

Volume 33, Issue 3**Were the European short selling bans of 2011 effective?**

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Abstract

Regulators in Belgium, France, Italy and Spain issued a short sales ban on financial stocks to contain volatility in August 2011. This paper uses a quasi-experimental approach to assess the ban's effectiveness. Control groups in the study are the ADRs of the banned financial stocks and their European peers. Using differences-in-differences and differences-in-differences-in-differences methodologies to measure differences in volatility, our results suggest that the ban was ineffective in containing volatility.

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1. Introduction

Regulators in Belgium, France, Italy and Spain restricted short sales of financial stocks as a response to intensifying financial distress on August 11th 2011¹. The Spanish regulatory body cited ‘a period of extreme volatility that is clearly influencing the stability of markets’ as a cause for the action (CNMV 2011). This response was a continuation to the policies adopted during the financial crisis of 2007-2009.

There is evidence that higher volatility and short selling are linked (Henry and McKenzie 2006; Chang et al. 2007). On the other hand, short sellers have been suggested to be better informed about fundamentals and consequently, restrictions may lead to overvaluation and inefficient asset pricing (Chang et al. 2007; Beber and Pagano 2011). For instance, short sellers attempt to benefit from valuation errors when a stock listed as an American Depositary Receipt (ADR) in the US stock exchanges is subject to short selling constraints in the home country (Blau et al. 2012).

Although regulators often resort to short-sales restrictions during the times of crisis, their usefulness is questionable. The evidence suggests that the bans issued during the financial crisis of 2007-2009 were ineffective in supporting stock prices but instead, they hurt liquidity and were detrimental to market quality (Helmes et al. 2010; Lobanova et al. 2010; Beber and Pagano 2011; Boehmer et al. 2011). Also evidence to the contrary exists. Jain et al. (2012) suggest that a ban issued in one country (e.g. in Europe) affects also cross-listed shares in the US markets even though restrictions do not apply there. Bris et al. (2007) find that stock prices exhibit less negative skewness in the countries that have issued bans and argue that they may alleviate panic in the markets. According to Appel and Fohlin (2010), the bans issued in 2008-09 were effective in improving liquidity.

This paper studies the effectiveness of the European short selling ban of 2011 in containing the volatility of financial stocks. Our approach, which is related to Appel and Fohlin (2010), is quasi-experimental as regulators set an unintentional experiment on the effectiveness of short sales bans. The ban can be seen as a treatment applied to the banned financial stocks. In consequence, the effectiveness can be tested against control groups which are the ADRs of the banned stocks. They are identical to the treatment group and the financial stocks from other European markets which are similar but not identical to the treatment group. Short sales of the control groups were not restricted.

A way to determine the effectiveness of the ban is to measure volatility before and after the ban was issued. Since the European ban was not effective in the US, the ADRs of the banned stocks were available for short selling. If the ban was effective, one could expect that the banned equities traded in Europe exhibit less volatility than their ADRs. Furthermore, most European Union (EU) countries did not join the ban. As a result, the financial stocks from other EU countries can be used as a control group to the banned equities. To control for any unobservable effects, we can test whether the volatility of ADRs differs in the case of the non-banned stocks. If the ban was effective, the banned group should not exhibit higher volatility than its European peer group.

2. Research design

¹ Restrictions on short selling were already in place in Greece.

We use daily returns from European financial stocks. The time span is from January 24th 2011 to February 10th 2012, such that the issuance date of the short selling ban divides the data in two equally long portions². The banned stocks were from Belgium, Greece, France, Italy and Spain. The data for ADRs was obtained when available. As trading volumes for some ADRs are very light, they were dropped from the sample. The final sample consists of 8 banned stocks and their ADRs. The European peer-group and their ADRs were collected from Ireland, Germany, Portugal and the Netherlands. The ADRs of this sample had similar problems with volume reducing the final sample to 8 stocks.

The empirical section studies the impact of the short sales ban on the volatility of financial stocks. The ban is a policy change, a treatment, administered by regulators. Identifying the impact requires controlling for any systematic changes to the outcomes of the treatment group that are correlated with but not due to the policy change.

Since the policy change affects stocks that trade both in the European and US stock exchanges but is in effect only in Europe, a natural treatment group and a control group emerge before and after the policy change. In essence, the treatment and control groups are identical. A slight difference exists though because trading hours overlap only for approximately two hours a day, and locations (stock exchanges) are different.

We follow the differences-in-differences (DD) strategy of comparing the treatment and control groups before and after the policy change. DD is carried out as follows. First, we select all stocks that were subject to short selling restrictions in Europe (treatment) but were also traded as ADRs (control). Second, we calculate the volatility of returns before and after the policy change for both groups by collapsing the volatility of stock returns into two periods using the policy change as a cutoff. Squared daily returns measure the volatility of returns³. Finally, a DD estimate is computed to measure the ban's impact.

To control for other unobservable effects that could vary between the trading locations, we use non-banned European financial stocks as a "non-experimental" control group. Due to ADRs' low trading volumes which may increase volatility, we control this effect by using other European financial stocks (both European and US listings) to control for unobservable effects. This is accomplished by estimating a DD estimate for the non-banned and banned groups and comparing its effect to the DD estimate of the banned group. This is a differences-in-differences-in-differences estimate (DDD).

3. Results

Table I reports the DD and DDD estimates for the impact of the short sales ban on the volatility of stock returns. The top panel compares the change in volatility of the banned European stocks to the corresponding change of their US listings. Each cell contains the mean of the volatility of returns for the group labeled on the axes along with the standard error and the number of observations. There is a 0.2 % rise in volatility in Europe compared to a 0.6 % rise in the volatility of ADRs over this period. The DD estimate is a difference between a change in volatilities between Europe and the US which shows the ban's impact. This implies a 0.4 % relative drop in volatility in Europe, but the estimate is not statistically significant. This suggests that the ban was not successful in containing volatility in Europe.

² The French authorities lifted the ban on February 11th 2012 (AMF 2012).

³ We also calculate the volatility of returns for each stock as a variance before and after the policy change. The results were almost identical, although due to a low number of observations, the power of the test was weak.

Table I. DD and DDD estimates for impact of short selling ban on volatility of returns.

Location/Time	Before	After	Time Difference for Location
A. Experimental Group: European Financial Stocks under the Short Selling Ban.			
Europe	0.0008	0.0027	0.0019
	(0.0001)	(0.0002)	0.0002
Observations	[1209]	[1168]	
USA	0.0033	0.0090	0.0058
	(0.0004)	(0.0028)	(0.0027)
Observations	[1245]	[1140]	
Location Difference in Time	-0.0025	-0.0063	
	(0.0004)	(0.0027)	
DD Estimate	-0.0039		
	(0.0027)		
B. Nonexperimental Group: European Financial Stocks without the Short Selling Ban.			
Europe	0.0017	0.0026	0.0008
	(0.0003)	(0.0002)	(0.0004)
Observations	[1122]	[1036]	
USA	0.0037	0.0069	0.0032
	(0.0019)	(0.0044)	(0.0047)
Observations	[1112]	[1008]	
Location Difference in Time	-0.0020	-0.0043	
	(0.0019)	(0.0044)	
DD Estimate	-0.0024		
	(0.0046)		
DDD Estimate	-0.0015		
	(0.0052)		
Note: standard errors in parentheses.			

While the DD estimate for the experimental group is not statistically significant, it is sensible to control for the location effect at least for robustness. If there is a difference between the trading locations in Europe and USA during this period, this estimate does not necessarily identify the impact of the ban. Therefore, the trading location effect is studied by performing the same exercise to the non-experimental control group in the bottom panel of Table 1. For this group, the DD estimate implies a similar fall of 0.2 % in volatility relative to their ADR listings. As earlier, the estimate is not statistically significant.

As a final test, we compute a DDD estimate for the experimental and non-experimental groups. Taking the difference between the two panels of Table 1 implies a 0.15 % fall in the relative volatility for the banned financial stocks. However, the estimate is not statistically significant. This validates the earlier results and provides evidence that the short selling ban was ineffective in containing the volatility of stock returns in Europe.

4. Conclusion

This paper used a quasi-experimental research strategy to assess whether the European short selling ban was effective. We compared the volatility of stock returns of the European financial stocks to their US cross-listings. Our results show that volatility increased after the ban for all groups (experimental and nonexperimental). Although the US control groups exhibit a greater degree of volatility, the difference to their base groups is not statistically significant. Thus, we conclude that the regulatory response - the European short selling bans of 2011 - was ineffective.

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