

# Market Reaction to Delisting Announcements in Frontier Markets: Evidence from the Vietnam Stock Market

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**Abstract:** This paper aims to measure the effects of delisting on stock returns for the Vietnam stock market. This study employs a sample of 118 stocks that were compulsorily delisted from the market between January 2011 and December 2021. Using an event study methodology, the empirical findings confirm that the delisting has negative effects on stock returns in the Vietnam stock market. Specifically, results derived from tests show that the average abnormal return of delisted stocks continuously declines during three trading days following the announcement of delisting. Moreover, it is found that the differences in cumulative abnormal returns between post-delisting and pre-delisting periods are significantly negative for all tracking periods. Apart from the negative effect of delisting on stock abnormal returns, we also find that the impact of delisting on stock returns for smaller companies is greater than for bigger companies. These results imply that investors can earn abnormal returns by using delisting information in the Vietnam stock market.

**Keywords:** delisting; stock returns; Vietnam stock market

## 1. Introduction

Delisting, which is the removal of a listed stock from a stock exchange, has become a common phenomenon and has received increasing attention from both academics and practitioners during the past few decades. Delisting can be voluntary or compulsory (Park et al. 2018). A voluntary delisting is initiated by a listed company based on the cost–benefit analysis of keeping stocks listed on a stock exchange. However, compulsory delisting occurs when a stock violates regulations and fails to meet the financial standards of a stock exchange. According to Park et al. (2014), compulsory delisting is one of the worst consequences for the shareholders' wealth. Therefore, the effects of delisting on stock returns could depend on the type of delisting. In fact, some studies documented that voluntary delisting has no impact on stock returns (Sun et al. 2002; Liu and Stow 2005; Pfister and von Wyss 2010). On the other hand, some studies found the negative effects of compulsory delisting on abnormal returns (Meera et al. 2000; Chandy et al. 2004; You et al. 2012; Pour and Lasfer 2013; Park et al. 2018; Fidanza 2022).

The Vietnam stock market comprises two stock exchanges, the Ho Chi Minh Stock Exchange (HOSE) and the Hanoi Stock Exchange (HNX). The HOSE, the first and largest stock exchange in Vietnam, was officially launched on 28 July 2000, while the HNX was established on 8 March 2005. Initially, the growth in the number of listed companies on the market was slow. In fact, only 32 firms with a total market capitalization of VND 7390 billion (USD 326.4 million) were listed on the HOSE for the period from 2000 to 2005. However, the market has experienced rapid growth in the total number of firms listed during the 2006–2021 period. By the end of 2021, a total of 404 companies with a total market capitalization of VND 5,838,100 billion (USD 257.9 billion) were listed on the HOSE, and 345 firms with a total market capitalization exceeding VND 510,027 billion (USD 22.5 billion) floated their stocks on the HNX.



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Along with the development of the market, an outstanding issue arose in the market of stock delistings. The list of delisted firms has been prolonged, and most delisted cases are compulsory due to continuous losses and violating the requirement of transparency. In fact, up to the end of 2021, there were 171 firms delisted from the Vietnam stock market (Vietnam Securities Depository and Clearing Corporation's website, [www.vds.vn](http://www.vds.vn), accessed on 30 June 2022). Although the effect of the delisting on stock returns has been investigated in many stock markets, including both developed and developing markets, to our best knowledge, no study on this effect has been found for frontier markets. Therefore, this study fills this gap in the literature by determining the effect of compulsory delisting on stock returns for the Vietnam stock market, a frontier market. This study provides unique insights into the literature covering the effect of compulsory delisting on stock returns in a frontier market because the Vietnam stock market is characterized by its domination by small individual investors, leading to a low-level information transparency (Nguyen et al. 2022; Truong et al. 2022). These characteristics of the market could make investors have irrational reactions to the delisting announcements. Therefore, it is expected that the effect of delisting on stock returns will be more pronounced in the Vietnam stock market.

This paper proceeds as follows. Section 2 reviews related theories and the empirical literature. Section 3 provides an overview of the Vietnam stock market and its regulations on the delisting. Section 4 summarizes the data and methodology employed in this study. Section 5 discusses the empirical findings. Finally, conclusions are presented in Section 6.

## 2. The Literature Review

The timeline of the literature on stock delisting started with the initial research for the US markets, with a substantial number of studies examining the delisting, and this topic has continued to be examined for US stocks. Subsequently, the researchers started examining delisting in the international markets. The examination of different international markets is important to juxtapose against the research of the US markets because each international market has different insider trading and short-selling rules, as well as different levels of informational efficiency across these markets. In addition, delistings can be broken into two general categories, voluntary and involuntary. The voluntary delistings may not contain substantial information. However, involuntary delistings may convey substantial information about the future of the delisted firm.

Early papers included Sanger and Peterson (1990), who examined price changes for NYSE stocks and documented an 8.5% loss in shareholder wealth on the announcement date. They attributed this loss in value to liquidity issues as these stocks moved off the NYSE and into the over-the-counter market, generally tracked on the pink sheets. In addition, Shumway (1997) examined the delisting bias in CRSP returns, while subsequent research by Shumway and Warther (1999) studied the delisting bias in CRSP data's impact on the size effect. At the time, CRSP returns omitted companies delisted in a given year. This was important to understand because CRSP data were relied on by many market participants and researchers at the time of this study. Depending on the topic, it is critical for future research to control for potential survivorship bias for returns found in CRSP. The author found that delisting for bankruptcy and other negative reasons was a surprise not anticipated by market participants. More importantly, they found that the correct delisting returns were not easily tracked for most stocks, with very limited trading information on the Pink Sheets for many companies. Shumway and Warther (1999) found that after controlling for the delisting, the size effect widely documented for NASDAQ-listed companies vanishes.

Chandy et al. (2004) chose the Nasdaq to study delisted stocks on the NMS, specifically looking at changes in market value and liquidity. They found a significant increase in bid-ask spreads as well as decreased trading volume after the delisting. Overall, very similar to prior research on the NYSE by Sanger and Peterson (1990), the authors found a significant negative reaction to market returns after the delisting. The authors concluded that delisting increases the cost of capital and hurts liquidity. In addition, Macey et al. (2008) focused on

the NYSE to examine the economic reasons for the delistings and the implications and legal rules around the delistings. Importantly, they found that approximately 50% of delistings were voluntary. Overall, for involuntary delistings, they found very large costs associated with the delisting. Percent spreads tripled, and volatility doubled for their sample.

Eisdorfer (2008) looked at essentially all publicly traded delistings for the US markets by examining a broader cross-section of markets across the NYSE, AMEX, and Nasdaq. The author examined momentum profits for short sellers of the delisting firms. The results indicated that 40% of momentum profits were generated from delisted stock returns. Bankruptcies were the primary driver of these profits, allowing traders to take advantage of the substantial declines spawned by the bankruptcy process. On the other hand, delistings from mergers only had a minor effect on momentum profits. The author also found that the ex-ante probability of bankruptcy created a stronger effect and profit opportunity for short sellers.

Liu and Stow (2005) took a unique approach to control for the difficulty of tracking delisted firms post-delisting. The authors, however, examined only voluntary delistings on returns by looking at US companies that cross-listed in Japan and subsequently delisted from the Japanese market. The authors found no significant price changes after delisting for these cross-listed stocks, but they found gradual price drops over time. Subsequently, along a similar vein of research, You et al. (2012) examined US stocks cross-listed on European exchanges. The authors examined the impact of the delisting on the price, risk, and liquidity of the delisted firms. They found a positive effect on the US companies' prices when they were initially cross-listed on a European exchange while, as anticipated, observing a negative effect on these firms upon their delisting.

In the cases of cross-delisting, Loureiro and Silva (2020) documented stronger post-delisting financial constraints faced by firms that cross-delisted from a US stock exchange than their cross-listed counterparts using a sample of 583 firms from 38 countries over the 2000–2012 period. Later, Loureiro and Silva (2022) uncovered an increase in crash risk associated with accrual-based earnings management in the post-cross-delisting period for firms being cross-delisted from the major US stock exchanges between 2000 and 2016. The authors found that this effect is more pronounced with respect to firms originating from countries with weaker shareholder protection.

Recently, the effects of involuntary delisting from the NASDAQ on delisted firms were examined by Li et al. (2024). They documented a decline in liquidity, access to capital markets, investment, and performance of delisted firms. However, they showed that these declines were not predominantly due to the delisting. Li et al. (2024) indicated that the decline in daily trading volume and equity issuance of delisted firms only occurred for those with their stocks being actively traded prior to the delisting.

For the international arena, Meera et al. (2000) and Sun et al. (2002) examined the Malaysia and Singapore markets for the impact of the delistings under different scenarios on market returns. Meera et al. (2000) documented a significant loss in delisted firms that were originally cross-listed on both the Malaysian and Singapore markets. Sun et al. (2002), on the other hand, looked at mass delistings for groups of companies where there was no firm-specific information. They found that if there was no information conveyed by the delisting, no abnormal returns were generated.

Pfister and von Wyss (2010) studied the return and volume effects of the delisting from the primary exchange for the company for stocks delisted from the SIX Swiss Exchange, Deutsche Borse, and the Tokyo Stock Exchange. First, the authors used standard event study methodology to examine the impact of the delisting. Interestingly, the authors found a limited impact around the delisting announcement or around the actual delisting date. However, they found negative returns preceding the initial announcement. They also found that volume tended to increase at the announcement and effective delisting dates.

Pour and Lasfer (2013) examined London Stock Exchange delistings to identify the reasons for and the market valuation of voluntary delistings. The authors found that the sample of firms examined were likely to have become listed to rebalance firm leverage

ratios instead of growth opportunities. For this group of companies, on average, leverage remained high, with firms not raising substantial equity, and insider ownership was very high during the listing period. Results indicate that profitability, growth opportunities, and volume fell markedly, surrounding the delisting process. The authors also found that delisted firms, on average, had negative pre- and post-event returns after controlling for possible agency and liquidity effects as well as asymmetric information. The results indicate that the sample firms delisted voluntarily when they found no benefit from the initial listing. As a group, the decision to list significantly impacted shareholder wealth, and these firms probably should have avoided listing in the first place. In addition, these firms generate negative excess returns pre-event and at the announcement date. These findings persist even when the analysis controls for the agency, asymmetric information, and liquidity effects. The results indicate that firms delist voluntarily when they do not see benefits from the initial listing. In aggregate, these firms destroyed shareholder wealth, and they should not have opted to list on the market.

[Park et al. \(2014\)](#) looked at involuntary delisting in Korea and examined informed trading effects across domestic individual retail investors, domestic institutional traders, and foreign investors. They found abnormal returns for short sellers of 80% to 90% for firms involuntarily delisted. In addition, liquidity dropped substantially. There were clear differences in trading strategies across the different investor groups. Domestic individual investors were net buyers prior to the delisting announcement, while domestic institutional traders and foreign investors were net sellers. They also documented that large shareholder block ownership declined by over 30% over the two years prior to the delisting, indicating that informed investors had identified the potential losses that might have been generated by these companies and started adjusting their holdings.

[Park et al. \(2018\)](#) looked at the wealth effects of involuntary delistings for Japanese stocks. Similar to [Park et al. \(2014\)](#), the authors examined the influence of what they called “insider opportunism” surrounding a delisting as well as corporate governance structures, liquidity, and the legal environment for these involuntary delistings. To document insider opportunism, they examined ownership changes by insiders prior to the delistings. The authors’ results expose the disruption and low liquidity surrounding the delisting. Interestingly, they found only small insider ownership changes of around 2% to 3% drop in insider ownership. The Japanese markets are uniquely different from the US markets both in their insider trading legal differences as well as the Keiretsu ownership structure of Japanese firms, where large banks often make substantial investments in the firms with which they have business relationships. The authors find that higher insider bank ownership contributed to less price decline prior to the delistings but a much greater drop after the delistings for their sample of firms.

[Huynh and Smith \(2017\)](#), similar to previous research in the US markets on momentum trading profits, studied the momentum effects of delistings for the Australian market. The momentum strategy success depended on the nature of the delisted stock. The found large stocks have momentum profits even after controlling for delisting. More recently, [Fidanza \(2022\)](#) looked at the wealth effects of delisted firms on European exchanges using an event student methodology and also examined the operating performance of these firms after their delisting. The authors found a bump in pre-delisting prices while observing price declines following the announcements. Interestingly, they found that operating performance showed no significant change post-delisting.

In another aspect, [Rogova and Belousova \(2021\)](#) investigated the effects of stock delisting on the stock returns of rival companies in Russia. Using the event study methodology, they found that stock delisting has significant positive effects on competitors’ stock returns. Specifically, they documented that competitors’ stock returns increase significantly both following the dates of delisting announcements and completion, being more pronounced after the dates of delisting announcements.

Overall, for the U.S. and international markets, the research indicates a clear negative impact of returns for involuntary delistings, especially surrounding firm bankruptcy. However, for voluntary delistings and mergers, there is generally little to no impact on returns surrounding the delisting process.

### 3. Overview of the Vietnam Stock Market and Regulations on Delisting in Vietnam

The two exchanges that comprise the Vietnam stock market are the Ho Chi Minh Stock Exchange (HOSE) and the Hanoi Stock Exchange (HNX). The HOSE, launched on 28 July 2000, was the first stock exchange in Vietnam and is the largest stock exchange in Vietnam. According to Decree No. 58/2012/ND-CP implemented on 20 July 2012, only firms with equity over VND 120 billion (about USD 5.3 million) are licensed to list their stocks on the HOSE, while a minimum equity is required for listing stocks on HNX is only VND 30 billion (USD 1.3 million). On the HOSE, only two stocks with a total market capitalization of VND 444 billion (USD 19.4 million) were listed and traded in the first session. Growth in the total number of companies listed on the market progressed slowly in the beginning. By the end of 2001, there were only 11 companies listing their stocks on the market. Despite the initial start, the HOSE has experienced rapid growth over the last two decades as a larger number of enterprises have opted to go public. By the end of 2021, there were 749 firms with stocks listed on the market, including 404 companies for the HOSE and 345 companies for the HNX. In addition, the market size, measured by the capitalization-to-GDP ratio, was rather small in the 2000–2005 period, but it has remarkably increased during the period from 2006 to 2021. In fact, the market's capitalization-to-GDP ratio reached 75.6% at the end of 2021 compared to 0.2% and 0.9% at the end of 2000 and 2005, respectively. Although the Vietnam stock market has considerably increased the number of companies listed and total capitalization during the past two decades, it continues to be classified in the frontier markets group for MSCI's (Morgan Stanley Capital International's) market classification.

Regarding stock delisting, according to the Vietnamese Law on Securities, stocks could be delisted from a stock exchange, either voluntarily or compulsorily. A voluntary delisting is decided by a listed firm based on the cost–benefit analysis of keeping stocks listed. On the other hand, a compulsory delisting occurs when a stock violates regulations and fails to meet financial standards. Specifically, a stock is compulsorily delisted from a stock exchange if it falls into any of the cases below:

- The listed firm is canceled with the notification of the State Securities Commission (SSC) of Vietnam;
- The listed firm suspends its main production and business activities for at least one year;
- The listed firm has its registration certificate or operational license revoked;
- The listed firm's shares are not traded on a stock exchange for one year;
- The firm's stocks are not publicly traded within 90 days from the date that a listing is approved for trading by a stock exchange;
- The listed firm in three consecutive years incurs losses, or total accumulated losses exceed the contributed charter capital, or the firm has negative equity in the latest audited annual;
- The listed firm ceases to exist due to a reorganization, bankruptcy, or dissolution;
- The auditing company refuses to perform an audit or to provide an opinion on the latest annual financial statements for the firm or to have an exceptional opinion regarding the annual financial statements for three consecutive years;
- The listed firm has violated the deadline for annual financial statements submission for three consecutive years;
- The SSC or the stock exchange determines that the listed firm used fraudulent documents in the application for listing;
- The listed firm's main business lines are suspended or banned;
- The listed firm does not fulfill the listing requirements due to a merger, split, or other restructuring of firms;

- The listed company violates the obligation of information disclosure or fails to successfully complete the firm's financial obligations to the stock exchange.

#### 4. Data and Methodology

##### 4.1. Data

For this study, a sample of 118 stocks were compulsorily delisted from the Vietnam stock market for the period from October 2011 to December 2021. It is important to note that the first company was delisted from the market on 10 October 2011. To serve this event study, daily price data on stocks and market indexes have been collected for 10 trading days prior to and subsequent to the announcement date of delisting. The data for this analysis were obtained from the HOSE website ([www.hsx.vn](http://www.hsx.vn)), accessed on 30 June 2022, and the HNX ([www.hnx.vn](http://www.hnx.vn)), accessed on 30 June 2022. Then, the daily continuously compounded returns for stocks and the market were calculated with the following equation:

$$R_t = \text{Log}(P_t) - \text{Log}(P_{t-1}) \quad (1)$$

where

$R_t$ : Stock/market returns at trading day  $t$ ;

$P_t$ : Stock prices/market index at trading day  $t$ ;

$P_{t-1}$ : Stock prices/market index at trading day  $t - 1$ .

##### 4.2. Research Methodology

To investigate the effects of delisting on stock returns in the Vietnam stock market, this study employs the event study methodology that has been widely used in the financial literature (Liu and Stow 2005; Truong et al. 2006; You et al. 2012; Fidanza 2022). In this study, the event date is defined as the announcement date of delisting, and the event window includes 10 pre-event days and 10 post-event days ( $-10, +10$ ). To employ the event study methodology, abnormal returns ( $AR$ ) are first calculated for every stock using the market-adjusted model as follows:

$$AR_{it} = R_{it} - R_{mt} \quad (2)$$

where

$AR_{it}$ : Abnormal return of stock  $i$  for trading day  $t$ ;

$R_{it}$ : Stock return of stock  $i$  for trading day  $t$ ;

$R_{mt}$ : Market return for trading day  $t$ ;

Then, average abnormal returns ( $AAR$ ) for each trading day of the event window are computed by using the following equation:

$$AAR_t = \frac{\sum_{i=1}^{118} AR_{it}}{118} \quad (3)$$

Subsequently, the average cumulative abnormal returns ( $ACAR$ ) are calculated for each tracking period ( $k$ ) using the equation:

$$ACAR_k = \sum_{t=1}^k AAR_k \quad (4)$$

Finally, both parametric  $t$ -test and non-parametric signed-rank test are applied to test for statistical significance of the differences in abnormal return between pre- and post-delisting periods. It is expected that the delisting will have negative effects on stock returns. In other words, the abnormal return of stocks in the post-delisting periods is lower than their own returns in the pre-delisting.

Given a negative effect on abnormal returns that result from delisting, the literature documents that differences would arise due to differences in the size of companies (Fama and French 1993; Shumway and Warther 1999; Huynh and Smith 2017). Therefore, for the next step, we partition our data into two portfolios, bigger firms and smaller firms, based on their capitalization in the delisting announcement date. Firms with capitalization above the median for the sample are identified as bigger firms; otherwise, they are delegated to the second group of smaller firms. The different effects of delisting on abnormal returns between two groups are also tested using the same procedure mentioned above.

## 5. Empirical Results

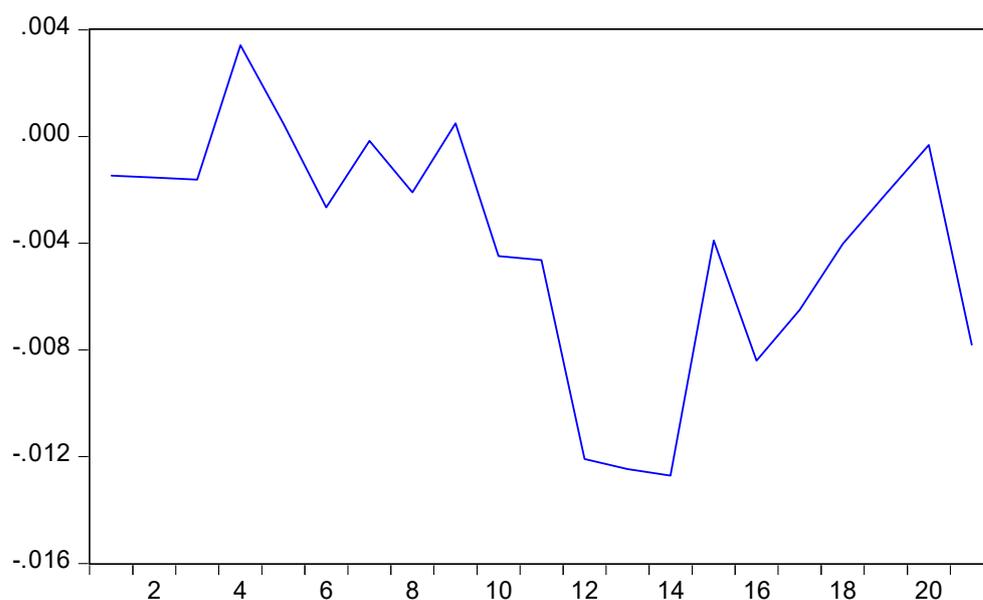
### 5.1. Descriptive Statistics of AR of Delisted Stocks

The descriptive statistics of abnormal returns for single days around the delisting announcement are presented in Table 1. It is observed that the mean AR is negative for all single days around announcement dates of delisting, except T – 6 and T – 7. For the post-delisting announcement period, the largest and smallest negative mean ARs are found for T + 3 (–0.0134) and T + 9 (–0.0004), respectively. Moreover, Figure 1 shows that the mean AR tends to decrease for the period from T – 7 to T – 1 and drop sharply during the period from T + 1 to T + 3. In addition, the descriptive statistics of ACAR shown in Table 2 indicate that the mean ACAR is negative for all studied periods following announcement dates of delisting, ranging from –0.0124 [+1, +3] to –0.0070 [+1, +9].

**Table 1.** Descriptive statistics of AR of delisted stocks around announcement dates.

Trading Days	Observations	Minimum	Mean	Maximum	Standard Deviation
<i>Pre-delisting announcement</i>					
T – 10	118	–0.0505	–0.0015	0.0354	0.0158
T – 9	118	–0.0482	–0.0015	0.0414	0.0176
T – 8	118	–0.0958	–0.0016	0.0543	0.0200
T – 7	118	–0.0606	0.0034	0.0522	0.0173
T – 6	118	–0.0516	0.0005	0.0534	0.0186
T – 5	118	–0.0545	–0.0027	0.0527	0.0208
T – 4	118	–0.0452	–0.0002	0.0506	0.0186
T – 3	118	–0.1283	–0.0021	0.0654	0.0216
T – 2	118	–0.0631	–0.0005	0.0387	0.0176
T – 1	118	–0.0507	–0.0045	0.0427	0.0164
T <sub>0</sub>	118	–0.0581	–0.0046	0.0327	0.0188
<i>Post-delisting announcement</i>					
T + 1	118	–0.1069	–0.0121	0.0401	0.0227
T + 2	118	–0.0785	–0.0128	0.0815	0.0236
T + 3	118	–0.1759	–0.0134	0.0634	0.0268
T + 4	118	–0.0547	–0.0043	0.1381	0.0309
T + 5	118	–0.0592	–0.0094	0.0632	0.0236
T + 6	118	–0.0915	–0.0074	0.0447	0.0250
T + 7	118	–0.0796	–0.0047	0.1729	0.0339
T + 8	118	–0.0610	–0.0026	0.0603	0.0237
T + 9	118	–0.0467	–0.0004	0.1053	0.0284
T + 10	118	–0.0787	–0.0095	0.0598	0.0256

Note: T<sub>0</sub> is the announcement date of delisting.



**Figure 1.** Average AR of stocks around announcement dates of delisting.

**Table 2.** Descriptive statistics of ACAR of delisted stocks for studied periods.

Periods	Observations	Minimum	Mean	Maximum	Standard Deviation
<i>Pre-delisting announcement periods</i>					
[−1, −2]	118	−0.0746	−0.0028	0.0685	0.0195
[−1, −3]	118	−0.0731	−0.0032	0.0562	0.0157
[−1, −4]	118	−0.0733	−0.0027	0.0414	0.0149
[−1, −5]	118	−0.0586	−0.0030	0.0395	0.0135
[−1, −6]	118	−0.0523	−0.0022	0.0442	0.0123
[−1, −7]	118	−0.0536	−0.0012	0.0477	0.0118
[−1, −8]	118	−0.0549	−0.0013	0.0491	0.0110
[−1, −9]	118	−0.0425	−0.0011	0.0518	0.0103
[−1, −10]	118	−0.0340	−0.0010	0.0537	0.0102
<i>Post-delisting announcement periods</i>					
[+1, +2]	118	−0.0728	−0.0123	0.0312	0.0181
[+1, +3]	118	−0.0804	−0.0124	0.0267	0.0162
[+1, +4]	118	−0.0453	−0.0103	0.0338	0.0144
[+1, +5]	118	−0.0478	−0.0099	0.0341	0.0140
[+1, +6]	118	−0.0413	−0.0093	0.0339	0.0132
[+1, +7]	118	−0.0468	−0.0086	0.0348	0.0129
[+1, +8]	118	−0.0413	−0.0078	0.0371	0.0122
[+1, +9]	118	−0.0311	−0.0070	0.0355	0.0113
[+1, +10]	118	−0.0342	−0.0070	0.0319	0.0110

### 5.2. The Effects of the Delisting Announcement on Stock Returns

Based on the sample of 118 delisted stocks, the parametric and non-parametric tests are conducted to measure the effects of the delisting on stock returns in the Vietnam stock market. The empirical results derived from these tests are reported in Tables 3 and 4. Specifically, Table 3 shows that the mean AR of delisted stocks is negative and statistically different from zero at the one percent level for  $T + 1$ ,  $T + 2$ ,  $T + 3$ ,  $T + 5$ ,  $T + 6$ , and  $T + 10$ . In addition, Table 3 shows that the average AR of delisted stocks for the first three trading days following the announcement of delisting is lower than the first trading day before the announcement of the delisting. Specifically, the mean AR for  $T + 1$  and  $T + 2$  is lower than  $T - 1$  by 0.76% and 0.83% at the 1% level of significance, respectively.

Furthermore, the results presented in Table 4 reveal that the mean ACAR of delisted stocks is negative and statistically different from zero at the one percent level for all studied periods following the announcement of delisting. In addition, a comparison of ACAR between pre- and post-delisting periods indicates that the differences in mean (median) ACAR are negative, and statistically significant difference ranges from zero at the one percent level for all studied periods. The difference is largest for the period [+1, +2] and tends to decrease for the remaining periods.

In summary, these findings provide evidence to conclude that delisting has negative effects on stock returns in the Vietnam stock market. The findings are consistent with previous empirical results of Meera et al. (2000), Chandy et al. (2004), You et al. (2012), Pour and Lasfer (2013), Park et al. (2018), and Fidanza (2022). This evidence implies that investors can earn abnormal returns by establishing trading strategies on the basis of delisting information. Specifically, the proposed trading strategy is that investors should sell stocks immediately after information about delisting is released and buy them back on the third day following the announcement of delisting, and then sell them again at T + 9. It is important to note that current transaction costs for stock trading on the Vietnam stock market are about 0.20% (Truong et al. 2023). Therefore, by using this trading strategy, investors can earn about 1.78% in return.

With the negative effect of delisting on stock returns, it is expected that differences would arise due to differences in the sizes of companies. Therefore, in the next step, we split the data into two groups, bigger firms and smaller firms, based on their capitalization in the delisting announcement date. Firms with capitalization above the median of the sample are referred to as bigger firms; otherwise, they are categorized into the second group of smaller firms. The results derived from tests for the different effects of delisting on stock returns between the two groups are presented in Table 5. It is observed that the delisting has a negative effect on the returns of two groups for all tracking periods following the announcement of delisting. However, the effect on each group is different. Specifically, the negative effect of delisting on the returns of smaller firms is greater than for bigger firms. For instance, the outcome of our comparison shows that the differences in mean ACAR for smaller firms are  $-0.0162$  [+1, +2] and  $-0.0151$  [+1, +3] compared to  $-0.0028$  [+1, +2] and  $-0.0038$  [+1, +3] for the larger firms.

**Table 3.** Summary of results from tests for AR of trading days following the announcement of delisting.

Trading Day	Observations	Mean (Median)	Trading Days	Mean (Median)	Differences in Mean (Median) between Two Trading Days	t-Statistic for Difference in Mean between Two Trading Days	z-Statistic for Difference in Median between Two Trading Days
T − 1	118	−0.0045 (−0.0013)	T + 1	−0.0121 *** (−0.0048)	−0.0076 (−0.0035)	2.95 ***	2.62 ***
T − 1	118	−0.0045 (−0.0013)	T + 2	−0.0128 *** (−0.0090)	−0.0083 (−0.0077)	3.13 ***	3.76 ***
T − 1	118	−0.0045 (−0.0013)	T + 3	−0.0134 *** (−0.0080)	−0.0089 (−0.0067)	3.06 ***	3.31 ***
T − 1	118	−0.0045 (−0.0013)	T + 4	−0.0043 (−0.0034)	0.0002 (−0.0021)	0.07	1.29
T − 1	118	−0.0045 (−0.0013)	T + 5	−0.0094 *** (−0.0064)	−0.0049 (−0.0051)	1.84	2.26 **
T − 1	118	−0.0045 (−0.0013)	T + 6	−0.0074 *** (−0.0059)	−0.0029 (−0.0046)	1.05	1.66
T − 1	118	−0.0045 (−0.0013)	T + 7	−0.0047 (−0.0027)	−0.0002 (−0.0014)	0.06	0.94
T − 1	118	−0.0045 (−0.0013)	T + 8	−0.0026 (−0.0003)	0.0019 (0.0010)	0.70	0.77
T − 1	118	−0.0045 (−0.0013)	T + 9	−0.0004 (−0.0014)	0.0041 (−0.0001)	1.32	0.26
T − 1	118	−0.0045 (−0.0013)	T + 10	−0.0095 *** (−0.0040)	−0.0050 (−0.0027)	1.74	1.75

\*\*\* and \*\* denote significance at 1% and 5% levels, respectively.

**Table 4.** Summary of results from tests for ACAR of studied periods following the announcement date of delisting.

Pre-Delisting Periods	Observations	Mean (Median)	Post-Delisting Periods	Mean (Median)	Differences in Mean (Median) between Two Periods	t-Statistic for Difference in Mean between Two Periods	z-Statistic for Difference in Median between Two Periods
[−1, −2]	118	−0.0028 (−0.0002)	[+1, +2]	−0.0123 ** (−0.0101)	−0.0095 (−0.0099)	−3.86 ***	4.57 ***
[−1, −3]	118	−0.0032 ** (−0.0013)	[+1, +3]	−0.0124 *** (−0.0115)	−0.0092 (−0.0102)	−4.43 ***	4.84 ***
[−1, −4]	118	−0.0027 * (−0.0013)	[+1, +4]	−0.0103 *** (−0.0094)	−0.0076 (−0.0081)	−3.99 ***	4.53 ***
[−1, −5]	118	−0.0030 ** (−0.0016)	[+1, +5]	−0.0099 *** (−0.0089)	−0.0069 (−0.0073)	−3.84 ***	4.20 ***
[−1, −6]	118	−0.0022 * (−0.0009)	[+1, +6]	−0.0093 *** (−0.0069)	−0.0071 (−0.0060)	−4.33 ***	4.72 ***
[−1, −7]	118	−0.0012 (−0.0007)	[+1, +7]	−0.0086 *** (−0.0070)	−0.0074 (−0.0063)	−4.59 ***	4.93 ***
[−1, −8]	118	−0.0013 (−0.0006)	[+1, +8]	−0.0078 *** (−0.0060)	−0.0065 (−0.0054)	−4.31 ***	4.78 ***
[−1, −9]	118	−0.0011 (−0.0009)	[+1, +9]	−0.0070 *** (−0.0048)	−0.0059 (−0.0039)	−4.16 ***	4.26 ***
[−1, −10]	118	−0.0010 (−0.0009)	[+1, +10]	−0.0070 *** (−0.0053)	−0.0060 (−0.0044)	−4.34 ***	4.20 ***

\*\*\*, \*\*, and \* denote significance at 1%, 5%, and 10% levels, respectively.

**Table 5.** Summary of results from tests for differences in ACAR between larger and smaller firms.

Bigger Firms				Smaller Firms				Differences in Mean (Median) between Two Groups	t-Statistic (z-Statistic) for Difference in Mean (Median) between Two Groups		
Pre-Delisting Periods	Mean (Median)	Post-Delisting Periods	Mean (Median)	Differences in Mean (Median) between Two Periods	Pre-Delisting Periods	Mean (Median)	Post-Delisting Periods			Mean (Median)	Differences in Mean (Median) between Two Periods
[−1]	−0.0067 (−0.0016)	[+1]	−0.0066 (−0.0004)	0.0001 (0.0012)	[−1]	−0.0058 (−0.0022)	[+1]	−0.0176 (−0.0127)	−0.0118 (−0.0105)	0.0119 (0.0093)	1.97 * (1.91) *
[−1, −2]	−0.0033 (−0.0014)	[+1, +2]	−0.0061 (−0.0031)	−0.0028 (−0.0017)	[−1, −2]	−0.0022 (0.0020)	[+1, +2]	−0.0184 (−0.0177)	−0.0162 (−0.0157)	0.0134 (0.0140)	3.05 *** (3.12) ***
[−1 −3]	−0.0030 (−0.0013)	[+1, +3]	−0.0063 (−0.0030)	−0.0033 (−0.0017)	[−1, −3]	−0.0034 (−0.0010)	[+1, +3]	−0.0185 (−0.0185)	−0.0151 (−0.0175)	0.0118 (0.0158)	3.09 *** (3.58) ***
[−1, −4]	−0.0013 (−0.0016)	[+1, +4]	−0.0041 (−0.0038)	−0.0028 (−0.0022)	[−1, −4]	−0.0040 (−0.0006)	[+1, +4]	−0.0165 (−0.0174)	−0.0125 (−0.0168)	0.0097 (0.0146)	2.77 *** (3.02) ***
[−1, −5]	−0.0014 (−0.0017)	[+1, +5]	−0.0043 (−0.0027)	−0.0029 (−0.0010)	[−1, −5]	−0.0046 (−0.0013)	[+1, +5]	−0.0155 (−0.0169)	−0.0109 (−0.0156)	0.0080 (0.0146)	2.37 ** (2.66) ***
[−1, −6]	−0.0004 (−0.0011)	[+1, +6]	−0.0043 (−0.0035)	−0.0039 (−0.0024)	[−1, −6]	−0.0040 (−0.0008)	[+1, +6]	−0.0144 (−0.0161)	−0.0104 (−0.0153)	0.0065 (0.0129)	2.17 ** (2.60) ***
[−1, −7]	0.0010 (−0.0008)	[+1, +7]	−0.0033 (−0.0022)	−0.0043 (−0.0014)	[−1, −7]	−0.0034 (−0.0006)	[+1, +7]	−0.0139 (−0.0131)	−0.0105 (−0.0125)	0.0062 (0.0111)	2.11 ** (2.27) **
[−1, −8]	0.0005 (−0.0001)	[+1, +8]	−0.0029 (−0.0026)	−0.0034 (−0.0025)	[−1, −8]	−0.0030 (−0.0012)	[+1, +8]	−0.0127 (−0.0118)	−0.0097 (−0.0106)	0.0063 (0.0081)	2.21 ** (2.83) ***
[−1, −9]	0.0009 (−0.0004)	[+1, +9]	−0.0024 (−0.0013)	−0.0033 (−0.0009)	[−1, −9]	−0.0031 (−0.0021)	[+1, +9]	−0.0115 (−0.0133)	−0.0084 (−0.0112)	0.0051 (0.0103)	1.92 * (2.68) ***
[−1, −10]	0.0009 (−0.0007)	[+1, +10]	−0.0025 (−0.0013)	−0.0034 (−0.0006)	[−1, −10]	−0.0029 (−0.0022)	[+1, +10]	−0.0116 (−0.0105)	−0.0088 (−0.0083)	0.0054 (0.0077)	1.97 * (2.71) ***

\*\*\*, \*\*, and \* denote significance at 1%, 5%, and 10% levels, respectively.

## 6. Conclusions

This study empirically investigates the effects of delisting on stock returns for the Vietnam stock market. Using the event study approach, the results derived from both parametric and non-parametric tests consistently confirm that the delisting has negative effects on stock returns in the Vietnam stock market. Specifically, the AR of stocks is negative for all single days following announcement dates of delisting. In addition, it was found that the average AR of delisted stocks for the first three trading days following the announcement of delisting was lower than the first trading day before the announcement of delisting. Moreover, the mean ACAR of delisted stocks is negative for all studied periods following the announcement of delisting. These results are consistent with previous empirical findings of Meera et al. (2000), Chandy et al. (2004), You et al. (2012), Pour and Lasfer (2013), Park et al. (2018), and Fidanza (2022). Moreover, a comparison of ACAR between pre- and post-delisting periods reveals that the differences in mean ACAR are negative for all studied periods. Given a negative effect on abnormal returns as a result of delisting, we also find that the negative effect of delisting on the returns of smaller firms is greater than for bigger firms.

Although this study has enriched our understanding of the market reaction to delisting announcements in a frontier stock market, it still has a limitation that can be addressed in future empirical research. This limitation is concerned with weaknesses in the data that are used in this study. With the data, we do not use financial indicators of firms to predict stock delistings. This limitation awaits further research for the Vietnam Stock Market.

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