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A STUDY OF BANK STOCKHOLDER RETURNS DURING PAYCHECK PROTECTION PROGRAM: THE ROLE OF BANK SIZE

[1]Pedraza, A, and [2]Ruiz-Ortega, C

Article Info

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Abstract

This study analyzes the impact of the Paycheck Protection Program (PPP) on bank stockholders' returns during the COVID-19 pandemic. The study investigates the performance of the largest and smallest bank-based indices, the KBW and ABAQ, during the implementation of PPP, and tests the hypothesis that bank stock returns increased compared to a pre-event comparison period. The results show that both indices had superior returns during the implementation of the PPP program, but neither index produced abnormal returns for the PPP window when controlled for general market movements. However, bigger banks produced significantly higher returns than smaller banks when the general market moved upwards. The study highlights the role of banks as the main conduit for government assistance during times of crisis and the potential misalignment of their objectives with the public. The authors recommend rating banks with DEI scores to see if banks are meeting government objectives in the distribution of federal funds.

INTRODUCTION

The COVID-19 pandemic impacted the US economy during the years 2020-21. During this time, the US Government took several measures to help the impacted nation. One of the major programs at the time was the Paycheck Protection Program (PPP hereafter), which was part of the CARES Act (Coronavirus Aid, Relief, and Economic Security Act) that was aimed at helping selected businesses, mainly small ones with uncollateralized loans from April 3, 2020, and up to May 31, 2021. In the United States, most government assistance was channeled through the banking system. The purpose of this study is to examine if the stockholders of banks benefited from the implementation of the program. As the business of banks increased during this time due to their role in the economy, it is possible that banks would outperform their own pre-PPP performance during the implementation of the program. We also examine to check if banks' returns differed based on size. Since larger banks are expected to have more money available for distribution, it could be likely that their stockholders would benefit more. Our results are summarized as follows: We find that the daily percentage bank returns for two indices representing the

[1] Texas A&M University-Commerce
[2] Texas A&M University-Commerce

largest bank groups (KBW index) and smallest bank groups (ABAQ index) did better than their pre-event comparison periods. The results of t-tests and, in the case of the larger banks, non-parametric tests support this evidence. However, when controlled for general market increases, the results indicate that no superior returns accrued to bank stockholders of either size during the PPP period. When the general market movement moved upwards, the bigger banks have a significantly higher return than their smaller counterparts. We conclude that while banks did perform better compared to their own pre-event comparison period, they did not produce superior returns for their stockholders compared with the general market.

MOTIVATION AND HYPOTHESIS

Banks and Paycheck Protection Program: Literature Review

Banks are unique financial institutions in that they allocate credit in society and act as delegated monitors. The PPP enabled banks to allocate credit for fees without fear of default. Karakaplan (2021) examined PPP loans of up to $1 million and showed that banks making an extra dollar of PPP credit made 0.91 cents to $1.27 extra for their small business loans. The author argues that the multiplier effect of the PPP loans on small business bank loans was roughly one dollar to one dollar on average. In another work, Demirguc-Kunt, Pedraza and Ruiz-Ortega (2021) examine the impact of financial sector policy announcements on bank stocks around the world during the pandemic. They find that while various programs moderated the adverse impacts of the crisis, the impact varied considerably across banks and countries. In a very interesting study, Granja, Makridis, Yannelis, and Zwick (2022) use loan-level microdata for all PPP loans and report that banks played an essential role in mediating program targeting. They also mention how policy transmission depends on the agents delegated to deploy it. The above studies make it clear that banks played a huge role in the allocation of funds under the PPP program and made fees and commissions in the process as they should have, it had dissimilar effects on their stock prices.

In another interesting work, Bartik, Cullen, Glaeser, Luca, Stanton, and Sundaram (2021) ask, "*what happens when public resources are allocated by private actors, whose objectives may be imperfectly aligned with public goals?*" They study the question in the context of the PPP, which relied on private banks to disburse aid to small businesses rapidly. They reported that while banks did target loans to their preexisting customers, treatment effect heterogeneity was sufficiently modest, and the correlation between the bank and public objectives seemed sufficiently strong that delegation could still have been optimal given the high costs of delay. Further evidence of heterogeneity in the allocation of funds under the PPP program is provided by Joaquim and Netto (2021), who empirically provide that firms that are larger and less affected by the COVID-19 crisis received loans earlier, even in a within-bank analysis. These studies show that banks would act in their shareholders' interests first.

Bank Size, Bank Priorities, and Paycheck Protection Program

There is evidence to suggest that bigger banks and smaller banks distributed the funds they had differently. Griffiths, Mauldin, and Winters (2020a and 2020b) study the impact of community banks across Texas in the first and second rounds of distribution of funds under the program. They reported that approximately 64 percent of all first-phase lenders in Texas under PPP were community banks. They also showed in their second study mentioned above that community banks were at the forefront of making most loans of the PPP program. The same is not true of bigger banks, in whose case, studies found that there was discrimination in the distribution of PPP funds. For example, Packin (2020) argues:

"In an effort to support the economy, the US government passed numerous stimulus acts, which included, among other things, a Paycheck Protection Program (PPP), and the distribution of relief checks to consumers. To effectuate the massive distribution of liquidity on an expedited basis, the government relied on big banks. But instead of prioritizing the public welfare, the banks were focused on their bottom lines and thus did not carry out

the true intent of the stimulus. For example, with respect to the PPP, although the Small Business Administration was required to process the loans on a first-come, first-served basis, the banks were not. And absent that requirement, the banks prioritized richer and bigger customers."

There is evidence from the popular press that bigger banks prioritized select customers. Flitter and Cowley (2021) mention in the *New York Times*,

"*The federal government's $349 billion aid program for small businesses devastated by the coronavirus pandemic was advertised as first-come, first-served. As many business owners found out, it was anything but.*

That's because some of the nation's biggest banks, including JPMorgan Chase, Citibank and U.S. Bank, prioritized the applications of their wealthiest clients before turning to other loan seekers, according to half a dozen bank employees and financial industry executives who spoke on the condition of anonymity because they were not authorized to discuss the banks' operations."

There are also other press reports (Ponciano 2020 *Forbes*) that the house select subcommittee on the coronavirus showed that big banks prioritized billions in PPP funds for wealthy clients at the expense of struggling small businesses. In another article, Baker (2020) mentions that:

Instead of providing quick, efficient and fair employee retention assistance directly through employers — like the method used in the European Union and elsewhere globally — the U.S. relies on bank lenders as the primary conduit for delivery of assistance to employers and their employees.

This reliance on lender intermediaries means that assistance must come in the form of "loans" rather than direct support payments. It also exposes how frequently the government's policy goals conflict with lenders' economic goals and incentives. This is an inefficient and ineffective solution for the problem it intended to solve.

And

"Here is where using the banks as a conduit for government policy courts big trouble. Bank lenders are hard-wired to maximize shareholder value — not social value — and their decisions are inevitably based on their own capital, profitability, and customer relationship needs."

This problem of banks' goals for stockholder wealth maximization and their departure from the goals of the fiscal policy distribution of funds by the government was addressed by Packin and Nippani (2022). The authors argue that banks' goals for their stockholder wealth maximization came into conflict with the government's goals for providing funds to the impacted population during the pandemic. The authors mention in their article that:

Recent years' frustration from the economic system due to growing inequality intensified following the government's disbursement of Coronavirus Aid, Relief, and Economic Security (CARES Act) stimulus package to COVID-19 affected populations that was distributed in an unequal and unequitable manner, largely because of the banks' business choices. The banks simply failed in advancing the goals of the stimulus package, as intended by the government, partly because they had no incentives to do so. The lack of fiduciary duty placed on banks contributed to their inability to be flexible with those facing financial difficulties. Some banks used widely known loopholes, to collect the government's payments in customers' bank accounts, if payees owed outstanding loans or other payments to the bank. Alarmed by this, scholars, journalists, and politicians expressed concerns about this practice. Similarly, several states' attorney generals, governors, and even various courts tried to address the problem in order to help consumers, stressing that the government intended for banks to distribute the funds to consumers that truly need them.

Packin and Nippani (2022) recommend that in case of a clash between banks' objective of wealth maximization in the distribution of federal funds, there should be a rating similar to CAMELS ratings called DEI ratings, which rate how much banks distribute of funds meet government objectives. The authors recommend DEI scores similar

to CAMELS ratings which regulators could use to see if banks could amend their behavior to get access to future government distributions.

Motivation

There is evidence provided in the above two sections that banks received commissions in the distribution of PPP funds (Karakaplan, 2021). There is also evidence that banks could have had a different set of priorities in the distribution of funds compared to what the PPP intended. For example, as mentioned earlier, Joaquim and Netto (2021) showed that firms that are larger and less affected by the COVID-19 crisis received loans earlier, even in a within-bank analysis. Griffiths, Mauldin, and Winters (2020a and 2020b) provide evidence that smaller banks played a significant role in Texas regarding the distribution of PPP funds. Evidence from the popular press and legal studies in the previous subsection indicates that bigger banks prioritized bigger customers. Banks are corporations. Corporations are wired to make decisions that maximize their stockholder's wealth. Even at the height of the pandemic, when fiscal funds were provided for the relief of the population where banks were the main funnel of funding, there were enough reports that indicated that all of the fiscal policy's goals were not met due to banks' behavior. This is our motivation for the paper.

Based on the studies in literature, the popular press, and the legal press, it is clear that: banks benefited from distributing PPP funds. It is also evident that smaller banks have probably distributed the funds better than their bigger counterparts in that they followed the purpose of the distribution of funds more closely than bigger banks did. If both of these are true, it is possible that (1) bank stock returns increased during this period as compared with a pre-event comparison period; and (2) It is possible that bigger banks whose pursuit of bigger customers showed actions inconsistent with fiscal distribution benefited in greater stock returns for their stockholders than their smaller counterparts did. We, therefore, test the following two hypotheses in this study:

H1: *Bank daily stockholders' returns during the distribution period of PPP were not higher compared with their pre-event comparison period. This is true for both larger and smaller banks. The alternate is that the returns were higher compared with the pre-event comparison period.*

The other hypothesis is:

H2: *The daily returns to stockholders for the bigger banks is not greater as compared with their smaller bank counterparts. The alternate hypothesis is that the returns for bigger banks are higher as compared with their smaller bank counterparts.*

DATA AND EMPIRICAL EVIDENCE

Data

To study the hypotheses for the study, we used the daily returns of the KBW Nasdaq Bank Index. This is the index representing 24 large banks. The symbol used for this is BKX. For smaller banks' representation, we use the daily returns of the ABA Nasdaq Community Banks Index. In the study, we call this ABAQ. In addition, we also gathered data for the NASDAQ Composite Index as a control variable for the regressions. The data were acquired from the website of NASDAQ. We acquired the daily closing values for the BKX (KBW Nasdaq Bank Index), the ABAQ (ABA Nasdaq Community Bank Index) from the website of NASDAQ.com, and the NASDAQ (Nasdaq Composite Index) closing values were obtained from yahoo finance. The exact dates used for analysis were from March 6, 2018, and ending June 28, 2021. Of this total data, the period up to April 6, 2020, was considered the comparison period (March 6, 2018, to April 3, 2020), and the period from April 6, 2020, to June 28, 2021, was considered the PPP event period. The PPP event period is based on the dates from the COVID-19 timeline mentioned in the website of the *Federal Reserve Bank of St. Louis*. As per the website, the Paycheck Protection Program loans started on April 3, 2020, and the final extension was announced on June 25, 2021. The

focus of this paper is on PPP program exclusively. Many events occurred regarding the CARES act during the period. This study confines to the PPP program and banks only. The daily percentage returns were calculated from the closing values of the indices in the following way:

$R_{it} = [(SI_t - SI_{t-1})/SI_{t-1}] * 100$ (1)

where R_{it} is the return of the stock index for day t, and SI_t is the daily closing price of the index on day t and SI_{t-1} refers to the closing price of the index on day t-1 (previous trading day). The daily returns calculated for BKX were called BKXRET, and the returns for ABA Nasdaq Community Bank Index were called ABAQRET, and the daily returns for the Nasdaq Composite were called NASRET. We also calculated the difference in the daily percentage returns between BKXRET and ABAQRET (same day returns for both indices) to measure if bigger banks performed better. This variable is called DIFFRET and is defined as follows:

DIFFRET = BKXRET-ABAQRET (2)

This statistic is specifically designed to see if the bigger banks subjected to several articles citing their pursuit of wealth maximization as opposed to the social goals of the PPP fared better in stockholder returns.

Empirical Evidence: Descriptive Statistics and Tests for differences

We first calculated the descriptive statistics for the variables ABAQRET, BKXRET, NASDAQRET and DIFFRET. We calculated these separately for the comparison period known as ABAQRET-PRE, BKXRET-PRE, NASRET-PRE, and DIFFRET-PRE. Returns were also calculated for the PPP period, which are called ABAQRE-PPP, BKXRET-PPP, NASRET-PPP, and DIFFRET-PPP. The pre-event comparison period was 524 days, and the event period had 310 trading days. The descriptive statistics are given in Table 1 below.

TABLE 1 DESCRIPTIVE STATISTICS

Panel A: Comparison Period (Pre-PPP enactment)

	ABAQRET-PRE	BKXRET-PRE	NASRET-PRE	DIFFRETPRE
Mean	-0.095287	-0.099198	0.013514	-0.003912
Median	-0.033280	0.047533	0.079969	0.022328
Maximum	10.12455	14.82906	9.345998	5.299061
Minimum	-12.92328	-16.20163	-12.32133	-5.042556
Std. Dev.	1.867599	2.094809	1.635376	0.792328
Skewness	-0.898964	-0.723802	-0.786019	-0.043758
Kurtosis	17.00028	21.74086	15.31325	12.72157
Observations	524	524	524	524

Panel B: Event Period (PPP Period)

	ABAQRET-PPP	BKXRET-PPP	NASRET-PPP	DIFFRETPPP
Mean	0.230808	0.270906	0.229087	0.040098
Median	0.080455	0.141458	0.376121	0.011734
Maximum	12.37393	13.47474	7.326113	3.012744
Minimum	-8.753075	-8.998642	-5.265476	-3.346322
Std. Dev.	2.637489	2.586841	1.462960	0.942041
Skewness	0.526427	0.621014	-0.231141	-0.179774
Kurtosis	5.096255	5.984296	5.515785	3.992299
Observations	310	310	310	310

The table above gives the descriptive statistics for the three indices' daily percentage returns used in the study. Panel A gives the values before the Pre-PPP sample period, while panel B gives the values for the PPP Period. The values of the daily mean return, the daily median, the Maximum value, the Minimum Value, Standard Deviation, Skewness, Kurtosis, and Observations (N). Panel A gives the statistics for ABAQRET-PRE, BKXRET-PRE, NASRET-PRE, and DIFFRET-PRE. These are the comparison period returns used in the study. Panel B gives the statistics for ABAQRET-PPP, BKXRET-PPP, NASRET-PPP, and DIFFRET-PPP. DIFFRET-PPP is the difference between BKXRET and ABAQRET for both PRE and PPP periods.

The descriptive statistics given in the above table are very interesting to read. In the pre-event comparison period, presented in Panel A of Table 1, the mean returns for the two bank indices, ABAQRETPRE and BKXRET-PRE, have a negative mean. NASRET-PRE has a positive mean, but not surprisingly, DIFFRET-PRE also has a negative mean. It can also be seen that all the indices and DIFFRET-PRE are negatively skewed. It appears that the stockholders of banks did not have a productive period prior to the PPP event.

Panel B of Table 1 shows the descriptive statistics for the PPP period. All three indices ABAQRETPPP, BKXRET-PP, NASRET-PPP, and DIFFRET-PPP, the difference between larger bank and smaller banks indices all have positive means and medians. The two leading bank indices are positively skewed, with NASRET and DIFFRET negatively skewed. There appears to be a significant difference in the market's perception in that the returns appear to have turned positive during the PPP period for not only the bank indices but for their differences too. To examine this statistically, we calculated the difference in means t-tests and the difference in median non-parametric tests Wilcoxon and Kruskal-Wallis tests. The results of these tests are presented in Panels A and B of Table 2 below.

TABLE 2 PARAMETRIC AND NON-PARAMETRIC TESTS OF EQUALITY OF MEANS AND MEDIANS

Panel A: T-tests for the differences in Means.

Variable	N	Mean	SD	SE	t-value	p-value
ABAQRET-PPP	310	0.230808	2.637489	0.149799	2.082436	0.0376
ABAQRET-PRE	524	-0.095287	1.867599	0.081586		
BKXRET-PPP	310	0.270906	2.586841	0.146923	2.255626	0.0244
BKXRET-PRE	524	-0.099198	2.094809	0.091512		
NASRET-PPP	310	0.229087	1.462960	0.083091	1.911951	0.0562
NASDAQ-PRE	524	0.013514	1.635376	0.071442		
DIFFRET-PPP	310	0.040098	0.942041	0.053504	0.721728	0.4707
DIFFRET-PRE	524	-0.003912	0.792328	0.034613		

Panel B: Mann-Whitney and Kruskal-Wallis tests for differences in the Medians

Variable	N	Median	Wilcoxon (p-Value)	Kruskal-Wallis (p-Value)
ABAQRET-PPP	310	0.080455	1.156 (0.248)	1.337 (0.248)
ABAQRET-POST	524	-0.033280		
BKXRET-PPP	310	0.141458	1.677(0.093)	2.81 (0.093)
BKXRET-PRE	524	0.047533		
NASRET-PPP	310	0.376121	2.742 (0.00)	7.52 (0.00)

NASRET-PRE	524	0.079969		
DIFFRET-PPP	310	0.011734	0.861 (0.39)	0.74 (0.39)
DIFFRET-PRE	524	0.022328		

The differences between ABAQRET (PRE and PPP), BKXRET (PRE and PPP), NASRET (PRE AND PPP), and DIFFRET (PRE and PPP) and their significance are presented in the table below. Panel A gives the t-test values for the differences in means (parametric tests), and Panel B presents the values for the non-parametric Wilcoxon/MannWhitney Tests and Kruskal-Wallis tests for the equality of medians. The values given in Panel A are the number of observations (N), the mean, the standard deviation (SD), the standard error (SE), and the t-statistic and its p-value for differences in means. Panel B has the number of observations, the median, the Wilcoxon/Mann Whitney statistic and its p-value, and the Kruskal Wallis statistic and its corresponding p-value.

In Table 2 above, the tests are for the two bank indices ABAQRET and BKXRET, since these are the focus of the study. The test results for NASRET and DIFFRET are also given above.

The results of the t-test in Panel A of Table 2 above show that the means of the ABAQRET and BKXRET are different and higher in the PPP period as compared with the comparison period prior to the implementation of PPP. For ABAQRET, the t-value for the difference in means is significant at 5%. The same is true of the BKXRET. Here the p-value is 0.0244 making the t-statistic significant at 5%. It appears the implementation of the PPP period has resulted in higher daily average percentage mean returns for investors of both bank sizes. For NASRET, the difference in means is consistent with the two bank indices with the mean returns significantly higher in the PPP period as compared with the pre-event comparison period. The difference in means is significant at 10% level. It appears that all three indices fared better in the PPP period as compared with the previous period. However, the difference between the large bank returns index and its smaller counterpart, DIFFRET is not significant at all. Based on the t-test, the mean returns do not seem much higher for the bigger banks as compared with their smaller counterparts.

We next examined the differences in the medians using the non-parametric tests in Panel B of Table 2. Here the results are mixed. For ABAQRET, the differences in medians are not significant, with neither the Wilcoxon statistic nor the Kruskal-Wallis statistic being significant at any conventional level. For the

BKXRET, the average daily medians for large banks, the results indicate that the Wilcoxon and KruskalWallis statistics are significant at 10%. The p-values given next to the statistics in the parentheses are both 0.093, indicating their significance. While the evidence of significance here is less than in the t-tests, where significance was seen in both indices, we use a dummy variable regression to examine for superior returns during the PPP period. For NASRET, the difference in medians is significant, with the better performance following PPP, with both Wilcoxon and Kruskal-Wallis having a significance of 0.01 percent.

Regression Analysis

The dummy variable regressions are conducted with the dependent variables being ABAQRET, BKXRET, and DIFFRET. The dependent variable in Regression 1 is ABAQRET, Regression 2 is BKXRET and Regression 3 is DIFFRET, the difference between BKXRET and ABAQRET. The general regression equation for these three regressions is given in Equation 3 below.

$$R_{it} = \beta_0 + \beta_1 PPP \quad (3)$$

In the above equation, R_{it} is the daily percentage return for ABAQRET in Regression 1, BKXRET in Regression 2, and DIFFRET in Regression 3. PPP is a dummy variable that takes a value of 1 for April 6, 2020, to June 28, 2021, zero earlier. The regressions are calculated for the total period from March 6, 2018, ending June 28, 2021. The results of the regression analysis are presented in Panel A of Table 3 below.

TABLE 3 REGRESSION ANALYSIS

Panel A: Regressions with PPP

Regression 1 (Dependent variable: ABAQRET, R-squared=0.00)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CONSTANT	-0.095287	0.071227	-1.337796	0.1813
PPP	0.326095	0.146237	2.229914	0.0260

Regression 2 (Dependent variable: BKXRET, R-squared=0.00)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CONSTANT	-0.099198	0.084734	-1.170702	0.2421
PPP	0.370104	0.158874	2.329548	0.0201

Regression 3 (Dependent variable is DIFFRET, R-Squared=0.00)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CONSTANT	-0.003912	0.028498	-0.137259	0.8909
PPP	0.044009	0.062189	0.707674	0.4793

Panel B: Regressions with PPP and NASRET

Regression 4 (Dependent variable: ABAQRET, R-squared=0.31)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CONSTANT	-0.105667	0.046619	-2.266596	0.0237
NASRET	0.768103	0.101216	7.588773	0.0000
PPP	0.160513	0.134535	1.193099	0.2332

Regression 5 (Dependent variable: BKXRET, R-squared=0.38)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CONSTANT	-0.111310	0.054083	-2.058114	0.0399
NASRET	0.896172	0.117363	7.635910	0.0000
PPP	0.176914	0.137289	1.288624	0.1979

Regression 6 (Dependent variable: DIFFRET, R-squared=0.05)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CONSTANT	-0.005642	0.026277	-0.214721	0.8300
NASRET	0.128069	0.035573	3.600187	0.0003
PPP	0.016401	0.059541	0.275460	0.7830

The table above gives the analysis of Regressions where the daily percentage returns of the ABAQ Index (ABAQRET) and KBW Index (BKXRET) and the difference in their returns (BKXRET-ABAQRET=DIFFRET) are used as dependent variables. The independent variable in the regressions in Panel A is the PPP dummy which is a binary variable that takes a value of 1 for the day after the enactment of PPP, zero earlier. In Panel B, the same variables are used, and the daily percentage returns of NASDAQ is used as a control variable to control general market movements. The number of observations for all regressions is 834. The t-statistics reported in all the regressions are corrected by Newey and West (1987) heteroskedasticity and autocorrelation consistent covariance matrix.

The results of the dummy variable regressions presented in Panel A of Table 3 above show that the constant is negative and not significant in Regressions 1 and 2 with ABAQRET and BKXRET as the dependent variables. The t-statistics reported in all the regressions are corrected by Newey and West (1987) heteroskedasticity and autocorrelation consistent covariance matrix. The dummy PPP is positive and significant for ABAQRET with a coefficient of 0.326095 (p-value of 0.03). It is also significant for BKXRET in Regression 2 with a coefficient of 0.370104, t-value of 2.32, and p-value of 0.0201. Based on the results, it appears that both large and small banks did well during the implementation of the PPP. Regression 3 looks at DIFFRET, the difference between the returns of large and small banks and the coefficient of PPP is not significant at any conventional level. This implies that neither larger banks outperformed nor underperformed their smaller counterparts during the PPP implementation period.

In Table 2, evidence was presented that NASRET, the return for NASDAQ was significantly higher in the PPP period than in the comparison period. Based on that, it appears that the general trend in the market is higher during the PPP period. To check to see if the daily percentage returns of ABAQRET and BKXRET were impacted by general market movements and not necessarily PPP we use the following equation for Regressions 4, 5, and 6. The results of these regressions are presented in Panel B of Table 3 above. Here the generalized equation used is:

$$R_{it} = \beta_0 + \beta_1 PPP + \beta_2 NASRET \quad (4)$$

Regressions 4-6 have the daily returns of ABAQRET, BKXRET, and DIFFRET as the dependent variables. The independent variables are the PPP dummy, similar to the regressions in Panel A and NASRET, the daily corresponding returns of NASDAQ as a control variable that controls for general market movements. The results are significantly different from Panel A. First, the value of R-squared is higher for Regressions 4 and 5 compared with Regressions 1 and 2. The constant is significant and negative for both Regressions 4 and 5. This implies that other factors negatively impacted both ABAQRET and BKXRET during the regression period. PPP is not significant in either Regression 4 or Regression 5. However, NASRET, the control variable, is significant. This implies that the positive returns seen in the ppp period were actually because of a general increase in market movements and that PPP did not really prove to be a positive time specifically for bank stocks. For Regression 6, with DIFFRET as the dependent variable, only NASRET has a highly significant coefficient. This implies that bigger banks did better compared to their smaller counterparts when the markets moved up in general. Like Regressions 4 and 5, PPP does not have a significant coefficient. The conclusions and implications of these findings are presented in the last section below.

CONCLUSIONS AND IMPLICATIONS

The purpose of the study is to examine if the implementation of PPP impacted bank shareholder returns as compared with the pre-event comparison period. A second objective was to see if the returns that accrued to shareholders of larger banks received higher returns as compared with shareholders of smaller banks. The study uses KBW NASDAQ bank index daily percentage returns to measure the returns for large banks. ABAQ Nasdaq Community Banks Index daily percentage returns measure the returns for smaller banks. The results of the t-tests and a dummy variable PPP for the period of implementation showed that both indices performed better as compared with their pre-event comparison period. However, when controlled for general market movements represented by the daily returns of the NASDAQ Composite Index, the variable PPP was insignificant, indicating that the higher returns that accrued to both large banks and small banks during the study period are impacted more by the general market movement upwards. For DIFFRET, the difference between the returns of larger and smaller banks, it showed that the general movement upwards as measured by NASRET, the return on NASDAQ composite proved more favorable to bigger banks as compared with their smaller counterparts. Based on the

results, we reject hypothesis 1. The returns during the PPP period are higher but this is attributable to general market movements for larger and smaller banks. For Hypothesis 2, we reject the null that bigger bank returns are not higher than their smaller counterparts. It appears that in the general upward trend, there seem to be higher returns for bigger banks as compared with their smaller counterparts. This could mean that bigger banks' pursuit of their stockholder wealth inconsistent with fiscal goals outlined by PPP could have worked in higher returns when the markets moved toward higher returns.

In a recent study, Nippani and Ling (2021) using bank ratios show that bigger banks outperformed their smaller counterparts in the post-financial crisis era. In another interesting study, Nippani, Arize, and Malhotra (2021) show that an increase in credit risk following the crisis of 2008 led to a decrease in returns for both the ABAQ index and the KBW index. They also showed the significance of both the indices, ABAQ and KBW were less affected by TED spread and were more impacted by general market movements. This current study shows that in the COVID-19 crisis, while the general market movement of both ABAQ and KBW in the PPP implementation was higher, the general market movement as represented by NASDAQ is impacting the returns more. Our results are similar to Nippani, Arize, and Malhotra (2021) in that regard. Our study also adds to the existing literature on bank discrimination following the COVID-19 crisis. It shows that, in general, larger banks have higher returns which are related to general market movements during the PPP implementation. Future studies can look into other aspects of wealth maximization like ROE and ROA increases following PPP implementation.

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