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**Article**

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Article

# Stock Markets and Stress Test Announcements: Evidence from European Banks

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**Abstract:** This paper examines the market reaction to the European bank stress test announcement and results release events. Using event study methodology (calculating abnormal returns on a three-day period around the event dates), we find that the market reacts differently between the announcement event and the results release event. We also show that the market seems to positively overreact one day before each event, and that this positive reaction is either fully or partially reversed one day after the event. We thus conclude that researchers should consider both events when exploring the market reaction to stress-testing exercises.

**Keywords:** stock markets; stress test announcements; European banks; event-study methodology; Central Banks

## 1. Introduction



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Financial stability is a core objective of the regulatory and supervisory authorities in modern economies, especially in the aftermath of the global financial crisis of 2008. Central banks are responsible for creating a strong, efficient, and stable banking system, which in turn helps the development of the economy. In this context, especially after the financial crisis of 2008, regulators came up with a tool to explore the extent to which banks were able to withstand adverse, even disastrous, economic and financial conditions, namely the stress test. Regulators conduct stress tests to test commercial banks' capital needs under adverse conditions, since it is important for banks to be aware of their level of resistance to pressures in a financial stability context. Thus, stress tests aim to explore the banks' ability to cope alone in extreme economic conditions, aiming at strengthening the stability of the entire banking system. The stress tests' results are then evaluated in the context of creating tools and mechanisms to support the financial system in conditions of uncertainty. Thus, stress tests are simulations of the consequences of adverse conditions to banks' capital adequacy.

When conducting stress tests, regulators usually set two different scenarios related to key macroeconomic variables: (1) the base scenario and (2) the adverse scenario. The adverse scenario contains stressful economic and financial conditions, such as a decline in real GDP, a large increase in interest rates, and/or a large increase in yields of government bonds. To ensure transparency and comparability of results for all banks in a specific country, regulators follow a common methodology, common assumptions, and a commonly accepted framework. The main task is to investigate whether banks, under these stressful conditions, would still be able to pass the threshold for the Tier 1 capital adequacy ratio. For instance, European banks are required to maintain a minimum CET1 ratio of 8% under the baseline scenario and a minimum CET1 ratio of 5.5% under the adverse scenario.

Also, the fact that the central banks typically do not allow banks to announce their plans for dividends and buybacks until a few days after the stress test results means that

stress tests contain important information for the market, so that, in turn, it is important to examine the market reaction to the European bank stress test announcement and results release events. Furthermore, the exact time period that our study covers is of particular importance. Specifically, we use data that cover the COVID-19 period, after the ECB had recommended (March 2020) that euro area banks do not pay dividends or buy back shares due to the specificities of the pandemic period. According to [Andreeva et al. \(2021\)](#), “The recommendation concerned dividends to be paid from profits generated in 2019 and 2020 and was issued in an environment characterised by heightened uncertainty and financial market tensions. It aimed to conserve the capital position of euro area banks, boosting their resilience and ability to provide funding to households and firms. Most banks subsequently announced that they would follow the recommendation.”

In this context, the purpose of this paper is twofold: (a) to examine the impact of the stress test announcements on banks’ stock prices using recent European data, and (b) to differentiate between the announcement and the results release dates and explore any differences. The fact that we explore these issues during a turbulent period amidst the COVID-19 pandemic provides an extra layer of interest to our study, since the pandemic specificities, as described in the previous paragraph, are supposed to increase the need for information that stress tests bring to the market. Our results show that the market reacts differently between the announcement event and the results release event. Specifically, we show that the overall market reaction to the announcement event is significantly positive or negative depending on the bank sample we use, while no overall significant market reaction is observed for the release date. We also show that the market positively overreacts one day before each event, and that this positive reaction is either fully or partially reversed one day after the event.

The rest of this paper is structured as follows. Section 2 discusses the literature review; Section 3 describes our approach and sets our hypotheses; Section 4 presents our methodology and discusses the results; Section 5 concludes this paper.

## 2. The Literature Review

Bank stress tests are an essential tool for assessing the resilience of financial institutions under adverse economic conditions. The literature is already rich regarding stress tests and various aspects of bank performance, as evidenced by the literature review discussed separately in the sub-sections that follow.

### 2.1. Risks and Regulatory and Policy Implications

Stress tests and their results are closely linked with systemic risks and respective regulatory and policy implications. A number of papers highlight the importance of stress tests in mitigating systemic risk in the U.S. banking sector, outlining that positive stress test results are associated with lower systemic risk indicators and improved market sentiment, while adverse results can trigger market disruptions and contagion effects, underscoring the significance of stress testing for financial stability. [Becker and Opp \(2013\)](#) investigate how stress test disclosures influence market perceptions of systemic risk. They find that stress test results can affect systemic risk assessments by providing insights into the interconnectedness and resilience of financial institutions. [Acharya et al. \(2014\)](#) find that stress-tested banks enhance their capital positions and adjust risk exposures post-tests and that stress test announcements act as important signals of bank soundness and regulatory oversight, helping to restore investor confidence and stabilize market conditions during periods of uncertainty.

### 2.2. Impact on Financial Markets

This sub-section discusses the importance of the disclosure of the stress test results for the financial markets. [Flannery et al. \(2017\)](#) examine the average absolute cumulative abnormal returns (CARs) and the average abnormal trading volumes related with U.S. stress test result announcements and conclude that the disclosure of stress test results

generates significant new information about stress-tested banks, with the average absolute value CARs and the average abnormal trading volumes on the stress test disclosure date to be significantly higher than the pre-disclosure event values. Their results are much more pronounced for riskier or more highly leveraged banks. [Fernandes et al. \(2020\)](#) also support that stress tests produce valuable information for the market, especially for markets under pressure. Specifically, they provide empirical support for significant market impact of stress test announcements such as the EBA 2011 stress test and the CCAR 2013 stress test. In the same direction, [Beltratti \(2011\)](#) examines the EBA 2011 stress tests and concludes that they produce new information, as investors cannot *a priori* distinguish between capitalized and under-capitalized banks.

[Petrella and Resti \(2013\)](#) use an event study methodology to explore the markets' responses to the stress test results for 51 European banks that took place in the 2011 EU stress tests, carried out by the European Banking Authority. [Sahin et al. \(2020\)](#) find significant market responses to stress tests and conclude that they produce valuable information for market participants and can play a role in mitigating bank opacity. They find that banks with stronger stress test results tend to exhibit better financial performance and higher stock returns, indicating positive market perceptions and investor confidence in their resilience to adverse shocks. [Bushman and Williams \(2012\)](#) analyze investor responses to stress test news using event study methodology. They find that stress test announcements lead to significant market reactions, with investors adjusting their portfolios in response to new information. The study by [Ahnert et al. \(2020\)](#) takes the debate even further, showing that researchers should identify between the announcement and the results release date differently when exploring stress test exercises.

A number of papers find that the market reaction to supervisory stress test announcements varies across countries and banking sectors within the European Banking Union, noting that, while some banks experience positive stock price movements following stress test results, others may face negative market reactions, reflecting differences in bank fundamentals, regulatory environments, and investor perceptions. [Goldstein and Sapra \(2013\)](#) analyze the costs and benefits of disclosing stress test results, particularly focusing on market reactions. The study argues that, while disclosure of stress test results can enhance market discipline by reducing information asymmetry, it can also lead to unintended consequences such as market panic or overreaction. The authors highlight that the timing and manner of disclosures are crucial in determining the market's response. [Barucci et al. \(2018\)](#) examine the relation between bank fundamentals and the test outcomes' publication and conclude that a bank's capitalization and the non-performing exposures are correlated with the stress test pass/fail likelihood. [Goldstein and Leitner \(2018\)](#) highlight the importance of the disclosure of stress test results during bad times as it may produce a stabilizing effect for the market. In the same line, [Carboni et al. \(2017\)](#) examine the market reaction to the ECB's comprehensive assessment (CA), find that this CA exercise may produce new valuable information for the market, and report a negative effect for banks subject to direct ECB supervision. [Alves et al. \(2015\)](#) conclude that the publication of the stress test outcomes has informational content for both the CDS and the stock markets. In fact, CDS spread changes and stock return changes move in opposite directions, i.e., banks that pass the stress test exhibit positive stock performance and negative CDS spreads. The publication of the outcomes of the stress tests has a stronger impact on the stock prices of riskier financial institutions. [Georgescu et al. \(2017\)](#) conclude that stress test disclosures reveal new information that is priced by the markets and provide evidence that the impact on the bank CDS spreads and equity prices tend to be stronger for the weaker performing banks in the stress test. [Morgan et al. \(2014\)](#) show that bank equity and CDS performance is significantly affected by stress test results release. On the other hand, [Glasserman and Tangirala \(2016\)](#) report that banks' stock market prices and CDS spreads show no reaction to the publication of stress tests results, suggesting that either financial market participants have no confidence in the assessment and therefore decide to ignore the publication of its results or that the outcomes of the assessment are already in line with market expectations.

As the stress testing process has evolved, its outcomes have become more predictable and therefore arguably less informative.

Stress tests also have an impact on liquidity and volatility while bank stress test announcements generally lead to increased stock market volatility, with mixed effects on stock prices while stress test outcomes can exacerbate stock market volatility in the European banking sector, particularly during periods of heightened uncertainty and systemic risk, leading investors to react negatively to adverse stress test results, which leads to sell-offs and increased market turbulence.

### 2.3. Behavioral Response to Stress Tests

[Schuermann \(2016\)](#) indicates that banks often change their behavior in response to stress tests, including adjusting asset allocations and capital structures to meet regulatory expectations. [Homar and van Wijnbergen \(2017\)](#) investigate how the 2014 EU-wide stress tests influenced bank behavior, particularly in terms of recapitalization efforts. The study finds that banks subjected to stress tests significantly improved their capital positions, mainly through equity issuance. The market responded positively to these efforts, as evidenced by improved stock prices and reduced CDS spreads post-disclosure.

### 2.4. Criticism and Limitations

Still, there are criticisms and limitations about stress tests. For example, [Perotti et al. \(2011\)](#) recommend more flexible frameworks allowing for tailored stress testing, while [Flannery et al. \(2017\)](#) note that, while transparency in stress test results can improve market discipline, it can also lead to negative consequences. While stress tests are beneficial, their accuracy depends on the models and assumptions used. [Kupiec \(2018\)](#) argues that model risk and scenario limitations can lead to under- or over-estimation of risks.

### 2.5. Pandemic and Bank Performance

Studies find that the pandemic led to deteriorating bank performance metrics, including profitability, asset quality, and capital adequacy ratios. [Jackson and Schwarcz \(2021\)](#) find that financial stability concerns increased due to rising credit risk, loan defaults, and liquidity pressures on banks, particularly in sectors heavily impacted by lockdowns and economic slowdowns. Financial markets experienced heightened volatility during the pandemic, characterized by sharp declines in stock prices, increased market uncertainty, and fluctuations in risk premiums ([Khan et al. 2023](#)). [Colak and Oztekin \(2021\)](#) outline that understanding how the pandemic affected the financial markets and institutions is an important research question for academics and policymakers. They evaluate the influence of the pandemic on global bank lending and find that bank lending is weaker in countries that are more affected by the health crisis. [Shabir et al. \(2023\)](#) examine the effects of the pandemic on the performance and stability of the banking sector and find that the pandemic outbreak significantly reduced bank performance and stability. It would therefore be interesting to explore how the pandemic affected the stress testing exercise in terms of evaluating their results.

## 3. Approach and Hypotheses

The recent financial crises underlined the necessity for banks to be well capitalized, in order to be able to withstand large negative shocks. Thus, a tighter regulatory framework with a special focus on the banks' risk-weighted asset calculation and capital requirements became crucial. In this context, regulators came up with the stress testing exercise to assess whether banks are in line with regulatory demands.

Focusing on the European banking system, during the first semester of 2021, the European Banking Authority (EBA) applied financial stress tests on a large sample of European banks from 21 countries in order to investigate their capital needs, their Tier 1 ratios, and their ratios of resilience to adverse shocks. The announcement of the stress test results also contributed to increasing the transparency in the European banking sector and

the trust of investors and depositors to the European banking system. In the same line as EBA, the US CCAR applied stress tests on US banks to examine their resistance to large adverse economic shocks and to possible negative shocks concerning their capital structure, e.g., a possible decline in their assets or a possible increase in their obligations.

In our paper, we follow [Ahnert et al. \(2020\)](#)'s approach. Their paper examines the impact of the events of the stress test announcement and the stress test result publication on bank equity and CDS performance, considering both the announcement and the results effects. Specifically, they use a large sample of tests from the US CCAR and the European EBA regimes for the time period 2010–2018 and measure the overall effect of the stress testing exercise as follows. For the stress test announcement days, they show that banks that are going to be stress tested experience significantly negative abnormal equity returns and wider CDS spreads on the announcement event day, mainly for the banks tested for the first time. For the results release day, they show that passing banks experience significantly positive abnormal equity returns and tighter CDS spreads, while failing banks earn significantly negative abnormal equity returns and widening CDS spreads. Thus, they conclude that an investigation of the stress test impact has to take into account the results of both the results release and the announcement effect to give a complete picture. It should also be noted that they find similar results under both the US CCAR and the European EBA regimes, even if the institutional designs between US and European stress tests differ.

Following [Ahnert et al. \(2020\)](#), we develop a similar methodological approach, but we expand our analysis by creating specific sub-samples of banks, which are further distinguished to passing vs. failing banks in both the baseline and adverse scenario of the EBA stress testing exercise. In the context described above, while also considering the findings of the studies discussed in the literature review (which show that bank stress tests do contain significant new information), we develop the following hypotheses:

**H1.** *The bank stress test results lead to abnormal returns prior to the announcement date.*

**H2.** *The bank stress test results lead to abnormal returns after the announcement date.*

**H3.** *The bank stress test results lead to abnormal returns prior to the release date.*

**H4.** *The bank stress test results lead to abnormal returns after the release date.*

**H5.** *The bank stress test results lead to cumulative abnormal returns around the announcement date.*

**H6.** *The bank stress test results lead to cumulative abnormal returns around the release date.*

As mentioned above, we test the aforementioned hypotheses on passing vs. failing bank sub-samples in both baseline and adverse scenarios.

#### 4. Data, Methodology, and Results

We analyze the market responses to both the announcement and the release dates of the European banks stress test results by employing an event study approach. Our sample consists of 34 banks<sup>1</sup>, for which we have available data for their capital equity Tier 1 ratio (CET1). Our first event date is 29 January 2021, when EBA announced the launch of the 2021 EU-wide stress test exercise. The second event date is 30 July 2021, when EBA published the results of its 2021 EU-wide stress test. The estimation period is set at a fixed length of 245 actual trading days (−250, −5) to the announcement and release dates (where  $t = 0$  is the stress test announcement and release dates).

Regarding our methodology, we focus on a three-day period around the event dates, spanning one day before and one day after the event. To calculate abnormal returns, we adopt the methodology suggested by [Brown and Warner \(1980\)](#). They define an abnormal

return  $AR_{it}$  as the actual return of stock  $i$  at the event day  $t$  minus the expected stock return at the event day  $t$  predicted by an estimated model:

$$AR_{it} = R_{it} - E(R_{it}) \quad (1)$$

where  $R_{it}$  is the actual return of bank stock  $i$  at event day  $t$ ,  $i = 1, 2, \dots, N$ , with  $N$  indicating the total number of stocks,  $E(R_{it})$  indicates the expected stock return at time  $t$ . We set a 245 actual trading day  $(-250, -5)$  estimation window prior to the event date (where  $t = 0$  is the stress test announcement and the release date, respectively).

We calculate expected returns using the market model and the market-adjusted model (Campbell et al. 1997).

The market model is represented by the following linear regression model estimated by least squares:

$$R_{it} = \alpha_0 - \beta_1 R_{mt} + u_{it} \quad (2)$$

where  $R_{mt}$  is the return on the market, defined as the euro stock index.

The market-adjusted model is represented by the following equation:

$$MAR_{it} = R_{it} - R_{mt} \quad (3)$$

where market abnormal return  $MAR_{it}$  is the actual return of stock  $i$  at the event day  $t$   $R_{it}$  minus the market return, which in our case is the euro stock index.

The market-adjusted model is the market model with  $\alpha_0 = 0$  and  $\beta_1 = 1$  for each stock.

We calculate results for the full sample and the sub-samples of banks with a CET1 ratio below (over) 8%, using both the baseline and the adverse scenario.

#### 4.1. Announcement Date Results

Regarding the announcement date (29 January 2021), the main results are the following (Tables 1 and 2): (a) positive abnormal returns for all cases of bank sub-samples for the day before the announcement ( $AR - 1$ ), except for the failing banks/adverse scenario sample; (b) this  $AR - 1$  positive market reaction is partly reversed the day after the announcement ( $AR + 1$ ) for both models; (c) overall, both models agree on a statistically positive CAR for the 3-day window  $(-1, +1)$  for the passing banks/adverse scenario and the failing banks/baseline scenario samples, and a statistically negative  $(-1, 1)$  CAR for the failing banks/adverse scenario sample.

**Table 1.** Market model announcement date (29 January 2021).

|                |         | All Events | CET1 > 8%  |            | CET1 < 8% |           |
|----------------|---------|------------|------------|------------|-----------|-----------|
|                |         |            | Baseline   | Adverse    | Baseline  | Adverse   |
| CAR            | (-1, 1) | 0.495      | 0.120      | 0.109 *    | 1.940 *   | -1.167 *  |
|                | Pos:Neg | 20:14      | 15:12      | 17:8       | 5:2       | 3:6       |
| AR             | Day -1  | 1.178 ***  | 0.899 **   | 1.562 ***  | 2.253 **  | 0.110     |
|                | Day 0   | 0.603 **   | 0.469 *    | 0.839 ***  | 1.121     | -0.052    |
|                | Day +1  | -1.286 *** | -1.248 *** | -1.131 *** | -1.434 *  | -1.224 ** |
| Number of Obs. |         | 34         | 27         | 25         | 7         | 9         |

**Note:** \* , \*\* , \*\*\* indicate statistical significance at 10%, 5% and 1% level respectively.

**Table 2.** Market-adjusted model announcement date (29 January 2021).

|                       |         | All Events | CET1 > 8%  |            | CET1 < 8% |           |
|-----------------------|---------|------------|------------|------------|-----------|-----------|
|                       |         |            | Baseline   | Adverse    | Baseline  | Adverse   |
| <b>CAR</b>            | (−1, 1) | 0.400      | 0.016      | 1.044 *    | 1.879 *   | −1.389 *  |
|                       | Pos:Neg | 19:15      | 14:13      | 16:9       | 5:2       | 3:6       |
| <b>AR</b>             | Day −1  | 1.287 ***  | 1.008 **   | 1.692 ***  | 2.363 **  | 0.161     |
|                       | Day 0   | 0.081      | −0.066     | 0.313      | 0.648     | −0.563    |
|                       | Day +1  | −0.968 *** | −0.926 *** | −0.962 *** | −1.132 *  | −0.988 ** |
| <b>Number of Obs.</b> |         | 34         | 27         | 25         | 7         | 9         |

**Note:** \*, \*\*, \*\*\* indicate statistical significance at 10%, 5% and 1% level respectively.

#### 4.2. Release Date Results

Regarding the release date (30 July 2021), we observe similar results in the CAR (−1, 1) results for the two models. Specifically, the main results are the following (Tables 3 and 4): (a) positive abnormal returns for all cases of bank sub-samples for the day before the announcement (AR − 1) in both models; (b) this AR − 1 positive market reaction is fully reversed in both models, with negative abnormal returns for the day after the release date (AR + 1), resulting in no statistically significant results overall, namely looking at the CAR (−1, 1) results.

**Table 3.** Market model release date (30 July 2021).

|                       |         | All Events | CET1 > 8%  |            | CET1 < 8% |           |
|-----------------------|---------|------------|------------|------------|-----------|-----------|
|                       |         |            | Baseline   | Adverse    | Baseline  | Adverse   |
| <b>CAR</b>            | (−1, 1) | 0.314      | 0.309      | 0.003      | 0.333     | 1.177     |
|                       | Pos:Neg | 19:15      | 16:11      | 13:12      | 3:4       | 6:9       |
| <b>AR</b>             | Day −1  | 0.909 ***  | 0.816 ***  | 0.965 ***  | 1.266 **  | 0.755 **  |
|                       | Day 0   | 0.189      | 0.367      | −0.207     | −0.494    | 1.289 *   |
|                       | Day +1  | −0.785 *** | −0.874 *** | −0.755 *** | −0.439    | −0.868 ** |
| <b>Number of Obs.</b> |         | 34         | 27         | 25         | 7         | 9         |

**Note:** \*, \*\*, \*\*\* indicate statistical significance at 10%, 5% and 1% level respectively.

**Table 4.** Market-adjusted model release date (30 July 2021).

|                       |         | All Events | CET1 > 8%  |           | CET1 < 8% |          |
|-----------------------|---------|------------|------------|-----------|-----------|----------|
|                       |         |            | Baseline   | Adverse   | Baseline  | Adverse  |
| <b>CAR</b>            | (−1, 1) | 0.526      | 0.531      | 0.236     | 0.508     | 1.331    |
|                       | Pos:Neg | 20:14      | 16:11      | 14:11     | 4:3       | 6:3      |
| <b>AR</b>             | Day −1  | 1.048 ***  | 0.963 ***  | 1.112 *** | 1.376 **  | 0.871 ** |
|                       | Day 0   | 0.069      | 0.237      | −0.324    | −0.581    | 1.159 *  |
|                       | Day +1  | −0.591 *** | −0.669 *** | −0.552 ** | −0.288    | −0.699 * |
| <b>Number of Obs.</b> |         | 34         | 27         | 25        | 7         | 9        |

**Note:** \*, \*\*, \*\*\* indicate statistical significance at 10%, 5% and 1% level respectively.

#### 4.3. Summarizing the Results

The first important finding that should be mentioned is that stress tests do seem to generate significant new information about banks, as also noted in previous studies (Beltratti 2011; Petrella and Resti 2013; Alves et al. 2015; Flannery et al. 2017; Fernandes et al. 2020), since abnormal returns are evidenced around the event dates of announcement

and release. On top of that, considering announcement and release dates separately also matters, as results are also differentiated, as [Ahnert et al. \(2020\)](#) point out. It looks like the above-mentioned results seem to tell slightly different stories regarding the market reaction between the announcement date and the release date. Looking at the similarities of the results, both models seem to tell the same story of a positive market overreaction *before* the event, followed by a negative market reaction *after* the event, while no abnormal returns are evidenced on the day of the reaction. Another similarity is the fact that, in both models, the failing banks/adverse scenario sample shows a negative CAR on the announcement date. The interesting finding, however, is the clear distinction of the overall market reaction (CAR) when we compare the announcement and the release date. Specifically, both models show no statistically significant CARs for the release date, while there is some significance at the 10% level for the announcement date, either positive (for the passing banks/adverse scenario and failing banks/baseline scenario samples) or negative (for the failing banks/adverse scenario sample).

The story that these combined results seem to tell is interesting. First, it seems that the market is more sensitive to the stress test announcement event than the release event. This is in line with [Bushman and Williams \(2012\)](#), who conclude that stress test announcements lead to significant market reactions. Second, there seems to be an overreaction prior to the event, followed by a correction after the event (for both dates), in line with [Goldstein and Sapra \(2013\)](#), who also find that stress tests can lead to overreaction. The case of “overreaction” is also rigorously explored in other studies, which generally report traces of overreaction to stress test results. In our case, however, it should be highlighted that, even if we do find overreaction evidence before the event, the market seems to correct abnormal returns the day after the event. Last, the market seems to correctly identify the weaknesses of the “weak” banks, as the failing/adverse sub-sample receives a negative CAR on the announcement date. This finding is similar to that of [Sahin et al. \(2020\)](#), who find that banks with stronger stress test results tend to exhibit better financial performance and higher stock returns, implying that markets can identify strong and weak banks. In any case, our results confirm the conclusion of [Ahnert et al. \(2020\)](#), who show that, when researching the impact of the stress test event on the market, we should consider both the announcement and release dates, as these could bring about different results and, thus, conclusions.

## 5. Conclusions

This paper examines the short-term market reactions to the European bank stress test announcement and release dates, using an event study methodology. We use a sample that consists of 34 banks that took part in the stress-testing exercise and we then create sub-samples of these 34 banks, according to whether they passed or failed the test ( $CET1 > 8\%$  vs.  $CET1 < 8\%$ ), also considering the two stress test scenarios (baseline and adverse). Specifically, we focus on a three-day period around the event dates (announcement and results), spanning one day before and one day after the event, and we calculate abnormal returns, adopting the methodology suggested by [Brown and Warner \(1980\)](#) and applying the market model and the market-adjusted model.

We identify distinct differentiations when comparing the announcement date results with the release date results. First, the overall market reaction is clear and coherent in the announcement date event, since both models agree that  $CAR(-1, 1)$  is significantly positive for the passing/adverse sample and the failing/baseline sample, and negative for the failing/adverse banks. On the other hand, no overall significant market reaction is observed for the release date, where positive market reactions before the release date are fully reversed by negative market reactions after the release date. We also observe that the market seems to correctly identify the “weak” banks, which receive a negative CAR on the announcement date. We thus confirm the finding of [Ahnert et al. \(2020\)](#), who point out that researchers need to consider both the announcement and release dates when examining the market reaction on stress test exercises. Our results are also close to the conclusions of [Glasserman and Tangirala \(2016\)](#), who suggest that, in time, stress test outcomes have

become more predictable and therefore less informative; this conclusion of their study could explain our finding of no statistically significant overall market reaction around the results release event. We thus accept our hypotheses H1–H4 that bank stress tests lead to abnormal returns prior and after the announcement and release events. Hypothesis H5 is also accepted, since our results show that bank stress test results lead to cumulative abnormal returns around the announcement date. Hypothesis H6 is rejected, since no cumulative abnormal returns are evidenced around the release date. Our study does not come without limitations. First, our conclusions are narrowed down to the data that we possess, meaning that we cannot compare our results with similar stress-testing processes in the US or other jurisdictions, while, second, we do not have stress test results before the pandemic to be able to run a robust quantitative comparison analysis between the two datasets.

Last, our paper uses data that cover COVID-19, thereby incorporating respective specificities. Perhaps this is the reason why we obtain different results when comparing ours with the respective results of Ahnert et al. (2020), with whom we share a similar approach. Specifically, they find that tested institutions experience negative abnormal equity returns on the announcement day while experiencing positive abnormal equity returns on the stress test result day. However, we found positive CAR on the announcement event for the passing/adverse sample and the failing/baseline sample (and negative for the failing/adverse banks) and no overall significant results for the results event. This might imply that the COVID-19 impact has changed the way that markets assess stress-testing exercises, but this implication needs to be further researched in a later study. In any case, next research efforts should focus more on exploring differences in stress test results before/during/after the pandemic period in order to obtain a better idea of how the pandemic has influenced bank performance in the stress-testing exercise.

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## List of Abbreviations

|            |                                           |
|------------|-------------------------------------------|
| GDP        | Gross Domestic Product                    |
| CET1 ratio | Common Equity Tier 1 ratio                |
| ECB        | European Central Bank                     |
| CAR        | Cumulative Abnormal Return                |
| AR         | Abnormal Return                           |
| MAR        | Market Abnormal Return                    |
| EBA        | European Banking Authority                |
| CCAR       | Comprehensive Capital Analysis and Review |
| CA         | Comprehensive Assessment                  |
| CDS        | Credit Default Swaps                      |

## Appendix A

**Table A1.** Sample of banks that participated in the 2021 EBA stress-testing exercise.

|    | Bank                                        |
|----|---------------------------------------------|
| 1  | Banco BPM SpA                               |
| 2  | Mediobanca Banca di Credito Finanziario SpA |
| 3  | DNB Bank ASA                                |
| 4  | Caixabank SA                                |
| 5  | Nordea Bank Abp                             |
| 6  | BNP Paribas SA                              |
| 7  | Intesa Sanpaolo SpA                         |
| 8  | Banco Comercial Portugues SA                |
| 9  | Credit Agricole SA                          |
| 10 | Swedbank AB                                 |
| 11 | Powszechna Kasa Oszczednosci Bank Polski SA |
| 12 | HSBC Holdings PLC                           |
| 13 | ING Groep NV                                |
| 14 | Deutsche Bank AG                            |
| 15 | Banco Santander SA                          |
| 16 | ASR NEDERLAND                               |
| 17 | Bankinter SA                                |
| 18 | Svenska Handelsbanken AB                    |
| 19 | ABN                                         |
| 20 | Skandinaviska Enskilda Banken AB            |
| 21 | Kbc Groep NV                                |
| 22 | Bank of Ireland Group PLC                   |
| 23 | Commerzbank AG                              |
| 24 | Danske Bank A/S                             |
| 25 | Banco Bilbao Vizcaya Argentaria SA          |
| 26 | Banca Monte dei Paschi di Siena             |
| 27 | Jyske Bank A/S                              |
| 28 | AIB                                         |
| 29 | UniCredit SpA                               |
| 30 | Bank Polska Kasa Opieki SA                  |
| 31 | Raiffeisen Bank International AG            |
| 32 | Banco de Sabadell SA                        |
| 33 | Erste Group Bank AG                         |
| 34 | OTP Bank Nyrt                               |

## Notes

<sup>1</sup> The list of banks that took part in this exercise appears in Appendix A.

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