

## Loan Moratorium Announcements and Stock Market Reaction: An Event Study Analysis

(Pengumuman Moratorium Pinjaman dan Reaksi Pasaran Saham: Analisis Event Study)

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### ABSTRACT

*Loan moratoriums have been a crucial lifeline defence for many borrowers during the unprecedented COVID-19 pandemic. Despite the massive amount of funds allocated to support affected borrowers, the impact on banks remains unexplored. This study aims to examine the impact of the loan moratorium announcements on Malaysian banks' stocks. Utilising an event study methodology, this study shows that bank investors reacted differently to different types of loan moratoriums. Bank investors positively valued moratoriums that did not waive accrued interest and covered a broader group of borrowers. This study suggests that while moratoriums must be given to borrowers during difficult times, the financial interests of banks should also be considered. Hence, loan moratoriums should feature accrued interest payments to ensure the banks' prospects remain stable from the investors' perspective.*

*Keywords: Bank stock returns; loan moratorium announcements; COVID-19 pandemic; event study*

### ABSTRAK

*Moratorium pinjaman telah menjadi talian hayat yang amat penting bagi ramai peminjam semasa pandemik COVID-19. Walaupun sejumlah besar dana telah diperuntukkan untuk membantu peminjam yang terjejas, kesan moratorium pinjaman terhadap bank masih tidak terjawab. Kajian ini bertujuan untuk mengkaji kesan pengumuman moratorium pinjaman terhadap saham bank Malaysia. Dengan menggunakan metodologi event study, kajian ini menunjukkan bahawa pelabur bank bertindak balas secara berbeza terhadap jenis moratorium pinjaman yang berlainan. Pelabur bank menyambut baik moratorium yang tidak mengetepikan faedah terakru dan meliputi kumpulan peminjam yang lebih luas. Kajian ini mencadangkan bahawa walaupun moratorium perlu diberikan kepada peminjam semasa mereka menghadapi kesukaran, kepentingan kewangan bank juga perlu dipertimbangkan. Oleh itu, moratorium pinjaman perlu disertakan pembayaran faedah terakru untuk memastikan prospek bank kekal stabil dari sudut pandangan pelabur.*

*Kata kunci: Pulangan saham bank; pengumuman moratorium pinjaman; pandemik COVID-19; event study*

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### INTRODUCTION

The COVID-19 pandemic is having a devastating impact on the global economy. This health crisis has caused severe economic hardship for households and businesses alike following the series of lockdown events intended to contain the virus. In Malaysia, the economy contracted by 17.1% and the unemployment rate increased by 1.8% in the second quarter of 2020 due to the global economic downturn and the impact of government-imposed movement control orders (DOSM 2020). To address this sudden setback, the government has enacted several policy interventions to ease the financial burdens of affected individuals and businesses.

A crucial intervention related directly to banks has been loan moratoriums. A loan moratorium or payment deferral program is defined as a temporary suspension of debt obligations owed to banks or other financial institutions (Coelho & Zamil 2020). This facility allows borrowers to suspend their loan repayments for a period agreed by the lender, and the payments would resume

once the suspension period ends. On 25 March 2021, Bank Negara Malaysia (BNM) announced a six-month automatic blanket moratorium.<sup>1</sup> All borrowers, regardless of loan type and whether their income was affected, were eligible for the moratorium, which was to begin on 1 April and last until 30 September 2020.<sup>2</sup> According to the Association of Banks in Malaysia (ABM), the estimated value of the blanket moratorium, as of September 2020, was around RM97.26 billion, with 65% of this amount having been granted to individual borrowers. The moratorium benefited 7.7 million individual borrowers (93% of total individual borrowers) and 243,000 SMEs (95% of total SMEs).

The initial six-month blanket loan moratorium was initially planned to end on 30 September 2021. However, on 29 July 2020, the government announced a three-month extension to the moratorium, from 1 October 2021 to 31 December 2021. This extension, though, was only for adversely affected borrowers. Unlike the previous moratorium, potential applicants were required to formally apply for the extension from their respective

banks. Approximately 700,000 borrowers applied for this targeted loan moratorium, with an approval rate of 98%. On 6 November 2020, the government announced a program of enhanced targeted payment assistance, which was to effect from 1 December 2020 to 30 June 2021. As an enhancement of the previous moratorium, the later moratorium was extended to borrowers from the middle-income group, who needed to discuss their application with their respective banks.

Following the implementation of the full movement control order (FMCO) on 1 June 2021, the government once again introduced a loan moratorium, which was announced on 28 June 2021. This was based on an opt-in element, whereby all borrowers, regardless of their income group, were eligible to benefit from the six-month moratorium. Unlike the blanket moratorium, the opt-in moratorium required borrowers to apply for the deferment via their respective banks without being required to submit any documentation, and approvals were granted automatically. More importantly, the opt-in moratorium clearly stated that the accrued interest would be collected by banks when payments resumed in the post-moratorium period. The inclusion of accrued interest was an important feature that had been missing from the previous moratoriums, with banks providing clear guidelines on how accrued interest would be accounted for in deferred loans. As reported by BNM, between 1 June 2021 and 29 October 2021, over 2.7 million borrowers and 93,000 SMEs successfully obtained loan deferment assistance.<sup>3</sup>

The objective of this study is to examine the impact of loan moratorium announcements on the stock prices of banks in Malaysia. This is a timely and vital area of research, given that the loan moratoriums provided essential lifelines that have helped affected borrowers to survive during the period of adversity by giving them short-term relief on their debt burden. However, it remains unknown whether the loan moratoriums affected customers' post-moratorium credit risk (Coelho & Zamil 2020) or relieved banks from possible significant loan defaults. To bridge this important gap and evaluate the extent of these impacts, we examined the reactions of bank investors to the loan moratorium announcements. Our findings may provide valuable information to policymakers about the ideal way to assist borrowers during difficult times and simultaneously protect the interests and stability of the banking system.

Using an event study methodology with a sample of nine listed banks in Malaysia, we discovered that bank investors reacted negatively to the announcement of the targeted moratorium in July 2020. In contrast, the investors reacted positively to the announcement of the opt-in moratorium in June 2021. A key difference between these two moratoriums was that the latter explicitly stated that banks would not waive the interest accrued during the deferment period. The accrued interest was to be paid with the principal when the payment resumed in the post-moratorium period. This feature may contribute to

banks' future sustainability, which eventually led to their attracting positive valuations upon the announcement of this moratorium.

The critical contribution of this study is that it offers new evidence regarding the impacts of government policies during the COVID-19 pandemic (e.g., Demirgüç-Kunt et al. (2021)) and of loan moratorium announcements on banks' stock prices (Bhattacharjee et al. 2020; Mohd Sah & Wong 2021). In particular, it shows that depending on their salient features, the loan moratorium announcements attracted significant (positive and negative) responses from bank investors. This finding suggests that investors valued the potential effects of loan moratoriums on the banks' prospects.

This study also has important policy implications. Since loan moratoriums have become a vital form of financial aid for affected borrowers during the pandemic, the government needs to continue offering this facility through banks. However, the government should also consider the banks' financial interests in maintaining sufficient short- and long-term liquidity, as well as minimal credit risks in the post-moratorium period. Hence, the inclusion of accrued interest in loan deferments seems to be ideal for both banks and borrowers. While borrowers can ease their monthly commitment during this difficult period, banks can also ensure the stability of their current and future incomes to continue supplying credit to the economy.

The remainder of this study proceeds as follows: the second section reviews the related literature and discusses the testable hypotheses. The third section describes the event study methodology and the data sources. The results and discussions are presented in the fourth section, while the fifth section concludes the study.

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### LITERATURE REVIEW

A limited number of studies have examined the impact of economic policies on the banking sector during the COVID-19 pandemic. Demirgüç-Kunt et al. (2021) provided cross-country evidence on the effects of various economic policy interventions on bank stock returns. Their sample covered all publicly traded banks in 52 countries from May 2018 to May 2020. The policy interventions they analysed included liquidity support for banks, borrower support (supply funds to borrowers), asset purchases, policy rate adjustments (monetary policy) and prudential measures. The latter include the temporary relaxation of key supervisory elements, such as the relaxation of capital buffer requirements, minimum reserve requirements, the cancellation of stress tests and loan moratoriums. Using an event study methodology, Demirgüç-Kunt et al. (2021) demonstrated that announcements of prudential measures are associated

with negative abnormal returns on bank stocks. This negative response was found to be due to the potential risk that these measures could impend banks' longer-term financial stability. However, this study did not isolate the impact of loan moratorium announcements on bank stock prices because the analysis included many other policies in one regression. A more focused study was undertaken by Bhattacharjee et al. (2020), who examined the loan moratorium announcement in India. Utilising an event study methodology, they found no conclusive evidence regarding the impact of the three-month loan moratorium on the stock prices of Indian banks. A possible explanation for this outcome was that the bank stock price adjustments occurred before the announcement, leaving no significant abnormal returns surrounding the announcement date. In the context of Malaysia, Mohd Sah and Wong (2021) identified an insignificant impact of the blanket loan moratorium announcement on the stock prices of the three largest banks in Malaysia. This study, however, did not examine the subsequent loan moratorium announcements, which might have attracted different reactions from bank investors. Furthermore, they also excluded other banks from the analysis, although these are no less important to the Malaysian banking industry.

#### HYPOTHESIS DEVELOPMENT

The effects of loan moratorium announcements on bank stock returns depend crucially on the investors' expectations regarding the consequences of the loan moratorium/s on banks' future non-performing loans and short-term liquidity. In this study, we focus on several theories, such as banking fragility and funding liquidity, which may explain how and in which directions investors would respond to the loan moratorium announcements in Malaysia. On the one hand, banking fragility theory argues that significant credit defaults by borrowers make banks vulnerable to failure during economic downturns. However, the existence of loan moratoriums might prevent these defaults. This would have a favourable impact on bank stock returns when a loan moratorium is announced. The funding liquidity risk theory, on the other hand, argues that if banks allow substantial amounts of loan deferments, this may cause them to encounter severe liquidity shortages, which may result in their failure. This would cause bank stock prices to fall following a loan moratorium announcement.

The risk of loan defaults by borrowers during the COVID-19 pandemic has been more pronounced than in normal times (Ari et al. 2020; Bitar & Tarazi 2020). Prior theoretical work has also shown that major pandemics could cause banking crises, especially in developing countries, due to potentially large deposit withdrawals and relative banking fragility (Lagoarde-Segot & Leoni 2013). During the COVID-19 pandemic, firms stopped operating due to lockdowns, while households lost income because of unemployment or enforced unpaid

leave, which increased their risk of defaulting on bank loans. Such defaults might cause an increase in non-performing loans (NPLs) among banks, impair their balance sheets and weaken their credit growth (Aiyar et al. 2015; Kalemli-Özcan et al. 2019). Ari et al. (2020) showed that dealing effectively with NPLs during a crisis is crucial to economic recovery. They also argued that the treatment for NPLs could be different during the COVID-19 pandemic than during past crises due to the nature of the new pandemic, which was not preceded by typical causes of a banking crisis (e.g., a credit boom).

Furthermore, the pandemic has also required banks to supply more funds for new lending to affected firms (Li et al. 2020). While banks need to provide more funds to become lenders of the first resort, they also face potential loan defaults from existing borrowers. During this challenging time, loan moratoriums prevent loans from defaulting. The loans involved in the moratorium during the pandemic are not migrated from the "performing" level to the "under-performing" or "non-performing" levels in banks' standard accounting treatment (Coelho & Zamil 2020). This seems to be good news for banks since potential defaults by affected borrowers are not recorded as non-performing loans in the banks' balance sheets. If investors are confident that a moratorium could reverse the negative effect of the COVID-19 pandemic on their banks (by making loans payable in the future rather than defaulting now), they will positively value the announcement of a loan moratorium. In other words, investors will treat the announcement as a value-creation announcement that will benefit banks in the future.

Other theoretical work also argues that loan moratorium announcements may attract negative reactions from investors. One theory is related to funding liquidity risk. Following the seminal work by Diamond and Dybvig (1983) on bank liquidity risk and bank runs, a growing body of literature has emerged discussing the relationship between liquidity creation and financial stability (Allen & Gale 2000; Diamond & Rajan 2001; 2005). These authors argue that a liquidity shortage can lead to solvency problems and have a subsequently adverse impact on the entire economy through contagion bank failures. In Malaysia, all loans were automatically included in the moratorium, regardless of borrowers' conditions. This exposed banks to possible liquidity problems that would affect not only their capital but also their ability to generate profits via lending (Coelho & Zamil 2020). As the Finance Minister mentioned, the potential loss for banks during the six-month moratorium was expected to be quite significant, with a potential loss of RM6.4 billion and a reduction in their lending capacity to around RM79 billion (The Star 2020). This may lead to a liquidity shortage among banks, where the inflow of funds is less than the outflow (Holmstrom & Tirole 1998; Drehmann & Nikolaou 2013).

Another argument relates to the post-moratorium credit risk. Coelho and Zamil (2020) argued that a legislative moratorium may expose banks to credit

risk if participation in the moratorium is mandatory for banks and involves flexible eligibility criteria, as in the Malaysian context. Because of this, many loans, regardless of the borrower-specific criteria, have received automatic deferrals, involving a massive amount of funds. These deferrals, however, will increase the debt burden of borrowers once the moratorium ends. According to the Malaysian Financial Reporting Standard (MRFS) 9 framework, modifying or rescheduling loans may greatly increase borrowers' credit risk (MASB 2020) because the deferrals must be treated by the banks as loss allowances when calculating lifetime expected credit losses. For certain types of loans, borrowers might face higher accrued interests that will be reflected in higher monthly repayments (Coelho & Zamil 2020). These higher repayments may lead to greater exposure to credit risk in the post-moratorium period. If the investors are rational about the potential risk and do not consider the positive impact of a loan moratorium, they will negatively value banks following the moratorium announcement. Therefore, two competing hypotheses were formed as follows:

- H<sub>1a</sub> A loan moratorium announcement has a positive impact on bank stock returns.  
 H<sub>1b</sub> A loan moratorium announcement has a negative impact on bank stock returns.

## DATA AND METHODOLOGY

### SAMPLE

The sample included nine banks listed on Bursa Malaysia. These banks and their balance sheet details (e.g., size, capital ratios and loan compositions) are listed in Table A1 in the Appendix. This study utilised daily stock price data from 21 February 2019 to 30 June 2021. The length of this period corresponded to the 250-day estimation window used in this study (i.e., 250 trading days before 25 February 2020 and two trading days after the opt-in moratorium announcement on 28 June 2021).

### DATA SOURCES

The stock price and accounting data were downloaded from the Thompson Reuters Datastream. The announcement dates of various key events (loan moratoriums and MCOs) were obtained from a local online news portal and the websites of Bank Negara Malaysia and the Association of Banks in Malaysia (ABM).

### METHODOLOGY

To examine the impact of loan moratorium announcements on bank stocks, we employed an event study methodology. This has been widely used to analyse

returns behaviour among groups of firms experiencing a common type of event, such as a corporate or regulatory announcement (Kothari & Warner 2007). The event might occur at different points in time or on a particular date, triggering effects of the firm valuation on the stock market. In banking, many studies have employed an event study methodology to analyse investors' responses to various regulatory announcements (Kleinow et al. 2014; Bruno et al. 2018; Chronopoulos et al. 2018; Fiordelisi et al. 2020) and bank corporate event announcements (Chronopoulos et al. 2013). Three critical assumptions were made for this methodology to function effectively: the event was unexpected, no other confounding events occurred within the estimated window and the markets were efficient (Fama et al. 1969).

Our empirical approach began with a computation of the firms' abnormal returns. We first measured the firms' normal returns using the 'market model', based on the FBM-KLCI index. We call these 'predicted returns', which are returns during normal circumstances, without any other significant events that may trigger irregular valuations of bank stocks among investors. To compute the predicted returns, we followed MacKinlay (1997) and used a 250-day estimation window from day  $t-21$  to day  $t-270$ , based on the announcement date of 25 March 2020 (as  $t_0$ ). (The dates of all the related events are listed in Table 1). We started from day  $t-21$  to exclude the MCO 1.0 announcement on 16 March 2020 (day  $t-7$  from our event date of the blanket moratorium announcement). Excluding the period beyond this date was essential to prevent this event from influencing the estimation of normal performance. Figure 1 illustrates the estimation and event windows used in this study. The predicted stock returns were formally estimated using the following market model:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}, \quad t = -21, \dots, -270 \quad (1)$$

where  $R_{it}$  is the daily stock returns for firm  $i$  at day  $t$  and  $R_{mt}$  are the equally weighted FBM-KLCI index returns for day  $t$ . Daily returns were calculated as  $R_{it} = \ln(P_{it}/P_{it-1})$ , where  $P_{it}$  denotes the closing share price of bank  $i$  at time  $t$ . We estimated the model parameters using 250 daily returns observations from 21 to 270 days before the loan moratorium announcement on 25 March 2020. The abnormal returns (AR) were constructed using the sum of the prediction errors, given as Equation (1) in the following model:

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \quad (2)$$

We then calculated the cumulative abnormal returns (CARs) that occurred near the loan moratorium announcements using five- and three-day event windows (day  $-2$  to  $+2$  and day  $0$  to  $+2$ , respectively).<sup>4</sup> These short event windows were chosen due to the assumption that the investors might not have taken long to learn the potential impact of the loan moratorium on their banks. Furthermore, these short event windows ensured that we



TABLE 1. Key events in Malaysia during the COVID-19 pandemic

Event	Announcement date	Period of event
First COVID-19 case detected in Malaysia	25 January 2020	N/a
Movement Control Order 1.0	16 March 2020	18 March - 3 May 2020
Blanket moratorium	25 March 2020	1 April - 30 September 2020
Targeted moratorium	29 July 2020	1 October to 31 December 2020
Enhanced targeted moratorium	6 November 2020	1 December 2020 to 30 June 2021
Movement Control Order 2.0	11 January 2021	13 January to 4 March 2021
Movement Control Order 3.0	10 May 2021	7 May to 31 May 2021
Full Movement Control Order	28 May 2021	1 June to the National Recovery Plan announcement phase
Opt-in moratorium	28 June 2021	July 2021 to January 2022

Notes: This table shows the dates of key events in this study. These dates were retrieved from various sources such as the websites of BNM and the Association of Bank in Malaysia, as well as a local online news portal.

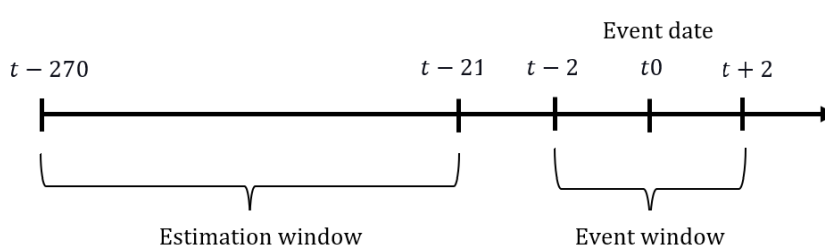


FIGURE 1. Estimation and event windows used in the study

accounted for other events that happened close to the period examined to ensure the reliability of our results (Kothari & Warner 2007; Miyajima & Yafeh 2007). To accomplish our objective, we estimated the deviations between the actual from the expected bank stock returns as a result of the loan moratorium announcements. We then determined whether banks' CARs that occurred near the moratorium announcements were statistically different from zero.

## RESULTS AND FINDINGS

### DESCRIPTIVE STATISTICS

Table 2 displays the descriptive statistics of the CARs used in this study. The means and medians of the CARs for the blanket moratorium were mixed, with positive (five-day event window) and negative (three-day event window) values in both event windows. Meanwhile, the means and medians of the CARs for the targeted moratorium were negative for both event windows. This indicates that investors tended to respond negatively to this moratorium announcement. Contrastingly, the means and medians of the CARs for the opt-in moratorium were positive for both event windows, suggesting a positive response to the announcement of this moratorium.

### RETURNS TRENDS SURROUNDING THE ANNOUNCEMENTS

In this section, we present the results using the event study technique. Figure 2 depicts the monthly returns trend of nine Malaysian banks relative to the market returns (FBM-KLCI Index) over the 3.5-year period from January 2018 to June 2021. As shown in the graph, the average stock returns for the banks fell significantly, from -3.5% in February 2020 to -17.2% in March 2020 (a drop of around 13.5%), in the month when the BNM announced the blanket loan moratorium. For comparison, the average reduction for the market returns was only 6.1% (from -3.2% in February to -9.3% in March) during the same period. In contrast, for the announcement of the targeted loan moratorium in July 2020, the bank stock returns increased to 1.1% from 0.7% in the previous month (a 0.4% increase). Finally, the bank stock returns dropped from 0.9% in May to -1.5% in June 2021 when the government announced the opt-in moratorium on 28 June 2021. From these trends, we can observe that both the bank and market returns fell more significantly in March 2020 than in the other months, presumably due to the announcement of the first movement control order (MCO 1.0) on 16 March 2020.

### CUMULATIVE ABNORMAL RETURNS SURROUNDING LOAN MORATORIUM ANNOUNCEMENTS

We then plotted a graph showing the movement of the cumulative average abnormal returns (CAARs) in the

15-day event window (seven days before and seven days after the event date) to observe the trend of the CAARs occurring close to the announcements of the three moratoriums. These plots are presented in Figure 4. For the blanket moratorium (diamond-shaped plot), the CAARs before the event day were highly negative but appeared to rebound after the event. The high

drops in CAARs during this period were due to the severe impact of the MCO 1.0 announcement on 16 March 2021. This suggests that the impact of the loan moratorium on the bank stock returns was not critical as it had been following the MCO 1.0 announcement. In contrast, the CAARs during the announcement of the targeted moratorium on 29 July 2020 (the square-shaped

TABLE 2. Descriptive statistics

	N	Mean	Median	Min	Max	Std. Dev.
Panel A: Blanket Moratorium						
5-day CAR [-2,2]	9	1.9348	1.7670	-7.0947	11.0250	7.0891
3-day CAR [0,2]	9	-0.1388	-0.7173	-4.2096	7.8192	3.8505
Panel B: Targeted Moratorium						
5-day CAR [-2,2]	9	-1.8854	-1.9197	-5.1567	3.3200	2.5304
3-day CAR [0,2]	9	-1.0473	-0.1650	-2.8750	0.2550	1.3296
Panel C: Opt-in Moratorium						
5-day CAR [-2,2]	9	0.9986	1.2371	-1.7432	2.5412	1.3485
3-day CAR [0,2]	9	0.6163	0.8270	-0.6342	1.8240	0.7068

Notes: This table lists the descriptive statistics of the CARs of all nine listed banks in our sample. We present the number of observations, means, medians, minimum and maximum values, and standard deviations.

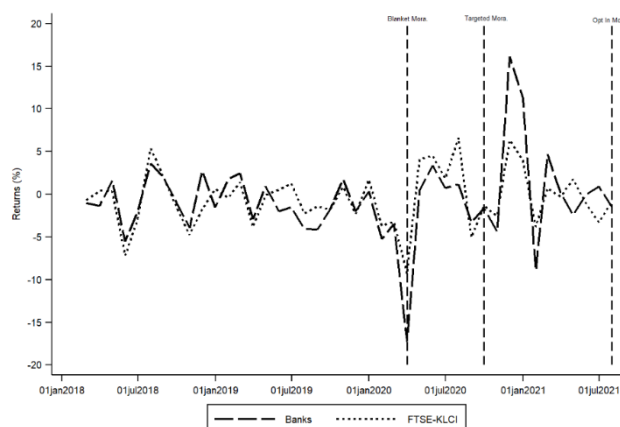


FIGURE 2. Plots of monthly stock returns of nine Malaysian publicly listed banks and FBM-KLCI from January 2018 to June 2021

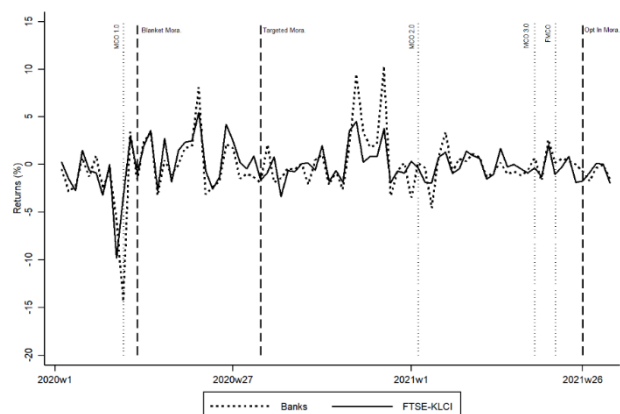


FIGURE 3. Plots of weekly stock returns of nine Malaysian publicly listed banks and FBM-KLCI from January to May 2020

plot) showed a considerable drop after the event date. However, this drop only occurred until day  $t+2$ , after which the CAARs became stagnant. When examining the CAARs during the announcement of the opt-in moratorium (the triangle-shaped plot), the trend was very similar to that of the CAARs for the blanket moratorium. In particular, the CAARs increased after the event day, albeit experiencing a very slight drop on day  $t+1$ . One similarity between these moratoriums (i.e., the blanket and opt-in) is that they were offered to all borrowers, regardless of their exposure to the COVID-19 pandemic. This suggests that banks' investors reacted differently to a moratorium given to a broader group of borrowers compared to a targeted moratorium.

#### SIGNIFICANCE OF ABNORMAL RETURNS

Table 3 presents the results of our event study analysis. As discussed in the third section, we employed five- and three-day event windows to capture the impact of loan moratorium announcements on bank stock returns. In Column 1, the positive and negative CAAR estimates across both event windows suggested that investors had mixed reactions to the blanket moratorium announcement. These market valuations, however, were not statistically significant in both event windows under consideration. Hence, there was no evidence of a market valuation change in response to the blanket moratorium announcement on 25 March 2020. This finding seems to be consistent with Mohd Sah and Wong (2021), who showed that the blanket loan moratorium announcement did not significantly impact Malaysian banks' abnormal returns.

Column 2 shows the CAAR estimates for the targeted moratorium announced on 28 July 2020. The CAARs for both event windows are negative, indicating a drop in the bank stock returns following the announcement. These market valuation drops are statistically significant at the 5% level for both the five- and three-day event windows. In particular, the banks experienced 1.9% and 1.0% market value drops on average in the five- and three-day event windows, respectively. These results suggested that the market expected that the targeted moratorium might negatively affect bank values. This result supports hypothesis H1b and the finding aligns with Demirgüç-Kunt et al. (2021), who found that the announcement of prudential policies, which could include loan moratoriums, causes banks' stock prices to fall. They argued that such policies might expose banks to capital buffer depletions that may threaten their financial stability.

The results tabulated in Column 3 for the opt-in moratorium announcement contradicted the findings shown in Column 2. In particular, both CAAR estimates for five- and three-day event windows were positive and statistically significant at the 5% level. This implies that the market believed the re-introduction of a (non-targeted) moratorium could have given value to banks,

possibly because the loan moratorium could technically have prevented affected borrowers from defaulting on their loans, especially when the full movement control order (FMCO) had been announced a few days before. This result, therefore, provides evidence to support hypothesis H1a and suggests that banks' investors react differently to different types of loan moratoriums. Hence, we extend the findings of Demirgüç-Kunt et al. (2021) to show that loan moratoriums do not necessarily attract negative responses from investors. The responses might also depend on the features of the moratorium, which was not the focus of their study.

#### ROBUSTNESS TEST USING ALTERNATIVE BENCHMARK INDEXES

The results so far have been based on the FBM-KLCI index as a benchmark to determine banks' abnormal returns. Five out of the nine banks in our sample were included in the FBM-KLCI index calculation. This may have resulted in erroneous abnormal returns calculations, whereby the market performance was merely driven by our sample banks. To enhance the robustness of our results, we replaced the FBM-KLCI index with the FTSE Bursa Malaysia Top 100 (FBM-Top 100) and FTSE Bursa Malaysia Emas (FBM-EMAS) indexes. This test aimed to check whether our results would remain unchanged when we used benchmark indexes representing more firms listed on Bursa Malaysia. We then re-ran the results obtained in Table 3 and the new results using the alternative indexes are presented in Table A2. We show that these results were qualitatively similar to the main results shown in Table 3.

Taken together, the results presented thus far have demonstrated that different types of moratoriums cause different market reactions to banks. Despite the mixed results from the two types of loan moratoriums, our study somewhat supports the findings of Demirgüç-Kunt et al. (2021), who showed that prudential measures - such as loan moratoriums - entail major medium-term risk that might threaten financial stability. More importantly, we also show that a moratorium for which all borrowers are eligible, such as the opt-in moratorium, attracts a positive market valuation. This reaction could also relate to the fact that this moratorium did not waive the interest accrued during the deferment period, which might have increased investor confidence in the banks' future profitability.

#### THE IMPACT OF LOAN MORATORIUM ON INDIVIDUAL BANKS

Next, we investigated further the impact of moratorium announcements on individual banks. Since banks generally follow particular business models, have target borrowers and vary in size, the announcement of a loan moratorium might have heterogeneous effects on individual bank stock returns. The event study results of

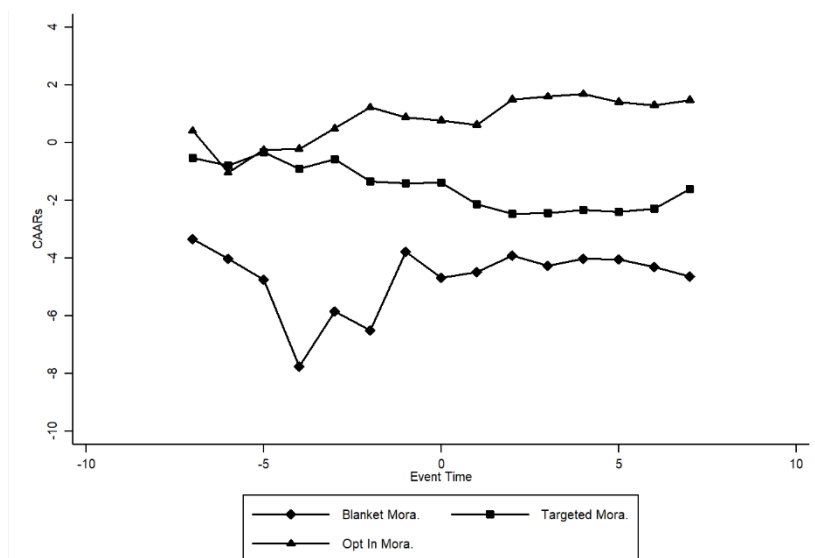


FIGURE 4. Plots of cumulative average abnormal returns (CAARs) for all three loan moratorium announcements from event day -7 to event day +7. The abnormal returns were calculated using the market model

TABLE 3. The impact of loan moratorium announcement on Malaysian Banks' stocks returns

	Blanket Moratorium		Targeted Moratorium		Opt-in Moratorium	
	CAAR	<i>t-stat</i>	CAAR	<i>t-stat</i>	CAAR	<i>t-stat</i>
5-day CAR [-2,2]	1.935	0.820	-1.885	-2.240**	0.999	2.220**
3-day CAR [0,2]	-0.139	-0.110	-1.047	-2.360**	0.616	2.620**
No of bank observations	9	9	9	9	9	9

Notes: This table presents the results of an event study analysis investigating the impact of loan moratorium announcements on bank stock returns as a group. Cumulative average abnormal returns (CAARs) for all nine banks were calculated for two different event windows surrounding the announcements of three types of loan moratoriums. The abnormal returns were calculated using the market model of FBM-KLCI returns indexes in 250-day estimation windows from t-21 to t-270. \*\*\*, \*\*, \* indicate significance at the 1%, 5% and 10% levels, respectively.

this analysis are presented in Tables 4 to 6. In Table 4, the announcement of the blanket moratorium seemed to have significant effects on the small banks (by total assets in 2019) in the sample, such as Alliance Bank (positive valuation) and Am Bank Malaysia Berhad (negative valuation). More interestingly, in Table 5, the CAR estimates around the targeted moratorium announcement were negative and statistically significant for the two largest banks in the sample, Maybank and Public Bank. Of these two, Maybank experienced a more significant stock price drop in each of the event windows. Finally, in Table 6, the announcement of the opt-in moratorium seemed to positively affect Hong Leong Bank, with all the CAR estimates in the five- and three-day event windows being significant. In contrast, the three largest banks (Maybank, CIMB Bank and Public Bank) were unaffected by this announcement. We also found that some banks - such as Affin Bank and RHB Bank - were not affected by any of the three moratoriums. Overall, the results presented in Tables 4 to 6 illustrate that the different types of moratoriums had heterogeneous impacts on Malaysian banks' stock valuations.

In short, the results from this event study suggest that banks in Malaysia were negatively affected by the targeted moratorium but positively affected by the opt-in moratorium. These different responses might have been driven by the inclusion of accrued interest in the opt-in moratorium, with the latter announcement attracting positive valuations.

## CONCLUSION

This study examines the impact of loan moratorium announcements on the performance of banks' stock prices in Malaysia. The loan moratorium has been a lifeline for many borrowers, especially those severely affected by the COVID-19 pandemic. This temporary suspension of debt repayment is crucial to ensure borrowers are less financially burdened and to stimulate spending in the economy. While this facility is deemed helpful for borrowers, its benefits or implications on banks had been unknown. This study aimed to bridge this gap by examining the implications of loan moratorium announcements on bank stocks.



TABLE 4. The impact of blanket moratorium announcement on individual bank stock returns

Banks	5-day CAR (-2,2)		3-day CAR (0,2)	
	CAR	<i>t-stat</i>	CAR	<i>t-stat</i>
AFFIN Bank	2.700	0.988	-0.717	-0.614
Alliance Bank	10.854	2.110**	7.819	4.287***
AMMB	-7.095	-2.737**	-4.210	-2.299**
BIMB	1.767	0.561	4.095	6.527***
CIMB Bank	-5.284	-0.756	-0.680	-0.465
Hong Leong Bank	11.025	1.062	-2.606	-1.779
Maybank	-3.510	-0.874	-1.264	-0.662
Public Bank	9.445	1.403	0.027	0.012
RHB Bank	-2.488	-0.364	-3.713	-0.869

*Notes:* This table presents the results of an event study analysis investigating the impact of loan moratorium announcements on bank stock returns. The table tabulates the cumulative abnormal returns of individual banks for two different event windows surrounding the announcement of the blanket loan moratorium on 25 March 2020. The abnormal returns were calculated using the market model of FBM-KLCI returns indexes in 250-day estimation windows from t-21 to t-270. \*\*\*, \*\*, \* indicate significance at the 1%, 5% and 10% levels, respectively.

TABLE 5. The impact of targeted moratorium announcement on individual bank stock returns

Banks	5-day CAR (-2,2)		3-day CAR (0,2)	
	CAR	<i>t-stat</i>	CAR	<i>t-stat</i>
AFFIN Bank	3.320	0.740	-0.025	-0.014
Alliance Bank	-1.775	-0.852	-0.002	-0.001
AMMB	-3.408	-0.830	-0.165	-0.042
BIMB	-0.292	-0.053	0.255	0.044
CIMB Bank	-1.920	-1.170	-1.067	-0.620
Hong Leong Bank	-3.508	-1.062	-2.635	-0.741
Maybank	-3.821	-5.692***	-2.875	-8.662***
Public Bank	-5.157	-2.308**	-2.747	-1.137
RHB Bank	-0.409	-0.362	-0.165	-0.140

*Notes:* This table presents the results of an event study analysis investigating the impact of loan moratorium announcements on bank stock returns. This table tabulates the cumulative abnormal returns of individual banks for two different event windows surrounding the announcement of the targeted loan moratorium on 29 July 2020. The abnormal returns were calculated using the market model of FBM-KLCI returns indexes in 250-day estimation windows from t-21 to t-270. \*\*\*, \*\*, \* indicate significance at the 1%, 5% and 10% levels, respectively.

TABLE 6. The impact of opt-in moratorium announcement on individual bank stock returns

Banks	5-day CAR (-2,2)		3-day CAR (0,2)	
	CAR	<i>t-stat</i>	CAR	<i>t-stat</i>
AFFIN Bank	1.237	2.122**	0.953	1.864
Alliance Bank	0.044	0.031	-0.634	-0.565
AMMB	2.223	0.867	1.824	0.700
BIMB	-1.743	-0.459	1.122	0.424
CIMB Bank	2.541	0.777	0.236	0.146
Hong Leong Bank	2.112	2.500**	0.828	2.591**
Maybank	0.217	0.318	0.103	0.195
Public Bank	0.814	1.430	0.287	0.683
RHB Bank	1.543	0.656	0.827	0.377

*Notes:* This table presents the results of an event study analysis investigating the impact of loan moratorium announcements on bank stock returns. This table tabulates the cumulative abnormal returns of individual banks for two different event windows surrounding the announcement of the opt-in loan moratorium on 28 June 2021. The abnormal returns were calculated using the market model of FBM-KLCI returns indexes in 250-day estimation windows from t-21 to t-270. \*\*\*, \*\*, \* indicate significance at the 1%, 5% and 10% levels, respectively.

Using an event study methodology, we demonstrate that bank investors reacted negatively to the announcement of the targeted moratorium but positively to the opt-in moratorium. These different reactions might have been driven by the feature clearly stated in the opt-in moratorium that accrued interest would be collected by banks when payments restarted in the post-moratorium period. This feature may benefit banks' future sustainability, so it attracted positive valuations upon the announcement of this moratorium.

This study adds to the body of knowledge on how government actions during the COVID-19 pandemic have affected bank performance. The stock performance of banks in relation to the COVID-19 pandemic and various financial policy measures was examined by Demirgüç-Kunt et al. (2021). Our analysis focuses primarily on the stock performance of banks around the periods of the loan moratorium announcements, whereas their study covered a broader definition of prudential measures (the loan moratorium was one of these). In other words, we examined how various loan moratorium announcements affected the stock of banks. The earlier research by Bhattacharjee et al. (2020) and Mohd Sah and Wong (2021) examining the performance of the banks' stock prices in the wake of loan moratorium announcements is closely related to our study. However, our analysis differs significantly from their studies in two key areas. First, we examined Malaysia's loan moratoriums, which differed from those in India in several respects. Second, in contrast to the work of Mohd Sah and Wong (2021), our study compares the magnitude of the market response to three different types of loan moratoriums.

Our findings have significant policy implications. Since the loan moratorium was intended to improve the affected borrowers' cash flows, the government must continue to offer this facility, especially when the economy remains fragile. However, it is also important to accommodate the interests of the banks in maintaining adequate short- and long-term liquidity, as well as minimal credit risk exposure. Therefore, it appears that including accrued interest in a loan moratorium would be the best option for both banks and borrowers. While borrowers can reduce their monthly commitment during difficult periods, banks can also ensure their income is stable so they can continue providing credit to the economy.

One limitation of this study is that the findings should be interpreted cautiously because event studies only analyse market reactions surrounding loan moratorium announcements instead of the true economic impact on banks' conditions. Hence, future studies could examine the impact of loan moratoriums on the measures related to banks' direct productivity - such as profitability, lending and liquidity creation - once adequate observations of annual financial data are available. Additionally, future studies could also analyse the effects of different approaches to loan moratoriums on bank stocks in different countries. This is a fruitful

study, given that heterogeneity in loan moratoriums may produce different reactions from investors and affect banks in different ways.

#### END NOTES

- <sup>1</sup> <https://www.bnm.gov.my/-/measures-to-assist-individuals-smes-and-corporates-affected-by-covid-19>
- <sup>2</sup> This blanket moratorium was subject to one condition, whereby the loan could not be in arrears for more than 90 days, as of April 1, 2020.
- <sup>3</sup> <https://www.bnm.gov.my/ra>
- <sup>4</sup> We applied the same model for all three loan moratorium announcements. In other words, we used the same 250-day estimation window (from 25 March 2020) and five- and three-day event windows surrounding the event date of each announcement.

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#### REFERENCES

- Aiyar, S., Bergthaler, W., Garrido, J.M., Ilyina, A., Jobst, A., Kang, K., Kovtun, D., Liu, Y., Monaghan, D. & Moretti, M. 2015. *A Strategy for Resolving Europe's Problem Loans*. IMF Staff Discussion Note 15/19. Washington.
- Allen, F. & Gale, D., 2000. Financial contagion. *Journal of Political Economy* 108(1): 1–33.
- Ari, A., Chen, S. & Ratnovski, L. 2020. COVID-19 and non-performing loans: lessons from past crises. *ECB Research Bulletin* 71.
- Bhattacharjee, A., Kumari, M. & Das, J. 2020. Investigating the impact of the announcement of loan moratorium on stock prices: Evidence from Indian Public Sector Banks. *Jindal Journal of Business Research* 9(1): 1–11.
- Bitar, M. & Tarazi, A. 2020. *A note on regulatory responses to COVID-19 pandemic: balancing banks' solvency and contribution to recovery*. Working Paper.
- Bruno, B., Onali, E. & Schaeck, K. 2018. Market reaction to bank liquidity regulation. *Journal of Financial and Quantitative Analysis* 53(2): 899–935.
- Chronopoulos, D.K., Girardone, C. & Nankervis, J.C. 2013. How do stock markets in the US and Europe price efficiency gains from Bank M&As? *Journal of Financial Services Research* 43(3): 243–263.
- Chronopoulos, D.K., Sobiech, A.L. & Wilson, J.O.S. 2018. The Australian bank levy: Do shareholders pay? *Finance Research Letters* 28: 412–415.
- Coelho, R. & Zamil, R. 2020. *Payment holidays in the age of Covid: Implications for loan valuations, market trust and financial stability*. Financial Stability Institute Briefs No. 8. Bank for International Settlement.
- Demirgüç-Kunt, A., Pedraza, A. & Ruiz-Ortega, C. 2021. Banking sector performance during the COVID-19 crisis. *Journal of Banking & Finance* 133.

- Diamond, D.W. & Dybvig, P.H. 1983. Bank runs, deposit insurance, and liquidity. *Journal of Political Economy* 91(3): 401–419.
- Diamond, D.W. & Rajan, R.G. 2001. Liquidity risk, liquidity creation, and financial fragility: a theory of banking. *Journal of Political Economy* 109(2): 287–327.
- Diamond, D.W. & Rajan, R.G. 2005. Liquidity shortages and banking crises. *Journal of Finance* 60(2): 615–647.
- DOSM 2020. *Malaysia Economic Performance Second Quarter 2020*. [online] Available at [https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=100&bul\\_id=N59TNE9yeHJ1eHB6cHV1aXBNQINUZz09&menu\\_id=TE5CRUZCb1h4ZTZMODZIBmk2aWRRQT09#:~:text=Malaysia's%20GDP%20contracted%2017.1%20per,the%20first%20quarter%20of%202020.&text=On%20the%20demand%20side%2C%20all,growth%20of%202.3%20per%20cent](https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=100&bul_id=N59TNE9yeHJ1eHB6cHV1aXBNQINUZz09&menu_id=TE5CRUZCb1h4ZTZMODZIBmk2aWRRQT09#:~:text=Malaysia's%20GDP%20contracted%2017.1%20per,the%20first%20quarter%20of%202020.&text=On%20the%20demand%20side%2C%20all,growth%20of%202.3%20per%20cent).
- Drehmann, M. & Nikolaou, K. 2013. Funding liquidity risk: definition and measurement. *Journal of Banking & Finance* 37(7): 2173–2182.
- Fama, E.F., Fisher, L., Jensen, M.C. & Roll, R. 1969. The adjustment of stock prices to new information. *International Economic Review* 10(1): 1–21.
- Fiordelisi, F., Minnucci, F., Previati, D. & Ricci, O. 2020. Bail-in regulation and stock market reaction. *Economics Letters* 186.
- Holmstrom, B. & Tirole, J. 1998. Private and public supply of liquidity. *Journal of Political Economy* 106(1): 1–40.
- Kalemli-Özcan, S., Laeven, L. & Moreno, D. 2019. *Debt overhang, rollover risk, and corporate investment: evidence from the European crisis*. ECB Working Paper Series No 2241.
- Kleinow, J., Nell, T., Rogler, S. & Horsch, A. 2014. The value of being systemically important: Event study on regulatory announcements for banks. *Applied Financial Economics* 24(24): 1585–1604.
- Kothari, S.P. & Warner, J.B. 2007. Econometrics of event studies. In *Handbook of Empirical Corporate Finance*. Amsterdam: Elsevier. 3–36.
- Lagoarde-Segot, T. & Leoni, P.L. 2013. Pandemics of the poor and banking stability. *Journal of Banking & Finance* 37(11): 574–4583.
- Li, L., Strahan, P.E. & Zhang, S. 2020. Banks as lenders of first resort: Evidence From The COVID-19 Crisis. *The Review Of Corporate Finance Studies* 9(3): 472–500.
- MacKinlay, A.C. 1997. Event studies in economics and finance. *Journal of Economic Literature* 35(1): 13–39.
- MASB 2020. Media Release – COVID-19: MFRS 9 Financial Instruments: Expected Credit Loss Considerations. Available at [https://www.masb.org.my/pdf.php?pdf=MFRS9\\_ECL\\_COVID19\\_25Mar.pdf&file\\_path=pdf\\_file](https://www.masb.org.my/pdf.php?pdf=MFRS9_ECL_COVID19_25Mar.pdf&file_path=pdf_file).
- Miyajima, H. & Yafeh, Y. 2007. Japan's banking crisis: an event-study perspective. *Journal of Banking & Finance* 31(9): 2866–2885.
- Mohd Sah, N.I. & Wong, W.-Y. 2021. The impact of MCO on the stock market and moratorium on banking sector's performance in Malaysia: The case of COVID-19. *Labuan Bulletin of International Business & Finance* 19(2): 13–25.
- The Star 2020. Banks could lose capacity to provide RM79b loans due to moratorium. *The Star Online*. [online] Available at <https://www.thestar.com.my/business/business-news/2020/07/27/banks-could-lose-rm106b-a-month-if-moratorium-extended-zafrul-says>.
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## APPENDIX

TABLE A1. Bank Financial Information

Bank Name	Total Asset (RM'000)	Market Capitalisation (RM'000)	Tier 1 Capital Ratio	Liquidity (%)	Problem Loans (%)	Retail Loans (%)	Domestic Loans (%)	Short- and Medium-Term Loans (%)
Maybank	834,413,015	99,185,585	16.49	9.20	2.65	27.42	63.38	46.93
CIMB Bank	573,245,655	55,911,340	13.99	9.43	3.07	37.27	59.75	42.97
Public Bank	432,830,675	80,942,584	14.08	5.57	0.49	65.02	92.95	27.83
RHB Bank	257,592,496	22,537,476	16.88	6.71	1.97	53.58	90.21	38.44
Hong Leong Bank	207,369,415	39,154,100	14.59	5.18	0.78	54.10	94.83	30.36
AMMB	158,793,400	10,829,802	12.33	6.57	1.59	54.68	99.73	43.35
AFFIN Bank	68,341,262	3,695,868	16.28	8.98	3.00	49.34	99.61	42.62
BIMB	67,593,802	6,186,100	14.21	6.87	0.86	74.13	100.00	18.14
Alliance Bank	56,520,851	4,737,204	14.42	5.89	1.11	47.80	100.00	38.58

Notes: This table tabulates various financial information of banks in our sample. Liquidity is the percentage of cash and cash equivalent to total assets. Problem loans is the percentage of problem loans to total consumer loans. Retail loans is the loans to retail borrowers while domestic loans are loans granted to domestic borrowers. Short- and medium-term loans are loans that mature in five years or less. The last three items are calculated as the percentage of total loans. All these variables are as of the fiscal year end 2019.

TABLE A2. Robustness Tests Using Alternative Market Indexes

	Blanket Moratorium		Targeted Moratorium		Opt In Moratorium	
	CAAR	<i>t-stat</i>	CAAR	<i>t-stat</i>	CAAR	<i>t-stat</i>
Panel A: FBM-Top 100						
5-day CAR (-2,2)	1.332	0.560	-2.549	-2.840**	1.051	2.390**
3-day CAR (0,2)	-0.920	-0.750	-1.369	-2.920**	0.482	2.090**
No of bank observations	9	9	9	9	9	9
Panel B: FBM-EMAS						
5-day CAR (-2,2)	1.348	0.820	-2.656	-2.940**	1.173	2.650**
3-day CAR (0,2)	-0.918	-0.740	-1.482	-3.130***	0.500	2.190**
No of bank observations	9	9	9	9	9	9

Notes: This table presents the robustness tests using alternative market indexes to calculate the abnormal returns. Cumulative average abnormal returns (CAARs) for all nine banks are calculated for two different event windows surrounding the announcements of three types of loan moratorium. The abnormal returns are calculated using the market model of FBM-Top 100 (in Panel A) and FBM-EMAS (in Panel B) indexes in 250-day estimation windows from t-21 to t-270. \*\*\*, \*\*, \*, indicate significance at the 1%, 5% and 10% levels, respectively.