The Impact of Short Sales and Securities Lending on Capital Market Portfolios - 1990 through 2006 *

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ABSTRACT

Historically, analysts have disagreed sharply on whether short sellers helped or hurt investors' portfolio values. Today, those differences are even more contentious -- while the evidence has become much more complex. For certain markets and timeframes, academic researchers have found short sales to be linked more often with overpriced securities. They have also found that more normal prices followed a rise in short interest in those securities. In this, academics and critics seem to agree that short sales drive down stock prices, albeit for good purpose in the former view. This paper presents a third view.

Since 1990, changes in levels of aggregate U.S. short sales often followed major market movements. We argue that many short sales were likely to have been the effect, rather than the cause of price changes. We present evidence that many short sellers were actually brokers to large institutional investors and hedge funds; that their traders were hedging market risks or rebalancing portfolios; and that the chain reactions created by these transactions could have offset any negative impact on stock prices for the portfolios of well-diversified, long-term investors.

We also acknowledge the difficulty of proving the merits of any viewpoint, due to lack of public information. However, using a proprietary dataset, we show that pension funds, mutual funds, insurance companies and other institutional investors loaned securities to short sellers who contributed more to liquidity and price stability in U.S. and Japanese equity markets, than to price direction.

Finally, we suggest that improved information on the nature of short selling in domestic capital markets may give market regulators a chance to direct these powerful market forces for benevolent purposes. One key source of information may be the relative tenure of securities lending activity by agent banks to broker-dealers. For instance, individual securities with high proportions of long-tenured loans have behaved differently than the aggregate market. Toward that end, this paper introduces some of the issues and data needed for understanding the dynamics of short selling and securities lending activity in equity capital markets.

SHORT SELLING AND SECURITIES LENDING

While there are opposing views of the merits of short selling in the functioning of the market mechanism, there is generally little debate about the value of securities lending in capital markets, especially its association with pricing efficiency and liquidity. Several studies dating back to 1987 (especially Recommendation #8 of the G-30 working group after the 1987 Meltdown) recommended that all international securities markets should have securities lending functions to promote market liquidity and avoid operational breakdowns. The most recent of these official recommendations of securities lending as a component of market efficiency was in a joint study by the International Association of Securities Regulatory Organizations (IOSCO) and the Bank for International Settlements (BIS), published in 1999. That study reported, among other factors, that securities lending is an important facilitator of short selling strategies.

Today, securities lending is an integral component of nearly all active securities markets, both domestic and international. The cash-driven market, in which securities positions are financed with cash loans, provides a means for market participants to finance securities positions at rates generally below unsecured borrowing rates and gives cash lenders access to a flexible money market instrument. The securities-driven market, in which securities are provided as collateral for loans of other securities, increases the liquidity of securities markets by providing a means for participants to borrow securities on a temporary basis. This reduces the potential for failed settlements. It also facilitates investment and trading strategies that would not be possible without a liquid supply of securities available for borrowing, such as "fundamental short" strategies as well as market-neutral driven arbitrage strategies such as cash versus futures arbitrage, convertible bond arbitrage, or dividend-related arbitrage. In addition, many market participants now borrow securities to hedge offsetting positions they have taken on through derivative instruments.

In the most active markets, securities-driven lending is no longer a specialized activity, but is widespread among many different types of market participants. It allows portfolio managers and institutional investors to earn incremental income by lending out idle securities held in custody on a collateralized basis. This activity may also increase repo market liquidity since the cash collateral for securities loans is frequently reinvested in the repo market. Securities firms and their customers depend on the ability to borrow securities to hedge risks and to arbitrage price differentials across markets. The extent of this arbitrage has an important effect in increasing the efficiency of market prices and in increasing the linkage between securities markets and other markets, such as associated futures and options markets.

The growth of securities lending is attributable in large measure to the positive effects securities lending has had on both investment activity and securities settlement arrangements. These benefits should continue to promote the development of liquid securities markets.

"Securities Lending Transactions," **Bank for International Settlements**, Basel, Switzerland, June 1999

OFFICIAL VIEWS OF SHORT SALES

In 1815, New York State prohibited sales of securities unless the seller was the actual or assigned owner. The state removed the ban in 1858. England outlawed short selling in 1733, and then reinstated it in 1860. Similarly, France banned and then later repealed laws against short selling. The reason for these swings in government opinion may be seen in the experience of the Berlin Bourse, which also swung from an 1896 ban to a 1909 repeal. According to Professor Henry C. Emery, a noted American economist:

> The effect of interference, increased cost, and legal uncertainty (entailed by this restriction of stock transactions) was to drive business to foreign exchanges and diminish the power of the Berlin Exchange in the field of international finance. The number of agencies of foreign houses increased four or fivefold, and much German capital flowed to other centers, especially London, for investment and speculation. This in turn weakened the power of the Berlin money market, so that even the Reichbank has at times felt its serious effects.
>
> Emery, "Ten Years Regulation of the Stock Exchange in Germany," *Yale Review*, 1908

Official efforts to control the short sales process have not stopped. Today, regulators of some stock markets impose an "uptick rule," in that short sales can only be executed following an upward tick in the price of the stock. In developing markets, short sales have been abolished during times of unusual instability and uncertainty. The Hong Kong Stock Exchange (SEHK) imposed new rules "to strengthen the order and transparency of stock and futures markets" on Monday, September 7th, 1998, when all Asian markets were under pressure from capital movements out of the region. Among other steps, the SEHK reinstated an uptick rule to "reduce the selling pressure of short selling on market prices," created an eligible securities list "to ensure only stocks with sufficient liquidity are accepted for short selling," and mandated settlements on trade date plus two (T+2). To enforce the rules, the Clearing House (SCC) announced it would impose compulsory stock lending and borrowing arrangements for delivery fails on T+2, then close out all T+3 fails with buy-ins, fees and "heavy penalties." SCC would consider "termination of membership for repeat offenders." Brokerage firms were told to be ready, upon SEHK request, to report the names of "their beneficiary clients" and would be held responsible for "ascertaining that clients have the covering stocks for sales orders and, in the case of short sales, have appropriate arrangements in hand, [and to] report them to the stock exchange."

The SEHK clamped down on derivative-shorts with tough rules on covered warrants, which outlawed cash settlement and dealer roll-overs. The Hong Kong Futures Exchange (HKFE) began enforcing capital adequacy rules "with a view to avoiding brokers maintaining trading positions inconsistent with capital levels." The HKFE began real-time regulatory disclosure of large holders' positions and daily public disclosure of large brokers' positions. The automation of the Hang Seng Index futures pit (from open outcry) was ordered "to minimise confusion on order execution and possibilities of improper conduct on the trading floor." The exchanges and

Securities and Futures Commission (SFC) were ordered to build "a cross-market, early-warning system to provide warnings to the market and its participants whenever futures-market activity exceeds a predetermined level of the cash market. A response system will be put in place to trigger appropriate actions, such as increasing margins in order to regulate market activities and facilitate market adjustment back to a prudent level." The SFC threatened to "criminalize" unreported short selling and to prosecute brokers, as well as their clients, for illegal short selling.

PREVENTION OF "CORNERS"

Despite attempts to curtail short selling, many regulators also see value in the organized securities lending markets, which arise not only to support short sellers but also to prevent corners. Some of the most dramatic tales in market lore are linked to attempted corners, such as those which squeezed shorts in the Erie Railroad after the U.S. Civil War, in Stutz and Piggly Wiggly stocks during the 1920's, and in US Treasury notes in 1991. Market regulators encourage securities lending in order to prevent corners.

Recently, a report for the Bank for International Settlements by Hirotaka Inoue of The Bank of Japan in 1999 pointed out the many G10 countries had established SL regimes as a way of preventing short squeezes and maintaining market efficiency in the government securities markets. That report, by the Study Group on Market Liquidity, is part of a longer research initiative under the auspices of the Bank for International Settlements to investigate the sources of market liquidity as a way of preventing the kind of market crisis experienced in 1970 and 1998:

> In the secondary market, several measures are taken to reduced expected profits by attempting market manipulations such as short squeezes. One approach, taken by all countries expect Japan and Germany, is to formulate rules and practices for delivery fails. This facilitates short-sales of securities by dealers, increasing market depth. The other approach is to increase the availability of securities by lending and reopening securities.
>
> "The Structure of Government Securities Markets in G10 Countries: Summary of Questionnaire Results," **Bank for International Settlements**, Basel, Switzerland, 1999

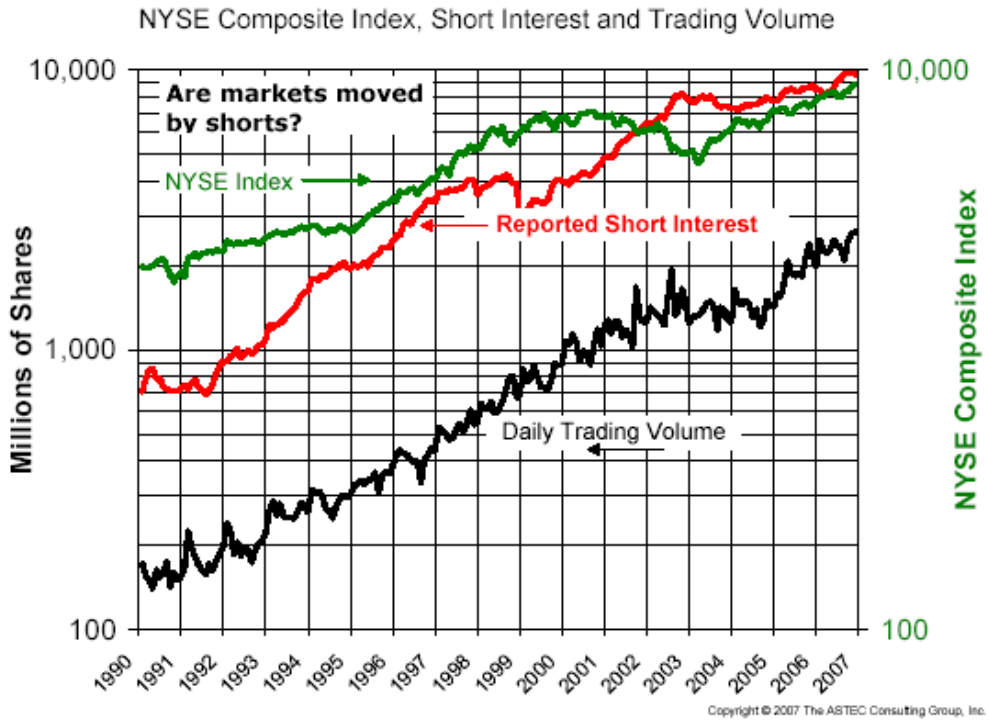
In the view of central bankers, a ready supply of lendable securities can discourage speculators, who may try to control the available float in a security in order to "corner" short sellers and demand exorbitant prices for the covering buys.

FRAMING THE CENTRAL ISSUE: DO SHORT SALES DEPRESS VALUES?

Any sale of a commodity tends to drive down its price. Since holders in a free market can sell at any time, the potential for downward pressure always exists. The impact of that potential will be greater at times when holders are more willing to sell, than counterparties are to buy. If one concedes, for argument's sake, the proposition that short sellers can add

further pressure to prices, then the holder of a one-stock portfolio will likely suffer greater pressure on value if short sellers target that stock.

Figure 1



However, long-term holders will also benefit as each short seller buys back the stock. (In the words of Daniel Drew, the 19th century American stock market speculator: "He who sells what isn't his'n, buys it back or goes to prison.") Therefore, all things being equal, long-term holders will not be hurt, so long as they continue to hold the stock.

Now consider the holder of a many-stock portfolio: using recent evidence, one can argue that she will not be hurt by short sales either. Market-wide moves in U.S. and Japanese equities during the 1990's and 2000's often operated independently of changes in the pressure from short selling, as measured by short interest (Figures 1, 2 and 3). This may well have been due at least partly to the neutralizing effect of the long sides in the paired long-short trades that comprise market neutral strategies. If this is so, then any deflating effect of short sales in one part of an investor's portfolio would tend to be offset in another by the inflating effect of the traders' paired long positions.

There seems to be no evidence that the market is consistently restrained by short sellers. In the period studied from the late 1990s through 2006, changes in short interest followed, more often than led price changes. It seems likely that short sellers were re-acting to market changes, as arbitragers, rather than influencing market changes. Consequently, large investors who held positions comparable to the market portfolio, e.g., most large institutional investors, would not have been hurt by rising levels of short selling. Rather, it seems more likely that the rebalancing

initiatives of large investors would have helped prices by adding liquidity. In any event, institutions would likely have had greater effect on the positions of short sellers, by force of their trades and short-hedges of their executing brokers, than the shorts would have had on those huge portfolios.

Figure 2

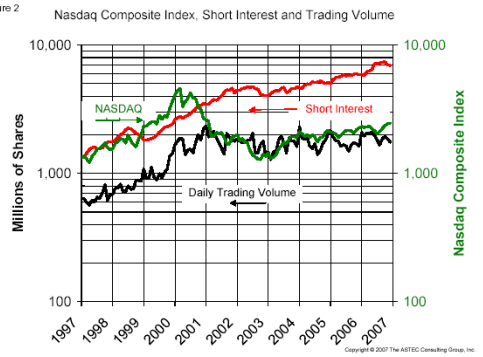
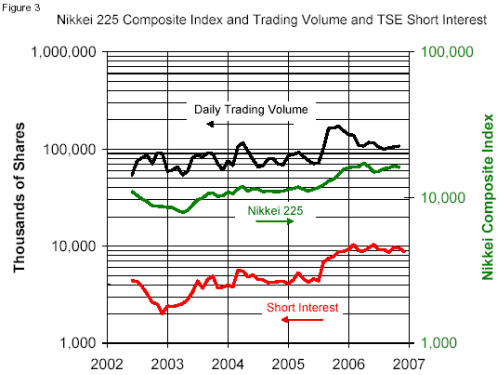


Figure 3



SHORT SELLERS FOLLOWED MARKET CHANGES

Just as a market-level view can be used to reject the thesis that short sellers generally drove down values, so also can the results of an analysis of its market-sample of securities loans made between 2003 and 2006. If a price-deflating effect had been operating, then securities lending volume, as a proxy for short sales, would have grown in advance of falling stock prices, and vice versa. Yet, when comparing new loans of Nasdaq stocks made by clients of the consultancy which provided the data comprising the securities lending universe, the opposite result was found: changes in lending activity generally lagged behind changes in Nasdaq and NYSE market prices (Figures 7 and 8).

Figure 7

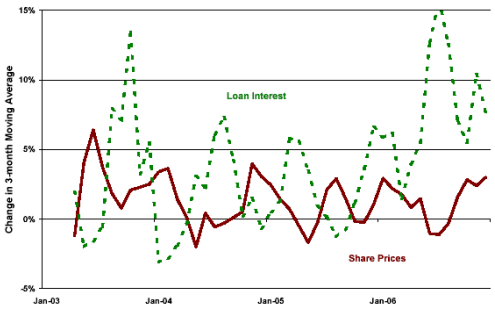
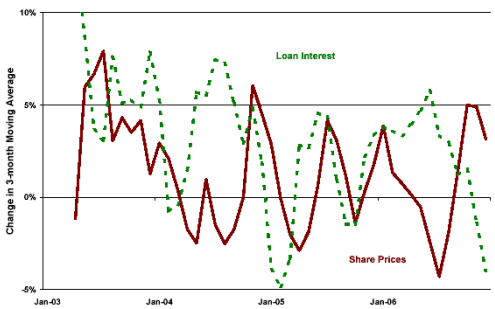


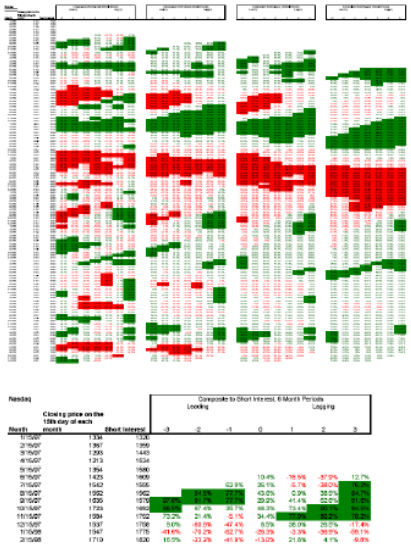
Figure 8



We calculated concurrent and 1, 2 and 3 month lead / lag correlations between share prices and short interest and found no clear relationship between the two data sets (Figures 9, 10 and 11). For the NYSE, share prices and short interest moved up and down together throughout the 1990's. In October 2000, share prices and short interest exhibited a negative correlation. As the stock market bubble burst and share prices declined, short interest increased as long portfolio managers hedged their positions and other borrowers attempted to capitalize on falling prices. In June 2004, however, the relationship of positive correlation resumed and has continued ever since.

Figure 9

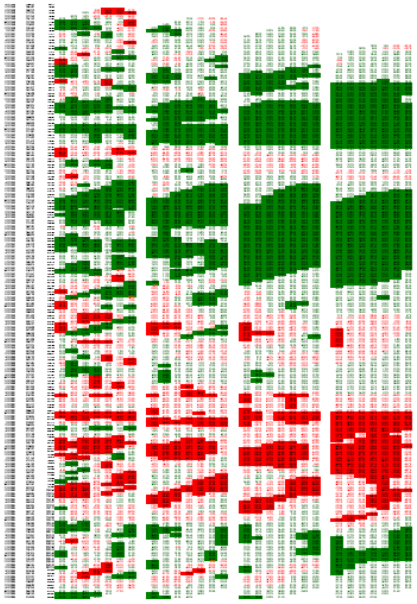
Correlation between Nasdaq Short Interest and Composite Index Between 1997 and 2006 on a Concurrent Basis as well as Leads and Lags of 1,2 and 3 months



First Column contains correlations across a 6 month period
Other columns are 9,12 and 18 month periods

Figure 11

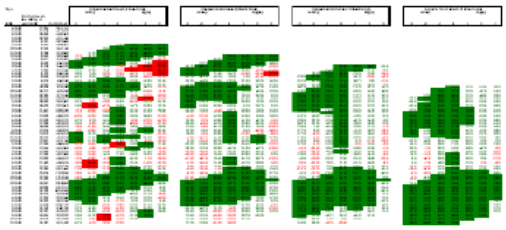
Correlation between Short Interest and NYSE Index Lead and Lag of 0,1,2 and 3 months



Stocks on the Nasdaq Stock Market exhibited similar trends between share prices and short interest as those on the NYSE. There was generally positive correlation between June 1997 and September 2000, but in October 2000 the correlation statistics turned negative as the equity market bubble burst. In April 2003, the trend reversed and correlation statistics were mostly positive, especially when short interest was a leading indicator.

Figure 10

Correlation between TSE Short Interest and Nikkei 225



Share prices for the Nikkei 225 Index and short interest on the Tokyo Stock Exchange did not follow the same pattern as the US exchanges whereby share prices and short interest are positively correlated during good times and negatively correlated during market declines (Figure 11). The Nikkei Index declined from April 2002 and May 2003 but has steadily risen since its 5-year low on May 2, 2003. Throughout this four and a half year time frame, share prices have been generally positively correlated with short interest. The only exception occurred in the first six months of 2005 when short interest as a leading indicator was negatively correlated with share prices.

As short interest has increased along with the rise in share prices over the last few years, outstanding loan value on the lending market for stocks on the NYSE and Nasdaq markets has shown the same trend (Figures 12 and 13).

Figure 12 NYSE Composite Index and NYSE Lending Activity

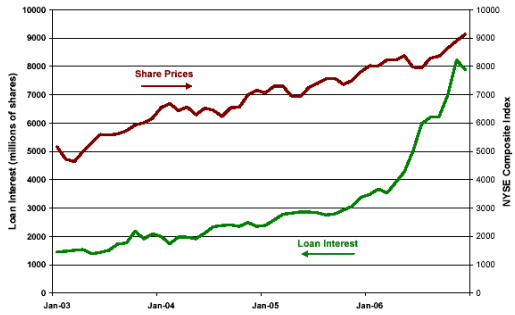
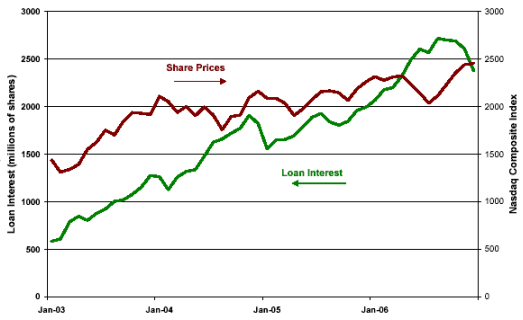


Figure 13 Nasdaq Composite Index and Nasdaq Lending Activity



This phenomenon was supported in other sections of the analysis, which showed a high correlation between new loans and market activity. Short sales during this period seemed to be related more to market volumes than to values. The correlation between short sales and trading volume for the NYSE was .94 between 1990 and 1998 and .84 between 2003 and 2006.

The correlation between short sales and trading volume for the Nasdaq was .91 between 1997 and 2000. Between 2003 and 2006, correlation was still positive but declined to .28 as trading volume increased in volatility (Figure 15). In the U.S equity markets, securities loans appear to have been made primarily to that category of short seller whose trades added liquidity (via increased trading volume), rather than to those who tended to affect market prices (Figures 14 and 15).

Figure 14 NYSE Short Interest and NYSE Trading Volume

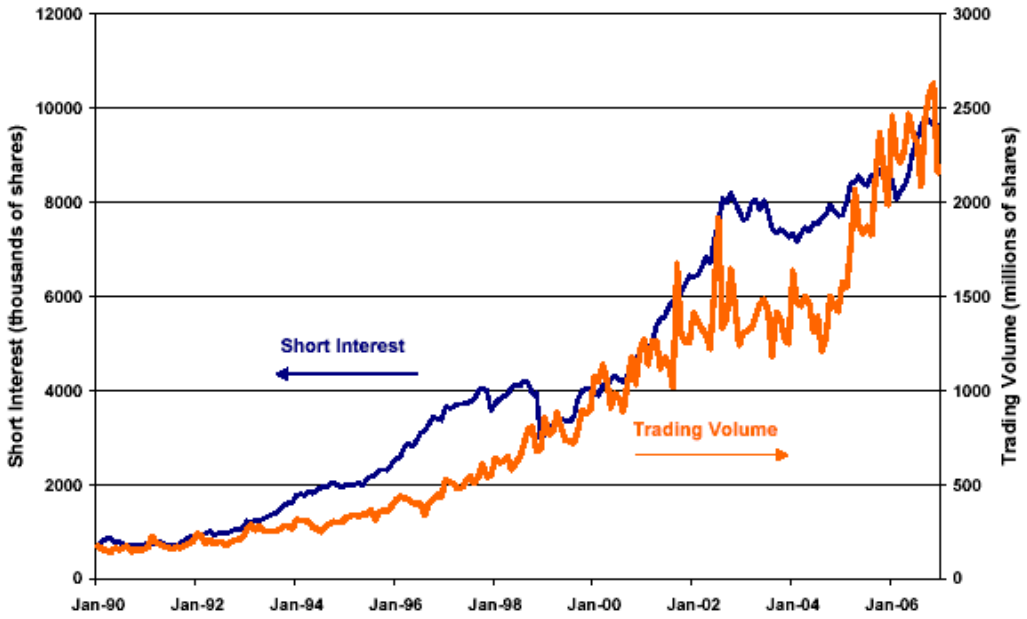
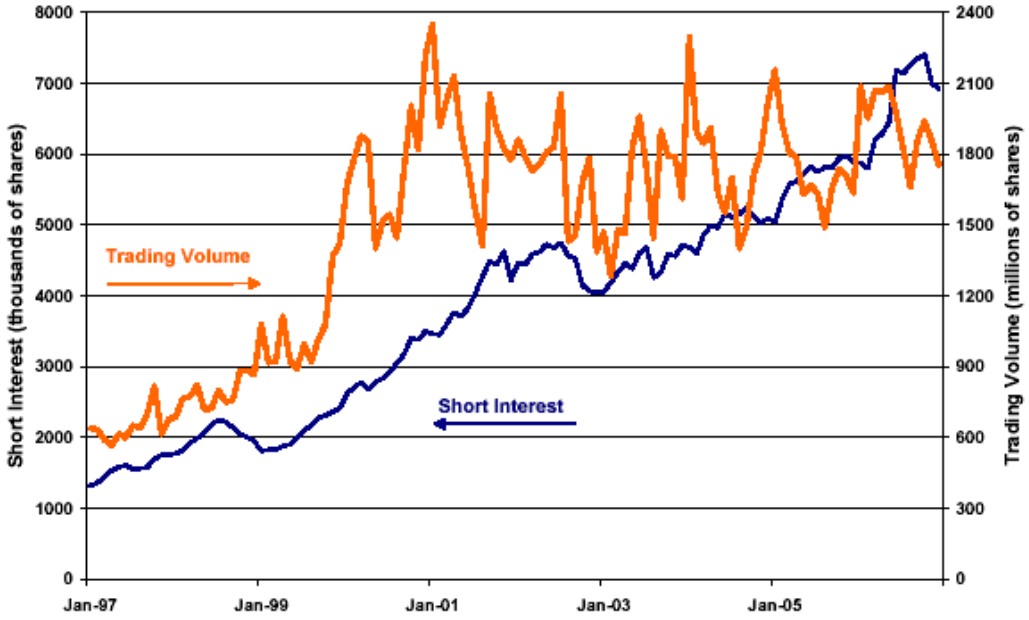


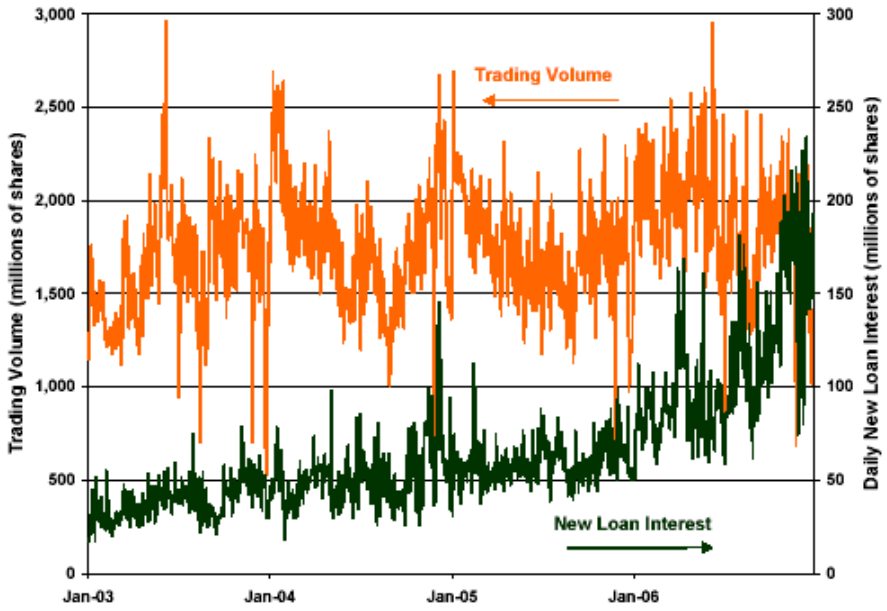
Figure 15 Nasdaq Short Interest and Nasdaq Trading Volume



Using similar methods, a like result was found in an analysis of institutional investors' loans to short-selling customers of the prime broker customers (Figure 16). The correlation between new lending activity and trading volume of issues on the Nasdaq Stock Exchange was .24 between January 2003 and December 2006. At that level, then, it's possible to argue that loans to short sellers by institutional lenders did not drive down prices (Figures 12 and 13). Assuming these loans were representative of all securities loans, then it would be hard to argue that well-diversified investors were hurt by aggregate short sales -- unless it could also be shown that those prices would have risen still farther in the absence of short selling. However, taking short sellers and their bearish sentiment away might have propped stock prices up artificially for a while, but underlying fundamentals would have come into play sooner or later.

The use of other, public data sources make it possible to extend the strength of these limited findings. And, using those sources, there is evidence that, quite apart from damage, U.S. equity markets may have gained at least two advantages from short selling: better liquidity and stability.

Figure 16 Nasdaq New Lending Activity and Trading Volume



SHORTS WERE USED IN PORTFOLIO REBALANCING, TRANSITION AND HEDGE PROGRAMS

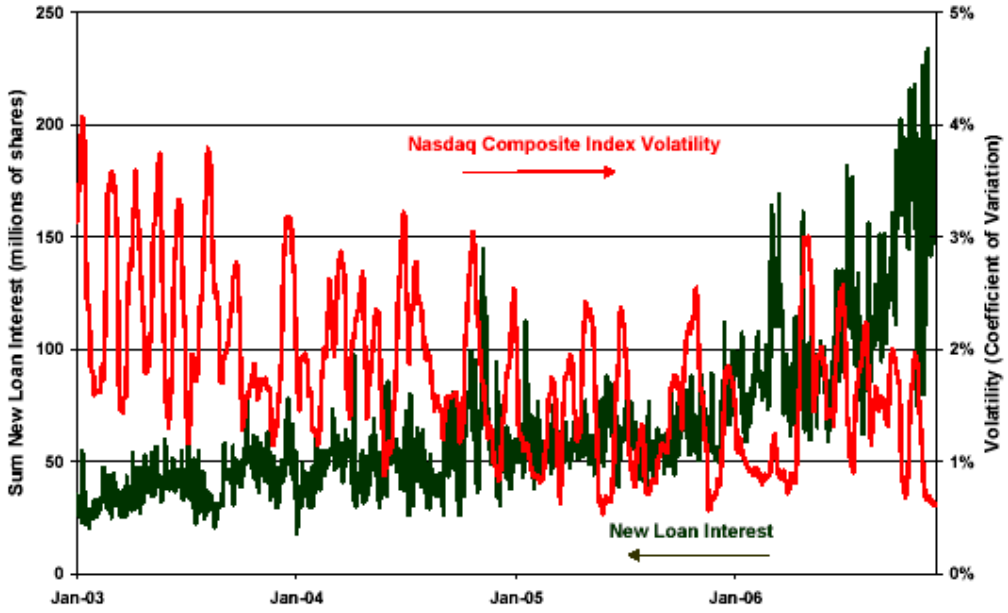
On the New York Stock Exchange, program trading describes several forms of high-volume trade execution service required to complete a variety of complex investing strategies. Many of these strategies are designed to implement algorithms involving the rebalancing of billions in portfolio values. Others involve the transition of portfolios between old and new manager mandates. Fast positioning can be critically important to all these strategies, which are put on by the brokers' hedge fund and institutional customers. The resulting program trades often require traders to take on substantial, but temporary positions while the execution process unfolds. These positions create large market risks for the brokers, especially during volatile markets, such as those of the late 1990's. To reduce those risks, the brokers hedged their changing portfolios with derivatives and short sales. While brokers were selling short to hedge, so were their hedge fund customers. Many trades created market neutral positions, in that a comparable long and a short position were created simultaneously. In a portfolio with these long-short positions, there is assumed to be virtually no market risk to the holder. This type of strategy involving non-directional short sales became very popular in the late 1990s. In fact, many long positions would likely not have been created without the paired shorts. Many long-short strategies, along with the rebalancing trades described above, were implemented using "program trades" executed by their prime brokers. Therefore, the NYSE's program trading statistics can be used as a proxy for the intensity of hedged instititutional trading activity.

SHORT SALES ADDED LIQUIDITY AND DAMPENED VOLATILITY

Program trading can provide another proxy statistic, along with securities lending, for gauging the market impact of short sales. During the late 1990's, securities loaned by institutional lenders were highly correlated with the level of program trading, as reported by the New York Stock Exchange, as well as overall trading volume on the NYSE and Nasdaq. Although the latter does not report program trades, it may be credibly argued that securities loans added liquidity to both markets. It may also be argued that those loans generally did not work to drive down stock prices.

Figure 17

Nasdaq Composite Volatility and Nasdaq New Lending Activity



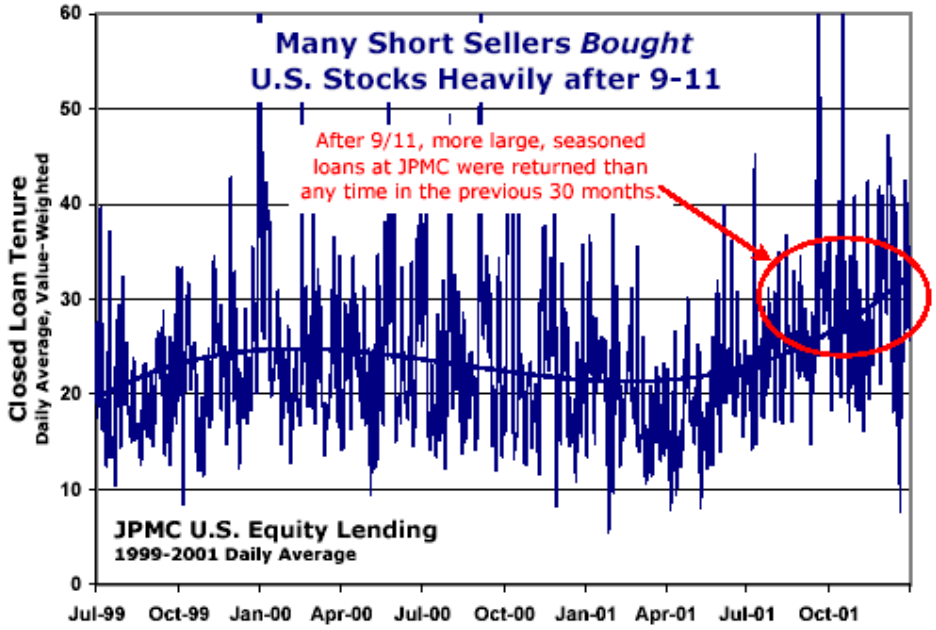
Moreover, it is just as likely that the operations of lenders and short sellers worked to dampen equity market volatility. The level of securities lending new loan volume was negatively correlated (-.31) with share price volatility for the Nasdaq Composite (Figure 17). Lenders appear to have been providing securities mainly to short sellers who were acting as counter-balancing traders, thus dampening volatility. This stability-inducing force would have been a positive benefit at any time of great uncertainty in the market system. But, in the days following September 11, 2001, those benefits, and others, were invaluable.

SHORT SALES AND SECURITIES LENDING DURING THE 9-11 MARKET CRISIS

The funding / securities lending market was one of only two U.S. securities markets which remained open in the days immediately after the 9-11 terrorist attacks. All pre-9-11 trades had to be settled, even while the U.S. trading markets were closed, to keep brokers solvent and to prevent paralysis of the global market system. To provide a partial answer to the charges that stock market manipulators were attempting to short the securities of airlines, energy producers, and other terror-

sensitive corporations, the large American bank J.P. Morgan Chase agreed to provide its transaction files to an independent consultancy for systematic analysis. More large, seasoned securities loans were found to have been returned to the securities lending program at JPMorgan Chase after 9-11 than during any similar period over the 30 months ending December, 2001 (Figure 18).

Figure 18

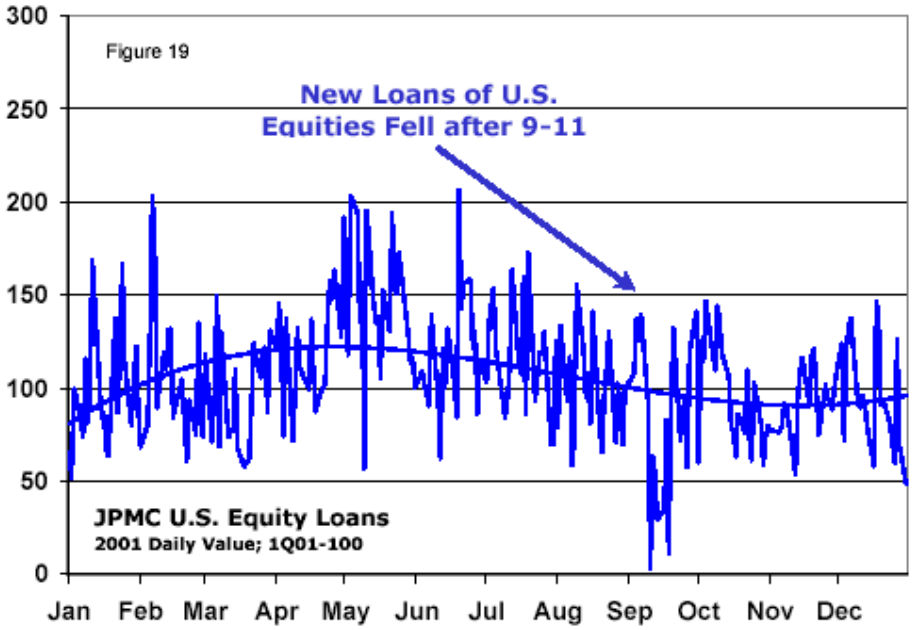


Since seasoned loans are more likely to be covering fundamental shorts, this suggests that short sellers were reacting to the changed market fundamentals after 9-11 by closing out their long-term positions. Of course, to close out their loans, first the shorts had to buy and then return their borrowed stocks. These purchases contributed important support for the U.S. (and international) equity markets during a very precarious time. Furthermore, borrowers seem not to have redirected their capital into new short positions, at least not initially (Figure 19). The value of new loans by JPM dropped after 9-11, to levels not seen for six months.

Coincidently, the securities lending program at JPMorgan Chase and other large banks provided another important risk management service to the capital market systems. During the rise in seasoned loan returns and the decline in new lending activity, JPMorgan and other agent banks continued to lend securities to brokers for settlement, while also offering a productive safe harbor by paying market-level interest (rebates) on their deposits of cash margin. As prices fell, the banks made more cash available to brokers on their now-over-collateralized existing loans.

The crucial intermediation process provided by securities lending, during and after the crisis, allowed brokers to be paid for their trades and to re-circulate their collateral. All this added to liquidity and enabled the continued smooth functioning of the American, as well as the global capital markets. Consequently, it can be credibly argued that many short

sellers – at least those operating through JPMorgan Chase and other securities lending banks during this period – were not hurting market values. They were actually helping the market's recovery. And so was the securities lending market itself.



ANALYZING MARKET TRENDS IN U.S. EQUITY SHORT SALES

The magnitude of cumulative short sales of New York Stock Exchange listed stocks expanded along with volume until the late 1990's. These huge volumes of short sales confounded critics by failing to slow the surging NYSE composite market index. This rise was difficult for critics to explain without introducing qualitative factors into the analysis, such as investor exuberance, or disputatious statistics, such as excessive trading liquidity, flight capital, rising national productivity, and other forces. Then, beginning in mid-1996, NYSE short interest began dropping, relative to average daily volume ("short interest ratio"). From January 1997, through December 1999, the composite index and short interest were negatively correlated (-36.8%). Stock prices rose as shorts declined ... as opponents would expect. By contrast, the correlation between the same Nasdaq factors was strongly positive (+88.8%). Yet the Nasdaq indices also continued to rise. Short interest spiked in both markets during the 3Q98 and then fell for months before again rising into the 1999-year end. Short selling seemed to be no factor at all, at least in aggregate over the long term.

Although the Nasdaq composite fell considerably after January 2000, while the NYSE index vacillated, it is not clear what impact, if any, short sellers had on either market's valuation. Even a guess requires an examination of the supply and demand factors for short sales.

SQUEEZE CONDITIONS CAN AFFECT STOCK PRICES

Practitioners often contend that a "squeeze factor," i.e., the share of an issue's total float* that is currently on loan to short sellers, is a more relevant statistic for estimating pressure on stock values. (Since the shorts are also stock borrowers, their defense against a squeeze, if prices start rising, depends on their ability to protect or replace their loans. If recalled by lenders, shorts must find new loans or, worst case, face buy-ins. This is dangerous to the trader with an integrated short position because it forces premature close-outs.) Shorts become concerned about protecting their positions against recalls and buy-ins when the squeeze factor is high, since loan supply is then low. But in the late 1990's, driven by new stock issuances and falling short interest, the aggregate NYSE squeeze ratio dropped.

About the same time, there was an increase in the institutional supply of lendable stocks available to short sellers and other stock borrowers, most notably from mutual funds (+60% increase from 1998 to 1999 in stocks on loan). A virtual flood of securities was available on the lending market. But even the rising supply could not encourage short sellers to challenge the market's historic march upward.

The securities that short sellers needed to borrow could also be drawn from a brokerage firm's "box," i.e., its proprietary and retail margin accounts. (Since the broker had loaned call money to its retail margin accounts, these securities were available to the broker to be used as collateral in raising cash.) During the late 1990's, the supply of box securities grew substantially as many margin customers borrowed cash to buy into the rising stock market. Margin debits at NYSE member firms grew to new heights, as did market values.

Yet, again despite bountiful supply, short sales remained relatively low, at least when compared with recent highs. It seemed that (a) the availability of securities had little impact on short sales and, again, (b) short sales had little impact on market values.

SHORT SELLERS IN ACTION

The popular view of short sellers paints them as speculators or even "Bear Raiders," destroying capital markets by selling so heavily as to pound down stock prices, then repurchasing the same stocks later at prices which have become depressed from margin calls and panic sales by thinly-capitalized public investors. In reality, the damaging effect of short sellers is limited by their obligation to deliver securities to the buyers. As more securities are borrowed by short sellers to make deliveries, the security in play becomes increasingly "hard-to-borrow". The fee charged by holders of the security can rise so quickly and to such a stratospheric level as to make it economically impractical, or even impossible for a trader to put on a short position. For this reason, regulators sometimes require the broker acting on behalf of the short-sellers to locate a suitable supply of lendable securities before executing the sale transaction.

The most notorious transactors are called "naked shorts". These are sellers who, because they do not borrow the securities, are considered to have unlimited leverage in forcing down market values. They are considered to be operating without covering their short positions. Thus, they are "naked". As a practical matter, even naked short sellers are required by broker dealers to collateralize their positions, creating a de facto capital constraint on their market actions. However, the prices of illiquid securities may well be influenced by well-capitalized naked short sellers.

"Fundamental shorts" are seen as different in motive from naked shorts, but not in effect. These speculators believe that an issuer of securities will soon fall into disfavor with market analysts. Their short sales, preceding release of the negative news that validates their beliefs, can themselves trigger a change in market sentiment toward the stock. In either event, they profit from the falling stock price that allows them to cover their loans and expenses.

Both naked and fundamental shorts are regarded with antipathy by long-term investors, who seek to profit from an increase in the value of their portfolios through capital appreciation. Since the value of short sellers' portfolios benefit from a decline in the value of the same investments held in the portfolios of long-term investors, the latter often see themselves as opponents in practice, as well as in philosophy. Nonetheless, long-term investors often contribute significant additional earnings to their investment portfolios by renting their securities to short-sellers. Still, investors may prefer lending to "technical" shorts, as described below, instead of fundamental short-sellers. Interestingly, investors may sometimes short their own positions themselves.

Long-term investors who anticipate a decline in a security, but do not wish to sell their positions outright, may short the stock as a hedge. These "sales against the box" may be motivated either for control or tax purposes. Similarly, investors who believe that the market is due for a downturn may sell non-portfolio securities in order to recoup some of the anticipated losses in their long-term holdings. And risk arbitrageurs will often short the stock of the acquirer and go long the target of a combination between two publicly-traded corporations. This allows them to take advantage of pricing differences that are expected to vanish after the companies complete their merger.

Not all shorts are driven by expectations of a price change; some sales are meant to stabilize prices. For instance, underwriters often sell short to reduce volatility in the price of public offerings and buyback programs. Like underwriters, the dealers and specialists in hot stocks will often sell short to offset temporary shortages or dampen unusual volatility.

According to NYSE data, the fastest-growing set of short sellers may be neither speculators nor fundamentalists. Rather, index arbitrageurs and other "program traders" have boosted their activity significantly, secure in the assurance that ready loans would be available to cover the short-sides in their spread trades. The shorts created by these positions seem not to

have affected stock values, possibly because equal, offsetting positions were created in many of their arbitrage trades.

TECHNICAL SHORTS DISPLACED FUNDAMENTAL SHORTS

The late 1990s in the American capital markets were a time of aggressive trading on both sides of the market: long and short. There have been many similar periods in the history of developed capital markets to provide fruitful patterns of behavior for study by investment researchers, and they are usually marked at the terminus by a catastrophic collapse of values, i.e., "the Crash". The "Dotcom Collapse", which took place shortly after the turn of the millennium and marked the end of one of the most aggressive investment periods in American history, was notable for an entirely different reason. For the first time in history, trades were being initiated and executed by computers. At times the volume of computer-generated trades was greater than that of individual decision-makers. Transaction volume grew almost without limit, led by "program trades".

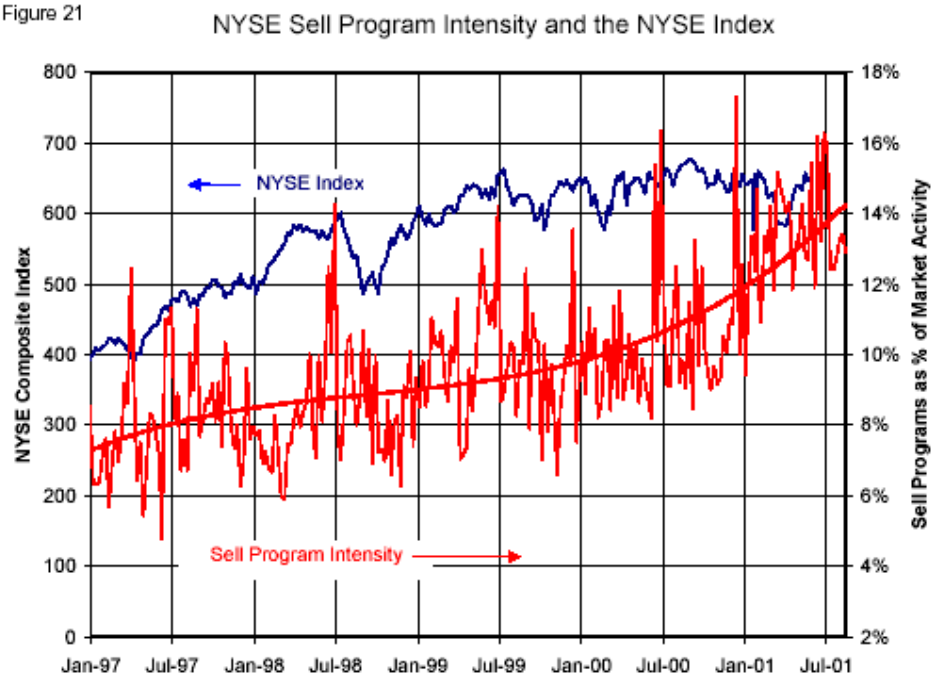
For the three-year period ending 1999, the average daily volume of NYSE program trades nearly doubled (Figure 20). Although the short side in program trades is not broken out by the NYSE, it is reasonable to assume that the growth of program trading also stimulated short sales. Despite the difficulty of measuring the degree to which any rise in program trading would have added to short interest, some useful insights can still be gained from the data. For instance, given that reported NYSE short interest was relatively flat in 1997- 1999, while program trades were rising, it is reasonable to conclude that fundamental shorts were being displaced to a certain degree by these program trades and "technical" shorts. Thus, fundamental shorts must have been shrinking in the aggregate.

It follows then that the latent purchasing power of the short interest ratio would have been even less than the nominal ratio, which was already declining as average daily market volume rose. Clearly, the ratio would have been even less useful to technicians in predicting the market impact of implied short covers, since many of the eventual buys (from the short interest created by sell programs) would be offset almost immediately by liquidation of their hedges.

This raises a question: Did programs fuel the market’s climb or, alternatively, check an even stronger rise?

Unfortunately, an answer to that question would require the use of analytic methods that are deeply mired in complex academic debates about the efficiency of the capital asset pricing model. And, regardless of one’s views about how markets are influenced, it seems clear that program trades didn’t drive the NYSE down at this time. The composite indexes kept climbing.

Figure 21

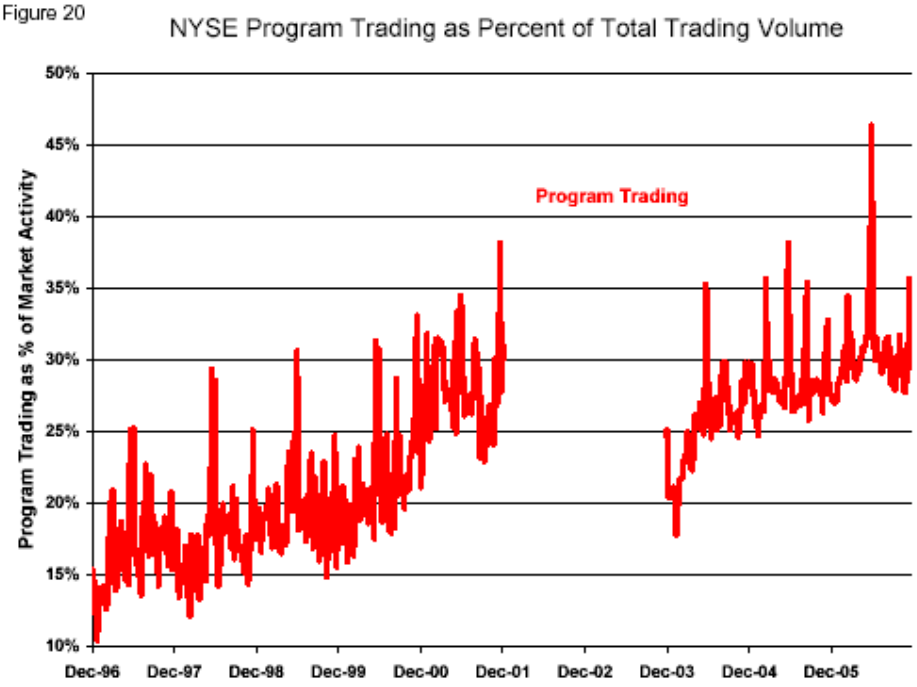


The NYSE data also show that derivative-linked program trading and related shorts enabled a substantial increase in U.S. stock market liquidity. Activity grew steadily, in absolute as well as relative terms, moving from 15% of average monthly NYSE share volume in 1996 to 20% by March, 2000. Only rarely did program trading dip below 15% after mid-1997, while spiking to 30% in mid-1998 and mid-1999. From 2003 through end of 2006, program trading as a percent of total trading averaged 28% and never dipped below 25%. During one week in June 2006, program trading actually accounted for 46% of all activity (Figure 20).

While these are impressive volumes, market liquidity was not a concern to investors during this period. Instead, market values and volatility were their primary topics of discussion, especially when massive turbulence engulfed the Asian and Russian markets in 1997 and 1998. Hedge funds were blamed by some for contributing to the turmoil. Yet, their program trades may also have been a stabilizing force, especially if the resultant liquidity served to keep markets functioning and to dissipate selling pressures. This may well have averted a cataclysmic market correction.

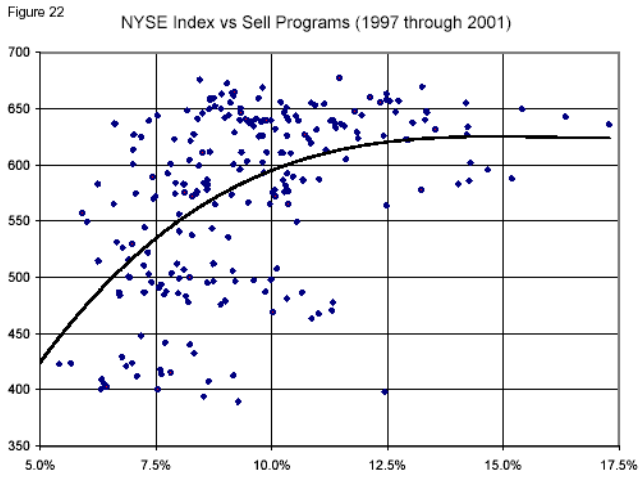
If such a result were shown to be true, critics would be hard pressed to argue against the merits of those short sales that enabled program trades. Recent results of hedge funds support the pragmatic appeal of their strategies. However, this may remain conjectural until appropriate research is conducted into the relationship between market indices and program activity. Indeed, there is much to investigate -- and not just regarding liquidity.

Figure 20



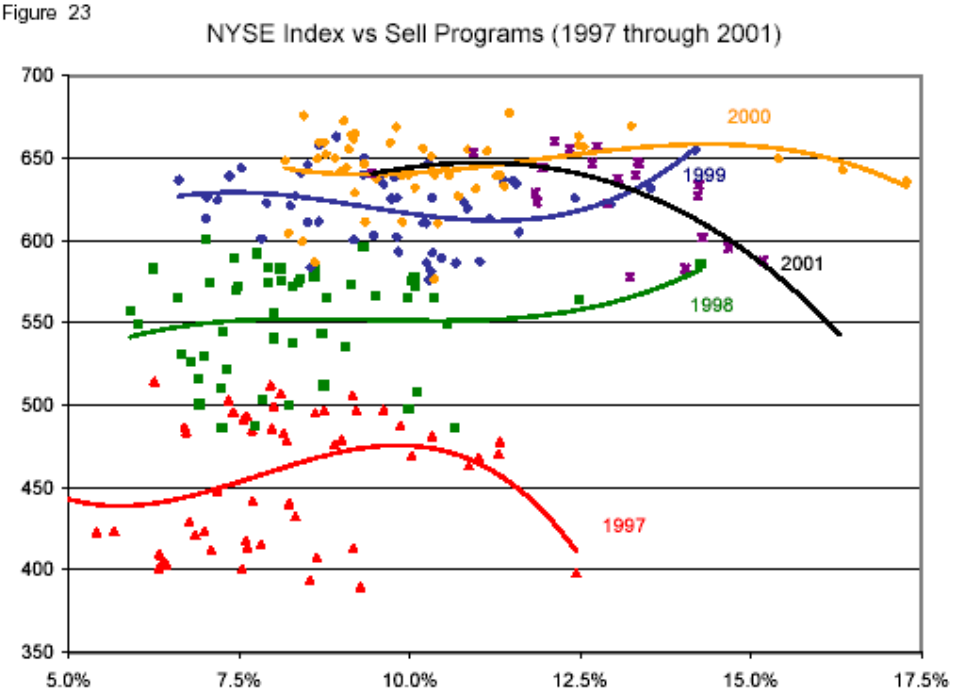
The widely-varying intensity of sell programs (from 5% to over 14% of NYSE trading in Figure 21) poses an intriguing question. ww At that time, sell programs seemed to be ineffective in slowing the advance. This merits a closer look.

Figure 22



Since the time-series is inconclusive, a frequency distribution could be called on to explore whether sell programs were more intense at times of higher market values. In other words, did program sellers frequently act to cap the market's tops? On the surface, the data support that view, in that sell programs comprised more of the market's volume at relatively higher index values (Figure 22). Yet, when the same dispersion is segmented by year, the trend-lines flatten (Figure 23). Therefore, sell programs rose as a share of market volume just as often at lower market levels, relative to the year's index range.

Figure 23



Taking the analysis to still another level, this time a dynamic rather than static market view, the issue of value impact is still left undecided. Neither buy nor sell programs dominated during rising or falling markets (Figure 24) suggesting that these trades neither carry nor block an existing market trend. To a somewhat lesser extent, the same neutrality can be seen during market trend reversals: sell programs and buy programs were evenly balanced during the four weeks leading up to trend reversals, both in rising and falling market changes (Figure 25). Neither program type dominated, reinforcing the view that the nature of modern short sales, using program sales as a proxy for relative intensity, creates far more complex market dynamics than traditional analytics can accommodate.

Depending on the period considered, the correlations among sell program activity, as a share of all program activity, and the direction of the composite index can be taken as either positive or negative. In particular, despite rising intensity of the short-sale component, sell programs did not seem to have the destructive impact on market values that might be expected by critics. At least anecdotally, these case examples seem to support the "economic channel" argument advanced by proponents of program trading.

The impracticality of relying on traditional views to assess or anticipate the impact of short sales dictates the formulation of a new model, possibly based on market aggregates and securities loans. Ultimately, it may be

Figure 24 Buy and Sell Programs Give Directional Liquidity Enhancement to Markets Regardless of State of Trend

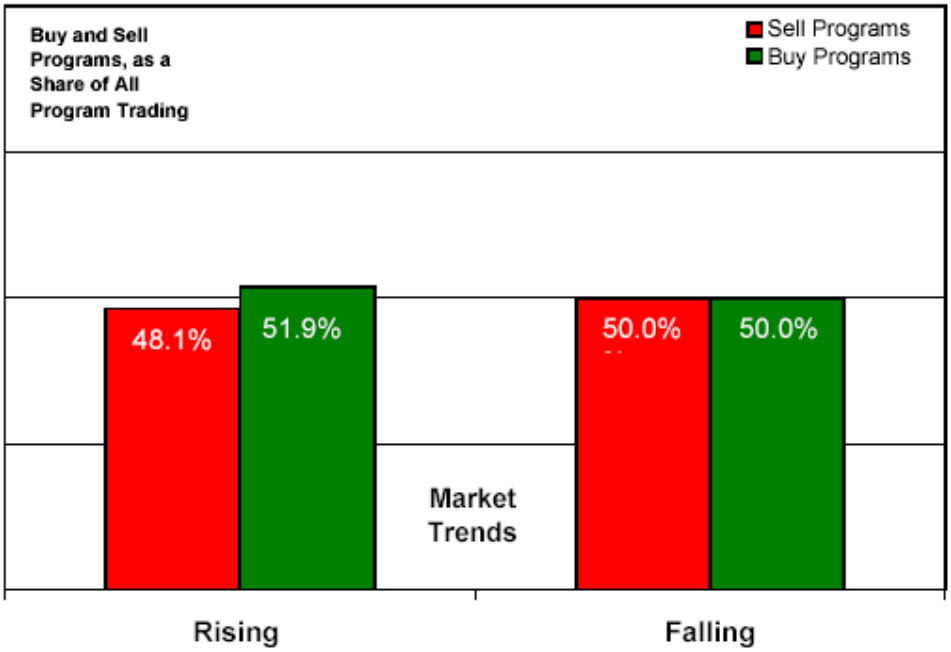
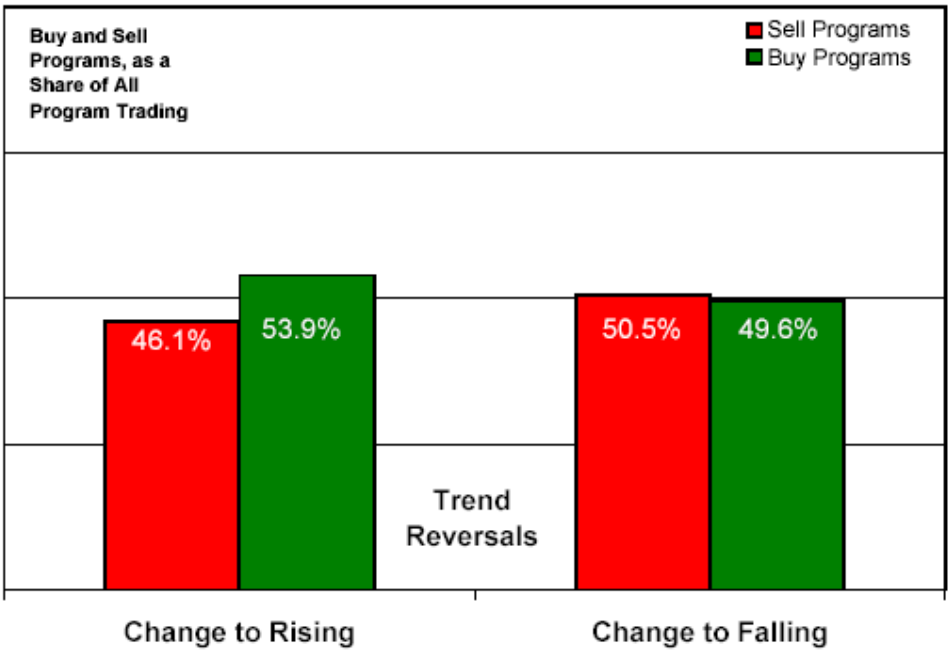


Figure 25 Buy and Sell Programs Give Directional Liquidity Enhancement to Markets Regardless of State of Trend



possible to locate signals for portfolio decision-making after filtering an index of securities borrowing activity and applying the net fundamental shorts instead of reported short interest. For instance, securities lending is utilized for many reasons besides covering short sales, such as to prevent a failure to deliver, dividend arbitrage, or using long positions to refinance. Filtering for these factors as well as term and exclusive loans, security-specific lending activity would be able to provide investors with a more accurate indication of fundamental sentiment. This index could also

be refined by analyzing the demand functions of facilitators of short sales, such as lending agents or prime brokers. Other factors such as the duration and timing of aggregate demand for securities issues, relative to historic demand functions, could then be used to generate market intelligence without divulging either client confidences or the market positions of trade facilitators.

SHORT SALES AS CREDIT EXTENSIONS

Short sales always involve an extension of credit. The short seller must borrow the stock sold, since the trade must be settled by delivering the securities to the buyer. To make settlement, the short seller must put up collateral against the loan, usually by applying the proceeds of the sale. The central factor in understanding the impact of short selling is the extension of credit. Despite the widespread use of new technologies, this aspect has not changed over several generations of capital market activity.

> The outright purchaser tends more permanently to increase the price of the stock he purchases, since he usually withdraws for a long period a number of shares from the supply. Also, the outright seller tends more permanently to depress stock prices, since in most cases he does not soon buy back his stock. Credit transactions in stocks, however, almost always involve both a purchase and a sale. The buyer on margin must ultimately prove a seller before he can obtain his profit, and for the same reason the short seller in the end must buy stock. Moreover, both margin purchases and short sales must usually be terminated within a reasonably short time lest interest charges and dividends eat up all hope of profits. In consequence, it is obvious that the buyer on margin at first tends to raise prices and later to lower them; and that similarly, the short seller for the time being tends to lower prices, but later to raise them again. Thus a double check is created against the undue inflation of the price above, or the undue depression of prices below, the actual value of any security in which active speculation occurs on the Stock Exchange.
>
> Meeker, 1922

Proponents of short sales make the case that market liquidity is enhanced by their actions. Buyers are able to purchase the securities sold by shorts, while sellers find a ready market when the shorts buy in stock to cover their loans. Continuity and depth in markets results from the willingness of short sellers to risk their capital in taking positions which are often at odds with the general temper of the market.

Another case is made that short sellers provide an important counterbalance to margin buyers. Investors who buy stocks on margin create inflationary pressures on market prices. Analysts who advocate short selling say that these credit-driven purchases should be offset by short sellers who, on the opposite pole of the speculative range, impose deflationary pressures on prices.

To defenders of short selling, the latent buying power in short interest provides a backstop during panic times, when institutional and retail investors move to the sidelines. They reason that sellers who must liquidate at those times can find buyers only in the ranks of the former short sellers, who are under compulsion to buy and cover their securities

loans. That purchasing power can support a falling market at a time when few others have the necessary resources or will power.

This traditional view of short interest, serving as a cushion against free-falling prices, has worked to weaken much of the opposition to short selling that has risen over the centuries. However, critics claim that the short covering often doesn't begin until the recovery has already started. During the Great Depression, there was no significant short interest before the 1929 Crash. Instead, the maximum level of short interest was reached in 1931, when the market was at its weakest. The shorts held on until 1932, critics say, when the market started to recover. Therefore, short sellers did not come to the market's aid until prices were already starting to rise. In 1932, U.S. Senator Arthur Capper said: I am definitely of the opinion that short selling has been a major cause in prolonging the depression. I regard short selling on the stock and commodity markets as one of the greatest commercial evils of the day.

His negative position was neither the first, nor the last to be offered. Among others are that short selling distorts the normal supply-demand mechanisms; represents an assault on others' property; prompts margin calls; promotes gambling; manipulates prices; produces excessive brokerage commissions; creates the danger of "corners;" and benefits insiders to the detriment of the general public.

Sentiments about short selling have changed considerably since the Depression. In 1999, the Committee on the Global Financial System, Bank for International Settlements said, in the fourth of its five recommendations for creating efficient securities markets:

> [T]he ability to make short sales is also an important element of liquidity-enhancing trading rules. If short sales are not allowed, dealers cannot respond to customers' buy orders quickly. This impediment to the market-making function would cause a decline in market liquidity. Many countries adopt measures to facilitate short sales, and special security lending and/or repo facilities through which the authorities can provide the securities in short supply.
>
> "How Should We Design Deep and Liquid Markets? The Case of Government Securities," **Bank for International Settlements**, Basel, Switzerland, 22 October 1999

EVOLVING VIEWS OF SHORT SALES

The Modelling Problem

A 1997 study of short interest by researchers at MIT and Harvard explored the empirical basis of short interest*. After studying eighteen years of market data and short interest, MIT Professor Paul Asquith and Harvard Associate Professor Lisa Muelbroeck found that "a strong negative relation [exists] between short interest and subsequent abnormal returns." The study used several benchmarks to measure abnormal returns, concluding that, "An investor with a portfolio composed of heavily short stocks would earn excess returns of -144.6% over 1976-1993." As a result,

If an investor already owns a stock that develops sustained high short interest, the clear and strong advice is to sell the stock immediately. ... Prices do not adjust for long periods even though short interest is consistently high. This finding suggests that some stocks may be mispriced since available information is not incorporated. Short sellers may have been able to earn positive abnormal returns using this information, investors who happened to already hold shorted stocks almost surely could have profited from this information.

Although this seems clear, recent scholarship into "abnormal, long-term, excess returns" casts some doubt on the measures used to estimate prices. The latter term describes stock performance that differs from that expected in an efficient market. Nevertheless, in their study, short selling seems to be clearly correlated with stock price declines:

[W]e detect a strong negative relation between short interest and subsequent returns, both during the time the stocks are heavily shorted, and over the following two years. This relationship persists over the entire 18 year period, and the abnormal returns are even more negative for firms which are heavily shorted for more than one month. The results indicate that short interest does indeed convey negative information.

However, the study linked variances in the impact of short selling to measurable differences in types of short selling activity. In particular, the negative returns were less significant for the type of short selling linked to arbitrage. Importantly, the study did not suggest that short sales actually caused price declines, merely that short sales were correlated with declines.

The Statistical Problem

Long-term views of forces affecting market values are sensitive to the time frame and the model used to measure pricing effects. A simple example can be seen in a comparison of short interest and market indices on the NYSE. The ten-year view suggests a fairly strong positive correlation. When the time series is shrunken to a three-year analysis, the correlation is inverse. This gives a very different picture of the linkage between short interest and stock values. More sophisticated comparisons require more complex methods for measuring price efficiency. Yet these techniques, such as those used in the MIT/Harvard study for the calculation of abnormal excess returns, carry heavy intellectual baggage. Adherents are being subjected to a great deal of academic scrutiny. Thus, it may not be defensible to associate short interest with a measure of security prices that relies on abnormal long term excess returns, as in the MIT/Harvard study. The conclusion of that study, which had seemed to support the fact that short interest could be correlated to declining share prices, is itself in question today. Nevertheless, there is useful content to be drawn from the MIT/Harvard study. For instance, the findings made a primary distinction between the price correlations of issues with just one-month short interest, as compared with longer-term short interest. The shorter-term shorts were associated with arbitrage strategies that have less enduring impact on market values. Experienced practitioners generally support this link between shorter-term shorts and arbitrage strategies; the correlation between short interest and market return is in doubt. Given the uncertainty of this study, both proponents and opponents can summon elements to support their own points of view.

Unfortunately, the strength of their arguments often revolves on proofs that use data that is not always reliable.

The Data Problem

Stock exchanges in the United States publish more information on short selling than any of the next largest 50 national stock exchanges. The New York Stock Exchange, American Stock Exchange and National Association of Securities Dealers Market System each report monthly short interest levels for the last decade or so. This is based on data reported by their member firms, as of the 15th of each month, describing their short positions in all accounts and listed securities. For the next few days, the exchanges compile the short position reports and correct for stock splits and other corporate actions, then publish the short interest to the news media. Reporting styles conform to the interests of traders, member firms and the regulators. For instance, market technicians compute the "Short Interest Ratio" as the number of days that it would take to buy in the shorts for each stock at its then-current volume, by using the number of shares in short positions, along with each stock's price and trading volume.

Market regulators are pushing for more disclosure of short-sale related activity, but it is coming very slowly. In 45 national markets surveyed, only 11 reported short interest. The regulators are also appealing for greater disclosure of one of the enabling force behind short sales – the lending of securities. Interestingly, this is motivated by many (but not all) regulators' conviction that securities lending is a positive force in the market. Although traders may provide information about short selling in response to regulations, there is little coordination in the definition or frequency of these reports. As a result, analysts have great difficulty in assembling comparable data sets. For example, member firms of the New York Stock Exchange report their short positions monthly, but only as a snapshot in each issue, not as an average daily position. Nor do they report the volume of short sales in any time series. Consequently, it's impossible to determine the intensity or endurance of each issue's short interest levels.

Outside the United States, some national market systems are starting to raise their level of disclosure on certain aspects of their short sales activity. For instance, the Stock Exchange of Hong Kong collects and reports daily short positions for all qualified securities by issue, relative to the total turnover for that day. Still, the SEHK does not report cumulative short interest. So there's no way to determine how many positions have been closed out, nor any way to measure latent buying power. And yet, Hong Kong Stock Exchange members, unlike those of the NYSE, report their short positions by value, as well as by shares. This is far more valuable from the perspective of potential market impact. Even better would be a series of reports on a cumulative, weighted-average-balance basis, in the same way that the Federal Reserve reports the weighted cost of overnight reserves as the "Fed Funds Effective" rate.

Improved disclosure of aggregate short selling data on a standardized basis would be invaluable in helping analysts to understand and explain the dynamics of modern market movements. Even for individual securities, the correlations among short sales and market movements are extraordinarily complex in today's cross-border, arbitrage trading environment. There is no readily discernible pattern for U.S. market aggregates during the 1990's. However, the motive forces behind these trading patterns may become clearer as better information is made available to market participants.

For now, the effect of short selling on markets and securities may fairly be regarded as uncertain, at best. But this uncertainty exists, not for lack of attention or analytic effort over the years, but rather for the novelty and complexity of the forces now linked to short sales in modern markets. This has created an analytic dilemma.

Historically, arguments over short selling have been framed in technical, ethical or political terms. Critics have long argued that short selling hurts the price of stocks and damages market values. Furthermore, they said, short selling promotes gambling, fosters manipulations and enables corners. Proponents responded by saying short sellers are obliged to replace their borrowed securities no matter how prices move, and those buys help cushion markets after a panic. Short sales also created a natural balance, they said, against the pricing leverage from stocks bought in margin accounts. As a result of these arguments, short selling has been in turn outlawed and then reinstated over the past two hundred-plus years in markets around the globe.

Today, both arguments may retain merit, but a new set of forces has arisen which appears to have overwhelmed these traditional factors and redefined the calculus of short sales. Now, short selling seems either to have a neutral impact on prices or, just as likely, has a positive impact from liquidity factors so embedded in trading mechanisms that a cogent argument will require a new lexicon and models. This is suggested by correlations of NYSE and Nasdaq data from 1997-99, which appear to give conflicting evidence of the effect of short sales on market indexes. At times, short interest and the index were positively correlated, but negatively correlated at other times. Moreover, short interest on the NYSE has increasingly been comprised of technical shorts which result from program trading activity, and less so of fundamental shorts. The latter may be more influential than technical shorts on stock prices. Over three years, there was no long-term difference in the relative impact of buy or sell programs on markets. This is true in both static and dynamic markets, supporting the view that short sales in program trades neither push nor pull the market.

Given their more substantial role in markets, technical shorts should more naturally be the focus of future arguments on pricing. The neutral impact of technical shorts on markets can be used as a screen on published short interest. For instance, a filter to flag the level of technical shorts could be used to signal portfolio managers about which securities have rising negative sentiment. This filter would have to isolate the technical

component in each issue (CUSIP) and segregate total short interest into its fundamental and technical components. But there is much more involved than short positions. The same filter could be used by market regulators for gaining insights into the relative degree of liquidity, technical support, cross-market linkages, and other factors that would be useful in controlling systemic risk.

Despite the potential advantages to investors and regulators, no stock exchange currently publishes either sufficient or consistent data to permit ongoing analysis of short sales activity. These limitations prevent fair analysis of the role of short selling, either by critics or proponents. However, it may be possible for some financial intermediaries to contribute insights comparable to that of exchanges. In any event, it seems clear that neither short selling nor the techniques that produce short selling will disappear. Therefore, the only logical conclusion for legislators, market regulators, and participants may be to update their analytic tools and adopt investment strategies that conform to modern market practices.

IMPLICATIONS FOR LEGISLATORS AND MARKET REGULATORS

Discussions of the impact of short selling on portfolio values are generally misdirected, based on the results of this study. The issue seems not to be whether short sales drive down prices. Most shorts are part of arbitrage strategies that do more to add liquidity than influence price direction. And, even if short sales were to affect individual prices in the near term, the reversal mechanism would balance any negative impact for long-term investors. Furthermore, any negative effects may be offset by the benefits to systemic risk that result from the dampening effects on price volatility.

In sum, long-term investors and their capital markets will not be hurt by short sales. More often, they are likely to benefit from the systemic risk efficiencies, as well as from the income gained by renting their stocks to short sellers.

Although large investors will benefit in the long run from short sales and securities lending, it is also true that short-term markets and portfolio managers may be asymmetrically affected in the near term.

So the real discussion of short selling should focus on ways for investors to help their managers understand the current influences of short sales, both positive and negative, on the implementation of their portfolio mandates. Portfolios always benefit when their managers take market conditions into account. Toward that end, investor loans of securities can provide a window of sorts into the movements of short sellers.

In many cases, the tenure of a securities loan may be useful in determining whether the strategy is based on fundamental or technical factors. Therefore, regulators may consider asking market participants to report the weighted tenure of their current short sales and securities loans in order to track changing market conditions. If this data is combined with complementary data sources, that broad perspective can help make

regulatory intervention far more accurate and timely. As an example, regulators might use daily loan metrics with an open-market trading tool to influence the short-term cost of carrying positions, with the intent of reducing the possibility of a near-term liquidity shock from the rapid creation of fundamental short positions.

The design of such a passive trading tool must be based on a basic principle: If short selling drives down the price of stocks, then prices must fall initially when fundamental short sales increase. If this doesn't happen, i.e., if similar increases in short selling at a later date do not have the same (or proportional) effect on prices as that of an earlier date, then there must be other, overarching influences at work. These may result from trading activities that are the result of changes in the force of technical strategies that are played out through arbitrage trades. By filtering the effect of those technical shorts, it would be possible to restore the strength of short interest as a predictor of market trends.

An understanding of the market conditions influencing both fundamental and technical short sellers, as well as the underpinnings of their implied strategies, such as access to loans and free capital, all of which are also influenced by economic and market trends, would be necessary to recalibrate the model which regulators used to modify their current views of the influence of short sales on their markets. If one market regulator gains this understanding, it would become a necessity for all others in highly-evolved markets, given the continuing rise of short selling as a strategic facilitator. However, maintaining the currency of that model would be a substantial task for any regulator, just as it would be for any investor, manager or agent.

RUSSIAN SECURITIES WERE SUPPORTED BY GLOBAL SHORT-SELLERS

Global investors are very active in borrowing shares of major Russian securities firms, particularly those of Yukos and VimpelCom, in order to create short positions. Many outsiders might automatically assume that short sales would tend to depress the prices of these two Russian companies and translate negatively into the Russian domestic markets. In fact, by using a proprietary database of global securities loan activity, precisely the opposite can be shown to have happened.
Just as was evident for American securities in American markets, many global short-sellers created market liquidity for Russian securities and contributed to price cushioning when market prices turned downward. In all likelihood, the arbitrage effect of this activity also translated its beneficial impact to the Russian domestic markets. Equally likely, a similar cushioning in the domestic markets could have taken place directly, if the Russian markets enabled the borrowing and shorting of domestic Russian securities, not just for these two issues, but also for many other liquid Russian securities issues.

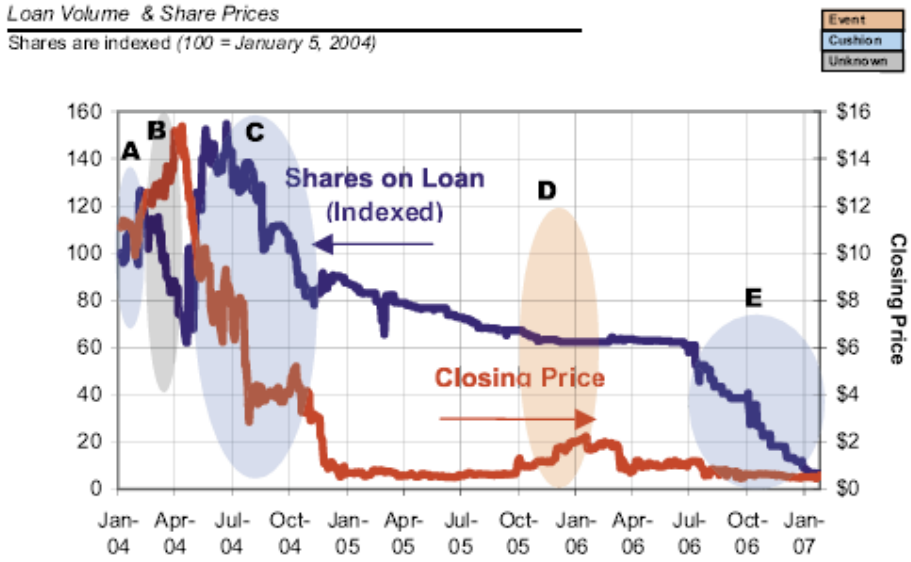
Yukos Oil Company (YUKOY)
At one time, Yukos was the largest Russian oil company and one of the 10 largest energy companies in the world. The company's share price declined dramatically after the chairman was arrested on tax fraud and

embezzlement charges on October 25, 2003. From January 2004 through January 2007, the share price and lending volume of Yukos moved together with fairly high correlation (.60). For most of the past 3 years, lending activity acted as a cushion for declining share prices as borrowers returned large loan positions and provided price support.

Vimpel Communications

VimpelCom, headquartered in Moscow and founded in 1992, offers mobile telecommunications services, wireless handsets and accessories to over 50 million subscribers in Russia, Kazakhstan, Ukraine, Tajikistan, and Uzbekistan. In 1996, VimpelCom became the first Russian company to list its shares on the New York Stock Exchange. Lending activity and share prices for VimpelCom were not closely correlated over the past 3 years (.07). However, borrowers provided price support at certain times, by covering their shorts with newly-purchased shares.

Yukos Oil Company



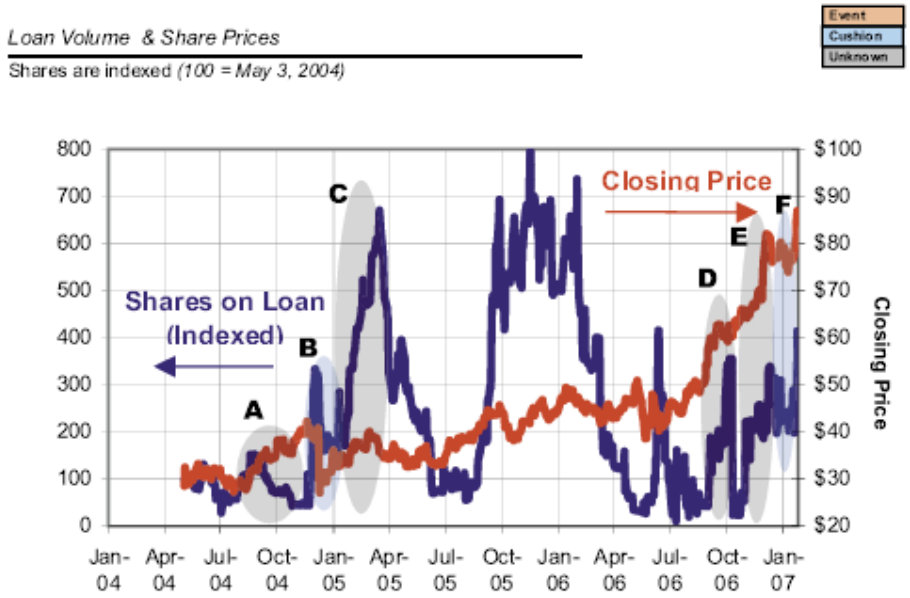
A. On January 28, 2004, share prices hit a low of 9.90 (down 10.77% from a week earlier). This fall in share price was cushioned by a decrease of 13.2% in loan interest over the same period.

B. Borrowers closed out their short positions by returning loans, which provided important price support. Loan interest declined 44%, while stock prices rose 33%.

C. Another example of cushioning occurred between May 20 and August 23, 2004. Stock prices fell by 49.12% while borrowers returned 34% of their outstanding loans. The fall in share price was linked to the July 2004 controversy over Yukos' $3.4 billion tax bill, which resulted in the seizure and sale of 60% of Yukos oil producing assets as payment. The price support from borrowers comparing their shorts help the stock price to stabilize at $4 per share.

D. Stock prices rose 48% and loan interest remained steady, as investors reacted positively to news showing that Yukos' Siberian oilfields were three times more valuable than previously thought.
E. From July 2006 to January 2007, share prices fell 57.40%. A huge drop in loan interest (down 89.57%) helped cushion this fall. Prices would likely have fallen even lower, if borrowers had not provided price support by covering their short positions. On August 2, 2006, Yukos declared bankruptcy.

Vimpel Communications



A. As share prices rose in September 2004, borrowers became eager to close out their short positions. By November, with prices up 25% since early September, more than half of loans on the books in September were returned. In buying back shares, borrowers provided pricing support.
B. As market prices hit $42, borrowers turned bearish. Over 10 days, loan volume rose fivefold. Soon after, prices fell sharply. So did loan volume as borrowers, eager to take their profits, began to return their loans. Their buy-ins again cushioned falling prices.
C. In January 2005, loan volume began a two and a half-month climb. By mid-March, loan interest tripled while prices rose only 2.5%. As soon as prices started to fall, borrowers began to cover their positions. By late June, with prices remaining fairly steady, loan interest fell steeply from the mid-March peak.
D. Share prices rose by more than 5%, following an announced 23% increase in second-quarter profits. Simultaneously, loan interest surged as skeptical short-sellers reacted to potential overenthusiasm.
E. Good news abounded in November 2006, with 38% increase in third-quarter profits and board approval to acquire 90% of CJSC Armenia Telephone Company. Share prices rose from $64.75 to $82.05 in December, while lending activity stayed fairly constant.
F. Borrowers hesitantly closed out positions in the beginning of December 2006. Loan interest declined by about 10% and stock prices

fell back by 3.7%, suggesting that short sellers had partly cushioned the fall, but were still waiting for further news.

NEW DEVELOPMENTS IN SECURITIES LENDING IN RUSSIA AND ASIA

Current regulations do not allow securities lending in Russia. But there is a substitute for participants via the repurchase (repo) market. Repo trades have a different legal meaning but the same financial result. Participants can also engage in lending via the ADR and GDR markets. Investors can short sell a Russian company's stock but must do so through the London Stock Exchange.

Short Selling Regulations and Short Interest Reporting

Exchange	November 2006 Market Capitalization (USD millions)	Allows Short Selling	Reports Short Interest	Index	Website
Americas					
American SE	288,291.0	YES	YES	AMEX COMPOSITE INDEX (^XAX)	http://www.amex.com
Bermuda SE	2,706.7	NO	NO		http://www.bsx.com
Buenos Aires SE	49,467.2	YES	no mention	MERVAL BUENOS AIRES (^MERV)	http://www.bolsar.com
Colombia SE	51,245.1	NO	NO		http://www.bvc.com.co
Lima SE	37,275.6	YES	no mention		http://www.bvl.com.pe
Mexican Exchange	324,102.1	NO	NO	IPC (^MXX)	http://www.bmv.com.mx
Nasdaq	3,890,158.5	YES	YES	NASDAQ COMPOSITE (^IXIC)	http://www.nasdaq.com
NYSE	15,137,834.6	YES	YES	NYSE COMPOSITE INDEX (NEW METHO (^NYA)	http://www.nyse.com
Santiago SE	167,203.3	NO	NO	IBOVESPA SAO PAULO (^BVSP)	http://www.bolsadesantiago.com
Sao Paulo SE	659,869.9	NO	NO		http://www.bovespa.com.br
TSX Group [1]	1,814,446.3	YES	YES	S&P/TSX Composite Index (Interi (^GSPTSE)	http://www.tsx.com
Asia - Pacific					
Australian SE	1,070,407.9	YES	YES	ALL ORDINARIES IDX (^AORD)	http://www.asx.com.au
Bombay SE	801,009.1	NO	NO	BSE SENSEX (^BSESN)	http://www.bseindia.com
Bursa Malaysia	227,237.6	YES	no mention	Kuala Lumpur Composite Index (^KLSE)	http://www.bursamalaysia.com
Colombo SE	7,874.7	NO	NO		http://www.cse.lk
Hong Kong Exchanges	1,568,739.3	YES	YES	HANG SENG INDEX (^HSI)	http://www.hkex.com.hk
Jakarta SE	129,234.1	YES	no mention	Composite Index (^JKSE)	http://www.jsx.co.id
Korea Exchange [2]	835,864.9	NO	NO	KOSPI Composite Index (^KS11)	http://www.krx.co.kr
National Stock Exchange India	755,407.9	NO	NO		http://www.nseindia.com
New Zealand Exchange	41,512.2	YES	no mention	NZX 50 INDEX GROSS (^NZ50)	http://www.nzx.com
Osaka SE	3,043,414.9	YES	no mention		http://www.ose.or.jp
Philippine SE	61,724.9	NO	NO		http://www.pse.com.ph
Shanghai SE	704,920.8	NO	NO	SSE Composite Index	http://www.sse.com.cn
Shenzhen SE	199,275.9	NO	NO		http://www.szse.cn
Singapore Exchange [3]	357,735.5	NO	NO	Straits Times Index (^STI)	http://www.sgx.com
Taiwan SE Corp.	578,894.3	YES	YES	TSEC weighted index (^TWII)	http://www.tse.com.tw
Thailand SE	152,033.0	YES	no mention		http://www.set.or.th
Tokyo SE	4,550,201.8	YES	YES	NIKKEI 225 (^N225)	http://www.tse.or.jp
Europe - Africa - Middle East					
Athens Exchange	203,198.8	YES	no mention		http://www.ase.gr
BME Spanish Exchanges	1,295,525.7	NO	NO		http://www.bolsasymercados.es
Borsa Italiana	1,018,854.1	YES	no mention	MIBTEL (^MIBTEL)	http://www.borsaitalia.it
Budapest SE	38,948.4	NO	NO		http://www.bse.hu
Cairo & Alexandria SEs	88,035.3	NO	NO	EGYPT CMA GENL INDX (^CCSI)	http://www.egyptse.com
Cyprus SE	15,536.9	Uncertain	NO		http://www.cse.com.cy
Deutsche Börse	1,568,715.0	YES	no mention	DAX (^GDAXI)	http://www.deutsche-boerse.com
Euronext	3,583,300.4	---			http://www.euronext.com
Brussels		YES	no mention	EURONEXT BEL-20 (^BFX)	
Paris		YES	no mention	CAC 40 (^FCHI)	
Amsterdam		YES	no mention	AEX (^AEX)	
Lisbon		NO	NO		
Irish SE	152,896.9	YES	no mention		http://www.ise.ie
Istanbul SE	152,513.0	YES	no mention		http://www.ise.org
JSE [4]	673,716.0	YES	no mention		http://www.jse.co.za
Ljubljana SE	14,613.2	Uncertain	NO		http://www.ljse.si
London SE	3,717,857.9	YES	no mention	FTSE 100 (^FTSE)	http://www.londonstockexchange.com
Luxembourg SE	80,077.6	Uncertain	NO		http://www.bourse.lu
Malta SE	4,604.6	Uncertain	NO		http://www.borzamalta.com.mt
Mauritius SE [5]	5,141.7	Uncertain	NO		http://www.semdex.com
OMX [6]	1,027,511.1	---			http://www.omxgroup.com
Copenhagen		YES	no mention	OMX COPENHAGEN 20 (OMXC20.CO)	
Stockholm		YES	no mention	OMXS ALL SHARE INDX (^OMXSPI)	
Helsinki		NO	NO		
Oslo Børs	268,116.0	YES	no mention	OSLO EXCH ALL SHARE (^OSEAX)	http://www.oslobors.no
Swiss Exchange	1,186,407.3	YES	no mention	SMI (^SSMI)	http://www.swx.com
Tehran SE	34,603.8	Uncertain	NO		http://www.tse.ir
Tel Aviv SE	162,054.4	YES	YES	TEL-AV TASE-100 IND (^TA100)	http://www.tase.co.il
Warsaw SE	147,932.1	YES	no mention		http://www.wse.com.pl
Wiener Börse	178,073.1	YES	no mention	ATX (^ATX)	http://www.wienerborse.at

Information gathered from exchange and industry websites and a Morgan Stanley report on short selling regulation (http://www.oecd.org/dataoecd/5/43/18465550.pdf)

It remains to be quantitatively determined how much more efficient securities lending transactions are versus repo transactions. This would be a good topic for further study to demonstrate the cost savings of an established securities lending market in developing countries.

Securities lending was recently allowed in Korea, China and Malaysia in 2006. The allowance of securities lending increases the ability of investors to engage in short selling and also helps to provide a more liquid market with reduced volatility. The fact that the Chinese, Korean and Malaysian authorities have allowed securities lending indicates that they realize that shorting and derivatives are important aspects of a developed capital market and that securities lending is an integral part of both activities. International investors will also be more willing to invest in local markets with the ability to hedge risks effectively and efficiently.

CONCLUSION

For investors holding capital market portfolios, that is, investments widely diversified across a range of international and domestic securities, the activities of short-sellers tend to provide market liquidity and pricing support. Often, the liquidity is contributed by technical short-sellers whenever sufficient volatility exists to create arbitrage opportunities and the pricing support follows actions by fundamental short-sellers to close out previously-established positions by purchasing shares on the open market and returning borrowed positions to lenders. These benefits can be shown to operate in regulated markets across broad time frames, as well as in over-the-counter markets during relatively short intervals.

To the extent that participants and regulators of evolving capital markets, particularly the Russian markets, wish to retain sufficient liquidity and stability in their domestic markets, especially for their most attractive issues, the development of an efficient securities lending community is a necessary ingredient to support those domestic short-selling activities which are, in turn, a necessary ingredient in the maintenance of a domestic derivatives market, which is a necessary facility for implementing the hedging activities of domestic dealers and institutional investors alike.

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The ASTEC Consulting Group of New York, London and Zürich provided *pro bono* access to their proprietary stock loan database of 90,000 issues and 500 million transactions for correlations of loan interest, particularly with respect to Yukos and VimpelCom.