

FINDING A SCAPEGOAT

USUAL SUSPECTS – BUT WHO'S GUILTY?



by **LESLIE V. HOSKING**

The search for reasons and scapegoats in the aftermath of the crash turned the spotlight, predictably, on techniques of futures trading. But this focus on program trading and portfolio insurance may be undeserved, according to evidence in American investigations.

On Tuesday October 6, 1987, the Dow Jones fell a record for that time of 95 points amid rumours that major banks planned to raise their prime lending rates. The next day they did, and a week later Chemical Bank raised its prime rate to 10 per cent, precipitating a new record fall of 108 points.

On October 14, the United States Government announced that the trade deficit for the month of September did not narrow as expected. In fact, the September deficit was more than \$15 billion, twice that of the entire year's deficit of 1976. At the September rate the US trade imbalance would be more than \$200 billion, perhaps as high as \$300 billion.

In the Persian Gulf in early October the Americans fired on and destroyed an oil production platform. The Iranians tried to shoot down United States helicopters and fired at oil tankers flying the United States flag.

In early October a disagreement erupted between the United States and Germany over interest rates and dollar values. Treasury Secretary James Baker over the weekend of October 17-18 warned the Germans to "toe the mark".

The Democrats in October, in the face of the massive United States deficit, again made strong representations for increases in taxes. Reagan refused.

At the close of business on Wall Street on Friday October 16, the Dow hovered above the 2200 points level, following the longest and strongest bull

run in market history.

On October 19, 1987, the Dow fell 508 points or 22.6 per cent in a single session on a turnover of 604.3 million shares.

The cumulative effects of the macro-economic conditions of the US economy, tensions in the Persian Gulf, tensions amongst the G-7 nations, uncertainty in foreign markets and so on have been ignored, however, by various individuals who have nominated stock index futures and options, program trading, portfolio insurance and computers as either causing the crash or exacerbating the fall.

This is sheer nonsense. Certainly computers were a factor in the crash. So were telephones, facsimiles, quote machines and other modern technological tools. But those who ignore economic conditions and world tensions, and blame traders and trading techniques for major market movements, are ostriches whose heads have been in the sand too long. They have missed what was going on around them.

Much of the public, including many high-profile individuals, do not understand even the basics of futures and options markets, let alone advanced trading techniques such as portfolio insurance and computerised index arbitrage. Thus it has been the fate of the futures industry to be the coveted scapegoat — the target of irrational criticism at times of crisis.

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The purpose of this paper is to explain the development of futures trading techniques, particularly as they are applied to share markets, examine the recent volatility of the share markets in the context of whether futures trading was an influence, and to express some view about the profile and future of futures in the post-crash environment.

Portfolio insurance

Portfolio insurance is a sophisticated new hedging strategy. Its goal is to protect against loss in equity value while retaining some participation in price appreciation.

A typical portfolio insurance program attempts to assure a minimum return over a specified period, say 0 per cent over three years. The "cost" of the insurance is the under-performance of the portfolio in a rising market. The portfolio insurer arranges and executes the program for a portfolio comprising the assets of many investors. There are about 20 specialist portfolio insurers in the US protecting in excess of \$US50 billion in assets for pension funds etc.

Portfolio insurance strategies were originally created and carried out directly in the cash markets. In this case, an initial hedge position is created by allocating part of the portfolio to equities and part to bills or bonds. The hedge is dynamically adjusted to increase protection when the market is falling and to decrease protection when the market is rising. In a rising market, for example, the equity portion is increased while the bill or bond portion is simultaneously reduced.

While direct cash market portfolio insurance still occurs, most current applications involve stock index futures, because of the relatively greater liquidity, speed of execution and lower commissions associated with futures trading. Portfolio insurers generally take a long position in stocks which is partially hedged by a short position in the index futures. Index futures are then sold in a declining market and bought (usually to offset the original short) in a rising market.

Program trading

Stock index futures were developed in 1980-81 on the basis that it was highly improbable that a quantity of stocks could be readily assembled to deliver against the futures contracts. A cash settlement expiry procedure was therefore developed. It was widely held that because of cash settlement the futures contract would not tend to correlate the immediate movements of the underlying stocks during the life of the contract.

However, a mathematician named

Ed Thorp, living in Irvine, California, found that a "proxy" of about 30 or so stocks moved in a predictable correlation with 95 per cent of the value of the Standard & Poor's index and could be arbitrated against the Standard & Poor's futures contract. Thorp identified that stocks yield dividends over the duration of the arbitrage while the futures contract yields nothing. But the futures contract can be traded on a margin of only 10 to 20 per cent of the price of the underlying stocks, which leaves 80-90 per cent available for investment elsewhere, probably at a higher yield than the dividends. There are other factors to consider — for example, the futures contract costs one commission whereas the purchase or sale of the proxy stocks costs a multitude of commissions, and this element must be included in the sums.

Thus, at any given moment, cal-

on many stockmarkets due to the limitations on short-selling.

Nevertheless, these inefficiencies can be overcome by widening the gap between the futures price and the stock prices in the basket. Through experience and experiment over time, the program traders developed efficient programs which yielded guaranteed profit by allowing for executions at prices away from the trigger prices.

Later, the New York Stock Exchange quite inadvertently improved the arbitrage exactness by introducing an innovation aimed at market efficiency. The exchange developed a communications network which allowed brokers to send their customers' small and medium-sized orders from their offices direct to the specialists at the post. These orders are treated as a market order and are therefore traded almost automatically. The market in any stock on the New York

The Superdot system...an electronic highway speeding money to whatever market offers the best return.

ulation of the yield from the anticipated dividends on the stock versus the yield from, say, T-Bills of comparable duration — plus the relative costs of acquiring and disposing of the futures and stocks — gives a "fair value" for the futures contract vis-a-vis the stocks. When the futures price rises above that price, sell futures and buy the proxy stocks; when the futures price falls below fair value, buy futures and sell the stocks.

Now, all this sounds very nice on paper, but can such trading actually be effected on the stock markets and the futures markets? Not all stocks on all stockmarkets are always liquid. The same applies to stock index futures on futures exchanges. A lot of individual orders have to be sent separately to the floors for execution at prices which are being determined by a continuous open-auction process. Moreover, the game can effectively only be played in one direction

Stock Exchange with a capitalisation in the top 20 per cent of the listed issues would be liquid enough to execute an order of a thousand shares or less immediately and automatically.

Through this system, called DOT (Direct Order Turnaround) and now Superdot, split-second transmissions and executions of baskets of stocks can be achieved against futures contracts which are also efficiently executed in the extremely liquid open-outcry pits of the CME's S&P 500 Stock Index Contract. "An electronic highway speeding money to whatever market offers the best return," says a trade magazine of the Superdot system.

Meanwhile, the growth of index funds has caused a huge pool of money, well into hundreds of billions of dollars, to be invested in all the stocks making up the futures contract. This means that the index funds can trade in both directions



The Sydney Futures Exchange trading floor — on October 20, index arbitrage was out of the question.

with less concern about short-selling rules. With an underlying pool of stocks, the funds can sell against their portfolio in Wall Street and buy the futures in Chicago with the assurance that the stock is already covered at a lower price.

Futures and market volatility

Rarely a week goes by that program trading is not blamed for some perceived ill in the stockmarket. If the stockmarket is volatile, then program trading is to blame. If the market is down sharply, program traders are likely to be nominated as the cause.

The accusers advance a simplistic argument against program trading.

- They have claimed that the computer has triggered the sell signals which have caused the massive sell-offs in the stockmarket.

- They have claimed that the computer has triggered the sell-off in the stock index futures contract which has had a negative influence on sharemarket confidence.

- They have claimed that a reaction on the sharemarket has been turned into a rout because computer-calculated prices are triggered, unleashing massive selling waves in futures and stocks.

Excluding the evils of the computer,

futures trading has been cited as the cause or the negative influence in sharemarket volatility.

- It is claimed that the low down-payment, the deposit, permits the speculator to exert undue influence on the sharemarket.

- It is claimed that futures divert risk capital away from more worthy and productive sectors.

- It is suggested that futures markets operating without price limits exacerbate sharemarket movements.

And so on and so on.

None of these claims has ever been supported by proof. Studies and investigations of such claims and of the relationships between the futures markets and the cash markets or the capital markets have found absolutely no basis for the claims. In fact, they have demonstrated reductions in volatility of the cash markets since the introduction of the derivative futures contract, and have shown other evidence of futures trading performing its correct economic functions vis-a-vis the cash and capital markets.

Some trading anomalies have been identified in various crisis situations,

including the October 1987 crash. Program trading and portfolio insurance did not work on October 19 and that fact will be explored later in this paper. But as to causes or negative influences, these claims are made by ill-informed or mischievous individuals who are at best naive and at worst irresponsible.

Program trading is simply another manifestation of arbitrage, a market force which generally keeps related markets in line and provides stability.

A decline in stock index futures markets followed quickly by a decline in sharemarkets is merely evidence of an efficient marketplace. In fact, the event which would reflect distortion, if not possible manipulation, would be the failure of one market to be followed by the other.

The existence of stock index futures markets actually coincides with one of the greatest bull markets in market share history. It would be equally nonsensical to claim that stock index futures are therefore responsible for the rise in stock prices.

But the most compelling argument in Australia against the claim that program trading causes a net bearish influence on the stock market is that the mechanics of the marketplace are not all conducive to program trading. There is no DOT or Superdot, short-selling is limited and markets are relatively inefficient, thus not attracting levels of business likely to be influential on the marketplace.

Even in the US, the short-selling rules, being a sale only on upticks, inhibit the selling of stocks and buying of futures at the behest of a computer program.

Finally, even a cursory reading of two major studies conducted in the US by the Securities and Exchange Commission and Commodities Futures Trading Commission will disclose that the 4.8 per cent fall in the Dow Jones on September 11 1986 and the 115 point fall in the Dow Jones on January 23 1987, the two sharpest falls in the Dow Jones before October 1987, were in no way connected with share-index-related trading.

The Securities and Exchange Commission investigation of September 11 came to this conclusion:

“...the magnitude of the September decline was a result of changes in investors’ perceptions of fundamental economic conditions rather than artificial forces arising from index-related strategies.”

The Commodities Futures Trading

Commission investigation of the January 23 decline decided:

"The staff found that index-related trading was not very significant during the narrow time period in which stock and futures markets peaked and began to fall rapidly. Furthermore for the entire day stock trading was smaller in magnitude relative to total volume than was found on either 11th or 12th September. Nor did the study find any evidence of manipulative activity within the futures market. None of the largest net traders during the key intrading periods examined appeared to have caused the price to drop, nor to have been positioned to profit from it. The analysis indicates that the price drop on 23rd January was most likely a correction to a very rapid moving stock market. After that correction the stock market rose to new record highs."

Crash – round up the usual suspects.

The October crash has resulted in the usual search for reasons and scapegoats. Highest on the list of suspects are program trading and portfolio insurance.

Investigations have been initiated in the US by the Securities and Exchange Commission and Commodities Futures Trading Commission into the events in the stockmarket and stock index futures markets.

Studies are being conducted by the Sydney Futures Exchange of the events as they occurred in Australia.

The same areas as covered in previous investigations of market declines, expiration day effects and triple witching hours will be examined again. These will include:

- Arbitrage activity between cash and futures.
- Portfolio insurance activity.
- Performance of exchange systems.
- Adequacy of the financial safeguards.
- Effectiveness of the regulatory structure.

Crash – if not to blame, did futures perform?

A 120-page preliminary report already issued by the Commodities Futures Trading Commission defends

A decline in stock index futures followed quickly by a decline in sharemarkets is evidence of an effective marketplace.

stock index futures trading. It says early data indicates that futures-related trading did not account for the major part of the volume on the New York Stock Exchange on October 19, and the following few days.

What is actually becoming apparent from the investigations is that the extraordinary market conditions on October 19 and 20 inhibited futures from performing its primary purpose of providing a hedge against the falling stock prices.

The Commodities Futures Trading Commission preliminary report points to a time-lag in trading and price-reporting for some New York Stock Exchange stocks in the week of October 19. This made the more up-to-date futures prices "appear to be greatly underpriced" causing the accusation that futures trading led the decline. The anomalies in price-reporting made it impossible to execute the stock leg of any arbitrage.

Furthermore, market conditions such as the non-quoting or in fact non-listing of particular stocks effectively prohibited program trading.

The fact is that examination of data from broker-dealer firms disclosed to the Commodities Futures Trading Commission that index arbitrage sell programs represented only 9 per cent of the share-trading on the New York Stock Exchange on October 19 – hardly an influential wave of selling.

The same set of facts applies to Australia and the Sydney Futures Exchange's All Ordinaries Share Price Index contract. Under normal cond-

itions index arbitrage programs are not prevalent in any event. Without facilities such as DOT, order execution on the Australian stock exchanges is cumbersome for index arbitrage purposes. Also, the Sydney Futures Exchange's All Ordinaries Share Price Index contract is a small-turnover contract and not fully efficient in its bid/ask spread.

In the conditions prevalent on October 20, index arbitrage was out of the question. Accurate stock prices in many stocks were unobtainable. The bid/ask spread in the Sydney Futures Exchange contract was equal to \$1,000. It was impossible to program-trade or sell futures to insure a portfolio against the falling stockmarket. It was too late.

The reason the Australian stockmarket crashed on October 20, was that Wall Street had crashed the night before. Preliminary studies show that futures had little to do with that crash.

Thus claims in Australia that futures caused the crash of the Australian sharemarkets are quite preposterous.

The future of futures

There are many lessons to be learnt from the crash.

In the context of futures trading, on the day that futures trading was needed the most, it was found that the market pricing mechanisms were inadequate.

In the context of the marketplaces in general, a fundamental deficiency has been highlighted by the crash. When the flood of orders arrived at the floors of the stock exchanges and futures exchanges, and at other equity-related markets such as the over-the-counter desks, the markets could not efficiently cope. Market-makers at the New York Stock Exchange quit their posts, OTC dealers stopped answering phones, locals in the futures pits refused to trade due to the chaos and uncertainty. Stocks were not traded or opened, leading to calls for closure of stock

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exchanges and subsequently futures exchanges. To avoid chaos the Hong Kong stock and futures exchanges chose not to open, creating greater chaos.

The events of October 19 and 20 can be described in short as the day liquidity disappeared on world marketplaces.

There can be no more damning result for a marketplace.

The task of the markets in general, including the futures markets, is to ensure that when the next pieces of bad news build up steam to a point where the pressure valve blows out, there are liquid, efficient markets to cope.

How is this done?

Instead of banning or limiting program trading, this trading strategy should be developed to a more sophisticated level. Arbitrage aids liquidity and stability in markets.

Portfolio insurance, if taken before October 19 and 20, would have protected institutions against the sudden fall in the market. Many did sell futures before October 19, but many have still to learn how to sell in a bull market, or take safety measures in the face of the ebullience of a rising stockmarket.

Australia must realise that it is now part of the global marketplace, no longer isolated from world financial events. When the United States of America sneezes we catch cold. To protect ourselves from awakening to a 500-plus fall in the Dow as we did on Tuesday October 20 we must develop 24-hour markets. It was too late at 9.30 am on Tuesday October 20 to begin portfolio insurance. Sydney Futures Exchange share index futures followed the United States lead and were down 500 points on the opening, and so was the Australian sharemarket — all as a direct result of events and macro-economic conditions on a global basis.

Global markets demand 24-hour protection. Protection in the form of risk insurance is available via futures markets — whether it be for bonds, bills, gold, equities or any other trading vehicle. To ensure that futures markets are able to perform their true risk-transfer function in times of crisis when they are most needed, all steps must be taken to provide liquidity and efficiency. Speculators must be encouraged to trade, portfolio insurers to hedge, arbitrageurs to trade the cash and futures.

Our computers carry important messages about the world around us — don't shoot at them because they carry bad news! □

HELD HOSTAGE BY A MONSTER?

The Brady Report, commissioned by President Reagan, was the most influential of a number of inquiries that followed the October 19 worldwide sharemarket crash. Chaired by Nicholas Brady, head of the broking firm Dillon Read, the Brady Commission sought to identify the technical causes of the collapse and to propose safeguards against any future repetition.

Although few people were surprised that the Brady Report pointed an accusing finger at computerised program trading by a small number of big institutional investors, the US securities industry was shaken by some of the commission's recommendations, which challenged the financial markets' tradition of self-regulation.

The report said that on October 19, sell programs by just three portfolio insurers accounted for nearly \$US2 billion in the sharemarket, and in the futures market accounted for an equivalent \$US2.8 billion of stock. Selling pressure in the futures market had been transmitted to the stock market by the mechanisms of index arbitrage, the report found.

It recommended a set of "circuit-breaker" mechanisms, such as price limits and co-ordinated trading halts, to create breathing spaces and opportunities for re-assessment during runaway market movements. But the market generally turned its back on this recommendation, claiming that price limits simply would not work and that automatic trading halts would lock in investors, unfairly increasing their risk exposure.

However, the New York Stock Exchange stepped in during February with a compromise measure. It asked member firms to agree to ban program trading for index arbitrage whenever the Dow Jones industrial index moves more than 50 points a day. The exchange said it would ask the Securities and Exchange Commission to make the restriction a permanent rule.

The NYSE chairman, Mr John Phelan, a frequent critic of the influence of computer-triggered trading, said the ban was a step towards "limiting the potential market volatility caused by program trading and reinforcing investor confidence".

The Wall Street financial community hoped the measure would help to avert intervention by Federal Government regulators.

Other recommendations of the Brady Commission were seen by US financial observers as being more in harmony with the preservation of the free-market ethos. The commission's report proposed a single co-ordinating agency to oversee futures and stock markets and other interdependent market segments, a unified clearing system to eliminate gaps in financial information, and higher margins to cool speculation on share price futures.

A January editorial in Britain's *The Economist* rejects excessive regulation as a solution to wild market volatility. "American investors brought October's slump upon themselves," the magazine says. "No changes to the system of share-dealing would have prevented that slump or made it shallower."

And *The Economist* dismisses the value of higher margins: "The Brady Commission thinks that the margin requirements in the market for share futures are so low that they boost the speculative forces driving the share market, and therefore should be raised. Wrong again. The only valid reason for raising these margins is if they allow investors to court such over-exposure that the government risks being forced to pick up the pieces. Even the trauma of the crash produced no evidence of this. If futures markets, soundly played, come to dominate share markets, so be it."

In the first major book to be published on the crash (*The Crash*, by Mihir Bose, published by Bloomsbury and available in Australia through Allen & Unwin), the author, a UK financial journalist, describes the outspoken attacks on program trading, financial futures and options that followed October 19.

Bose says the critics included people in positions of authority who might have done something about the system "had they perhaps realised the monster that had been created." He quotes Felix Rohatyn, a senior partner of Lazard Freres: "My industry leapt at the chance and helped create this Frankenstein. What I think has happened is that the Western economic system is now the hostage of the market, instead of vice versa."

And he includes this comment from I. W. Burnham, honorary chairman of Drexel Burnham Lambert, creator of many innovative financial techniques: "It is now time for the securities industry to realise that many of its products have no great value to the public interest and are a threat to the public. These products should be folded up as soon as possible. . . ." □