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## Assessing the Efficacy and Impacts of Bans on Short Selling

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In response to significant financial market volatility surrounding the collapse of Lehman Brothers in September 2008, many countries put in place a range of restrictions on short selling of listed securities. The types of bans ranged from simply banning “naked” short selling of specified financial stocks in Germany through to bans on naked and covered short selling of all securities in Australia, Taiwan and Korea. In this paper we review the various types of short selling limitations imposed in the second half of 2008 and then attempt to assess the impact and efficacy of these short selling bans.

### Short Selling Bans

Following the collapse of Lehman Brothers in mid September 2008, market authorities sought to implement a range of restrictions on short selling in order to attempt to stabilise markets. In announcing the ban on financial short selling in the UK, Hector Sants, chief executive of the FSA said *“While we still regard short selling as a legitimate investment technique in normal market conditions, the current extreme circumstances have given rise to disorderly markets.... to protect the fundamental integrity and quality of markets and to guard against further instability in the financial sector”* (FSA statement dated September 18, 2008). In the US the SEC chairman Christopher Cox states in a release dated September 19, 2008 *“The Commission is committed to using every weapon in its arsenal to combat market manipulation that threatens investors and capital markets. The emergency order temporarily banning short selling of financial stocks will restore equilibrium to markets.”* In Australia an ASIC release dated September 21, 2008 banning covered short selling states *“(ASIC), along with other global regulators, is concerned that the recent market global conditions, coupled with extensive short selling of stocks, particularly financial stocks, may be causing unwarranted price fluctuations. These fluctuations if unchecked, threaten the operation of fair and orderly stock markets.”*

Table 1 summarises the range of short selling restrictions put in place in the latter half of 2008 for major world and Asian markets. There are three types of short selling bans: “naked”; “covered” and “net position”. “Covered” short selling refers to selling a financial instrument that you do not own, but having entered into a borrowing agreement to borrow the security in order to satisfy normal settlement. “Naked” short selling refers to selling a security you do not own without having entered into a borrowing agreement. Naked short selling is premised on the basis that one can quickly repurchase the security at a lower price before it settles, but if the security is not repurchased that same day then settlement may fail. There seems fairly general consensus that naked short selling is speculative and should not be allowed, and in many cases naked bans essentially reinforced existing rules. “Net position” bans refer to bans on any net short position including naked, covered or synthetic



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exposures<sup>1</sup>, on a delta adjusted basis, and as such reflects the most comprehensive ban on short selling.

**Table 1. Selected Short Selling Bans 2008/2009\***

Country	Type of Ban	Stock Coverage	Disclosure	Initiation	Lapse	Extended
Australia	Naked	All		19-Sep-08		
Australia	Covered/Naked	All		21-Sep-08	18-Nov-08	Yes
Australia	Covered/Naked	Specified Financials		19-Nov-08	24-May-09	Yes
Canada	Covered/Naked	Specified Financials		19-Sep-08	8-Oct-08	Yes
France <sup>2</sup>	Naked	Specified Financials	0.25%	22-Sep-08		
Germany	Naked	Specified Financials		20-Sep-08	31-May-09	Yes
Italy	Naked	All		23-Sep-08		
Italy	Covered/Naked	Banks and Insurance		1-Oct-08	10-Oct-08	
Italy	Covered/Naked	All		10-Oct-08	31-May-09	Yes
Japan	Naked	All		29-Oct-08	31-Mar-09	
Korea	Covered	All		1-Oct-08		
Netherlands	Naked	All		22-Sep-08	21-Dec-08	
Netherlands	Net Position	Specified Financials	0.25%	5-Oct-08	1-Jun-09	Yes
Singapore	Naked	All		22-Sep-08		
Switzerland	Net Position	Specified Financials		19-Sep-08		Yes
Taiwan	Covered/Naked	All		1-Oct-08	5-Jan-09	Yes
UK	Net Position	Specified Financials	0.25%	19-Sep-08	16-Jan-09	
USA	Covered/Naked	Specified Firms	0.25%	19-Sep-08	8-Oct-08	Yes

\*Source Clifford Chance and regulatory authority websites, but any errors are the authors.

Many countries only banned short sales of specified financial securities such as banks and insurers, e.g., US and UK, whilst some jurisdictions such as Australia (initially) instituted bans on all listed securities. Within the Asian region Australia, South Korea and Taiwan instituted bans on covered and naked short selling of all securities whilst Japan and Singapore tightened procedures with respect to naked short selling only. Notably, Hong Kong<sup>3</sup> and New Zealand did not impose any new restrictions. Interestingly, at the same time it was reported that:

*“China's cabinet agreed to let investors buy shares on credit and sell borrowed stock to help develop Asia's second-largest market after prices and trading volumes slumped, an official familiar with the plan said. ... China's action contrasts with*

<sup>1</sup> Synthetic shorts could include bought put options, sold call options, sold swaps or stock futures.

<sup>2</sup> Whilst France appears to have implemented a naked short sell ban, in its release dated September 19 2008, the AMF states “Financial institutions are requested to refrain from lending any of the securities concerned in order to reduce the causes of market disruption”. So one could interpret this as a ban on covered short selling, although the wording suggests it may be a request rather than an enforceable law.

<sup>3</sup> In Hong Kong, dual listed financial securities covered by the UK FSA short sell rules were restricted under the FSA rules.



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*regulators in the U.S., Europe and Australia that have banned short selling in the past week to shore up financial shares battered by the global credit squeeze.”*  
Bloomberg, September 26 2008.

In some regimes, disclosure of individual short positions above a threshold were required, e.g. 0.25% economic net short position in the UK. These disclosure levels are quite small, particularly when one compares them to the disclosure levels for long positions, e.g., 5% substantial shareholder notice threshold in Australia. Whilst the implementation of the shorting bans was reasonably well co-ordinated around Friday September 19 through to Monday September 22 2008, some jurisdictions did amend their restrictions over time. In Australia, the initial ban on naked short selling announced on September 19 2008 was amended on September 21 to a temporary ban on covered short selling of all securities for a month (subsequently extended on October 21) and specified financial securities to January 27 2009 (twice subsequently extended). Italy and the Netherlands also changed their restrictions whilst many countries extended the initial restriction period. The restrictions lasted for varying periods, from just 13 trading days in the US to more than eight months in Australia (financials only).

### **Short Selling and Market Manipulation**

Before considering the impacts of the short selling bans, we will quickly discuss the practice of short selling, comparing it to normal long only investing, and considering the potential for security price manipulation.

Short selling is carried out by two distinct groups of market participants – investors and market makers. Market makers such as brokers largely undertake short selling in order to hedge positions, e.g., to hedge a sold put position a market maker would sell the underlying security. Many jurisdictions provided relief for market makers when imposing short selling restrictions, recognising the need to short sell to properly hedge other market transactions. Some investors also take out short positions as “hedge” positions against other parts of their portfolio, and are commonly referred to as “hedge funds”. Hedge funds are investment vehicles with broad investment mandates enabling them to take both long and short positions in a range of assets<sup>4</sup>, with the short positions hedging away much of the risk of the long positions. Unlike market makers, the “hedge” may be quite broad. A hedge fund might go long attractive shares and short unattractive shares in the same sector, or may go long shares in an attractive sector or country and short shares in an unattractive sector or country. Hedge funds theoretically should perform well in all markets, on the condition that their long positions outperform their “hedging” short positions no matter whether markets are rising or falling. However, in reality the average hedge fund does not fully hedge all their long market exposure, having a positive stock market beta, e.g., holding more long share positions than short share positions.<sup>5</sup> Long short investing has also grown rapidly within mainstream investment communities with more than

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<sup>4</sup> For the purposes of this paper we shall focus purely on shares or stocks (the two terms used interchangeably), but hedge fund assets can include virtually any tradeable asset or obligation, such as bonds, commodities, currencies, and derivatives.

<sup>5</sup> Asness, Krail and Liew (2001)



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fifteen long short funds used by Australian institutional investors.<sup>6</sup> These funds normally have quite tight investment parameters, enabling say up to 30% short positions to offset 130% long positions (a “130/30 fund”), being benchmarked to a 100% long index such as the S&P/ASX200. Long only investors are also benchmarked to indices like the S&P/ASX200, but are only allowed to hold positive positions in shares.

Considerable regulator concern has been expressed about the potential for short sellers to manipulate share prices “(w)e have made it clear to the market and to the brokers that we regard very seriously false rumours coupled with short selling” Mr D’Aloisio, ASIC Chairman, Hansard Senate Committee on Economics November 24 2008. Clearly investors who can short sell shares can make money out of falling share prices, by selling the shares short and then buying them back later at a lower price. Spreading negative rumours (“rumourtrage”) about a company can increase the profits of a short sale, and lead to increased share price volatility/disorderly markets. However, the incentive to manipulate prices is not restricted to short sellers, and nor is it restricted to sell transactions only. A long only Australian investor whose aim is to beat the S&P/ASX200 index can also gain from a falling share price if the investor does not own the share. Even if they do own it, they can simply sell it, and then take advantage of “rumourtrage” by buying it back at a lower price.

## **Impacts**

### **Share Price and Volume Behaviour**

Table 2 summarises market performance in September/October 2008 in Asian time for selected global markets. When expectations/news of the impositions of short selling restrictions became public around September 19 2008 Asian time, global stock markets rallied strongly for two days, reversing part of the earlier September falls which encompassed the Lehman Brothers collapse. This “relief rally” behaviour suggested that the initial ban did help provide a circuit breaker to briefly stabilise prices across all markets, no matter whether they implemented bans or not. However, this “relief rally” proved short lived, as global financial crisis concerns continued, and the pace of market declines accelerated into October. The average decline for the markets in Table 2 in early September (prior to any short selling bans) was 10.7%, they then rose 7% on average over the next two trading days, then fell a further 18% up to the end of the US short selling ban. Intra-day volatility (average of daily high-low, including previous close) also increased significantly following the imposition of short selling bans.

Looking at average market returns tells us little about whether the short selling bans were effective, or just postponed the inevitable declines, but most certainly they did not reduce volatility. A number of research papers have attempted to statistically investigate the impacts of the shorting restrictions put in place in September/October 2008.

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<sup>6</sup> Source: Mercer performance database.

**Table 2. Share Market Returns for Selected Markets  
1 September 2008 to 9 October 2008\***

\*Source IRESS, note dates refer to Asian time zone, market returns for all non-Asian time zones refer to the previous business day to more closely align real time market moves.

From day To day	Return 1/9 18/9	Return 18/9 22/9	Return 22/9 9/10	Intra- Day Volatility 1/9 18/9	Intra- Day Volatility 19/9 9/10
TAIWAN	-10.0%	9.0%	-13.9%	2.6%	3.7%
CANADA	-13.8%	8.7%	-22.1%	2.9%	5.2%
DUTCH	-13.5%	7.0%	-25.2%	2.9%	5.3%
FRANCE	-10.8%	8.1%	-19.1%	3.0%	4.8%
GERMAN	-8.7%	5.6%	-19.0%	2.6%	4.0%
HK	-15.7%	11.3%	-18.8%	3.7%	5.1%
ITALY	-10.5%	7.1%	-20.3%	2.7%	4.7%
JAPAN	-10.5%	5.2%	-24.3%	2.7%	3.7%
KOREA	-1.6%	4.9%	-11.3%	3.2%	3.6%
NZ	-6.6%	2.9%	-10.0%	1.5%	2.4%
SINGAPORE	-10.9%	5.2%	-17.4%	3.0%	4.3%
SWISS	-8.1%	5.6%	-13.5%	2.6%	4.1%
TAIWAN	-17.2%	8.3%	-16.0%	3.8%	3.8%
UK	-12.8%	8.1%	-17.8%	2.8%	4.8%
US	-9.9%	8.5%	-21.5%	2.9%	4.9%
Average	-10.7%	7.0%	-18.0%	2.9%	4.3%

In Australia, Hamson *et al* (2008) find that the initial ban on short selling of all securities decreased market liquidity and increased intra-day volatility, idiosyncratic intra-day volatility and spreads. Whilst all findings were as expected, a potential criticism of this single market study where all securities are banned, is that the findings might be due to increased market volatility as whole in the period of the ban. This may be a valid criticism for the findings in regard to volatility and spreads. However, the paper finds that trading volumes are normally significantly positively related to volatility, so one would normally have expected higher volumes, not lower volumes, in periods of heightened volatility such as those following the imposition of the ban. Markets where some stocks were banned and others were not provide an experimental window into assessing the findings on volatility and spreads.

Clifton and Snape (2008) consider the impact of the short selling ban in the UK, comparing the behaviour of banned stocks with control stocks not subject to the ban. They do find that average spreads rise for all stocks, but the spreads increase 150% more for banned stocks compared to control stocks. They also find that market depth deteriorated more for banned stocks, whilst turnover and number of trades also declined for banned stocks but actually increased for non-banned stocks. They conduct tests which lead them to conclude “*the observed decline in liquidity occurs independently of market-wide changes and increased volatility*”.



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Boehmer, Jones and Zhang (2008) carry out a detailed market microstructure study of restricted and unrestricted US stocks listed on the NYSE from August 1 to October 17 2008. They find that *“stocks subject to the ban suffered a severe degradation in market quality, as measured by spreads, price impacts and volatility”* which all rose on a relative basis when compared to a control sample of non-restricted stocks. The one interesting and contrary finding in this study pertains to the volume traded in banned stocks. Boehmer, Jones and Zhang find that volumes traded in banned stocks increase compared to non-banned stocks. They suggest that this increased volume may be due to *“considerable news about the progress of the bailout and about the health of financial firms during the ban period.”*

Marsh and Niemer (2008) investigated whether short selling restrictions affected the behaviour of daily stock returns across 17 countries with varying shorting ban regimes (from none to financials only to all stocks banned). They evaluate the first four moments of return, autocorrelation and goodness of fit to the market model of daily returns before and after the imposition of shorting bans for restricted and unrestricted stocks. They consider the third and fourth moments to be of most relevance, since if pessimistic short sellers are removed from the market, returns are likely to exhibit less negative extremes, hence reducing negative skewness and reducing kurtosis. They find *“no strong evidence that the imposition of restrictions on short selling in the UK or elsewhere changed the behaviour of stock returns. Stocks subject to the restrictions behave very similarly both to how they behaved before the imposition of restrictions and to how stocks not subject to the restrictions behave.”* They also fail to find any systematic patterns or differences between stocks in countries with different restrictions, suggesting that short selling bans did not improve return distributions. So whilst there appears to be little impact on share price behaviour at a return distribution level, the previous studies have documented an increase in transaction costs associated with short selling restrictions.

## **Market Manipulation**

Reducing market manipulation appears to have been one reason why authorities banned short selling. Unfortunately we do not know of any detailed and timely publicly available data which could be used to statistically determine whether market manipulation was heightened prior to the imposition of bans, and lowered thereafter. The US SEC and the UK FSA do provide statistics with respect to their surveillance activities, but these are not yet available for the most recent period, and in any case the information is provided on an annual basis only. In Australia, the ASX undertakes significant market supervision duties, and then refers potential market manipulation to ASIC. In April 2009 the ASX released its first Markets Supervision Quarterly Activity Report. Key statistics with respect to market manipulation are summarised in Table 3 below for the five quarters ending March 2009. Whilst the quantity of data is too small to undertake a statistical analysis, and the reason for the referral is not disclosed, the ASX statistics do not seem to indicate that increasing levels of market manipulation were evident in the September quarter of 2008. The four market manipulation referrals in the September 2008 quarter do not seem out of line with the four to six referrals found in other quarters, and the total number of ASX price queries in the September quarter is the lowest of any of the five quarters reported.



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Interestingly, the March quarter 2009 (when short selling of financials remained banned) had both the highest number of price queries (three times the level of the September quarter) and market manipulation referrals (equal with March quarter 2008).

**Table 3. ASX Market Supervision statistics around the shorting ban period**

	Mar-08	Jun-08	Sep-08	Dec-08	Mar-09
Price Queries made by ASXMS	78	147	71	109	211
Market Manipulation Referrals to ASIC	6	4	4	4	6
Listed Entities Supervised	2142	2148	2155	2146	2138

Source: ASX Markets Supervision (ASXMS) Quarterly Activity Report – March 2009

### **Economic Impacts**

Whilst most public discussion of short selling has centred around share price behaviour and potential for market manipulation, the implementation of short selling bans has clearly had other economic impacts. The previously discussed studies found significant declines in traded volumes following the implementation of the bans. Declining trading volumes directly impact the financial services sector with stock broker revenue reduced as commissions on trades fall. Taking Australia as a guide, the 16% fall in volumes documented by Hamson *et al* (2008) equate to a volume loss of \$640m per day based on \$4b daily turnover. If both buy and sell transactions paid 10bp commission, this equates to a \$1.28m daily loss in commissions received, or an annualised revenue loss of \$320m. There would be additional revenue losses amongst other financial service firms including lost transaction income for custodians and fund administrators, lost exchange fee revenue and lost securities lending income for prime brokers and the ultimate lenders of the securities.

A second indirect impact from the imposition of bans is the impact on transaction costs. The previous studies found strong evidence of increased bid/ask spreads. Commonly used market estimates for transaction costs include half the bid/ask spread plus a market impact and/or opportunity cost factor. Increased bid/ask spreads increase transaction costs. Using the Hamson *et al* (2008) finding of an 8bp increase in spreads provides an estimated increase in transaction costs of \$3.2m per day, or \$800m per year in Australia alone.<sup>7</sup> For large investors there would also be impacts on expected opportunity costs as these are generally estimated as a function of time to complete the order (order size versus a reasonable participation rate of average daily volumes) and stock volatility. With both volumes declining and volatility increasing after the short selling bans were implemented, the opportunity cost of trading large orders would also increase.

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<sup>7</sup> Calculated as half the spread cost for buys and half for sells - 4bp x \$4b buys plus 4bp x \$4b sells.

## Discussion and Summary

This paper has reviewed and discussed the range of short selling bans implemented across many countries in September/October 2008, and attempted to summarise the findings of a number of studies which have analysed the impacts of those bans. Shorting bans were introduced by a number of market regulators in an attempt to stabilise markets and to reduce purported market manipulation by short sellers. Whilst all major share markets around the world rallied on the initiation of shorting bans, the rally proved very short lived, with markets falling at a faster pace in October than in the early September pre-ban period. So at best the short selling bans seemed to provide a temporary circuit breaker, but prices inevitably continued to fall as economic fundamentals deteriorated. Assessing whether market manipulation lessened following the bans is difficult, since little relevant data is available. If market regulators made available detailed statistics of actual or potential market manipulation cases on a timely basis, one might be able to make a stronger claim, but what little evidence is available in Australia does not support the view that market manipulation was widespread in the September quarter of 2008, nor that it declined thereafter.

The imposition of shorting bans had a number of other direct and indirect effects. Trading volumes (except in the US) fell and spreads and volatility increased on stocks affected by the bans, compared to both pre-ban levels, and post-ban control groups of unaffected stocks. The economic impacts of these effects have generated scant attention in short selling debates, but can be substantial. This paper provides a simple estimate of the cost of the Australian ban alone, which is in excess of \$1B on an annualised basis. The economic cost of banning short selling is likely to have further fuelled the already deteriorating economic and financial environment.

Unexpected increasing transaction costs may potentially have other implications on security prices themselves. Swan (2002) develops a theory whereby liquidity/transaction costs explain the equity risk premium, with higher transaction costs being associated with lower asset prices/higher expected returns. Swan and Westorholm (2002) test this theory by investigating share price behaviour around reductions in transaction tax costs in Finland and Sweden, finding increasing trading volumes and increased asset prices. Swan's theory would imply that imposing a short selling ban which indirectly increases transactions costs as liquidity declines, would impose further downward pressure on already sagging equity markets. Bai, Chang and Wang (2006) also develop a theory which argues that security prices may be driven lower by short sales constraints since the market demands a higher risk premium when some (negative) information may not be fully priced.

In summary there is little evidence that short selling bans had any lasting positive effect on share markets or individual shares, or reduced market manipulation, but there is strong evidence that they reduced market liquidity, degraded market quality and imposed economic costs on the financial services industry at a time when it was already suffering considerable economic decline.

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