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the department for Enterprise

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The Rt. Hon. Lord Young of Graffham
Secretary of State for Trade and Industry

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Prime Minister

You may like to glance at the covering minute and executive summary (first 5 pages of attachment). But no need to go through the detailed report. This doesn't add much to the Stock Exchange's own earlier assessment of last autumn's events.

Dear Nigel,

REPORT ON THE STOCK MARKET FALL

As you may know, towards the end of last year I asked officials to review the major studies being carried out around the world of the implications of the Stock Market Fall of last October, and to draw out any implications for UK markets and market mechanisms. The aim was to produce a report identifying what responses might be appropriate by the various UK regulators and market authorities, and to enable us to satisfy ourselves that no inappropriate measures were likely to be taken.

The work has been carried out with participation by Treasury officials. The Bank have also been closely associated and the Securities and Investments Board, The Stock Exchange, LIFFE, the International Commodities Clearing House and a number of users have all been consulted. Of course many of the issues examined are the responsibility of the various regulatory and market authorities; the report is therefore understandably cast as noting what the authorities are doing in the light of the market fall and inviting them to consider the other recommended actions in their area.

The main conclusion is encouraging: that our systems stood up well in the circumstances of last October. The report is sceptical about many of the recommendations in the American reports, particularly those advocating wider use of circuit breakers or proposals to limit certain kinds of computer trading. It does, however, identify a number of areas where technical improvements could and probably should be made to improve dealing and settlement arrangements. What is said in

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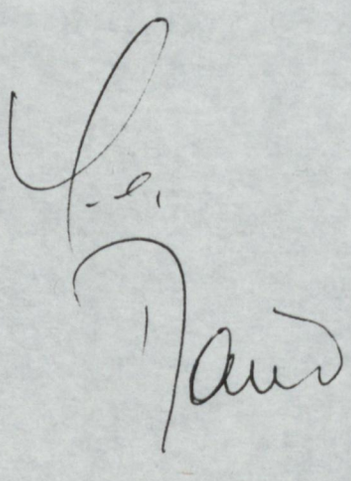
the report on these reflects discussions with the authorities concerned and should be broadly acceptable.

If you are content I propose to write to the organisations concerned, sending them the report in confidence, (omitting the sensitive passages) and inviting them to take note of any of the recommendations relevant to them.

I understand that officials, particularly in the Bank, have reservations about wider publication on the basis that parts of it, particularly Part V, might indicate a degree of contingency planning that could lead to moral hazard. I have to say I do not share this view: Part V seems to me a blandly-phrased statement of the obvious - that regulators should collaborate, particularly in difficult market conditions.

It is public knowledge that the Department is considering the implications of the market fall, in consultation with the relevant market authorities, and we are bound to be asked about our conclusions. It would in my judgement be better to present these conclusions at our own initiative, as part of a considered document, rather than risking the accusation that we have suppressed our findings. I will therefore ask my officials to discuss with yours the preparation of a suitably abridged version for publication.

I am copying this to the Prime Minister and to the Governor.



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OCTOBER STOCK MARKET FALL: IMPLICATIONS FOR MARKET MECHANISMS AND REGULATION

CONTENTS

EXECUTIVE SUMMARY

The October stock market break has been extensively analysed in respect both of underlying causes and of the actual events in the markets. This report is confined to reviewing events in the UK markets, the lessons to be drawn and the actions in hand by the appropriate UK authorities. In the USA, market mechanisms may have helped to aggravate the speed and extent of the fall, but there is no evidence to suggest that London mechanisms did so. In particular there is at present no reason to restrict the growth of the relatively small London markets for futures and options.

Market and regulatory mechanisms in London were able to cope so as to maintain the financial integrity of the markets and ensure that bargains once made were performed. No serious defaults occurred. Some investors experienced difficulty in dealing during the period of difficulty, and were not always able to deal on such good terms as in normal conditions, but the London markets did remain open throughout and handled a large volume of business.

We were not able to judge whether markets are more prone to sudden large price movements now than they were before the break. The Securities and Investments Board (SIB) is however reviewing its requirements for capital adequacy, which are based on historic volatilities. The Bank of

England and SIB are pursuing their discussions with overseas regulators to ensure that overseas firms operating in UK markets are effectively supervised. In the longer term it will be important for both regulators and Government to work towards international co-ordination and convergence of capital requirements for securities.

In the futures and options markets, each party to a bargain is required to pay "margin" to a clearing house so that if he defaults his counterparty is protected. UK margin systems worked effectively in October, although the clearing houses should consider whether to make more frequent and smaller changes to their margin requirements when prices are changing rapidly. There is no need to set margin requirements artificially high to discourage speculation or to constrain the growth of these markets.

Improvements have already been made to the arrangements for clearing and settling bargains on the London exchanges. The Stock Exchange is considering whether to introduce a centrally-operated margin system for equity bargains. The legal position of these various arrangements when a market member becomes insolvent needs to be clarified in the 1988/89 Companies Bill.

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Closer links between the various UK clearing systems would make it easier to handle during periods of difficulty.

That could be information exchange, or closer integration which could reduce the cost to participants.

The Stock Exchange is considering whether to change its Account System, under which equity bargains do not have to be settled for 6-16 trading days or even longer, perhaps to rolling settlement. Change would reduce exposure to the risk of counterparty default, as would further reductions in the settlement backlog.

Automatic halts to trading ("circuit breakers") have advantages and disadvantages, but on balance we are sceptical of their value. However, if more circuit breakers are introduced overseas the UK exchanges will need to assess the implication for their markets. If business were diverted to UK markets in times of crisis, it would be all the more important that they had sufficient capacity.

Computer assisted techniques such as portfolio insurance and index arbitrage are little used in the UK and we see no reason at present to try and restrict them, but the exchanges should keep the development of such techniques here under review for potentially destabilising effects.

It is essential that there should be clear lines of responsibility, efficient channels of communication and co-operation between regulators. When markets are

turbulent this becomes of critical importance. The Bank of England and SIB will keep existing arrangements under review, particularly in the light of the new regulatory system introduced by the Financial Services Act, to ensure their continued effectiveness.

INTRODUCTION

1.1 The purpose of this report to the Secretary of State for Trade and Industry is to review, in the light of the stock market break of October 1987, what action is contemplated by the various authorities in the UK, and what lessons might be drawn about the market mechanisms and the regulation of the UK financial markets.

1.2 In the exceptional circumstances of a sudden change in market levels the overriding requirement is that the market and regulatory mechanisms should maintain the overall financial integrity of the market and ensure that bargains once struck are performed.

1.3 It is also desirable that markets should as far as possible continue to be available, liquid, transparent, fair and cheap to use and that the mechanisms themselves should not artificially exaggerate the speed or extent of a movement in prices. Investors cannot however expect to be able to deal as easily or on such good terms during a crisis as they can in normal conditions.

1.4 The function of the financial markets is to bring together buyers and sellers at a price at which both are willing to deal, thereby facilitating the raising of capital, the deployment of savings, the transfer of risk, and changes in corporate ownership through mergers or acquisition.

Changing circumstances and fresh information will inevitably cause fluctuation in the price level. A rapid movement in price or continuing price volatility need not undermine the ability of the market to function. Indeed it can be argued that there is some advantage in a rapid movement to a new price level where supply and demand can balance. Nevertheless, excessive rapidity or volatility may bring the systems designed to ensure market integrity under strain or may deter users of the market from entering it. (Users may be deterred either by the higher risks or by higher costs of using the market as market makers widen their price spreads to cover their own risks).

1.5 The report seeks to investigate the way in which the market and regulatory mechanisms operated in October onwards, but does not seek to reach conclusions on the overall causes of the break.

1.6 At all times a balance need to be struck between safeguarding the financial integrity of the markets and avoiding unnecessary costs or restrictions which could unduly undermine their international competitiveness. This is a continuing dilemma. There is a close connection between the market mechanisms and the financial requirements to ensure market integrity. Tougher requirements are necessary in times of greater volatility than in calmer trading conditions. The continuing task of

the regulators is to assess market conditions and the risk to market integrity so as to strike the right balance between safety and competitiveness.

1.7 The report has drawn extensively on published studies undertaken by other organisations in the UK and abroad. These are listed and summarised in Annex B. The reports are far from unanimous in the recommendations they make. We have considered the relevance of their principal recommendations to the UK and have also looked at some other proposals which have been put forward by other bodies. We have consulted various UK regulators, market authorities and users.

1.8 Many of the reports by US regulators propose various changes to market practice. In translating these to the UK context it is important to make allowance for the significant differences between US and UK markets. In particular -

i) futures and options in the UK represent a small fraction of the underlying equity market, in marked contrast to the USA where volumes of futures transactions heavily outweigh those in the underlying market;

ii) computer driven trading techniques such as programme trading and arbitrage do not account for a significant proportion of dealing in the UK.

iii) the UK Stock Exchange, unlike the New York Stock Exchange (NYSE), has abandoned use of a trading floor;

iv) there are differences between market makers on The Stock Exchange and NYSE specialists in terms of capitalisation, competition and continuity in the obligation to quote prices;

v) regulatory responsibility in the UK differs structurally from that in the US.

1.9 We have grouped together the various areas for consideration under three main headings:

Part III

prudential regulation: capital adequacy and centrally operated margin systems;

Part IV

market mechanisms: dealing systems and market capacity, clearing and settlement systems, suspension or restriction of trading and computer trading;

Part V

planning and co-operation between regulators

1.10 We have examined these ideas on their own merits and also in case their adoption overseas might have implications for our markets. We have attempted to distinguish between arrangements appropriate for normal trading conditions and those which could or should be implemented rapidly during periods of rapid change in the markets.

1.11 Although some exchanges in the USA are already testing various new mechanisms designed to reduce volatility, overseas authorities, particularly in the USA, have yet to reach final decisions on whether to institute permanent changes in their markets later this year which could carry implications for our market mechanisms.

1.12 Many of the areas examined in this report do not need new initiatives but are already under examination by the Bank of England, The Securities and Investments Board (SIB), The Stock Exchange, The London International Financial Futures Exchange (LIFFE), The International Commodities Clearing House (ICCH), and others who have responsibility in this area. Discussion with overseas regulators will also be taking place.

II BRIEF DESCRIPTION OF THE FALL

2.1 Much has been written about the events surrounding the sudden fall in the stock market, including analyses of why the bull market lasted so long and why the market break was so sharp when it came. The economic background is described in Annex A. Although there is still considerable argument about the analysis, it is clear that since the beginning of 1987 share prices had moved further than economic realities justified and in particular had moved out of line with fixed interest securities. A growing number of people were beginning to become uneasy and concern in particular focused on certain features of the US economy. Considerable softening of the markets had been evident in the week before the market break. When it came, it is possible that features of the market mechanisms, such as the relationship between US markets for futures and stocks may also have contributed to the scale and rapidity of the fall.

2.2 In the US the action taken by regulators in response to the fall is well documented. On 20 October an announcement was made that "the Federal Reserve Board affirms its readiness to serve as a source of liquidity to support the economic and financial system".

2.3 This report is not concerned to weigh up all the possible causal factors of the break. Instead its concerns are

first to judge whether UK market mechanisms played a significant part in causing or aggravating it; and second whether the UK mechanisms coped adequately with the fall once it started.

2.4 Between its July peak and November trough, the FTSE Index fell by 36%. It is currently about a quarter below its peak level. So far, this is much less severe than the last major stock-market crash of 1973/74: prices in December 1974 were nearly 70% lower than two years earlier, and had more than halved in the course of the year. Falls of around 25% in stock prices from peak to trough in a few months are not unusual: 1969, 1976 and 1979 are examples. What was unusual about the 1987 fall was the sheer speed of adjustment, with the bulk of the fall concentrated into a few days.

2.5 The trading of financial futures, options and shares is so closely interrelated that the exchanges concerned cannot be considered in isolation: the underlying reality is a single market place. However, futures and options play a much less significant role in London than in the USA. The combined trading in FTSE traded options and FTSE futures is normally equivalent to about 10% of UK equity turnover, whereas trading in the CME S & P 500 futures contract is routinely four times the value of equity trading on the New York Stock Exchange. There is no evidence to suggest that the London futures and options markets caused or aggravated the fall.

2.6 All world markets fell simultaneously. This presumably reflects the extent to which investors hold overseas equities and market participants trade internationally, the dismantling of exchange controls and the speed of modern communications, as well as the international nature of the economic problems leading up to the market break.

2.7 London did not fall further (or indeed more rapidly) than most other exchanges. Tokyo has proved remarkably resilient, and indeed has now recovered to above its pre-break level. But comparing individual peaks to troughs, London fell by less than the other major European markets (which fell by around 40%) and markets such as Australia, Singapore and Hong Kong, which recorded falls of at least 50%. New York fell by about the same amount as London in local currency, but fell further when adjusted to common currency terms.

2.8 It is therefore difficult to blame mechanisms peculiar to the UK for causing or aggravating the fall.

2.9 There were some noteworthy features of the London market; its visibility and its accessibility. Trading hours were not curtailed; the SEAQ system remained in operation, although for certain, mainly short periods when "fast markets" were declared prices were only indicative. It has been alleged that these features (in that they also attracted business to the UK) could have caused the UK

market to fall more rapidly than otherwise, both because of the weight of selling pressure and because of defensive action by market makers, adjusting their prices down in anticipation of such pressure. Allegations of this nature are difficult to substantiate - or disprove. Such evidence as there is (set out in The Stock Exchange's Quality of Markets report and summarised in Annex B) suggests that artificial marking down did not occur to any significant degree and that the existence of a liquid, open and technically sophisticated market in London did not magnify the effects of the break on the UK market.

2.10 The complete closure of the Hong Kong markets for four days might have caused difficulty for some members of the London Stock Exchange but fortunately none had a very large exposure to Hong Kong stocks or futures. A rescue operation was mounted for the Hong Kong Futures Exchange, because when some participants defaulted the margin available in the clearing system was inadequate to support the guarantee to their counterparties. The NYSE decision to shorten its trading day helped confidence because it provided an opportunity to settle the large volume of NYSE bargains generated on 19 October and the next few days.

2.11 A particular feature affecting confidence in the UK and North American markets was the impending sale of BP shares. In the event the underwritten placing went ahead but the Chancellor of the Exchequer announced arrangements

by which the Bank of England would support the price of the new BP shares. This increased market confidence.

Volatility in the future

2.12 Are the markets now more prone to extreme shifts of volatility than in the past? In the immediate aftermath of the market break, there were six trading days when the index moved in excess of 50 points, a significant deviation by the standards of early 1987. Since then there have been a couple of occasions in the USA when the index has fallen by around 100 points but without sparking a chain reaction in other countries. But the Brady Commission's study of this question concluded that, whilst volatility in 1986 and 1987 was higher than in the immediately preceding years it was not unduly high by historical standards - for example before the Second World War.

2.13 There are several long term developments which may continue to affect price volatility. These include the growth in volume of securities transactions, internationalisation of markets, the greater use of futures, options and other sophisticated instruments, faster communications, technological advance in both dealing and control systems, and regulation and degregulation. There have also been changes in the mix of investors, for example institutional investors of various

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kinds have become more predominant, and Japanese investors represent a growing proportion of the total. Developments in the theory of investment also impinge on the attitudes of investors. Some of these factors may tend to increase volatility, others to reduce it.

2.14 Developments in the world economy also affect price volatility. In the short to medium term, the limited prospects for early substantial reduction in the US "twin deficits", uncertainty over Japanese willingness to finance them and the vulnerability of the dollar suggest that another marked fall might occur. On the other hand, the gap between equity and bond yields has narrowed, economic growth has held up and the G7 Louvre Agreement has survived: these factors suggest that markets may remain fairly stable.

2.15 Considerable research would be required to analyse all the factors which could affect the likelihood of sudden, large price movements. Thus it is not possible to reach a conclusive view on whether the markets are more prone to a sudden fall now than they have been in recent years.

Summary of Action taken by UK regulators

The Stock Exchange

2.16 The extent of the dramatic fall on Wall Street was not fully manifested until after London had closed on 19 October. The following morning The Stock Exchange Surveillance Department undertook a rapid check of the financial position of market makers and broker-dealers with large principal positions as revealed in their regular monitoring returns. These forty firms were subsequently required to make daily reports by 11 a.m. on the previous day's position. Some members initially found difficulty in supplying this information promptly, but they were eventually able to do so on a regular basis. Improvements to firms' internal control systems would help to avoid any such delay in future. The information obtained by The Stock Exchange was shared with the Bank of England in a joint working group, which made a daily assessment of the position.

2.17 By 21 October, a number of members had already received injections of additional capital, and others whose capital had been eroded were required by The Exchange to obtain fresh injections. The fact that many Stock Exchange firms are now parts of larger financial groups made this process much easier.

2.18 Other actions taken by Surveillance Department included:

- using its Database to monitor large individual client open positions and open under writing positions;

- requiring broker dealers with overseas principal trading business to provide information on any losses or bad book positions.

- making direct contact with firms' bankers where client defaults in options margin had already taken place;

- issuing closing-out recommendations on a regular basis;

2.19 Several members experienced difficulties with particular clients who were unable to meet their obligations as writers of traded options, especially FTSE options. A sole-trader in the options market had to close. The problems were contained without undermining the integrity of the market. The Stock Exchange's London Traded Options Market (LTOM) imposed an intra day additional 50% margin call. Member firms had little time to raise additional margin from their clients - an inevitable feature of a margin system. Member firms do need to have the power to close out their clients' positions if margin is not

forthcoming in the specified time and the new client agreement letters are designed to clarify the member's right to do this.

2.20 The Stock Exchange continued its close daily monitoring and contacts with the Bank of England and the banks throughout the crisis and helped members to deal with their problems. Account Day on 2 November passed without a default. Thereafter it was possible to put monitoring of the majority of members on to a weekly basis.

2.21 When price quotations on the screens cannot be updated fast enought to keep pace with the prices at which deals are being done, The Stock Exchange can declare a "fast market". The effect of this is to relieve market makers of the obligation to deal at the outdated and inaccurate screen prices, which become "indicative prices". Seven fast market declarations were made during the week of 19 October, covering an average of one hour each. The Stock Exchange concluded that during most of the critical period, bargains were struck very close to the screen prices, although there were a few short periods when a marked divergence occurred. (On 19 October there were six occasions when the gap measured by the FTSE index exceeded 1%, reaching 7% at one point, but for most of the day the gap was less than one quarter of 1%).

ICCH

2.22 The margin system operated by ICCH is designed to protect clearing members of LIFFE and other commodity markets against counterparty default. ICCH needs to hold sufficient margin at any given time to safeguard against an adverse price movement during a single day's trading. On 16 October the margin held for the FTSE futures contract represented 2.6% of the value of the contract. On 19 and 20 October ICCH made special intra-day margin calls which raised this percentage to 11.2%. These calls were met, and ICCH detected no reluctance on the part of the settlement banks to guarantee payment on behalf of the members, although the short time (one hour) during which settlement banks are required to respond to intra-day calls inevitably caused some administrative difficulty.

2.23 ICCH also had to raise the margin requirments for some other contracts on LIFFE and the London Metal Exchange (LME). Where price volatilities have fallen back since the crash, it has been possible to make some reduction in margin requirements.

2.24 ICCH has the discretion to impose additional margin requirements where an individual customer has built up a large position. ICCH consulted LIFFE before imposing its intra-day calls and also liaised with LTOM, the London Options Clearing House (LOCH) and overseas regulators.

LIFFE

2.25 LIFFE increased surveillance and analysis of the trading positions and volumes of individual members, with particular emphasis on the FTSE contract, liaised closely with the clearing house on margin and sought regular confirmation from members that no serious financial problems were arising.

2.26 LIFFE considers that the imposition of large intra-day margin calls ensured that members (and their clients) covered paper losses promptly. Any greater margin burden might have added further to the liquidity problems experienced elsewhere. All members met their margin calls promptly and this fact certainly gave confidence to the market. Some attempt was made at co-operation between markets prior to The Stock Exchange Settlement Day on 2 November. A meeting between LIFFE, LTOM, ICCH and LOCH was held to identify cross market positions of common members since no single regulator was in a position to see both sides. Uncertainty as to the possible outcome on that settlement day directly contributed to LIFFE/ICCH maintaining an exceptionally high level of initial margin for the FTSE contract during that period.

2.27 UK market mechanisms coped with the events of October by ensuring that the UK markets remained open and that investors were protected against default so that the bargains they had made were settled.

Conclusion

2.28 Although the performance was satisfactory it is difficult to judge how close the mechanisms came to breaking down under the unusual strains. If the slide in prices had continued, would market participants have been able to meet further margin calls and to raise further capital where necessary? Those participants with banking parents would presumably have continued to receive capital injections where necessary: a bank would wish to preserve confidence in its own integrity by maintaining its securities subsidiary if able to do so, and the actual losses of the subsidiaries could have been a great deal worse without causing serious difficulties for the banks concerned.

2.29 It is more difficult to assess whether a major UK - or US - participant without a banking parent might have run out of capital and been unable to find someone willing to rescue it. If that had happened, how great would the effect have been on market confidence and on other participants? It is impossible to answer these hypothetical questions - so much would depend on how much further prices might have fallen and on how serious the defaults might have been.

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PART III: PRUDENTIAL REGULATION

Capital adequacy

3.1 Most market and securities regulators require participants in markets to have a minimum level of capital reflecting the nature of the investments they make, their potential exposure and the normal volatility of the markets concerned. The most advanced systems, such as those developed by the SIB and The Securities Association (TSA) provide specifically for capital requirements to be calculated against both position risk (the change in asset value if the market moves) and counterparty risk (the loss of asset value if a counterparty defaults).

3.2 Several of the American reports recommend a review of US capital requirements and an increase in capitalisation of NYSE specialists. The UK has its own capital adequacy requirements - if we were to adopt and enforce higher requirements, that would reduce the risk of any given price movement threatening the integrity of the system. But applying them in normal trading conditions would add to the cost of doing business, reduce liquidity in the market and possibly drive business away from the UK. The key question is therefore what degree of 'normal' volatility should firms be capitalised to handle.

3.3 The minimum standard for capital adequacy has been set by SIB and self-regulating organisations (SROs) must at least match it. These requirements had not yet been applied in October and are to be introduced progressively under the Financial Services Act between now and January 1989. It would be undesirable to make frequent changes to capital requirements and it will be some time before it is possible to assess what the level of price volatility is likely to be when the after effects of the break have been absorbed by the markets. SIB is, however, reviewing its requirements (including those relating to underwriting commitments) in the light of these events, and has the statutory power to adjust them speedily and flexibly if this proves necessary.

3.4 It is important that the formulation and enforcement of capital adequacy requirements should permit flexible application in time of greater volatility so as not to aggravate the situation. An inflexible approach, requiring automatic suspension from trading or immediate liquidation of particular positions, could in an adverse market cause defaults which might have been avoided by swift corrective action (such as the injection of new capital).

3.5 Banks who do investment business are covered by the Financial Services Act, but, under arrangements agreed between the Bank of England and SIB, responsibility for

monitoring the capital adequacy of UK-owned banks falls to the Bank. A lead regulator system has been developed to facilitate sharing of information between UK regulators and to enable prompt and co-ordinated action to be taken with an individual conglomerate.

3.6 Particular problems arise in enabling supervisors to exercise their responsibilities in an effective and co-ordinated way with regard to transnational companies without unduly increasing bureaucracy and costs. The extent to which overseas regulators of foreign groups supervise securities operations through UK branches varies from country to country. The Bank of England and SIB are pursuing as a matter of urgency their discussions with overseas regulators to ensure that each overseas firm operating in the London markets has an agreed lead regulator and to establish clear arrangements for supervising it.

3.7 The global nature of the market fall has underlined the importance for both regulators and Government of working in the longer term towards the international co-ordination and convergence of capital adequacy requirements for securities business.

Firms' Internal Control Systems

3.8 Each active participant in the markets needs effective

internal control systems so as to keep position risk and the risk consequent upon a counterparty default to levels compatible with its capital base. This is particularly important in a crisis and there is some evidence to suggest that some firms' systems fell short of the ideal. The Financial Services Act regime introduces new requirements on internal controls and it would seem desirable for the relevant self-regulating organisations (SROs) to give priority to satisfying themselves that their members' control systems are adequate.

Role of lending banks

3.9 In the USA, the flow of information to banks about their customers was identified as important and some difficulties were experienced there. As a consequence the Commodities and Futures Trade Commission (CFTC) recommends that banks should have better access to data on their customers' markets obligations (and should receive prompt notification of margin calls made to their customers by clearing houses).

3.10 In the UK, communication difficulties did not arise to any major extent between regulators, market participants and the banks. This was partly because many of the key participants are owned by banking groups, and partly because ICCH operates a Protected Payments System whereby its margin calls are made direct to the clearing member's

settlement bank. This procedure does not extend to the London Traded Options Market which relies on town clearing cheques.

3.11 It is however important that lending banks should have speedy access to accurate and reliable information in a crisis, and be sufficiently familiar with the markets and market procedures, to be able rapidly to reach informed commercial decisions on whether to extend lines of credit. A bank's assessments may need to take account of a borrower's positions on more than one exchange and the extent to which these increase exposure or reduce exposure through hedging.

3.12 Last October, the banks coped well in general, but there was some indication during the crash that some smaller Stock Exchange members who had borrowed from provincial branches of the clearing banks were experiencing problems because these branch managers were less familiar with The Stock Exchange than the specialist City branches who handle most of this banking business.

3.13 <u>The SROs should consider, in conjunction with the Bank of England and the clearing banks, whether any further steps can be taken to improve the arrangements between market participants and their banks, so that banks can make well-informed judgements quickly in times of difficulty</u>.

Centrally operated margin systems

3.14 All members of the relevant financial markets are subject to capital adequacy requirements. Futures and options markets are also supported by centrally operated margin systems.

3.15 The primary purpose of market members making margin payments to a central clearing house is to protect each member involved in the bargain from default by the other. The margin enables the clearing house to quarantee performance to each counterparty. The initial margin requirement is calculated by reference to historical volatility and the margin is topped up daily by variation margin calls whenever the price moves against the firm (with a corresponding payout to the other party) . If prices move sharply the clearing house may call for more margin during the day. If prices remain volatile, margin requirements will remain high. (Thus the initial margin currently required for the FTSE option writer now safeguards against a movement of 160 index points, whereas before the fall the margin only covered a 60 point move).

3.16 In the USA the CFTC argues that the primary role of margin is to provide financial security. It recommends the routine use of intra-day margin calls to reduce pressure on the settlement banks and enhance the ability of the

system to run smoothly at times of volatility; and a review of margin levels to include a "cushion" against sharp price movements. On the other hand, the US President's Commission (Brady) accepts that futures margin requirements are adequate for the primary purpose of protecting financial integrity, but argues for higher margins for the secondary purpose of deterring "speculation".

3.17 Although the role of speculation remains controversial, we do not believe that the level of speculation in the UK is execessive or that the operations of the relatively small London futures and options markets exacerbated the crash. Indeed we take the view that speculation normally plays a useful role by increasing liquidity and reducing volatility, provided that the amount of speculation does not become excessive. There is therefore no reason at the present time to discourage the growth of these markets by imposing artificially high margin requirements on certain types of transaction.

3.18 The current approach to setting margin requirements should succeed in protecting market integrity if price volatility remains within the bounds allowed for in setting the margin. If volatility exceeds those bounds, the system will be able to cope provided first that the clearing house rapidly increases its margin requirements and second that the market members are immediately able to meet those

requirements. If an individual member is unable to meet the new requirement, and defaults, the clearing house will need to cover any shortfall in the margin from its own resources.

3.19 Thus the lower the margin requirement, the more resources the clearing house itself should have to ensure the financial integrity of the system in the event of an increase in price volatility. ICCH has recently made external arrangements with third parties to provide backing for its obligations to its members amounting to £100m. The Grain and Feed Trade Association (GAFTA) has also increased its external arrangements. These arrangements are adequate in relation to the current exposure of ICCH and GAFTA, but SIB should keep them under review in relation to the level of business in the future. The London Options Clearing House (LOCH), which clears the LTOM, is a subsidiary of The Stock Exchange, which is considering increasing the separate guarantee arrangements which exist specifically for LOCH.

3.20 A sudden increase in margin requirements may be destabilising if it forces market participants or investors to liquidate positions at whatever price they can get in order to meet the new requirement. This will depend upon the extent to which market participants can draw quickly on other sources, principally the banks, to meet margin calls. (See paragraph 3.13 above). If

difficulties are foreseen, clearing houses may feel constrained from raising margin requirements too sharply when volatility increases. This factor needs to be balanced against the requirement to protect the clearing house by adding to the margin it holds and it is not always easy to judge how much flexibility is appropriate. This dilemma would be less acute if margin requirements for normal trading conditions were set at higher levels than has been the policy in the past. But although that might improve the financial security of the market in a crisis, it would have serious implications for the normal operation of the market by reducing market liquidity, increasing the cost of doing business and hence affecting London's competitiveness.

3.21 There is no evidence to suggest that the London futures and options markets caused or aggravated the fall and it would not be appropriate to impose higher margin requirements merely to discourage the growth of these markets. Clearing houses should continue to base margin requirements on their assessment of price volatilities, using existing analytical techniques. They should however consider the case for more frequent changes to margin requirements for futures contracts as price volatilities vary, so as to reduce the risk of having to make sudden large margin calls.

Counterparty default procedures for the equity market

3.22 The equity market does not have comprehensive procedures to guarantee settlement in full of all transactions. When shares are delivered into the TALISMAN system, The Stock Exchange guarantees payment (in most circumstances) to the seller. But this leaves two significant gaps:

(a) the time between the transaction and the date when performance of the transaction is due, which under the account system will normally be one to three weeks;

(b) an additional period where delivery is delayed beyond the due date - the settlement backlog includes many bargains up to a year old.

During these periods each member runs the risk of his counterparty defaulting.

3.23 The new proposals for capital adequacy, based on SIB's rules, would require a TSA member to have additional capital in relation to this counterparty risk. The requirement would be adjusted daily as the counterparty risk varied. When fully implemented, in January 1989, this system will help to ensure that each member could survive the default of another.

3.24 The Stock Exchange is considering an alternative to this approach, namely a centrally operated margin system for equities, accompanied by a Stock Exchange guarantee of settlement. This would operate in a similar way to the ICCH.*

3.25 Neither a centrally operated margin system, nor the capital adequacy based approach would be proof against a sharp and substantial increase in price volatility.

3.26 A centrally operated margin system would, however, avoid the disadvantages of leaving a longer gap between the date of the bargain and the date at which the new capital is required, of relying on continuous monitoring of capital

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Footnote

* Each party to the bargain would deposit margin with a central clearing house, to reflect the price movement which might occur during one day's trading. If the market price changed, additional margin would be called from the party aginst whom the price had moved (the seller in a rising market, the buyer in a falling market). This additional margin would be paid out to the winning party. The result should be that if either party defaulted, the margin already obtained from him should be sufficient to cover the cost of buying (or selling) the stock in the market during the day of default, so as to settle the bargin

for the counterparty at the original price.

against the requirement, and of leaving the innocent member with depleted capital when his counterparty defaults. It would enable the clearing house to guarantee performance to the innocent member. It is not yet clear, however, whether such a margin system would impose higher costs on members and users of the market than capital requirements based on counterparty risk.

3.27 Another protective mechanism which has recently been adopted by The Stock Exchange is to provide for the automatic closing out and netting off of all the outstanding bargains of a member acting as principal who defaults. This is designed to limit the size of the impact of a member's default on other members. (Where the defaulting member was acting as agent, the two principals would be put in touch with each other to settle the bargain, in accordance with existing practice.)

3.28 Similar arrangements apply on the LTOM, which is also undertaking a review of its procedures in the event of default, in particular the responsibility which its clearing members assume for the clients whose trades are cleared through them.

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3.29 There is real concern, particularly at The Stock Exchange and ICCH, that these guarantee systems and default procedures might be successfully challenged in the courts as being incompatible with UK insolvency legislation. The DTI is therefore preparing primary legislation to remove this risk, with the aim of introduction in the 1988/89 Parliamentary Session. The Bank of England, SIB, The Stock Exchange, LIFFE and ICCH have all expressed their concern that Parliamentary time should be found in that Session.

PART IV: MARKET MECHANISMS

Dealing Systems and market capacity

4.1 A number of the US reports have focused on the need for more capacity to handle a larger volume of trading; for more competition in the NYSE "Specialist System" to provide greater capacity and keener prices; and for measures which establish an orderly adjustment process once capacity limits have been reached.

4.2 In the UK The Stock Exchange study considers the well-published complaint from several quarters that it was difficult to get access to market makers during the most hectic days of the market adjustment. The study accepts that there were access difficulties - particularly for investors wishing to trade in foreign equities, but it attributes these primarily to the upsurge in volume to nearly twice the normal level (which itself is 3 times up on a year ago). Exchange members did execute 100,000 bargains per day, compared to a normal level of 60,000 before the fall. It is also noticeable that a few market makers - in particular those who previously were jobbing firms - attracted an especially high proportion of business, thus adding to the pressures on their in-house resources. Because of the increased price volatility, it was not always possible for institutional investors to

deal in as large a size as they are acustomed to in normal trading conditions.

4.3 The Stock Exchange argues that it would be uneconomic for members to maintain sufficient capacity to deal with infrequent upsurges in trading volume, but accepts that there should be more capacity to execute and settle transactions. This will be important in preserving the long term confidence of investors in using the UK market.

4.4 The planned SEAQ Automated Execution Facility (SAEF) will help in due course with execution, but not during "fast market" conditions (see paragraph 2.21 above), and problems may still arise if investors are unable to make contact with Stock Exchange members. This suggests the emphasis will have to be on increasing capacity if resort to "fast market" conditions is to be minimised.

4.5 It is impossible to say to what extent access difficulties were aggravated by deliberate refusal to answer the telephone, and The Stock Exchange study reaches no conclusion on this point. The Exchange is however introducing an electronic surveillance system which will enable it to monitor how long members take to answer telephones on the Exchange's switchboard.

4.6 Problems arose for small investors wishing to deal in unit trusts, and unit trust managers had difficulty valuing

their units when market prices were changing rapidly or not available. Some managers suspended dealings (particularly in trusts with exposure to Hong Kong where the market had closed). Other unit trust managers shifted to forward pricing and wider spreads between bid and offer prices so that investors were generally able to deal.

Clearing and Settlement Systems

4.7 Most of the US reports recommend a more co-ordinated approach to clearing and settling bargains, either by establishing a single clearing system for all US markets or through rapid and automatic exchange of information between the existing systems.

4.8 In particular CFTC found that during the market break firms and settlement banks tended to delay payment beyond the deadline and it was difficult to check quickly who was doing so in more than one clearing system.

4.9 When intra-day margin calls are made, sums due to the clearing house must be paid the same day, but sums due from the clearing house are not paid until the following day. Members awaiting payments may experience credit difficulties if their banks are nervous about the creditworthiness of the clearing house. This problem would be less acute as Brady points out if common clearing arrangements allowed payments due to one clearing house to

be netted off against receipts due from another.

4.10 In the UK, clearing is done by: TALISMAN for equities, Central Gilts Office (CGO) for gilts, LOCH for most Stock Exchange options, ICCH for other Stock Exchange options for LIFFE and for other UK futures and options markets (except grain which is cleared by the GAFTA Clearing House). Clearing for Eurobonds is provided by Cedel and Euroclear, and various other systems operate for other instruments.

4.11 Some information is already exchanged between these clearing systems, but closer co-operation between them is highly desirable. This could take various forms, ranging from routine exchange of information to full integration of computer matching and clearing systems, assured payments systems and a common guarantor. Close links could permit netting off between margin requirements arising from different markets, thus reducing costs to the business. The closest links will be possible between markets with similar characteristics. LIFFE and the Stock Exchange options market are already studying this, but the exchanges should consider developing closer links between all the London clearing systems.

4.12 The UK benefits from the trend towards globalisation of securities markets. It is widely recognised that proposals to establish trading links with overseas

exchanges should cater for the control of risk and exchange of information between clearing systems so as to avoid creating problems for clearing and settlement systems.

Stock Exchange Account System

4.13 Three features of The Stock Exchange Account System for equities merit attention:

(a) the length of the trading period (normally 10 trading days), during which a position can be "closed" so that the original seller does not have to deliver stock;

(b) the gap (normally five trading days) between the end of the trading period and the day when settlement is due; and

(c) the fact that settlement does not take place automatically on the due date. Until recently there was a very large backlog of orders, many up to a year old.

4.14 These three features, while they may increase liquidity, increase the size of the risk which the member runs if his customer or his counterparty member defaults, because they add to the total of unsettled bargains at any given time.

That would cause less prudential concern if there were a centrally operated margin system or effectively monitored capital adequacy requirements based on counterparty risk. TSA is introducing a Counterparty Risk Requirement which will be fully implemented by January 1989, but where neither party has performed his obligations the requirement will not apply to bargains until 31 days after Settlement Day. The requirement will therefore not provide a safeguard during the first 6 to 8 weeks after the bargain is struck against default accompanied by adverse price movements.

4.15 Changes to one or more of the features of the Account System would tend to reduce the scale of the risk, while changes to capital adequacy requirements would protect firms against it. If a centrally operated margin system were adopted, however, there would be less need for changes to the Account period on prudential grounds.

4.16 Changing the length of the 10 day Trading Period would also reduce the scope for investors buying and selling within the account, but it is an open question whether the current level of "speculation" is excessive or whether introducing restrictions would remove useful liquidity. There might also be consequences for the levels of short-term funding and stock borrowing required by members. Changing the gap before settlement or requiring automatic settlement on the due date would not have these

effects, but would be impossible without implementing the TAURUS proposals for share transfer without share certificates. Building the TAURUS system will take some time but timely enactment of legislation is required if it is not to be delayed.

4.17 Institutional investors normally settle by paying cash against documents and any changes to settlement procedure should avoid exposing investors to greater counterparty risk than at present.

4.18 Introducing rolling settlement (as in New York) would smooth the fortnightly peaks in movement of short-term funds and would bring UK practice more into line with those overseas markets (such as NYSE) which settle more rapidly.

4.19 These prudential and other concerns need to be considered alongside the preferences which members of the market and investors may have. Changes may involve additional costs. On the other hand, changes which reduce exposure to counterparty risk may well reduce the cost of safeguarding against that risk (either through capital requirements or marginning). <u>The Stock Exchange is considering the possibility of making changes to the Account System</u>.

4.20 The Stock Exchange has made considerable progress in reducing the settlement backlog, thereby helping limit the counterparty risk. The Exchange should maintain its efforts to ensure that all member firms reduce their backlogs and keep them down to acceptable levels.

Suspension or Restriction of Trading

4.21 Considerable attention has been given in the US reports to the question of "circuit breakers". On some markets a decision to suspend trading, or to restrict the way in which trading is permitted, is left to the discretion of the market regulators, who can take it in the light of the prevailing circumstances. An alternative approach is to have in place devices which will automatically trigger a suspension or restriction on trading when specific events occur. Devices of this kind can take many forms but since the crash attention has focused on "price limits". When the price moves outside a predetermined range, trading of the contract is automatically suspended under one variety of price limit. Another variety, introduced by the NYSE in response to the events of last October, restricts the use of automated trading systems when price limits are reached.

4.22 The Brady report and CBOT recommend that devices of this kind be co-ordinated across the markets for stocks, stock index futures and options.

4.23 Price limits have operated for some time in Japan, but their effect must be judged against the particular characteristics of that market.

4.24 The advantages claimed for mechanisms to suspend trading ("circuit breakers") are that

(i) regulators may need a breathing space to calculate the market exposure of market participants and to call for new margin or new capital to be put up before trading resumes;

(ii) the suspension of trading may lead market participants to stop panicking, and perhaps reverse or moderate the previous sharp price movements when trading resumes;

(iii) in markets where order-matching is important, the pause could be used to share privately-held information about the size of unfulfilled buy or sell orders amongst all market participants.

4.25 The disadvantages are that

(i) investors are deprived of the opportunity to deal. Small investors are particularly likely to be locked in. Unit trust managers will experience difficulty in valuing units. Large investors may

try to deal off the exchange (weakening the price-setting mechanism) or through an exchange abroad;

(ii) if the price movement continues unabated when trading resumes, the market may effectively be suspended for some time until a price floor is found;

(iii) the threat of suspension may lead to greater price volatility as investors try to sell before suspension is imposed, or try to sell immediately trading resumes in case it is suspended again;

(iv) futures and options markets may be unable to function satisfactorily while trading is suspended in the underlying product; they may continue to trade at prices which anticipate further movement in the underlying product;

(v) artificial constraints on the market may encourage market manipulation (for example if investors place stop loss orders near to a price limit, traders may try to move the price so as to trigger the orders).

These disadvantages are likely to be greater if suspension is for a lengthy or unspecified period than if trading is

suspended for a short pre-announced period of (say) 15-30 minutes. Specific action taken during the suspension and the procedures for re-opening trading are also relevant.

4.26 A number of US reports favour circuit breakers but there is no agreement on what the effects are of using circuit breakers or on which varieties offer the best prospects of a beneficial effect. There is even a dispute over the relative mertis of automatic and discretionary devices.

4.27 The New York Stock Exchange (NYSE) now cuts off programme trading when the principal index falls more than 50 points in a trading day. This system was criticised when it was activated on 14 April. It is alleged that sell orders which computer programmes were recommending were still being carried out manually by dealers but the activity of index arbitrageurs whose influence would generally have been to stabilise prices was curtailed by the enforced absence of computer trading. Some have claimed that an extra 30 points fall occurred as a result, and others believe that the unco-ordinated imposition of circuit breakers by the various US exchanges has led to difficulties.

4.28 Complications could arise if circuit breakers operated in some countries' markets but not in others. The result could be a sudden switch of business to markets which were still operating freely without circuit breakers, which could be disruptive for them if their systems were unable to cope. Those regulators operating circuit breakers might still be able to achieve the primary objective of protecting their market systems from overload, although they might not be as effective in their secondary aim of imposing a pause for reflection on investors.

4.29 The Stock Exchange does not operate any circuit breakers which prevent willing buyers dealing with willing sellers. Instead it can declare a "fast market" (see paragraph 2.21 above) to relieve market makers of the obligation of dealing at screen prices. Market makers can also protect themselves at other times by reducing the size of bargain in which they are willing to deal at screen prices, and at all times by widening their spreads between the prices at which they buy and sell. The Stock Exchange considers that this approach is preferable to suspending trading, which it argues is not appropriate to a market based on competing market makers.

4.30 LIFFE used to operate price limits, but found them unsatisfactory and abandoned them some years ago (except for the Japanese bond contract). There is thus no

conflict between the approaches of The Stock Exchange and LIFFE.

4.31 It is important to ensure that the systems designed to protect market participants and users (margin, capital adequacy etc) can in practice react quickly enough to sharp price movements. Trading may need to be suspended if surveillance, dealing, clearing or settlement systems break down or are in danger of doing so. That decision can best be left to the discretion of the exchange authorities, after consulting other regulators. It is not obvious, however, that automatic circuit breakers carry any clear advantage if no specific action is to be taken during the trading halt.

4.32 Nevertheless The Stock Exchange and LIFFE will need to assess the implications for UK markets if more circuit breakers are permanently adopted in US or other overseas markets. If the UK does not follow suit, business may be diverted to UK markets when breakers are used elsewhere and it would then be all the more important that the capacity of our systems and capital base of our market makers were sufficiently robust to cope with that business.

Computer Trading

4.33 Computer trading can be used to permit the simultaneous purchase or sale of several stocks on a stock exchange and was common amongst large US traders prior to the crash. Computers can be programmed to indentify the stocks to be bought or sold and in some systems can execute the trade. Programmes can be written to identify when to change the balance of a portfolio, either by trading in securities, or by trading in the futures markets (which is cheaper and quicker). The main strategies based on these techniques are index arbitrage and portfolio insurance.

(a) Index Arbitrage

4.34 Index arbitrage is a means of profiting from a discrepancy between the price of an index future and the price of an equivalent amount of the underlying basket of stock. A simultaneous transaction, buying one element and selling the other allows profit to be locked in, virtually without risk.

4.35 The main effect of index arbitrage should be to keep futures prices and prices of the underlying product broadly in step. This is desirable, but it cannot work if one of the two markets suspends trading or is expected to do so. In these circumstances, disruptive effects may occur.

4.36 This lends support to the need for co-operation between regulators but does not suggest any action against index arbitrage as such.

4.37 Indeed The Stock Exchange and LIFFE argue that there was not enough index arbitrage in London - because delays in updating equity prices on the screens underminded confidence at the time in the calculated FTSE index. Although with hindsight The Stock Exchange consider that screen quotes and the prices at which deals were struck moved fairly closely except for a few short intervals this was not known at the time. At times FTSE futures traded at a very large discount to the FTSE index. The exchanges believe that bearish sentiment was aggravated by the existence of this large discount, which could have been irradicated if index arbitrage had been able to operate more effectively.

(b) Portfolio insurance

4.38 Portfolio insurance using computers is an alternative to straightforward hedging: instead of selling futures now to secure guaranteed protection against a market fall, the investor programmes his computer to do so as soon as a fall begins. This approach assumes that futures can be sold at close to current price levels when a fall occurs.

In October prices slid too fast for most portfolio insurers to be able to do this as the supply of buyers of the futures dried up.

4.39 When used successfully computer programes, operating through the futures market, represent a cheap and easy way of "insuring" a portfolio against loss. US institutions relying on this technique may have chased prices up further before the abrupt fall than they would have done if the technique had not been used. The problem for these institutions was that the technique failed to provide the expected insurance against loss. The problem for investors at large may have been that because the market was driven too high it fell further and faster than it might otherwise have done.

4.40 The US Federal Reserve Board estimates that the use of portfolio insurance in the US has declined since the crash. Little portfolio insurance is done in London: The Stock Exchange estimate insured funds are certainly less than £250 million.

4.41 Amongst the factors which tend to inhibit both portfolio insurance and index arbitrage in the UK are stamp duty on equity purchases, the tax treatment of trading in futures, the use of screen quotations rather than transaction prices as the basis for calculating the FTSE Index, the lack of an automated dealing facility on The Stock

Exchange, spreads on equities, expiry procedures on LIFFE, the relatively small size of the UK futures market and the conservative attitudes of some institutional investors.

4.42 Index arbitrage has the beneficial effect of keeping prices on different markets aligned and it should not be discouraged. The impact of portfolio insurance programmes is more questionable, but the technique is little used in the UK. It is arguable that the various forms of computer-assisted trading are part of the normal range of available techniques, but the Stock Exchange and LIFFE should monitor the extent to which portfolio insurance is used in the UK and keep other techniques under review for potentially destabilising effects.

PART V: CO-OPERATION BETWEEN REGULATORS

5.1 The American reports identify a need for closer co-ordination between US regulators and some favour changes to their responsibilities. The structure of regulation in the USA is not our concern. In particular there is no parallel here to the split of responsibility between the SEC and CFTC. SIB has overall responsibility for regulating securities, futures and options. It needs to work closely with the Bank of England which has overall responsibility for the Banking System.

5.2 There is a need to promote international co-operation between securities regulators. A period of turbulence can be handled more easily if close working relationships already exist between regulators. These need to be developed both bilaterally and multilaterally.

5.3 Flexibility is important in responding to particular market developments. Each situation is unique and extensive planning would be inappropriate. But it is necessary to be able to respond quickly and for regulators to collaborate smoothly. Problems could for example arise if one market closes or suspends trading without consultation, while related instruments continue to be traded on another. Special arrangements may be necessary for monitoring and handling a firm which trades on more than one exchange. Additional margin calls (see

paragraph 3.20) or rule changes on one market can have repercussions on other markets.

5.4 In times of uncertainty in the markets it is essential that there should be clear lines of responsibility, efficient channels of communication and co-operation between regulators. These arrangements should be developed and strengthened in normal times so that when the need arises regulators are able to cope with the issues that arise urgently. The Bank of England and SIB will be keeping the existing arrangements under review, particularly in the light of the new regulatory system introduced by the Financial Services Act, to ensure their continued effectiveness.

VI MAIN CONCLUSIONS OF THE REPORT

6.1 Features of the markets, such as the relationship between futures and shares, did not play the dominant role in causing the market break. There is no evidence to suggest that the London futures and options markets caused or aggravated the fall and therefore no reason to restrict the growth of those markets.

6.2 The market and regulatory mechanisms in London were able to cope so as to maintain the financial integrity of the market and ensure the performance of bargains. Although some investors experienced difficulty in dealing during the crisis, the London markets remained open throughout and handled a large volume of business.

Prudential Regulation

6.3 SIB is reviewing its requirements for capital adequacy, in the light of the events of October (paragraph 3.3).

6.4 The Bank of England and SIB are pursuing their discussions with overseas regulators to ensure that each overseas firm operating in London has effective supervision. It is important for both regulators and Government to work in

the longer term towards the international co-ordination and covergence of captial adequacy requirements for securities business (paragraphs 3.6 and 3.7).

6.5 The relevant SROs should give priority to satisfying themselves that their members' internal control systems are adequate (paragraph 3.8).

6.6 The SROs should consider in conjunction with the Bank of England and the clearing banks whether any further steps can be taken to improve arrangements between markets participants and their banks so that banks can make well-informed judgements quickly in times of difficulty (paragraph 3.13).

6.7 ICCH and GAFTA have made external arrangements with third parties to provide backing for their obligations to their members in the event of a default, and LTOM is considering increasing its arrangements. SIB should keep all these arrangements under review in relation to the level of business in the future. (paragraph 3.19).

6.8 Clearing houses should continue to base margin requirements on their assessment of price volatilities, but consider the case for more frequent changes to margin requirements when price volatilities vary (paragraph 3.21).

6.9 The Stock Exchange is considering whether to introduce a centrally operated margin system for equities; and has recently adopted procedures for automatic closing out of positions in the event of a default (paragraphs 3.24-27).

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6.10 All market authorities are concerned that the legal position on default procedures in the event of insolvency should be clarified in the 1988/89 Parliamentary Session (paragraph 3.29).

Market Mechanisms

6.11 The exchanges and clearing houses should consider developing closer links between all the London clearing systems. (paragraph 4.11).

6.12 UK Exchanges developing links with overseas exchanges should consider measures to control risk and to exchange information (paragraph 4.12)

6.13 The Stock Exchange is considering the possibility of making changes to the Account System. (paragraph 4.19).

6.14 The Stock Exchange should maintain its efforts to ensure that all member firms reduce their backlogs and keep them down to acceptable levels (paragraph 4.20).

6.15 Automatic halts to trading ("circuit breakers") offer no clear-cut advantages, but The Stock Exchange and LIFFE will need to assess the implications for UK markets if more circuit breakers are permanently adopted in US or other overseas markets (paragraphs 4.31-32).

6.16 It is arguable that the various forms of computer-assisted trading are part of the normal range of available techniques, but The Stock Exchange and LIFFE should monitor the extent to which portfolio insurance using computer programmes is used in the UK and keep other techniques under review for potentially destabilising effects. (paragraph 4.42).

Co-operation between regulators

6.17 In times of uncertainty in the markets it is essential that there should be clear lines of responsibility, efficient channels of communication and co-operation between regulators. These arrangements should be developed and strengthened in normal times so that when the need arises regulators are able to cope with the issues that arise urgently. The Bank of England and SIB will keep existing arrangements under review, particularly in the light of the new regulatory system introduced by the Financial Services Act, to ensure their continued effectiveness (paragraph 5.4).

ECONOMIC BACKGROUND

1 In retrospect the peak of the long bull market can be seen to have occurred in the summer of 1987. Most equity markets peaked in July or August and drifted slowly down over the rest of the summer. In London, there were some signs of increased volatility. On 6 August, the FTSE index fell by a then record of 56 points, on publication of poor trade figures. Turnover on all markets remained high. There was a short-lived recovery from the summer drift in September.

2 In October, there were several economic considerations which particularly affected market perception of the economic situation:

i) how the US trade deficit was to be financed, in the event that falls in the value of the dollar dissuaded foreign investors from purchasing US debt;

ii) the volatility of the dollar;

iii) a rising trend in interest rates

iv) a belief that the rapid rise in stock values during 1986 and 1987 had led to their becoming over-valued.

3 On 14 October, two events particularly focused US market concerns. The August US trade figures revealed a deficit of $15.7 billion, well above market expectations. This precipitated a fall in the dollar and a rise in the yield of US Treasury bonds which made equity investment look less attractive. Second, legislation was filed which would eliminate tax benefits associated with the financing of corporate take-overs. This initiative was particularly unwelcome to risk arbitrageurs whose selling activity particularly centred on take-over candidates.

4 The week before the break the Dow Jones index fell 95 points (a then record) on Wednesday 14 October, and a further 57 points on Thursday. In London, the FTSE index in response fell 50 points over the two days but on Friday 16 October, when the Dow fell 108 points, the London markets were closed by a freak storm.

5 Over the weekend, the US Treasury Secretary, James Baker, exhorted the German Central Bank to stimulate its economy, and was perceived to have been warning that otherwise US support for the dollar would not be forthcoming. This was taken to indicate that the future of the Louvre accord was in doubt. In addition, computer models operated by portfolio insurers recommended heavy selling in line with the heavy selling of futures which the insurers had already entered into during the preceding week.

6 This atmosphere led to the unprecedented trading conditions on 19 October, with heavy falls recorded on all world markets. In London, the FTSE index fell 250 points; in New York, the fall on the Dow was a record 508 points. On Tuesday 20, there was a further fall in London of 251 points, although New York, after a day in which the mechanisms of the financial markets came closest to breaking point, subsequently closed up over 100 points.

7 There is no clear economic rationale why markets rose so much only to fall so sharply in October. However, the factors identified above seem to have led the markets in October to believe that the dollar (which had declined by about 3% since August) was about to go into sharp decline. That could well have provoked a sharp rise in US interest rates, which were already edging up, and perhaps rises in other major industrial countries. The prospect of rising interest rates sending an already fragile US economy into a recession which could adversely affect world growth, apart from making equity holding itself less attractive, may well have reduced confidence in industrial prospects and forced a re-assessment of equity prices. In this sense, the October fall may have reflected fears about the lack of progress in reducing the current account imbalances, which pose a threat to world growth, and the ability of the G7 countries to continue to act together to overcome these problems.

8 If so, these fears may have proved the last straw to equity markets, which objectively were already showing signs of being over-valued. The economic rationale for existing stock market prices in late 1986, following a 5 year bull-market, might have appeared defensible: by August 1987, after an accelerating rise in prices over the year, that was less apparent. The Brady Report comments that by then, US stock valuation "challenged historical precendent and fundamental justification". By October Japanese price/earnings ratios had doubled since the start of the year, to average levels which would appear surreal in other countries. London, where prices had risen by nearly a half since the start of the year, had the highest price/earnings ratios since the slump of 1973/74. The widening gap between dividend yields on equities and redemption yields on gilts hardly suggested holding equity for long-term income flows. And there was very little in terms of economic performance which could explain why equity prices were rising so quickly.

9 London was very much at the forefront of the 1987 bull-market, rising as fast as Tokyo and New York, and considerably faster than Paris or Germany. Over the whole of 1987, London proved more buoyant than other markets except Tokyo.

a International Stock Exchange: Report by Quality of Markets Unit (to which the London International Financial Futures Exchange contributed) and letter from the Chairman to the Secretary of State for Trade and Industry

b Report of the Presidential Task Force on Market Mechanisms - the Brady report.

c US Federal Reserve Board: oral testimony to Senate Committee by Chairman Greenspan

d US General Accounting Office report

e Four reports by the US Commodity Futures Trading Commission

f Report by the US Securities Exchange Commission

g New York Stock Exchange: "An Overview of Program Trading and Its Impact on Current Market Practices" (The Katzenbach report)

h Report of the Chicago Mercantile Exchange

i Chicago Board of Trade comments on Brady Report

j Report of the US President's Working Group on Financial Markets

INTERNATIONAL STOCK EXCHANGE: QUALITY OF MARKETS REPORT

1. The Quality of Markets Committee of the International Stock Exchange has produced a survey of trading conditions during the market break in its Quarterly Bulletin. It provided the post Big Bang market with its first test of sustained selling pressure.

UK Equity Market

2. The FTSE 100 index fell 22% in the course of the period from 14 to 20 October, with further declines in the following two weeks followed by a period of stabilisation until the year-end. The period around mid-October also saw a substantial increase in volatility, with indexes moving a couple of hundred points in the course of a day's trading. Whilst this extreme volatility abated together with the marked fall in turnover, the market still seemed initially more volatile than before the crash. There were six trading days in November and December when movements in excess of 50 index points were recorded.

3. The extent and speed at which the London market fell may have been exacerbated by the high levels of equity held by UK institutions as a proportion of their total portfolio. They were also short of liquid funds because of underwriting calls. In addition, UK companies do not buy-back their own stock as in, for example, the USA, which can provide price support to a market.

4. Trading volumes were unprecendentaly high, at over 100,000 bargains on two days; trading in alpha stocks was especially high - not surprising given their greater liquidity and apparent desire of institutions to reduce their equity exposure swiftly; they accounted for 68% of turnover by value, compared with levels of 50% in normal trading conditions. Turnover in other stocks rose at the time of the fall but declined thereafter. Customer business accounted for the bulk of trading; intra-market turnover fell from 50% to 40% of total turnover a higher proportion of intra-market business is now carried out through inter-dealer brokers.

5. The Committee consider that the "fast market" indicator (which makes all prices quoted on SEAQ indicative) had worked well. It provides a safety valve at times of very heavy dealing pressure and high volatility to prevent market makers being 'hit' for large trades if their prices were momentarily out of line with the market. Without its use, market makers would have pulled out of the market, reduced quotation size or put quote prices below the current market bid quote, all of which would have been more damaging for the market than indicative price displays. The indicator was used sparingly and, save on 20 October, for periods of less than one hour at a time.

6. The survey finds that in the three weeks after the fall, a large number of small buy orders were matched with a lower number of high value "sell" orders. 80% (by number) of customer transactions were for purchases. The conclusion drawn is that individuals were net buyers in the period of the main fall on the market.

7. Market makers who were anyway long of stock at the beginning of October 19 not least because of the loss of the previous Friday's trading day had to absorb net customer sales on the day in excess of £250m. Subsequently, these positions were unwound at a rate which, in the report's opinion indicates a successful pricing strategy. Substantial buying occurred in early November. No market maker failed or withdrew from the market

8. The liquidity of the market deteriorated on the afternoon of Tuesday 20 October but not before. This was reflected in increased spreads * (which more than doubled in alpha stocks from 1.2% to 3%),an increased touch price * from 0.8% to 2%, a reduction in total market size * and the

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* The "spread" is the difference between the prices at which an individual market maker will buy and sell; the "touch" is the difference between the best buy and sell prices available in the market; and the "size" is the maximum number of shares for which the quoted price holds good.

emergence of significant size premia. The spread and touch in beta and gamma stocks also widened (from a higher base) so that, by October 30, the 'touch' in beta stocks was over 4%, up from 1.8%. The size of the market fell by two thirds (an indication of declining liquidity) and the maximum quote size for beta stocks is still well down. The touch for gamma stocks doubled.

9. The report's examination of movements in individual stocks concludes that those with high dollar exposure performed proportionately badly.

10. The report accepts that, with trading at such exceptional levels, there were delays in access to market makers. It concludes that, save for brief periods, transactions were being executed at quoted prices even when a fast market had been declared. These brief divergences could arise from technicalities in the collection of data. The Committee is encouraged by the relatively few divergences, as indicating a fair market.

11. The report also concludes that the visibility of the UK market did not add to its volatility; the difference in volatility between the (most visible) alpha stocks and other less visible stocks including beta stocks was negligible. This is seen as an indication that prices did not collapse like dominos but only in response to selling pressure; and the speedy dissemination of information in a

highly visible market leads to more efficient markets; market makers are not thought to have reduced prices in panic.

12. Evidence about whether foreign investors precipitated the UK market decline by selling their holdings in UK equities is unavailable; but ADR holders do not appear to have sold back into the UK. So there is no reason to assume heavy overseas selling.

13. Since October, spreads and touch prices, at least in alpha and beta stocks, have recovered but remain at around double pre-crash levels. The spread on gamma stocks has not improved, an indication of illiquidity in that area. The report recommends steps to increase the commitment of market makers in these stocks. Total market size and the maximum quote size in all categories of stock has improved, and the size premium has declined.

Foreign Equity Market

14. SEAQ International also had record volume levels in late October, some 50% higher than September's average at a value nearly 70% up. Selling pressure was heavy and at times indiscriminate especially on 19 and 20 October when prices were indicative but the market managed to transact over 40% more bargains for its customers; this suggests that delays in reaching market makers were caused more by

the constraints of firms' resources than by a refusal to answer the telephone. Spreads widened to up to three times the pre-break levels (and have since fallen); some market makers considered that new business was still attracted to London because of its greater liquidity.

15. The report notes considerable differences between individual countries. The level of trading in French equities rose sharply but fell in German stocks and was unchanged in US stocks. Trading in Japanese stocks was also high, at double the average bargain size. The market in Australian equities which is not exclusively professional seems to have attracted private investors or purchasers; with institutions selling stock.

16. The overall conclusion is that the market performed well, despite inevitable capacity constraints which led to delays in obtaining accurate price information.

Derivative Products. (Futures and options)

17. This part of the report was produced in consultation with LIFFE. It notes that the UK is different from the US in that UK trading volumes in derivative products are much less significant in relation to the underlying cash market, representing about 20%. The risk of "gridlock" on UK stock exchanges is correspondingly less. But there were price anomalies between cash and derivative markets

which can best be resolved by the facilitation of trading strategies which reinforce the connection between the markets.

18. At the time of the fall, many investors were exposed to price falls in the market because the writing of FTSE put options in the previous few months had been seen as a safe means to enhance investment yield. On October 19 with markets tumbling and the options becoming extremely unprofitable, these investors tried to close out their positions, spreads widened, prices were very volatile and there was a considerable excess of put options over call options until the afternoon. In the options on individual stocks, spreads widened sharply. The average size of trades reduced sharply, around 90% of trades being for 10 or less contracts. Intra-day margin calls were made twice on 20 October. The market suffered from some uncertainty over the quality of data being received from the cash market.

19. On LIFFE, FTSE futures (which only account for 3% of market activity) traded at record volumes of over three times the usual average , with exceptional price volatility of around 500 points in a day's trading. The futures were trading, on average, at a 5% discount to the quoted index level which may have caused alarm in equity dealing rooms for short periods. Spreads were raised, (up to 4% for a while on the morning of the 20 October) but

the average spread for the week was 0.5% or less. Intra-day margin calls were made on 19, 20 and 22 October (though they were not applicable to all contracts); and initial margin was increased on 21 October.

20. The report finds little evidence of arbitrage activity on the UK markets because of tax treatment, lack of automatic execution facilities and cash settlement procedures. At the time of the crash, arbitrageurs found their trading no longer risk free because of the pace of price changes and difficulties in executing orders.

21. The report concludes that the absence of strategies such as arbitrage ensured that the discrepancies between cash and derivative markets were not eliminated. The discount appears to have been caused by an expectation amongst sellers that they would not be able to deal in the cash market. They accordingly sold futures. Alternatively there may have been a suspicion that price data in the cash markets was unreliable.

22. The report believes that development of techniques such as index arbitrage would help to prevent divergence between cash and derivative markets to enable efficient risk transfers and more speedy execution services in the cash market are needed to improve the efficiency with which business is transacted. The SEAQ Automatic Execution Facility is one of the mechanisms by which this may be achieved.

Presidential Task Force on Market Mechanisms

The President of the USA set up the Task Force on Market Mechanisms, headed by Nicholas Brady. It concluded that the fall in the markets was triggered by bad US trade figures and proposals to alter US tax legislation which would make take-overs less attractive. Once prices began to fall, institutions using portfolio insurance programmes added to selling pressures, as did other investors who anticipated this portfolio insurance behaviour.

2. The selling momentum strained the capacity of the system as US markets handled record volumes. Market makers were not able to smooth the fall in prices. Problems were experienced in clearance and settlement systems.

3. The separate exchanges for stock and futures operate as a single marketplace, but prices did not move in line during the crash.

4. The report recommended greater consistency in the regulation of individual exchanges, and a review of the ability of the specialists on the New York Stock Exchange to cope with large order imbalances.

5. The report recommended that a single agency, such as the Federal Reserve Board, should co-ordinate regulation on

issues which affect all markets, that clearing systems for the markets should be unified, that margins should be set at consistent levels across the markets that circuit breakers should be implemented on a co-ordinated basis across the markets and that more information should be exchanged between markets.

US Federal Reserve Board

The Chairman of the US Fed testified before Congress. The Fed's actions during the break had been designed to reduce irrational demands for liquidity, and to meet unusual demands.

2. The historically very large and rapid decline in prices may have been attributable in the USA to the use of portfolio insurance, the technological ability to place large orders suddenly, fear that order execution, margin and clearing systems were breaking down and the disconnection between stock and futures prices.

3. The Fed Chairman emphasised that the stock and futures exchanges need to be seen as a single economic marketplace, and that the system had insufficient capacity to cope with the level of business. Circuit breakers to allow regulators to react might be the best solution when capacity proved inadequate, although they were inherently destabilising.

4. Either a single clearing organistion or greater co-ordination between clearing organistions was necessary, for example to avoid strains on liquidity because margin payments arising on different markets could not be netted off.

5. The level of margin required careful review and should be set by the markets, subject to Federal oversight.

6. The Federal Reserve Board should not have sole authority over the markets. Increasing the Fed's role might be interpreted as an indication that the Fed would support a wider range of financial institutions.

US General Accounting Office

The GAO report noted the problems experienced by the New York Stock Exchange in routeing orders and reporting bargains and recommended improvements in the automated operational systems. It also recommended contingency planning by self-regulatory organisations, to include information exchange and co-ordination of decision-making.

2. It recommended a role for the Federal Reserve Board in intermarket regulation.

3. It recommended greater co-operation between regulators in the longer term, to include review of margin requirements and the need for better capitalised market making.

Commodity Futures Trading Commission

The CFTC produced four reports. It found that the clearing and settlement systems were able to handle record flows of margin, that no investors experienced losses due to default and that no futures commission merchants failed.

2. The CFTC concluded that the margin system was adequate to protect market participants against the risk of counterparty default and saw no need to set margin at artificially high levels to discourage speculation.

3. The CFTC recommended that information about trading halts and delayed openings on the NYSE should be passed rapidly to the futures exchanges. It also recommended that exchanges should have co-ordinated plans for emergency closure of exchanges.

Securities and Exchange Commission

The SEC concludes that the US futures markets did not cause the break, but did aggravate the speed of the fall. Some investors sold in anticipation of portfolio insurance selling. NYSE specialists were unable to maintain orderly markets. Delays occurred in routeing orders between regional exchanges and the NYSE. Both stock and options markets suffered from volatility, order imbalances and trading halts.

2. Members of the SEC were divided on whether to seek the sole responsibility, currently shared with the CFTC, for regulating futures based on stock indices.

3. The SEC recommended higher capital requirements for NYSE specialists, increased capacity for the NYSE Designated Order Turnaround system and faster clearing procedures. It also recommends better monitoring of clearing members, and improved co-ordination of clearing and settlement systems.

4. The SEC recommends an express probition of "front-running" whereby a person trades on inside knowledge that a bargain in the same or a related instrument is imminent.

5. The SEC favours an increase in margin requirements for futures contracts to 20-25%

New York Stock Exchange

A study by Nicholas Katzenbach was commissioned by the NYSE. It found that the NYSE's Designated Order Turnaround system was unable to cope with the flow of orders during the break, and because quoted prices could not keep up with the prices at which investors wished to deal index arbitrage could not operate effectively. Portfolio insurance contributed to the speed of the price fall, but not necessarily to its size.

Chicago Mercantile Exchange

The CME found that because prices on the NYSE could not be relied upon, futures prices fell below stock prices. This uncertainty, together with the NYSE "uptick rule" (forbidding short sales when the last price movement was a fall) discouraged index arbitrage which would otherwise have kept prices in line.

2. The CME argues against a ban on either portfolio insurance or index arbitrage.

Chicago Board of Trade

The Chicago Board of Trade submitted a report to the Brady Commission. Its main findings included:

- the break was caused by worldwide uncertainty and fear about the US economy

- futures markets did not cause the decline and performed their hedging and risk-transfer functions admirably

- the CBOT markets remained open throughout, without trading halts

- the CBOT increased futures margins ten times during October reflecting increased volatility.

- all margin calls made by the clearing house were met and the CBOT markets maintained their financial integrity

2. The Board's recommendations include

- CFTC should retain jurisdiction over stock index futures

- futures margins should remain under the control of futures exchanges and not be raised to prohibitively high levels

- price limits should be established for all stock index futures

- daily exchange of information between futures exchanges (from the end of 1987) will improve financial assessment of clearing members, whereas consolidation of clearing houses would be a dangerous concentration of risk in one place

- more competition should be introduced into the NYSE specialist system

- markets should remain open, and the problem of trading halts and delayed openings on the NYSE should be examined

- if trading halts are imposed they should be instituted on a uniform basis under pre-set conditions and announced publicly when triggered

- capital requirements for the futures industry should be reassessed in relation to position risk.

US President's Working Group on Financial Markets

The US President set up a working group comprising representatives of the US Treasury, Federal Reserve Board, SEC and CFTC.

2. The group recommends that all relevant US markets should introduce a circuit breaker which would automatically halt trading for one hour if the Dow Jones Industrial Average declined 250 points from its previous day's closing level. 250 points is a wide gap and 19 October 1987 is the only occasion on which such a circuit breaker would have been triggered in the past. The group also proposes that a fall of 400 points would trigger a two hour halt.

3. The group proposes a series of studies of clearing and settlement procedures designed to improve liquidity.

4. The group proposesto remain in existence so as to improve co-operation between regulators, but makes no other recommendation on contingency planning.

5. The group does not recommend raising margin requirements for futures. Nor does it recommend restrictions on computer trading.