of or are not domiciled in the United States. This information is subsequently released by the CFTC in aggregated form in the weekly *Commitments of Traders in Futures (CTF)* reports.

As noted, there is no regulatory requirement for reporting of client positions in UK markets. However, the LME has instituted a voluntary reporting system²⁵ whereby brokers report client ownership of large positions, and, as the consequence of concern about the activities of Sumitomo, this system was strengthened in November 1995 with the effect that brokers agreed additionally to report OTC and physical positions. However, once manipulatory potential has been identified, the LME's powers are limited to gentlemanly persuasion. There is currently no reporting of client positions on LIFFE markets. This accords with Anderson's (1986, p.52) comment that the FSA does not "create powers specifically aimed at preventing or detecting manipulations. ... Instead, the action of the SIB would appear to be limited to the possible

²⁵ Around 95% of all large positions are currently reported.

withdrawal of designation if a futures exchange is unable to deal with manipulations.” But withdrawal of recognition is too draconian a power to be routinely exercised.

It would be straightforward to extend client position reporting to all London markets on a statutory basis and there are very strong arguments for requiring this. Mandatory client reporting would force the introduction of an element of extra-territoriality into UK financial services legislation - as in the CEA but not, currently, the FSA. Whatever the general arguments against extra-territoriality, the fact that financial transactions can easily be relocated across national boundaries makes it inevitable in financial regulation. From this perspective, the practical issue is to avoid conflicts between the regulations introduced by different regulators, but these issues are relatively minor with regard to reporting.

The more difficult questions are the extension of reporting to physical and OTC positions. In either case, there is an issue of what constitutes relevant positions. Physical markets include a very large number of trades, spread across the entire world, and it is neither feasible nor desirable that all these positions be reported. On the other hand, in the particular case of the LME it would be relatively straightforward to require reporting of client ownership of metal in LME warehouses, although this would involve an extra-territorial extension of current British regulatory powers (since most LME warehouses are outside the UK). The same sorts of issue arise with respect to reporting of OTC positions. Many (perhaps most) OTC contracts on metals are written outside the UK, and in copper, they might in principle be offset either on the LME or on NYMEX. It is therefore not clear that the UK regulatory authorities could claim jurisdiction over these. And although it would be feasible to require reporting of OTC clients written by LME members, this may just have the effect of chasing business away from London brokers. It may therefore be that the only feasible reporting requirement here is that brokers should declare contracts which are offsetting OTC positions (including appropriately deltaed OTC options).²⁶

The control of manipulation raises more difficult problems. An initial distinction is

²⁶ The delta of an option is the mathematical derivative of the Black-Scholes options price with respect to the price of the underlying asset, here the futures price. The delta of a call is the number (in fact a fraction) of futures contracts that the writer of the call should hold so that his net worth is unaffected by small changes in the futures price - ie so that he is hedged against the price. For example, if a call has a delta of one half, the call writer should hold one futures contract for every two calls he has written. An in the money option has a delta close to one (the call is near equivalent to holding the future) while an out of the money call has a delta near zero. See, for example, Hull (1995, pp.325-333).

between measures which, by making manipulation more difficult, discourage it, and measures which halt manipulations when in progress. This relates particularly to the publication of position data. The reporting of client positions to exchanges and to the regulator enables these organizations to intervene to control a manipulation. However, this puts the entire burden of enforcement on the police force, and it is arguable that manipulation, like other crimes, can be more effectively discouraged if the public are also involved in the process. In particular, if potential participants in a futures market are aware of an increase in the concentration in long positions which might result in a manipulation, they can manage their positions accordingly.

Specifically

- short hedgers and speculators will be discouraged from increasing their positions and indeed will attempt to close them out earlier than they might otherwise have wished;
- some speculators will attempt to establish long positions in order to free ride on the manipulation, but in so doing, they will dilute the manipulator's potential monopoly power; and
- the resulting market imbalance between longs and shorts will result in the emergence of a (or an increase in the) backwardation, providing a greater incentive for delivery of the underlying asset.

These arguments suggest that there are strong arguments for making the publication of suitably aggregated position data mandatory.

The CFTC's weekly *CTF* reports provide a possible model - see Edwards and Ma (1992, p.464). These identify the numbers of traders and aggregate long and short positions of

- a) Large commercial traders (normally identified as "hedgers"),
- b) Large non-commercial traders (normally identified as "large speculators"), and
- c) Small traders (normally identified as "small speculators", who are not required to report on an individual basis (aggregate positions only).

This information allows the industry to infer in an approximate manner manipulatory potential from the size of the aggregate long positions in relation to the number of traders.²⁷ There is

²⁷ In Kyle's (1984) model, manipulators hide behind hedgers with the result that it is not apparent to the shorts that a potentially manipulative position has been built up. The manipulation only becomes apparent when the shorts attempt to liquidate their positions. If the net hedge position is long, he will be short, and *vice versa* if the net hedge is short. However, he will only liquidate a short position. The *CTF* data indicates the possibility of manipulation

considerable merit in SIB producing data in exactly the *CTF* form since

- the US futures industry clearly finds these data useful; and
- this would allow direct comparison of London and US markets, facilitating cooperation between the two sets of regulators and thereby effectively providing position information for almost the entire world.

At the same time, the *CTF* data are, in certain respects, insufficient, and there are arguments for going beyond this level of publication if a new system is to be instituted. Specifically,

- i) there is merit in aggregating deltaed options positions with futures, since the two are near equivalent; and
- ii) the single most important statistic which would aid in identifying potential manipulation is a measure of open interest concentration - for example, the proportion of both long and short open interest held in, say, the five largest positions.²⁸
- iii) Reporting of LME positions should include physical positions - ie ownership of stock in LME warehouses.

There are two commonly voiced objections to the publication of aggregated positions data. The first is that it exposes vulnerable speculative positions to attack from stronger speculators. The implication is that publication may reduce liquidity. This is possible in certain circumstances, but in general it appears more likely that increased transparency will increase liquidity, in particular since improved hedge quality should encourage increases hedging. Second, it is suggested that publication of aggregate positions may encourage the migration of business to other centres. Not only manipulators, but also many large speculators are anxious to conceal their activities, both from competitors, but often also from regulators and the tax authorities, and it is therefore inevitable that some business of this sort may be discouraged. This may even lead to increased trading on some currently minor markets. At the same time, legitimate hedging

through (a) a short net hedging position and (b) a relatively concentrated long large speculative position. Note also that Kyle's model suggests that manipulation will be easier in markets in which hedging is predominantly balanced (copper), rather than on one side or the other (aluminium); and where hedging interest is variable over time (allowing the manipulator to hide more effectively).

²⁸ Since the identity of the largest client will frequently be known on an informal basis, publication of either the proportion of open interest controlled by the largest or the two largest clients would potentially breach anonymity.

activity and speculative investment by publicly accountable US funds will be encouraged by increased transparency, so the overall balance of advantage is difficult to assess. Nevertheless, I would argue that the London markets are better advised to market themselves on low costs and high performance rather than to depend on attracting business whose prime aim is to avoid regulatory scrutiny in the US; but, at the same time, the US and UK authorities should put pressure on other governments to maintain high standards in regulation.

Should futures changes have other powers to control manipulation? The LME has attempted to counter the effects of manipulation by limiting the extent of the backwardation in periods in which manipulation has been identified. This has the effect of limiting the impact of manipulations but does not tackle the monopolistic concentrations which cause the manipulations. That could be achieved if exchanges were to grant themselves the power to order brokers to reduce the positions of clients who were identified as exercising manipulatory power. However, the existence of an active OTC market would probably make such powers ineffective. The single most effective step that London exchanges can take to reduce manipulatory potential remains therefore the publication of positions data.

6. LME Trading Practices

The discussion in Section 4 in relation to the legal status of futures manipulation under the FSA and that of reporting and publication in Section 5 relate in almost all respects to all British futures markets, and not simply to the LME. The LME is, however, significantly different from other British and American futures markets in a number of important respects, and it has been suggested that certain of these features are called into question by the Sumitomo manipulation.²⁹ In this section I argue that although in general this is not the case, the unusual features of the LME make it more difficult to manipulate than other futures markets, but at the same time, imply that manipulations have more serious consequences on the LME.

The unusual features of the LME are³⁰

1. While standard futures markets operate on an open outcry basis in continuous "pit" trading, sometimes supplemented by after-hours electronic trading, the LME trades a dual

²⁹ For example by NYMEX President, Patrick Thompson, letter, *Financial Times*, 30 July 1996.

³⁰ This discussion follows the useful summary in SIB (1996, pp.50-52).

system of four short (five minute) open outcry “rings” per metal per day, supplemented by open outcry trading “on the kerb” and continuous inter-office dealing on a quote basis.³¹ The official (“settlement”) price is the final trade in the second of the two morning rings.³² The purpose of the short five minute rings is to concentrate liquidity. The LME estimates that on any day approximately one quarter of trades are through the ring or on the kerb (SIB, 1996, p.39).

2. The LME operates on a system of daily contracts up to three months ahead, supplemented by a more limited number of longer term contracts (for third Wednesdays) up to 27 months ahead. This implies that a new contract is introduced for every trading day. Standard futures markets, by contrast, trade at most one contract for expiry in any month, and in physical markets generally trade only five of six delivery months per year. In a standard futures market, activity is focussed on the two or three “nearby” contracts, but with very little open interest in a delivery month contract. Thus, for a commodity on a two month delivery month cycle, activity in December would be concentrated in the Feb, Apr and Jun contracts (the three nearbys) with most players having “rolled out” of the Dec contract towards the start of the month.³³ On the LME, by contrast, activity is less concentrated and considerable liquidity remains in short dated contracts.
3. Standard futures markets operate on a cash-clearing basis whereby brokers are required to pay margin payments on behalf of clients into the exchange clearing house on a daily basis, and can also withdraw margin in excess of the initial margin requirement, again on a daily basis. The LME, by contrast, operates a non-cash clearing system whereby although contracts are marked to market by the London Clearing House (LCH), profits and losses are not realized until a contract expires or is closed out. In the majority of

³¹ Traders stand in a pit but are seated around or behind a ring with the trading taking place across the ring. (The LIFFE cocoa and coffee markets operate through continuous ring trading). There are two kerb sessions per day of fifteen and up to twenty-five minutes per day when all LME metals are traded simultaneously. Kerb trading originated in trading by ring dealing members of the LME on the pavement (sidewalk) outside the Exchange prior to this being permitted within the Exchange. Kerb trading now takes place in the ring.

³² A committee decides whether the final trade is sufficiently representative to be reported as the settlement price.

³³ Standard futures contracts are invariably denoted by the first three letters of the delivery month.

cases, this will be within three months of initiation. Brokers are required to maintain sufficient collateral (securities, bank guarantees or cash) to cover their aggregate margin positions with the LCH, but are not required to seek daily margin payments from clients. The difference between the LME and standard clearing systems is accentuated by the practice of allowing “historic price carries” (HPCs) whereby brokers are permitted, subject to a number of restrictions,³⁴ to roll over loss-making contracts without payment of margin.

The LME justifies these departures from conventional futures practice by its close links to the physical metals trade. In particular, in the copper market (also lead), the LME is used by a large number of small “secondary” refiners (ie producers who refine scrap metal) both for risk management and marketing. These producers will typically sell the refined metal forward at the same time as buying the scrap input,³⁵ and will deliver to Exchange warehouses to avoid marketing costs. The Exchange argues that the daily contract system allows these producers to exactly match contracts with their proposed delivery dates and thereby completely eliminates basis (structure) risk, giving a perfect hedge. The role of contract standardization in futures markets is to focus liquidity on a small number of contracts. The LME’s contract structure precludes this, and liquidity must instead be provided by trading of carries between brokers. And finally, the Exchange defends non-cash clearing on the argument that this payment structure in which no cash changes hands until a contract is closed, suits the cashflow requirements of the physical users of the Exchange.

Non-cash clearing and HPCs expose LME brokers to additional risk without significant countervailing advantage. This was most clearly evident in the 1985 tin crisis. At that time, LME transactions were not marked to market in any formal way. Anderson and Gilbert (1988) argue that although marking to market would not have prevented the tin crisis, it would have advanced the collapse of the International Tin Council’s (ITC’s) support operation by several months and thereby have reduced the scale of the ITC’s losses, and, by implication, the losses incurred by

³⁴ Most importantly, subject to the written permission of the parent board, in order to ensure that HPCs are not used to conceal loss-making trades from directors and shareholders.

³⁵ Scrap prices move closely with refined metal prices so forward sale secures the refining margin. Three months is adequate to cover the time from scrap purchase to delivery of the refined metal.

LME members and the scale and expense of the subsequent law suits. Furthermore, it is difficult to accept that the LME's customers are so much less sophisticated than the customers of other futures markets that they could not very rapidly adapt to standard clearing arrangements. Under current rules in London, it is possible for brokers in commodity futures to insulate small customers from marking to market through direct provision of margin finance facilities, although this is not allowed in financial futures. But in any case, the same result may be achieved utilizing tripartite arrangements with customer banks. The advantage of these arrangements over the LME's non-cash clearing provisions is that they make explicit the different cost elements charged to customers.

In considering the divergences in practice between the LME and regular futures markets, it is important to distinguish between the question of whether the practices are wise, and whether they are causes for regulatory concern. Although the LME's clearing arrangements will appear unwise to anyone familiar with standard futures markets, there is no suggestion either that they put client funds at risk or that they are implicated in the Sumitomo or other manipulations. There does not, therefore, appear to be any divergence between private and public interest in this regard, and I therefore concur with the SIB's view that these arrangements do not raise regulatory concerns.

Ring trading raises more complicated issues since it results in a large proportion (around 75%) of the LME's business being conducted on a quote basis through inter-office trading. This raises transparency issues since inter-office trading yields much lower price transparency than does the ring. Dealer (bid and offer) quotes are available on screen but there is no obligation for dealers to trade between these quotes, even at small size, and no information is provided on the prices which are actually transacted. Two solutions are canvassed: either ring trading could be extended, or more information could be post-trade transparency could be provided on inter-office trading. The latter solution is correct, since ring trading is intimately tied in with the LME's daily contract system. The ring is an efficient price discovery mechanism: it focuses liquidity on cash and three month trades and in this way provides very reliable prices which are used as the pricing basis throughout the world metals industries. Instead, inter-office trading allows hedgers to precisely match contracts to their hedging needs, and in principle this should substantially decrease basis (structure) risk and thus increase hedge quality. Ring and inter-office trading therefore complement each other, and the regulator should not presume to dictate the balance

between these two activities. On the other hand, the SIB is right to be concerned about the transparency of inter-office trading, although again this was not a factor in the Sumitomo manipulation.

As noted, ring trading is tied in with the daily contract system. It is arguable that this feature of the LME does impinge on manipulation in that it makes manipulation more difficult than on regular futures markets but also has the implication that when manipulation does occur, the consequences are more serious. On standard futures markets, commercial customers and most speculators roll out of the first contract towards the beginning of the delivery month. The roll typically takes place over a period of a week and generates its own liquidity. For example, as short hedgers close out their positions in the delivery contract this provides the incentive for the longs to sell this contract and to buy the nearby contract into which the shorts are rolling. At the end of the roll, open interest in the delivery month will have fallen to a low level and will typically be confined to brokers and a few speculators who specialize in the closing days of futures contracts. Many contracts die peaceful deaths with open interest drifting slowly to zero, and with delivery neither taking place nor being threatened. In other contracts, either a single trader or a small group of traders emerge from the roll with a dominant long position with the implicit threat that the shorts must either pay a premium to close out their positions or come up with deliverable stock. The contract is thus squeezed and the delivery month price can trade at a volatile premium to the nearbys. Technically, this constitutes manipulation, but it is a game played by a small number of consenting adults, it typically does not involve commercial interests in the industry, and has little implication for pricing which will be generally be basis the nearby contracts. In standard futures markets, therefore, there is frequent manipulation of the delivery month but this has little consequence either for hedging or for price discovery.

Because the LME does not have delivery months, contracts are rolled on a continuous basis (either in the ring or the inter-office market) and on any particular day the cash (delivery) contract will be highly liquid. This implies that it is quite difficult for a potential manipulator to establish a dominant long position on any particular day or period of days. It follows that it is more difficult to manipulate the LME than to manipulate standard futures markets. However, the liquidity of the cash contract implies that commercial users will often maintain positions until the delivery date and also makes it possible for cash (settlement) prices to be used as a pricing basis in the industry. When manipulations do take place on the LME, they therefore impinge

directly on hedgers, and, through distortion of the pricing basis, on the entire world metals industry. By 1995-96, the Sumitomo manipulation had come to resemble the 1981-85 tin support operation, in which the ITC used the LME tin market to support the tin price, more than standard futures mechanisms which exploit the delivery mechanism in the final weeks of a contract.³⁶

It is not my intention to argue that the LME should move to a conventional monthly contract system. The LME's strength derives from its close links to the physical metals business, and it has evolved a structure which allows it to simultaneously perform the price discovery function of futures markets (through ring trading), to provide an efficient forward delivery market (through its contract system and warehouses) and to provide a flexible hedging environment (through the dealer inter-office market). Regulation should not interfere with this balance. At the same time, the success of the LME in establishing itself as the international pricing basis in non-ferrous metals does imply that manipulation has very serious consequences, and it is therefore of the utmost importance that both the Exchange and the SIB, as regulator, establish very much stronger procedures for preventing the type of manipulation that Sumitomo appears to have perpetrated.

7. Self-Regulation

There has been some suggestion that manipulations, and in particular the activities of Sumitomo, call into question the principle of self-regulation which forms the foundation for financial regulation in the UK. The argument is that members of the LME benefited, directly or indirectly, from Sumitomo's trades and are that their willingness and ability to control activities of this sort are therefore compromised. I have suggested (see Section 5), by contrast, that the regulatory deficiencies with regard to futures market manipulation in Britain relate less to the way in which exchanges regulate their members than to the statutory position which governs clients' relationships with their brokers where exchanges do not have a direct involvement. But in any case, any argument that self-regulation is insufficient must depend on a divergence of private and social benefits to regulation.

The major costs arising from futures manipulation are a reduction in the quality of hedging services and loss of accurate price discovery. Hedging (price protection) services are

³⁶ In terms of Pirrong's (1993) classification, it evolved from being a "frictional long manipulation" to become a "pure monopoly manipulation".

accessed by direct or indirect (ie via OTCs) purchase of exchange products and a deterioration in the quality of these services will lead to lower sales (ie lower futures volumes) and/or lower trading margins. Exchange members will therefore be acutely aware of the trade-off between hedge quality and regulatory cost and may be expected to make the appropriate decisions. The conflict of interest argument is therefore not, in general, valid.³⁷

This raises issues relating to competition between exchanges. A common view is that more lightly regulated exchanges may benefit relative to the more heavily regulated, and this factor has been seen as favouring London markets competing against US counterparts. Strong regulation is generally expensive, and it is clear that increased regulatory costs result in competitive disadvantage. Against this, customers are deterred from using exchanges where they perceive that they are at the mercy of potential malpractice, of favouritism towards local participants, or of poor hedge quality as the consequence of basis variability. Financial markets increasingly compete on the quality of regulatory assurance.

Price discovery is more problematic. Information is freely disseminated and exchange prices are accessible to firms and individuals who do not use the exchange. In the absence of a clear international price, marginal rates of substitution will differ across individuals and marginal rates of transformation across firms, and this will result in welfare losses. If a price is widely disseminated but distorted, the commodity will be consumed at a point at which its marginal use value differs from its marginal social production cost, and again there will be welfare losses. It is arguable, therefore, that price discovery does generate an element of externality, and that exchanges may be insufficiently vigilant in suppressing manipulation, not because they are compromised, but because they bear the entire costs of regulation but do not capture all the

³⁷ Suppose the j th firm's profits are given by $\pi^j(p,r)$ where $p(r)$ is the price of hedging services, r is the level of regulation, $\pi_p^j > 0$, $\pi_r^j < 0$, $\pi_{pp}^j < 0$, $\pi_{rr}^j > 0$ and $\pi_{pr}^j < 0$. Profits are rising in the price of hedging services, which itself is rising in the level of regulation because of increased hedge quality; but regulation is expensive for the firm both because of compliance costs and because it discourages potentially profitable abuses. If all firms are identical, the social optimum is for a level of regulation satisfying $\pi_p p' + \pi_r = 0$. If firms differ and the exchange uses majority voting to determine the level of regulation this condition will hold for the median firm, say firm m , ie $\pi_p^m p' + \pi_r^m = 0$ whereas maximization of social welfare would require that it hold for firms on average. To the extent, therefore, that the distribution of either π_p^j or π_r^j is skewed, there may be a minor departure from the social optimum.

benefits.³⁸ That argument suggests that exchanges should be compelled to regulate manipulation somewhat more strongly than exchanges would themselves choose. This can remain within the framework of self-regulation, but entails a strengthening of the statutory requirements embodied in the FSA and the SIB Principles.

8. Conclusions

This section collects the major conclusions of and recommendations from earlier sections.

1. Sumitomo manipulated the world copper market, possibly from as early as 1985, but certainly over the period 1991-96. This manipulation started as a textbook “long frictional manipulation” in which Sumitomo from time to time established a dominant long cash and futures positions obliging the shorts either to deliver or to close out at a premium. In 1995-96, however, Sumitomo ended up in controlling a large proportion of world copper stocks, and the manipulation came more to resemble the 1981-85 tin market support.
2. The LME contract structure limits the extent to which one may easily infer manipulation from price data since there is only reliable public information on a two dates in the term structure of prices. Nevertheless, it is possible to see evidence of manipulation in the LME copper backwardation relative to that in aluminium.
3. Contrary to the view expressed by the Securities and Investment Board (SIB), futures market manipulation does not appear to be illegal under the Financial Services Act (FSA). This is in contrast to the position in the United States where manipulation is explicitly prohibited (although not defined) in the Commodity Exchange Act. The FSA should be amended to make illegal any exercise of monopoly power in futures markets which has the effect of generating artificial off-exchange prices.
4. The US experience indicates that it is nevertheless very difficult to bring successful prosecutions against futures manipulation. The emphasis should therefore be on prevention rather than prosecution. The key element in prevention is client position reporting. This currently exists on a voluntary basis on the LME. I recommend that this

³⁸ Edwards and Edwards (1984) agree that there is no divergence between private and social costs with regard to hedge quality, but argue that price discovery quality will also be reflected in futures volume. It is true that superior price discovery might lead to an increase in futures volume through more active hedging. However, members of a competitive futures market will not have an incentive to subsidize price discovery in order to attract volume.

be put on a statutory basis and extended to all London markets. Reporting should distinguish positions which are entered into in order to offset OTC contracts and, in the particular case of the LME, should be extended to metal in LME warehouses.

5. Increased transparency is the best deterrent to manipulation since market participants can act early to close out positions when they see evidence of the emergence of a potentially manipulative situation. Publication of aggregated position information can act as a significant impediment to manipulation. The SIB should introduce the CFTC's *Commitments of Traders in Futures* reporting system to London markets. Reporting should cover both futures and options positions. These data should be augmented by summary statistics showing concentration of open interest. In relation to the LME, reporting should also extend to stocks in LME warehouses.
6. The LME differs in a number of respects from standard futures markets. These differences arise out of the LME's traditional very close links with the metals industry, which are a significant source of strength for the exchange. Some of these differences, in particular non-cash clearing and the use of historic price carries, appear unwise and impose additional risks on LME members; but they do not raise regulatory concerns. However, the LME's daily contract system does have the effect that, although manipulation is more difficult on the LME than on standard futures markets, it is more serious when it does occur.
7. The Sumitomo manipulation has focussed attention on the question of self-regulation, which forms the basis of the regulation of financial markets in Britain. Exchanges compete on quality as well as on cost, and there is no general validity in the view that conflicts of interest will result in their taking too little action to prevent abuses. However, price discovery is to some extent an externality and this may suggest that exchanges should be more vigilant in suppressing manipulation than is implied by the direct interest of their members. Although there is no basis for any charge that the LME has lacked diligence in attempting to identify and control manipulation, it and other London futures markets would benefit from a significant strengthening of the regulatory framework.

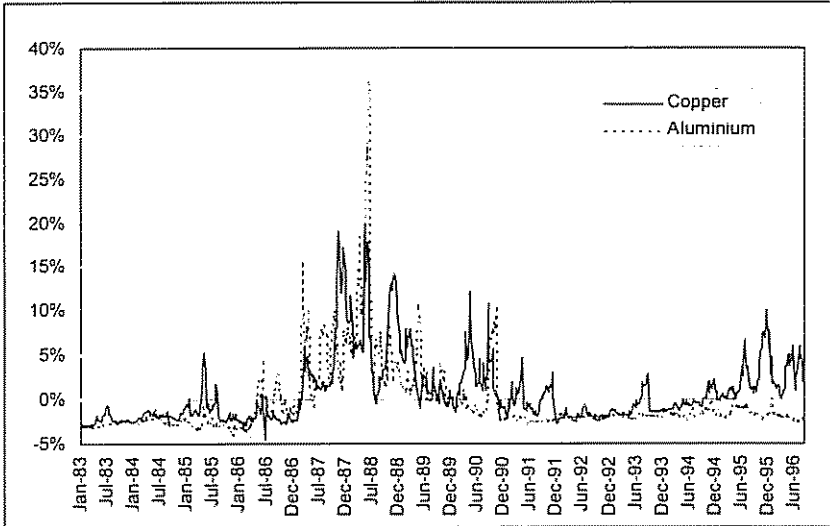


Figure 1: Copper and Aluminium Backwardations, 1983-96

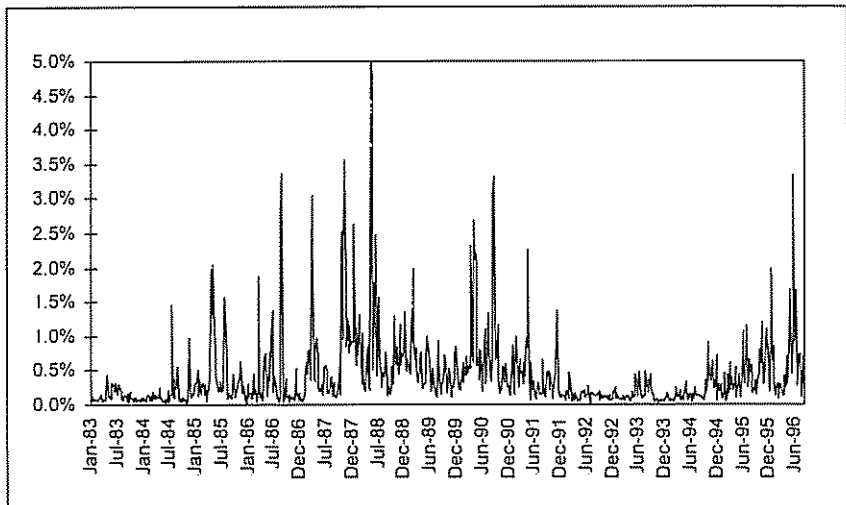


Figure 2: Copper, Basis Volatility, 1983-96

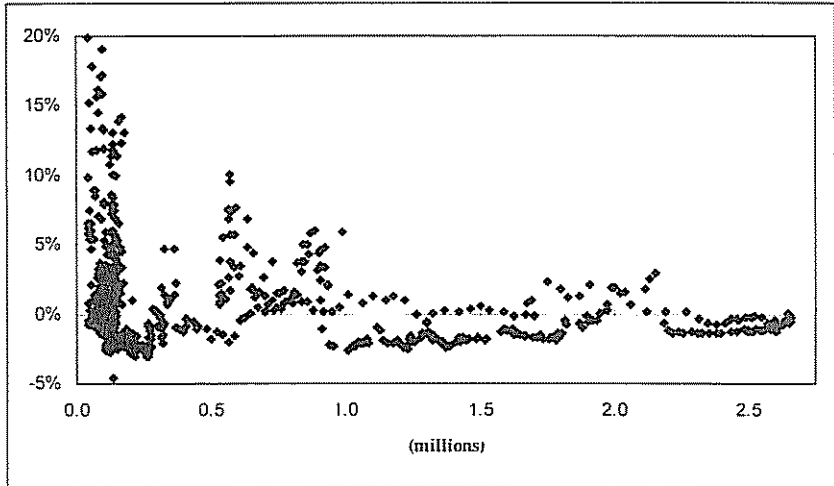


Figure 3: Copper, Backwardation and Warehouse Stocks, 1983-96

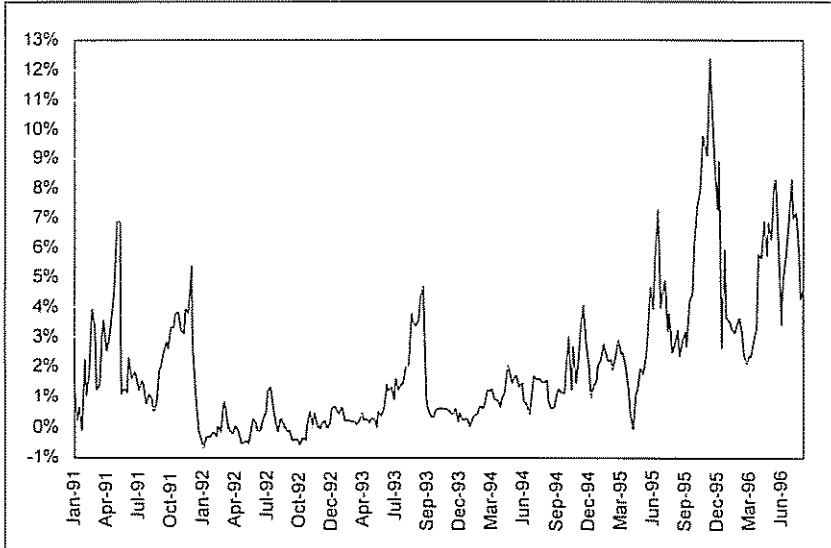


Figure 4: Differential Backwardation, Copper less Aluminium, 1991-96

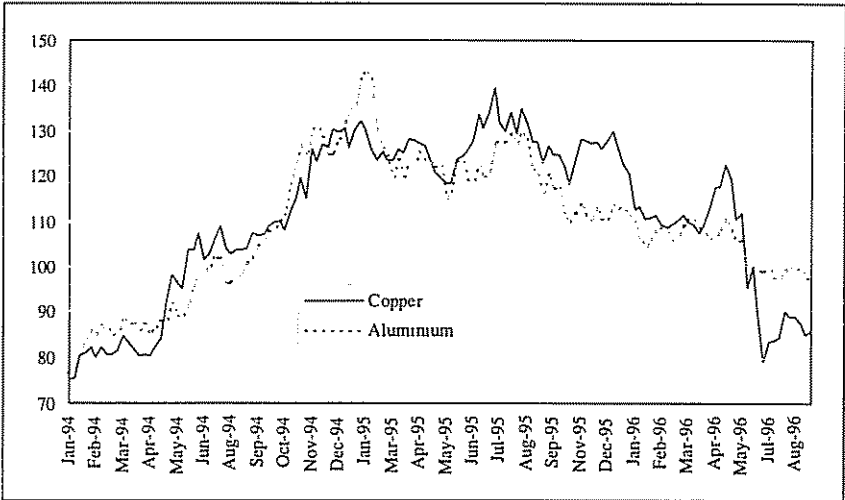


Figure 5: Copper and Aluminium, Cash Settlement Prices, 1994-96

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