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Economic Policy Uncertainty and Bank-Level Stock Returns Volatility of the United States: A Mixed-Frequency Perspective

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Abstract

Using generalized autoregressive conditional heteroscedasticity-mixed data sampling (GARCH-MIDAS) model with monthly Economic Policy Uncertainty (EPU) index and daily stock volatility of 149 banks in the United States from August 2000 to August 2023, we show that EPU plays a significant role in predicting bank stock volatility. Across the groups of large, mid, and small cap banks, stock volatility tends to increase in response to EPU, suggesting that growing uncertainty induces higher volatility in bank stocks. EPU has a stronger impact on large-cap banks. The outperformance of the GARCH-MIDAS-EPU model holds in an out-of-sample analysis, regardless of market capitalization and forecast horizons.

Keywords: Economic policy uncertainty (EPU); Bank-level stock returns volatility; GARCH-MIDAS model

JEL Codes: C32, C53, D80, G10, G21

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1. Introduction

The present value model indicates that stock price and/or returns volatility depends on the variability of cash flows and the discount factor (Shiller, 1981a, b). The general equilibrium models developed by Pástor and Veronesi (2012, 2013) points out that uncertainty surrounding government policy changes increases the volatility of the stochastic discount factor, which results in higher risk premium and, in the process, causes equity returns to become more volatile (given the present value model of risky asset prices). Besides this, increases in policy-related uncertainties can also lead to a reduction in stock volatility due to lower trading volumes in the stock market, as per the Mixture of Distribution Hypothesis (MDH; Clark, 1973) or the Sequential Information Arrival Hypothesis (SIAH; Copeland, 1976), given that investors tend to re-allocate their portfolio weights in favor of "safe haven" assets in times of high uncertainty (Balcilar et al., 2016; Raza et al., 2018; Bouri and Jalkh, 2024). Hence, uncertainty involving economic policy decisions can produce increases or decreases in the volatility of risky assets, such as equities.

Given the above-mentioned transmission channels, several studies (see, for example, Liu and Zhang (2015); Liu et al. (2017); Gong et al. (2022); Li et al. (2023); Salisu et al. (2023, 2024)) have utilized the index of Economic Policy Uncertainty (EPU), constructed by Baker et al. (2016) from newspaper articles, to successfully forecast aggregate stock market volatility of the United States (US), primarily based on variants of the generalized autoregressive conditional heteroskedasticity (GARCH) model. Realizing the importance of banks, which represent a critical component of the financial system of an economy, acting as lenders, custodians of deposits for customers, and managers of financial infrastructure, and thus, being often at the heart of financial crises (Ampudia and Van den Heuvel, 2022), we aim to add to this literature by focusing on the banking industry and EPU in the US. Specifically, we examine the predictive power of monthly EPU for the daily volatility of 149 banking stocks returns over the period of August 2000 to August 2023, with the banks categorized into large-, middle (mid)- and small-level of market capitalization.

The performance of the banking industry is a useful indicator for financial markets on the credit quality, consistency in flow of liquidity, and degree of fear surrounding banking insolvencies that exist in the wider financial system (O'Donnell et al., 2024), hence, appropriate modeling and prediction of volatility of banking stocks, capturing uncertainty and/or financial stability in the industry, is indeed of paramount concern for investors, bankers, and policymakers. Naturally, the

in- and out-of-sample predictive analyses that we undertake in this paper involving the volatility of stocks of the US banking industry carries important economic implications for various stakeholders, and goes beyond the academic value of being the first of its kind in the banking literature.¹ Regarding the econometric model, we rely on the generalized autoregressive conditional heteroskedasticity (GARCH) variant of mixed data sampling (MIDAS), i.e., the GARCH-MIDAS, model, as originally developed by Engle et al. (2013), which is well-suited in our context due to the mismatch in the frequency of our data: banking stock data are available daily, while our predictor—EPU index—is only available monthly. A MIDAS-based approach is therefore necessary for volatility modeling in our case, as it prevents information loss that would result from simply averaging the daily data to match the lower frequency of monthly data (Clements and Galvão, 2008).

Our main analysis shows the significant ability of EPU to predict the returns volatility of large, medium, and small banks, with evidence that EPU exerts a stronger impact on large banks.

2. Methodology

The GARCH-MIDAS model is built on the idea that volatility consists of two components: short-term fluctuations and a long-term aspect, with the latter potentially influenced by slow-moving predictors, such as EPU featured in our study. Predicting bank-level stock returns volatility at a daily frequency is motivated not only by the need for more precise statistical measures of variance (Ghysels et al., 2019) but also by the importance of high-frequency predictions for investors to make timely portfolio decisions, via calculations of Value-at-Risk (VaR) estimates (Ghysels and Valkanov, 2012).

We specify the GARCH-MIDAS model for stock returns of each bank on i^{th} day in the t^{th} month as in Equations (1 & 2):

$$r_{i,t} = \nu + \sqrt{\mu_t \times \tau_{i,t}} \times \varepsilon_{i,t}, \qquad \forall i = 1, 2, ..., N_t$$

$$\varepsilon_{i,t} \mid \varphi_{i-1,t} \sim N(0,1)$$
(1) (2)

²Here, the daily bank stock returns $(r_{i,t})$ in equation (1) is expressed as a function of an unconditional mean (ν) , a conditional variance $(\sqrt{\mu_t \times \tau_{i,t}})$, consisting of a short-term component $(\tau_{i,t})$ and a long-term component (μ_t) ,

¹ Studies involving EPU and the (international) banking sector has primarily concentrated on the effect on loan performance (see, Ozili (2022) and Ali et al. (2023) for detailed reviews).

$$\tau_{i,t} = (1 - \lambda - \gamma) + \lambda \frac{(r_{i-1,t} - \nu)^2}{\mu_t} + \gamma \tau_{i-1,t}$$
(3)

We define the daily long-term component (μ_i) for realized volatility and the exogenous factor in Equations (4) and (5), respectively:

$$\mu_{i} = m + \varphi \sum_{k=1}^{K} \theta_{k} \left(\omega_{1}, \omega_{2} \right) R V_{i-k}$$

$$\tag{4}$$

$$\mu_{i} = m + \varphi \sum_{k=1}^{K} \theta_{k} \left(\omega_{1}, \omega_{2} \right) X_{i-k}$$

$$\tag{5}$$

where *m* denotes the long-run intercept, while φ is the coefficient linked to the predictor³, which could either be the realized volatility of bank stock returns or our exogenously incorporated factor (EPU).⁴

The beta polynomial weights $\theta_k(w_1, w_2) \ge 0$, k = 1, ..., K in Equations (4) and (5) are constrained to sum to unity; to ensure identification of the model parameters. In the same vein, the secular component of the MIDAS weights is filtered using a span of twenty MIDAS months. Hinging on the flexibility of the beta weighting scheme (Colacito et al., 2011), we adopt the one-parameter beta polynomial $\left[\theta_k(w) = \left[1 - k/(K+1)\right]^{w-1} / \left[\sum_{j=1}^{K} \left[1 - j/(K+1)\right]^{w-1}\right]\right]$, a transformed variant (where w_1 is set to one and $w = w_2$) of the two-parameter beta weighting function $\left[\theta_k(w_1, w_2) = \left[k/(K+1)\right]^{w_1-1} \times \left[1 - k/(K+1)\right]^{w_2-1} / \sum_{j=1}^{K} \left[j/(K+1)\right]^{w_1-1} \times \left[1 - j/(K+1)\right]^{w_2-1}\right]$. The

and the error term, $\varepsilon_{i,t}$. The subscript "i,t" is used to differentiate between daily and monthly frequencies, respectively; with N_t indicating the number of days in a given month t. The error term, $\varepsilon_{i,t}$ is assumed to follow a Gaussian distribution, premised on the information set available up to the $(i-1)^{th}$ day of month t, which is denoted by and $\varsigma_{i-1,t}$. Similarly, the short-run component, $\tau_{i,t}$, of the conditional variance is defined in Equation (3), where λ and γ are respectively the ARCH and GARCH terms that are constrained to be non-negative, with values summing up to less than one. The monthly EPU is transformed into a daily frequency without any loss of generality (see, Engle et al. (2013) for a detailed explanation). Consequently, the days in a given month t are adjusted without explicit tracking.

³The statistical significance of the slope parameter, φ , determines the in-sample predictability of our incorporated predictor, where a significant estimate indicates predictability of the predictor (EPU) for bank stock returns volatility. ⁴Consequently, we examine two variants of the long-term component in the GARCH-MIDAS model, with the difference between the contending models being our predictor choice. The model variants are the conventional GARCH-MIDAS-RV model (which serves as the benchmark), which incorporates the realized volatility (RV), and the GARCH-MIDAS-EPU, which incorporates the EPU within a rolling-window framework.

chosen weighting scheme ensures a monotonically decreasing pattern (Engle et al., 2013). Additionally, while the weights (θ_k) are constrained to be positive and sum to one $\left(\sum_{k=1}^{K} \theta_k = 1\right)$, the parameter (*w*) is constrained to be > 1, ensuring that larger weights are assigned to more recent lagged observations than those from distant observations.

To assess the out-of-sample forecast performance of the contending GARCH-MIDAS model variants, we compare the respective forecasting precision using the modified Diebold-Mariano (DM; Harvey et al., 1997) test, which is an extension of the conventional Diebold and Mariano (1995) test for comparing pairs of models. The modified DM statistic, DM^{*}, is defined as follows:

$$DM^{*} = \left(\sqrt{\frac{T+1-2h+T^{-1}h(h-1)}{T}}\right)DM$$
(6)

where τ denotes the length of the out-of-sample period of the forecast errors, with h as the forecast horizon; $DM = \overline{d}/\sqrt{V(d)/T} \sim N(0,1)$ defines the conventional DM test, where $\overline{d} = 1/T \sum_{t=1}^{T} d_t$ is the mean loss differential $d_t \equiv g(\varepsilon_{it}) - g(\varepsilon_{jt})$ obtained as the difference between the loss functions $g(\varepsilon_{it})$ and $g(\varepsilon_{jt})$ of the forecast errors (ε_{it}) and (ε_{jt}) , respectively, from the competing models; and $V(d_t)$ is the unconditional variance of the loss differential: d_t . Following from the above, we test the null hypothesis of equality in the forecast precisions of the paired models⁵ $(H_0 : d = 0)$, against an alternative hypothesis of inequality $(H_0 : d \neq 0)$. We conduct our out-of-sample forecast evaluation using 75% of the full sample data, under three different forecast horizons: 20-, 60-, and 120-days ahead forecasts.

3. Data and Preliminary Analyses

The dataset employed in this study includes the daily closing prices of 149 US bank stocks and monthly EPU index of the US, extracted from DataStream and https://policyuncertainty.com/us_monthly.html, respectively. Banks are selected to have a minimum market cap of 500 million USD to avoid potential market structure issues with small cap

⁵A rejection of the null hypothesis would imply that the forecast precisions of the two models are statistically distinct, with the sign of the DM^{*} statistic informing us of the preferred model. A negative DM^{*} statistic indicates a preference for our predictive GARCH-MIDAS-EPU model over the conventional GARCH-MIDAS-RV model, and the converse for a positive DM^{*} statistic.

stocks and ensure a certain level of stock liquidity. The aggregate market cap of the selected banks is almost 1.5 trillion USD. Table A1 in the Appendix presents the bank ticker, name, market capitalization, and headquarter location, as of the ending date of our sample described below. Daily bank stock returns are computed as the natural logarithm of the ratio of two consecutive closing stock prices.

Turning to the EPU index, which measures policy-related economic uncertainty, is our main predictor. It is constructed by Baker et al. (2016) based on three types of underlying components⁶. While a daily version of the EPU index only based on the newspaper component is also available for the US, we decided to utilize the monthly measure, for several obvious reasons, notably its ability to capture in a broad fashion uncertainties involving monetary and fiscal policy decisions, the impact of which on overall stock market volatility of the US has been well-recognized by the studies cited in the introduction.

Although the start dates vary by bank, the earliest available data corresponds to 28th August 2000, while the end date is the same for all the banks, being 28th August 2023. This sample period is informative for our analysis because it covers various crisis periods, notably the 2008 global financial crisis, the 2020 Covid-19 outbreak, and the 2023 turbulence in the US banking industry when several regional banks, including Silicon Valley Bank, collapsed.

We briefly summarize the data for each bank's stock returns and the US EPU in Table A2 in the Appendix, with a report on the measures of location, spread and shape, along with some preliminary results on the stance of presence/absence of conditional heteroscedasticity, and first

⁶ The first component involves search results from 10 large newspapers (USA Today, the Miami Herald, the Chicago Tribune, the Washington Post, the Los Angeles Times, the Boston Globe, the San Francisco Chronicle, the Dallas Morning News, the Houston Chronicle, and the WSJ) for terms related to economic and policy uncertainty. namely, 'uncertainty' or 'uncertain', 'economic' or 'economy', and one or more of the following: 'congress', 'legislation', 'white house', 'regulation', 'federal reserve', or 'deficit'. To deal with changes over time in the volume of articles for a given paper, Baker et al. (2016) divide the raw count of policy uncertainty articles by the total number of articles in the same paper and month. The second component of the EPU index draws on reports by the Congressional Budget Office (CBO) that compile lists of temporary federal tax code provisions. Note that, temporary tax measures are a source of uncertainty for businesses and households because Congress often extends them at the last minute, undermining stability in and certainty about the tax code. The third component of the EPU index draws on the Survey of Professional Forecasters of the Federal Reserve Bank of Philadelphia. In this regard, Baker et al. (2016) measure dispersion in the individual-level data for three of the forecast variables directly influenced by monetary and fiscal policy actions: consumer price index (CPI), purchases of goods and services by state and local governments, and purchases of goods and services by the federal government. For each series, the quarterly forecasts for one year in the future is considered. To construct the overall EPU index, Baker et al. (2016) first normalizes each component by its own standard deviation, and then compute the average value of the components, using weights of 1/2 on the broad news-based policy uncertainty index, and 1/6 on each of the other three measures: the tax expirations index, the CPI forecast disagreement, and the federal/state/local purchases disagreement.

and higher order serial correlation at specified lags – 5 and 10. The banks are sub-categorized into three groups – large, mid and small caps. The categorization is in tandem with the criteria adopted by Standards & Poor's (S&P) Dow Jones and the MSCI frameworks. Small Cap represents bank stocks with a market capitalization below \$2 billion; Mid Cap represents bank stocks with a market capitalization below \$10 billion; while Large Cap represents bank stocks with a market capitalization.

Table A2 shows that the stock returns of banks are mostly positive on average, largely negatively skewed, and leptokurtic. This stance cuts across the three defined categorizations of capitalization. Notably, there are higher returns associated with the Small Cap stocks (approximately 0.0167%, averaging across all the bank stocks in this category), than the Mid Cap (approximately 0.0166%, averaging across all the bank stocks in this category) and Large Cap (0.0046%, averaging across all the bank stocks in this category) and Large Cap (0.0046%, averaging across all the bank stocks in this category). On average, the variability of the stock returns is highest under the Small Cap, followed by the Mid Cap and then the Large Cap categorizations. This is an indication that the returns on the bank stocks attain more stability as market capitalization grows. For all bank stock returns, the ARCH effect and first and higher-order autocorrelations are significant at lags 5 and 10. The EPU index also exhibits conditional heteroscedasticity and autocorrelation features, with positively skewed and leptokurtic behavior.

These features jointly suggest that the appropriateness of modelling stock return volatility using a GARCH process. Also, factoring in the divergent frequencies of the data: daily bank stock returns and monthly EPU, a MIDAS framework is inevitable to preserve the uniqueness of the data and the inherent information. Hence, our adoption of the GARCH-MIDAS model framework is well-warranted.

4. Empirical Results

We present and discuss the in-sample predictability of EPU for bank stock returns volatility along with the out-of-sample forecast evaluation of competing GARCH-MIDAS model variants. The conventional GARCH-MIDAS-RV, which uses realized volatility as a predictor for the bank stock returns volatility, serves as the benchmark model in this study, while our predictive GARCH-MIDAS-EPU model incorporates the EPU as a predictor for bank stock returns volatility. The results are presented in the similitude of the summary and preliminary analyses table sectioned into three, based on the market capitalization of the banking stocks under consideration. For the in-sample predictability, we use the full sample data, and for the forecast evaluation, a 75:25 data split is applied, with the first 75% for parameter estimation and the remaining 25% for the out-of-sample evaluation under three forecast horizons: 20-day ahead, 60-day ahead and 120-day ahead forecasts.

We only report the GARCH-MIDAS slope coefficient (φ), for each bank stock considered, which indicates the in-sample predictability of EPU for bank stock returns volatility. To further confirm that the established predictability extends beyond the in-sample period, we also provide the modified Diebold and Mariano (Harvey et al., 1997) statistic (DM^{*}) for out-of-sample forecast performance, which compares the GARCH-MIDAS-EPU with the GARCH-MIDAS-RV multiple forecast horizons (20-day, 60-day and 120-day ahead forecasts). This allows us to ascertain whether incorporating EPU provides additional information useful to improve the forecast accuracy of bank stock volatility.

Our analysis covers the impact of EPU on stock returns volatility. Column 2 in Table 1 presents the in-sample predictability results for the stock returns volatility over the considered sample periods for 149 banks, sub-divided into three groups (Small, Mid and Large Caps) based on market capitalization. The results show that the return volatility of most banks responds positively to EPU, in line with the present value model of asset prices, whereby policy related uncertainty affects the variability of the stochastic discount factor, raising the risk premium. Overall, this evidence is observed across the three categories, although there are pockets of significantly negative nexuses between EPU and bank stock returns volatility, possibly due to less trading volumes as outlined by the MDH and SIAH. In general, EPU has an in-sample-based predictive potential for the volatility of bank stock returns. It is, however, important to note that EPU exerts a higher impact on the large caps than other categories. For example, 13 (93%) out of the 14 large cap depict statistically significant predictability, while 38 out of the 57 (67%) mid cap and 56 out of the 79 (70%) small cap are statistically significant in terms of in-sample predictions.

Having established the in-sample predictability of bank stock returns volatility based on EPU, we evaluate the competing GARCH-MIDAS models using the modified Diebold and Mariano test (MD*). We assess whether the GARCH-MIDAS-EPU model, which includes the EPU index, outperforms the GARCH-MIDAS-RV model (see Columns 3 - 5 in Table 1). Significant negative DM* statistic implies that the GARCH-MIDAS-EPU model is preferred over the GARCH-MIDAS-RV model; while significant positive DM* favors the benchmark GARCH-

MIDAS-RV model; non-significance DM* indicates no marked difference between the two models. There are approximately 17.54% and 17.72% of the mid and small caps, respectively where the performances of the contending models do not differ markedly. However, of the statistically significant cases, there are more instances (approximately 71.43% among large cap, 55.32% among mid cap and 60% among small cap) of significant negative DM* statistics in favour of our GARCH-MIDAS-EPU than significant positive DM* statistics. These results hold across the different forecast horizons (20-, 60- and 120-day ahead forecasts), further confirming the statistical relevance of incorporating EPU as a predictor for bank stock returns volatility across the 149 US bank stocks analyzed.

[INSERT TABLE 1 HERE]

5. Conclusion

This paper provides first evidence on the in-sample and out-of-sample predictive power of monthly economic policy uncertainty (EPU) index on daily bank-level stock returns volatility in the US, using GARCH-MIDAS models. Considering 149 US banks, categorized into three groups (Small, Mid and Large Caps) and a sample period from August 2000 to August 2023, our analysis shows that bank stock returns volatility is predominantly positively linked to EPU, regardless of the capitalization category considered; though, the volatility of the large-cap banks appears to respond relatively more strongly to EPU. Our GARCH-MIDAS-EPU model outperforms the benchmark GARCH-MIDAS-RV model in over 55% cases across large, mid, and small cap banks, highlighting the statistical ability of EPU for predicting bank stock return volatility. Our results are robust to bank market capitalization and forecast horizons.

These findings raise important implications for investors, bankers, and regulators. Investors should have a close eye on the uncertainty surrounding US economic policies when making investment decisions that involve the volatility of US banks, irrespective of the spectrum of bank market capitalization. This may cover portfolio allocations, risk management, and option pricing which are essential tools and elements in the investment landscape. Bankers and policymakers, who are very concerned with the stability of the banking sector and the overall financial system, should consider putting the necessary emphasis on the significant role played by economic policy related uncertainty in any monitoring framework for the sake of financial stability and the health of the economy. This issue concerns all market capitalization of US banks. Given that our analysis concentrates on an aggregate measure of EPU, future studies could consider the various components of EPU, notably monetary and fiscal policy uncertainties to assess whether their predictive ability is also significant, and/or improves further, in the three market cap categories.

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Donk	Duadiatability Estimate (Std. Fuul	Modified Diebold and Mariano Statistics					
Бапк	Fredictability Estimate [Std. Eff] -	h = 20	h = 60	h = 120			
	Large Cap						
JPMorgan Chase & Co	0.3624*** [0.0441]	-4.4932***	-4.4895***	-4.5015***			
Bank of America Corp	0.4200*** [0.0165]	3.4637***	3.4384***	3.3896***			
Wells Fargo & Co	0.5096 [0.0200]	-2.6451	-2.6679	-2.6939***			
Citigroup Inc	0.3282 [0.0283]	-2.5001	-2.5254	-2.5510			
US Bancorp	0.4/19 [0.0352]	-2.3563	-2.3745	-2.39/6			
PNC Financial Services Group Inc	0.4/19 [0.0184] 0.5186*** [0.0244]	5.0/01 4.5208***	5.6325	5.5776 4.5242***			
First Citizens BancShares Inc (Delaware)	0.5180 [0.0244] $0.1706^{***} [0.0588]$	4.5598	4.5501	4.3243			
M&T Bank Corn	0.5148*** [0.0237]	-5 3977***	-5 4066***	-5 4154***			
Fifth Third Bancorp	0.3461*** [0.0156]	-2.9884***	-3.0039***	-3.0186***			
Regions Financial Corp	-0.2662*** [0.0363]	-5.2818***	-5.2633***	-5.2594***			
Huntington Bancshares Inc	0.3793*** [0.0158]	-3.5955***	-3.6022***	-3.6025***			
Citizens Financial Group Inc	-0.0394 [0.1527]	-8.2787***	-8.3593***	-7.5525***			
KeyCorp	0.4158*** [0.0203]	-2.8234***	-2.8242***	-2.8280***			
	Mid Cap						
New York Community Bancorp Inc	0.5227*** [0.0207]	3.2213***	3.1589***	3.1213***			
East West Bancorp Inc	0.3971^{***} [0.0219]	-2.3010**	-2.2560**	-2.3465**			
Webster Financial Corp	0.4406^{***} [0.0225]	-4.4389***	-4.4542***	-4.4633***			
First Horizon Corp	0.3552**** [0.0216]	-6.4823***	-6.4709****	-6.4905***			
Comerica Inc	0.4544*** [0.0232]	4.6188***	4.6129***	4.6097***			
Commerce Bancshares Inc	0.4943 [0.0375]	6.0211	6.0261	6.0358***			
Cullen/Frost Bankers Inc	0.4851 [0.0345]	3.5817	3.5897	3.6050			
SouthState Corp	0.4586 [0.0301]	-5.8248	-5.5660	-5.3402			
Western Alliance Dencom	0.30/1 [0.0261] 0.2026*** [0.0478]	7.2493	/.2545	1.2580			
Prosperity Bancshares Inc	$0.2020 [0.0478] \\ 0.2716^{***} [0.0521]$	-0.4057	-0.4/39	-0.4003			
Zions Bancorporation NA	0.2710 [0.0521] 0.4816^{***} [0.0162]	-7 3170***	_7 2730***	_7 2700***			
Pinnacle Financial Partners Inc	0.0673 [0.0943]	-1 2660	-1 1419	-0.9464			
Bank Ozk	0.0587 [0.0663]	7.2553***	7.2598***	7.3239***			
Popular Inc	0.4773*** [0.0133]	-5.1765***	-5.1404***	-5.2262***			
Wintrust Financial Corp	0.4530*** [0.0179]	-3.4395***	-3.4323***	-3.4415***			
Valley National Bancorp	0.5771*** [0.0221]	7.5303***	7.5576***	7.5916***			
Synovus Financial Corp	0.4353*** [0.0200]	-4.5865***	-4.5798***	-4.5794***			
Home BancShares Inc	0.0721 [0.1171]	2.2742**	2.2561**	2.4196**			
Old National Bancorp	0.5054**** [0.032]	10.2312***	10.2969***	10.3289***			
Columbia Banking System Inc	0.1272 [0.0874]	-4.3168	-4.1620	-4.0296			
Cadence Bank	-0.0164 [0.0880]	9.5941	9.5995	9.612			
FNB Corp Einst Einen siel Dankehenes Ine	$0.3512 [0.03/5] \\ 0.0525 [0.1284]$	5.9193	5.9219	5.926			
Linited Bankshares Inc	0.0355 [0.1264]	0.9002	0.6835	0.6747			
Hancock Whitney Corn	0.0865 [0.0855]	0 7942	0.8576	0.9317			
Glacier Bancorn Inc	0.0483 [0.0880]	-4.2533***	-4.0327***	-3.8494***			
First National of Nebraska Inc	0.5869*** [0.0123]	7.4766***	7.5539***	7.5979***			
United Community Banks Inc	-0.1293* [0.0720]	-1.8474*	-1.8780^{*}	-1.9315*			
BancFirst Corp	-0.2375*** [0.0452]	6.2276***	6.2253***	6.2212***			
Central Bancompany Inc	1.433*** [0.0275]	-3.5959***	-3.5939***	-3.0333****			
UMB Financial Corp	0.4954*** [0.0250]	8.0291****	8.0637***	8.1235***			
ServisFirst Bancshares Inc	0.4111*** [0.0432]	-5.3647***	-6.3864***	-6.2514***			
Texas Capital Bancshares Inc	0.1335* [0.0788]	5.7911***	5.8458***	6.0765***			
Ameris Bancorp	0.3658 [0.0217]	-1.4462	-1.3319	-1.217			
International Bancshares Corp	0.4211 [0.0291]	7.1245	7.1302	7.137			
First Interstate Bancsystem Inc	0.5116 [0.0415] $0.2272^{***} [0.0587]$	4.11/3	4.0243	6.4/4 5 4924***			
Associated Dalic-Corp Cathay General Bancorp	-0.2572 [0.0587] _0.0040[0.0848]	-3.4002 -4 6969***	-3.4/33 _4 5412***	-3.4024 -4 4035***			
Axos Financial Inc	-0.0040 [0.0848] 0.1318** [0.0526]	-9.0909	-0.357	-0.2512			
First Bancorp	-0.6598*** [0.0553]	-3.2836***	-3.2724***	-3.3645***			
Community Bank System Inc	0.4339*** [0.0339]	13.7709***	13.8015***	13.8068***			
CVB Financial Corp	0.0912 [0.0977]	-1.8524*	-1.5779	-1.4418			
WSFS Financial Corp	-0.0147 [0.0828]	6.8449***	6.844***	6.8398***			
Independent Bank Corp (Massachusetts)	0.0480 [0.1101]	-1.8371*	-1.7265*	-1.3435			
First Hawaiian Inc	0.0216 [0.1658]	-8.8819***	-8.1494***	-7.3065***			
Eastern Bankshares Inc	0.0861 [0.9474]	-14.1688***	-13.9026***	-13.5031***			
Simmons First National Corp	0.0738 [0.0883]	-0.2206	-0.0713	0.0307			

 Table 1: In-sample Predictability and Out-of-Sample Forecast Evaluation by Bank Market

 Capitalization Status

Atlantic Union Bankshares Corn	0 0964 [0 0697]	-0 9724	-0 7762	-0 5509
Pacific Premier Bancorn Inc	0.0604* [0.0335]	1 0442	1 1936	1 2905
Fulton Financial Corn	0.5787*** [0.0216]	8 2042***	8 2358***	8 2593***
Bank of Hawaii Corn	0.3707 [0.0210] $0.4749^{***} [0.0369]$	4 7000***	4 6955***	4 7053***
Seacoast Banking Corporation of Florida	0.0185 [0.0916]	-4 5554***	-4 5956***	-4 6501***
First Einancial Bancorn	0.0185 [0.0910]	2 0825**	2 0868**	1 0/51*
Panaore Inc	0.0233 [0.0048]	-2.0623	-2.0000	-1.9451
Dancorp Inc Doubl Inited Inc	0.0447[0.0024] 0.5207*** [0.0252]	2.0100	2./109	2.8330
	0.3207 [0.0332] $0.279^{***} [0.0242]$	-4.1413	-0.9333	-10.651
Hillop Holdings Inc	0.3678 [0.0243]	-9.2481	-9.2803	-9.4524
	Small Cap	***	***	***
First Merchants Corp	0.0287 [0.0943]	-5.8782	-5.8240	-5.7631
TowneBank	0.4905 [0.0166]	13.6123	13.6106	13.5908
Washington Federal Inc	0.5813 [0.0162]	8.3014	8.3057	8.3192
Columbia Financial Inc	0.4706 [0.0554]	-10.9009	-10.6560	-10.3450
UNB Corp	-0.1058 [0.0011]	-5.0652	-4.934	-4.9136
Independent Bank Group Inc	0.0907 [0.1006]	12.0488	10.9956	10.0568
Park National Corp	0.4894*** [0.0172]	4.7831***	4.8384***	4.8315***
NBT Bancorp Inc	0.3400^{***} [0.0466]	0.6614	0.7281	0.6356
Inter & Co Inc	0.2368 [0.5172]	-8.8584***	-8.5183***	-6.3673***
Renasant Corp	0.0886 [0.1114]	-1.8174*	-1.6184	-1.4239
WesBanco Inc	-0.2055*** [0.0711]	-6.9596***	-6.7345***	-6.4352***
Banner Corp	-0.0581 [0.0566]	-4.4004***	-4.3143***	-4.1521***
Triumph Financial Inc	0.4373*** [0.0310]	2.6876^{***}	2.8892***	2.7386^{***}
Enterprise Financial Services Corp	-0.1172 [0.0845]	-1.4230	-1.3266	-1.1938
OFG Bancorp	0.3453*** [0.0181]	13.1290***	13.0907***	13.0039***
Bank of N T Butterfield & Son Ltd	0.0981 [0.1126]	-9.0863***	-8.0814***	-7.0280***
FB Financial Corp	0.4125^{***} [0.0377]	-8.0455***	-7.4474***	-6.9807***
Trustmark Corp	0.3917*** [0.0465]	-1.4774	-1.4758	-1.4880
Live Oak Bancshares Inc	0.1083 [0.0824]	-19.1529***	-18.0456***	-17.0282***
Northwest Bancshares Inc	0.4725*** [0.0415]	-0.7162	-0.7536	-0.8248
City Holding Co	0.3832*** [0.0413]	-0.7849	-0.6757	-0.435
Heartland Financial USA Inc	0.4428*** [0.0217]	10.7081^{***}	10.692***	10.6983***
Stock Yards Bancorp Inc	0.1193* [0.0670]	-3.4786***	-3.4764***	-3.5143***
First Commonwealth Financial Corp	0.0395 [0.1087]	-0.2636	-0.1249	0.0291
Lakeland Financial Corp	0.4351*** [0.0276]	8.4904***	8.4789***	8.4690***
Pathward Financial Inc	0.0077 [0.0367]	0.1306	-0.0979	-0.0788
Provident Financial Services Inc	0.5272**** [0.0205]	7.7416***	7.7486***	7.7498***
First Bancorn (North Carolina)	0.0955 [0.0784]	-0.8535	-0.6858	-0.5532
National Bank Holdings Corn	0 4967*** [0 0300]	15 0767***	13 5113***	11 9813***
Westamerica Bancorn	0.4092^{***} [0.0358]	8 6310***	8 6569***	8 6837***
Hone Bancorn Inc	0 1252 [0 0825]	-0 4449	-0 3243	-0.1815
Trico Bancshares	0.4009*** [0.0236]	16 1979***	16 0674***	16 1108***
Stellar Bancorn Inc	-0 2215*** [0.0689]	-5 6986***	-5 3493***	-5 4088***
First Busey Corn	0.4677^{***} [0.0225]	-5 1804***	-5 1755***	-5 1784***
Nicolet Bankshares Inc	0.3796*** [0.0521]	1 6205	2 0399**	2 7725***
1 st Source Corp	-0.424^{***} [0.0607]	0.4512	0.4684	0.4360
Customers Bancorn Inc	0 1333 [0 1466]	-0 4754	-3 7344***	-5 9320***
S&T Bancorp Inc	-0.0111 [0.0992]	12 0445***	12 0663***	12 0612***
Veritev Holdings Inc	_0 0397 [0 1222]	-6 5430***	-6 5657***	-6.4869***
OceanFirst Financial Corn	0.5499*** [0.0178]	-3 7481***	-3.7836***	-3.7000***
Sandy Spring Bancorp Inc	0.0477 [0.0170]	6 0221***	6.0113***	5 8585***
PacWest Bancorp	0.0027 [0.0049] $0.081^{***} [0.0241]$	7.0261***	7.0281***	7.0315***
Origin Bancorp Inc	-0.0087 [0.0241]	-6 2417***	-6 5178***	-6 1547***
Berkshire Hills Bancorn Inc	0.0007 [0.1777] $0.4021^{***} [0.0312]$	1 8542*	1.8676*	1 8857*
Byline Bancorp Inc	0.4021 [0.0312] 0.404*** [0.0478]	-1.0342	-1.0070	-1.8857
First Baneshares Inc (Mississinni)	0.404 [0.0478] 0.361*** [0.0255]	10 2600***	10 1801***	10 0127***
Southside Baneshares Inc	0.3663^{***} [0.0673]	3 8880***	3 0085***	4 0008***
Beenles Bancom Inc	-0.3003 [0.0073]	7 2626***	-3.9085 7 1997***	-4.0008
Proformed Dank	0.3339 [0.0320] 0.0018^{***} [0.0001]	-7.2030	-/.100/	-0.6902
Lakaland Dancorn Inc.	0.0018 [0.0001]	7 9277***	7 824***	7 8044***
OCP Holdings Inc	0.3239 [0.044]	10 2474***	10 2251***	10 1751***
Quit notalligs life Depublic Department	0.0024 [0.0139]	10.2474 2.2454**	21672^{**}	2 0205**
Republic Dancorp Inc	0.0920 [0.0988]	-2.3434 2.2122***	-2.10/3 2 2015***	-2.0203
Growing American Densor In-	0.070 [0.0204]	-3.3133	-3.2713	-3.2043
Derman American Bancorp Inc	0.00/9 [0.1128]	/.U09 0.0202***	/.0885	/.0912
Diffe Community Bancshares Inc	0.5105 [0.0163]	0.9382 6.0266***	6.9423 6.7420***	8.9480 6.720***
First Olizens Bancsnares Inc (Tennessee)		-0.9200	-0./439	-0.0/29
Bank First Corp	0.3000 [0.008]	1.3183	1.4412	1.4189
Capitol Federal Financial Inc	0.658/ [0.0235]	10.8659	10.8566	10.8349
ConnectOne Bancorp Inc	0.452 [0.0268]	9.4057	9.4196	9.4347

Tompkins Financial Corp	-0.237*** [0.0774]	-3.5308***	-3.5410***	-3.5885***
Eagle Bancorp Inc	-0.1128 [0.0772]	-5.7157***	-5.7232***	-5.721***
Farmers & Merchants Bancorp	-0.6316*** [0.0244]	-4.9356***	-5.0342***	-5.0581***
First Mid Bancshares Inc	0.5686^{***} [0.0125]	9.7410***	9.7379***	9.7546***
WTB Financial Corp	-7.3185**** [0.0876]	-2.9955***	-3.4075***	-3.7487***
Premier Financial Corp (OHIO)	0.3789*** [0.0339]	9.2790^{***}	9.2818***	9.2804***
Old Second Bancorp Inc	-0.0873** [0.0354]	-4.5079***	-4.5245***	-4.5012***
Amerant Bancorp Inc	0.3598*** [0.0251]	-3.7486***	-3.4339***	-4.9449***
Community Trust Bancorp Inc	-0.2767*** [0.0796]	-1.1789	-1.1845	-1.3033
Heritage Financial Corp	0.5465^{***} [0.0248]	8.2083***	8.2046***	8.2162***
Great Southern Bancorp Inc	0.0879 [0.0816]	-5.5888***	-5.2658***	-4.9841***
HBT Financial Inc	0.1470 [0.0964]	8.2515***	6.6864***	4.1751***
First National Bank Alaska	0.3045*** [0.0188]	-2.2009**	-2.2033**	-2.2039**
Hills Bancorp	-0.2489*** [0.0020]	-8.0110***	-7.8403***	-7.6863***
Farmers And Merchants Bank of Long Beach	1.0047*** [0.0167]	11.4763***	11.5843***	11.7879***
TrustCo Bank Corp NY	0.3921*** [0.0319]	-3.091***	-3.1256***	-3.1562***
Univest Financial Corp	-0.6345*** [0.0765]	-7.3711***	-7.3535***	-7.3291***
Heritage Commerce Corp	0.4208*** [0.0215]	6.0349***	5.9741***	5.9138***
Capital City Bank Group Inc	0.0739 [0.0882]	4.3882***	4.4273***	4.3786***

Note: The table contains the in-sample predictability (Colum 2) and the out-of-sample forecast evaluation (columns 3 -5) using the modified Diebold and Mariano Statistic. For the predictability result, the cells contain the estimate of the slope coefficient with the corresponding standard error in square brackets and levels of statistical significance at 1%, 5% and 10% denoted by ***, ** and *, respectively. Under the forecast evaluation, the statistics represent the pairwise comparison of the GARCH-MIDAS-EPU with GARCH-MIDAS-RV (benchmark model). Significantly negative statistics indicate the preference of the GARCH-MIDAS-EPU over the GARCH-MIDAS-RV; conversely, if significantly positive. Non-significant coefficients indicate no marked difference in the estimates of the contending models. Small Cap represents bank stocks with a market capitalization between \$2 billion; Mid Cap represents bank stocks with a market capitalization conforms with Standards & Poor's (S&P), Dow Jones and the MSCI frameworks.

Appendix:

Table A1: Bank ticker, name, market c	anitalization, and heado	marter location
Table Mi. Dank tieker, hame, market e	ipitalization, and incaut	ual tel location

Ticker	Bank Common Name	Bank Market Cap	Headquarter - US State
	Large ca	p	
JPM.N	JPMorgan Chase & Co	\$426,671,439,782	New York
BAC.N	Bank of America Corp	\$230,285,853,547	North Carolina
WFC.N	Wells Fargo & Co	\$152,388,325,986	California
C.N	Citigroup Inc	\$80,089,966,310	New York
USB.N	US Bancorp	\$57,716,709,676	Minnesota
PNC.N	PNC Financial Services Group Inc	\$48,674,676,479	Pennsylvania
TFC.N	Truist Financial Corp	\$41,158,058,987	North Carolina
FCNCA.OQ	First Citizens BancShares Inc (Delaware)	\$21,121,441,839	North Carolina
MTB.N	M&T Bank Corp	\$20,869,700,463	New York
FITB.OQ	Fifth Third Bancorp	\$18,418,040,877	Ohio
RF.N	Regions Financial Corp	\$17,416,285,602	Alabama
HBAN.OQ	Huntington Bancshares Inc	\$16,245,240,909	Ohio
CFG.N	Citizens Financial Group Inc	\$13,521,788,958	Rhode Island
KEY.N	KeyCorp	\$10,819,222,738	Ohio
	Mid cap)	
NYCB.N	New York Community Bancorp Inc	\$8,900,895,597	New York
EWBC.OQ	East West Bancorp Inc	\$7,924,500,245	California
WBS.N	Webster Financial Corp	\$7,546,984,751	Connecticut
FHN.N	First Horizon Corp	\$7,123,449,008	Tennessee
CMA.N	Comerica Inc	\$6,417,516,670	Texas
CBSH.OQ	Commerce Bancshares Inc	\$6,228,765,400	Missouri
CFR.N	Cullen/Frost Bankers Inc	\$6,139,146,647	Texas
SSB.OQ	SouthState Corp	\$5,686,805,582	Florida
BOKF.OQ	BOK Financial Corp	\$5,668,594,055	Oklahoma
WAL.N	Western Alliance Bancorp	\$5,597,816,722	Arizona
PB.N	Prosperity Bancshares Inc	\$5,474,328,538	Texas
ZION.OQ	Zions Bancorporation NA	\$5,398,408,647	Utah
PNFP.OQ	Pinnacle Financial Partners Inc	\$5,290,206,434	Tennessee
OZK.OQ	Bank Ozk	\$5,287,486,125	Arkansas
BPOP.OQ	Popular Inc	\$5,043,171,091	Puerto Rico
WTFC.OQ	Wintrust Financial Corp	\$4,870,028,073	Illinois
VLY.OQ	Valley National Bancorp	\$4,792,071,861	New Jersey
SNV.N	Synovus Financial Corp	\$4,689,040,215	Georgia
HOMB.N	Home BancShares Inc	\$4,620,881,848	Arkansas
ONB.OQ	Old National Bancorp	\$4,619,980,310	Indiana
COLB.OQ	Columbia Banking System Inc	\$4,411,273,012	Washington
CADE.N	Cadence Bank	\$4,346,379,681	Mississippi
FNB.N	FNB Corp	\$4,223,318,085	Pennsylvania
FFIN.OQ	First Financial Bankshares Inc	\$4,192,308,927	Texas

UBSI.OQ	United Bankshares Inc	\$4,147,903,406	West Virginia
HWC.OQ	Hancock Whitney Corp	\$3,656,888,730	Mississippi
GBCI.N	Glacier Bancorp Inc	\$3,473,722,240	Montana
FINN.PK	First National of Nebraska Inc	\$3,364,397,680	Nebraska
UCBI.OQ	United Community Banks Inc	\$3,279,164,230	South Carolina
BANF.OQ	BancFirst Corp	\$3,226,974,418	Oklahoma
CBCY.PK	Central Bancompany Inc	\$3,205,376,985	Missouri
UMBF.OQ	UMB Financial Corp	\$3,134,356,987	Missouri
SFBS.N	ServisFirst Bancshares Inc	\$3,118,457,439	Alabama
TCBI.OQ	Texas Capital Bancshares Inc	\$3,052,851,389	Texas
ABCB.OQ	Ameris Bancorp	\$2,887,948,060	Georgia
IBOC.OQ	International Bancshares Corp	\$2,874,726,186	Texas
FIBK.OQ	First Interstate Bancsystem Inc	\$2,803,988,850	Wyoming
ASB.N	Associated Banc-Corp	\$2,666,775,660	Wisconsin
CATY.OQ	Cathay General Bancorp	\$2,661,617,699	California
AX.N	Axos Financial Inc	\$2,647,134,034	Nevada
FBP.N	First Bancorp	\$2,569,280,564	Puerto Rico
CBU.N	Community Bank System Inc	\$2,540,917,766	New York
CVBF.OQ	CVB Financial Corp	\$2,531,883,078	California
WSFS.OQ	WSFS Financial Corp	\$2,495,993,808	Delaware
INDB.OQ	Independent Bank Corp (Massachusetts)	\$2,473,348,993	Massachusetts
FHB.OQ	First Hawaiian Inc	\$2,464,141,588	Hawaii
EBC.OQ	Eastern Bankshares Inc	\$2,462,218,383	Massachusetts
SFNC.OQ	Simmons First National Corp	\$2,318,162,737	Arkansas
AUB.N	Atlantic Union Bankshares Corp	\$2,283,143,251	Virginia
PPBI.OQ	Pacific Premier Bancorp Inc	\$2,278,614,033	California
FULT.OQ	Fulton Financial Corp	\$2,250,480,734	Pennsylvania
BOH.N	Bank of Hawaii Corp	\$2,190,582,731	Hawaii
SBCF.OQ	Seacoast Banking Corporation of Florida	\$2,063,342,023	Florida
FFBC.OQ	First Financial Bancorp	\$2,054,690,215	Ohio
TBBK.OQ	Bancorp Inc	\$2,040,462,523	Minnesota
BKU.N	BankUnited Inc	\$2,022,599,646	Florida
HTH.N	Hilltop Holdings Inc	\$2,003,525,850	Texas
	Small cap)	
FRME.OQ	First Merchants Corp	\$1,832,415,892	Indiana
TOWN.OQ	TowneBank	\$1,815,822,395	Virginia
WAFD.OQ	Washington Federal Inc	\$1,811,779,489	Washington
CLBK.OQ	Columbia Financial Inc	\$1,808,191,293	New Jersey
UNPA.PK	UNB Corp	\$1,751,888,730	Pennsylvania
IBTX.OQ	Independent Bank Group Inc	\$1,740,618,139	Michigan
PRK.A	Park National Corp	\$1,673,333,296	Ohio
NBTB.OQ	NBT Bancorp Inc	\$1,637,695,320	New York
INTR.OQ	Inter & Co Inc	\$1,635,623,704	Ohio
RNST.OQ	Renasant Corp	\$1,593,164,172	Mississippi
-	-		

WSBC.OQ	WesBanco Inc	\$1,566,973,637	West Virginia
BANR.OQ	Banner Corp	\$1,533,857,079	Washington
TFIN.OQ	Triumph Financial Inc	\$1,509,426,227	Texas
EFSC.OQ	Enterprise Financial Services Corp	\$1,490,131,183	Missouri
OFG.N	OFG Bancorp	\$1,480,391,180	Puerto Rico
NTB.N	Bank of N T Butterfield & Son Ltd	\$1,462,859,651	British Overseas Territory
FBK.N	FB Financial Corp	\$1,451,693,782	Tennessee
TRMK.OQ	Trustmark Corp	\$1,447,361,252	Mississippi
LOB.N	Live Oak Bancshares Inc	\$1,433,817,493	North Carolina
NWBI.OQ	Northwest Bancshares Inc	\$1,431,096,535	Pennsylvania
CHCO.OQ	City Holding Co	\$1,391,266,985	South Carolina
HTLF.OQ	Heartland Financial USA Inc	\$1,365,663,983	Iowa
SYBT.OQ	Stock Yards Bancorp Inc	\$1,364,969,870	Kentucky
FCF.N	First Commonwealth Financial Corp	\$1,362,002,660	Pennsylvania
LKFN.OQ	Lakeland Financial Corp	\$1,341,602,091	Indiana
CASH.OQ	Pathward Financial Inc	\$1,315,998,751	South Dakota
PFS.N	Provident Financial Services Inc	\$1,278,641,381	New Jersey
FBNC.OQ	First Bancorp (North Carolina)	\$1,255,501,920	North Carolina
NBHC.N	National Bank Holdings Corp	\$1,228,164,307	Colorado
WABC.OQ	Westamerica Bancorp	\$1,203,982,212	California
HOPE.OQ	Hope Bancorp Inc	\$1,185,780,033	California
TCBK.OQ	Trico Bancshares	\$1,162,221,274	California
STEL.N	Stellar Bancorp Inc	\$1,160,520,472	Texas
BUSE.OQ	First Busey Corp	\$1,149,854,846	Illinois
NIC.N	Nicolet Bankshares Inc	\$1,147,102,986	Wisconsin
SRCE.OQ	1st Source Corp	\$1,132,679,980	Indiana
CUBI.N	Customers Bancorp Inc	\$1,132,437,974	Pennsylvania
STBA.OQ	S&T Bancorp Inc	\$1,107,868,364	Pennsylvania
VBTX.OQ	Veritex Holdings Inc	\$1,051,362,650	Texas
OCFC.OQ	OceanFirst Financial Corp	\$1,029,180,345	New Jersey
SASR.OQ	Sandy Spring Bancorp Inc	\$1,015,684,034	Maryland
PACW.OQ	PacWest Bancorp	\$976,792,482	California
OBK.N	Origin Bancorp Inc	\$962,109,927	Louisiana
BHLB.N	Berkshire Hills Bancorp Inc	\$958,517,065	Massachusetts
BY.N	Byline Bancorp Inc	\$951,191,276	Illinois
FBMS.OQ	First Bancshares Inc (Mississippi)	\$939,310,416	Mississippi
SBSI.OQ	Southside Bancshares Inc	\$934,578,551	Texas
PEBO.OQ	Peoples Bancorp Inc	\$926,349,807	Massachusetts
PFBC.OQ	Preferred Bank	\$916,006,783	California
LBAI.OQ	Lakeland Bancorp Inc	\$896,756,557	New Jersey
QCRH.OQ	QCR Holdings Inc	\$895,784,449	Illinois
RBCAA.OQ	Republic Bancorp Inc	\$877,281,634	Kentucky
BRKL.OQ	Brookline Bancorp Inc	\$873,351,580	Massachusetts
GABC.OQ	German American Bancorp Inc	\$868,566,147	Indiana

DCOM.OQ	Dime Community Bancshares Inc	\$864,675,531	New York
FIZN.PK	First Citizens Bancshares Inc (Tennessee)	\$834,901,955	Tennessee
BFC.OQ	Bank First Corp	\$827,552,269	Wisconsin
CFFN.OQ	Capitol Federal Financial Inc	\$788,522,551	Kansas
CNOB.OQ	ConnectOne Bancorp Inc	\$764,744,539	New Jersey
TMP.A	Tompkins Financial Corp	\$745,882,742	New York
EGBN.OQ	Eagle Bancorp Inc	\$745,554,960	Maryland
FMCB.PK	Farmers & Merchants Bancorp	\$717,143,700	Ohio
FMBH.OQ	First Mid Bancshares Inc	\$690,081,469	Illinois
WTBFB.PK	WTB Financial Corp	\$689,858,505	Washington
PFC.OQ	Premier Financial Corp (OHIO)	\$689,592,609	Ohio
OSBC.OQ	Old Second Bancorp Inc	\$671,912,857	Illinois
AMTB.N	Amerant Bancorp Inc	\$657,755,778	Florida
CTBI.OQ	Community Trust Bancorp Inc	\$653,628,252	Kentucky
HFWA.OQ	Heritage Financial Corp	\$618,944,148	Washington
GSBC.OQ	Great Southern Bancorp Inc	\$615,353,979	Missouri
HBT.OQ	HBT Financial Inc	\$610,810,806	Illinois
FBAK.PK	First National Bank Alaska	\$607,250,199	Alaska
HBIA.PK	Hills Bancorp	\$600,766,328	Iowa
	Farmers And Merchants Bank of Long		
FMBL.PK	Beach	\$597,655,800	California
TRST.OQ	TrustCo Bank Corp NY	\$551,518,313	New York
UVSP.OQ	Univest Financial Corp	\$541,683,634	Pennsylvania
HTBK.OQ	Heritage Commerce Corp	\$541,267,633	California
CCBG.OQ	Capital City Bank Group Inc	\$524,701,658	Florida

Note: These bank data were collected from DataStream at the end of August 2023.

	Ν	Mean	SD	CV	SKEW	KURT	ARCH(5)	ARCH(10)	Q (5)	Q (10)	$Q^{2}(5)$	$Q^2(10)$
Bank stock returns												
					Large Cap							
JPMorgan Chase & Co	6,000	0.017	2.33	1.36E+04	0.22	18.44	1046.55***	1181.3***	22.78^{***}	34.12***	2081.4***	3428***
Bank of America Corp	6,000	0.002	2.76	1.58E+05	-0.34	31.41	929.62***	1193.48***	82.27***	105.34***	1828.1***	3595.6***
Wells Fargo & Co	6,000	0.011	2.34	2.19E+04	0.65	28.71	745.24***	1157.19***	45.39***	68.89***	1339.7***	3230.3***
Citigroup Inc	6,000	-0.035	2.90	-8.29E+03	-0.58	46.20	221.93***	135.46***	29.41***	34.016***	1745.6***	2671.8***
US Bancorp	6,000	0.007	2.11	3.03E+04	-0.21	18.45	1242.71***	1420.8***	44.6***	58.67***	2683.6***	4767.7***
PNC Financial Services Group Inc	6,000	0.012	2.29	1.94E+04	-1.39	68.65	326.01***	385.47***	63.95***	83.48***	410.27***	586.16***
Truist Financial Corp	6,000	0.002	2.17	1.36E+05	-0.29	20.91	786.62***	1065.25***	15.26**	41.56***	1292.3***	2754.6***
First Citizens BancShares Inc (Delaware)	6,000	0.051	2.03	4.00E+03	1.86	42.04	72.76***	99.76***	10.42*	14.21	85.62***	140.24***
M&T Bank Corp	6,000	0.016	2.03	1.26E+04	0.19	15.09	701.52***	902.41***	32.07***	52.26***	1245.8***	2476***
Fifth Third Bancorp	6,000	-0.009	3.11	-3.37E+04	-0.42	60.82	552.71***	742.64***	43.98***	92.99***	885.37***	1711.1***
Regions Financial Corp	6,000	0.001	3.00	2.23E+05	-0.60	42.39	725.59***	1029.05***	43.77***	100.4***	1279.8***	2671.6***
Huntington Bancshares Inc	6,000	-0.007	3.13	-4.65E+04	0.31	35.51	1306.91	1577***	98.68	113.77	2923.4	5438***
Citizens Financial Group Inc	2,328	0.007	2.37	3.24E+04	-0.79	17.68	570.55	629.88	27.1	68.43	1118.5	1745.8
KeyCorp	6,000	-0.010	2.85	-2.91E+04	-0.73	38.23	655.09	900.5	52.24	87.06	1049.4	2022
					Mid Cap							
New York Community Bancorp Inc	6,000	0.010	2.00	2.04E+04	0.30	16.93	450.58***	517.18***	20.52***	47.24***	667.71***	1066.4***
East West Bancorp Inc	6,000	0.031	2.76	8.82E+03	0.66	25.94	434.91***	527.76***	17.75***	22.78**	653.43	1112.6***
Webster Financial Corp	6,000	0.009	2.64	2.94E+04	-0.25	20.44	1235.46	1512.05***	9.41*	52.62***	2592.2***	5108.6
First Horizon Corp	6,000	-0.006	2.67	-4.52E+04	-1.31	38.71	532.79	643.28	19***	47.37	781.43	1340.6
Comerica Inc	6,000	-0.003	2.55	-9.75E+04	-0.72	18.75	636.83	834.43	38.91	92.2	1135.3	2196.2
Commerce Bancshares Inc	6,000	0.024	1.62	6.78E+03	0.11	14.13	1017.31	1142.73	44.83	60.24	19/9.6	3342.9
Cullen/Frost Bankers Inc	6,000	0.019	1.95	1.04E+04	-0.23	16.44	65/.86	/93.03	29.9	41.21	1159.9	1953.9
BOK Einensiel Com	6,000	0.029	2.20	7.86E+03	0.11	9.30	000.74	08/.23	27.33	42.08	10/4.4	1/10.2
Western Alliance Bancorn	4 737	0.027	3.50	7.00E+03	-0.28	20.85	017.47 425.3***	072.30 120.83***	26.25	52 1***	1374.9	401 07***
Prosperity Bancshares Inc	6,000	0.014	2.05	6.43E+03	-0.15	13 52	425.5 694 59***	848.06***	32 94***	37 45***	1174 6***	2120 1***
Zions Bancornoration NA	6,000	-0.003	2.05	-8 60E+04	-0.15	20.10	943 32***	1167 4***	62 01***	89.41***	1774 4***	3466***
Pinnacle Financial Partners Inc	6,000	0.044	2.70	6 10E+03	-0.09	15.22	400 76***	529 34***	13 31**	23 14**	608 49***	1023 1***
Bank Ozk	6,000	0.063	2.00	3 56E+03	-0.51	15.22	316.32***	347 66***	15.11**	28.18***	474 19***	661.05***
Popular Inc	6.000	-0.007	2.80	-4.09E+04	-2.15	81.82	81.43***	111.8***	16.4**	53.23***	93.47***	147.74***
Wintrust Financial Corp	6,000	0.031	2.43	7.74E+03	-0.05	17.40	863.18***	1040.79***	52.85***	62.6***	1598.3***	2861.1***
Valley National Bancorp	6,000	-0.005	2.03	-4.11E+04	0.11	16.40	584.03***	708.76***	25.57***	39.58***	961.91***	1734.9***
Synovus Financial Corp	6,000	-0.011	2.94	-2.64E+04	-0.34	17.56	1381.27***	1570.55***	14.31**	21.55**	3069.1***	5121.1***
Home BancShares Inc	4,481	0.037	2.20	5.94E+03	0.06	10.08	883.64***	942.25***	20.93***	47.78***	1875.8***	2716.1***
Old National Bancorp	6,000	-0.006	2.00	-3.39E+04	0.16	11.35	747.88***	883.73***	39.35***	60.05***	1289.5***	2357.4***
Columbia Banking System Inc	6,000	0.010	2.68	2.75E+04	-1.50	36.71	173.76***	209.79***	30.08***	34.01***	232.51***	358.63***
Cadence Bank	6,000	0.007	2.24	3.03E+04	0.03	11.93	613.33***	680.56***	18.36***	32.21***	1041***	1667.6***
FNB Corp	6,000	0.002	2.32	9.47E+04	-0.32	19.16	888.18***	1007.28***	12.26**	16.99*	1757.5***	2870***
First Financial Bankshares Inc	6,000	0.040	1.99	4.92E+03	0.01	6.82	633.98***	769.38***	25.49***	29.29***	1092.7***	1778.7***
United Bankshares Inc	6,000	0.006	2.19	3.41E+04	0.23	12.11	943.73***	1084.77***	18.54***	21.72**	1872.5***	3249.4***
Hancock Whitney Corp	6,000	0.022	2.34	1.04E+04	-0.44	14.26	626.14***	760.71***	16.52**	26.49***	1028.8	1768.2***
Glacier Bancorp Inc	6,000	0.031	2.25	7.37E+03	0.10	10.94	689.36	826.04	30.6	37.52	1260.9	2262.2***
First National of Nebraska Inc	6,000	0.029	1.44	4.94E+03	-0.28	33.78	392.89	489.29	39.7	55.36	544.93	/52.12
United Community Banks Inc	5,595	-0.01/	2.89	-1.69E+04	-0.09	13.41	583.66	/08.83	4.19	17.34	1014.3	1/26./
Control Democratic Line	0,000	0.041	2.07	5.06E+03	-0.11	22.04	9/0.16	1158.72	18.38	27.84	1590.7	2201.1
LIMB Financial Corp	6,000	0.019	2.05	0.02E+03	0.30	17.24	662 97***	694 4***	31 33***	10 61***	1102***	1458 4***
ServisFirst Bancshares Inc	2 423	0.022	2.05	3.69E+03	-0.40	11 95	362.05***	369 56***	85	37 73***	698 5***	938 87***
Texas Capital Bancshares Inc	5.228	0.031	2.53	8.08E+03	-0.46	13.41	667.92***	875.77***	10.19*	18.73**	1107.6***	1945.5***
Ameris Bancorp	6.000	0.027	2.90	1.08E+04	-0.04	18.35	974.84***	1498.64***	9.25	22.53**	1888.4***	4284***
International Bancshares Corp	6,000	0.026	2.37	8.94E+03	-0.70	22.45	636.1***	703.82***	8.07	13.71	946.97***	1254.5***
First Interstate Bancsystem Inc	3,503	0.014	1.89	1.35E+04	-0.15	9.47	488.3***	538.91***	6.27	24.34**	887.18***	1411.5***
Associated Banc-Corp	6,000	0.002	2.18	1.02E+05	-0.29	14.44	843.18***	1011.66***	35.79***	57.79***	1505.7***	2793.5***
Cathay General Bancorp	6,000	0.017	2.54	1.47E+04	0.22	14.32	832.55***	903.77***	59.83***	72.63***	1541***	2437.9***
Axos Financial Inc	4,814	0.056	2.68	4.81E+03	-0.46	15.24	288.66***	316.12***	4.93	10.55	418.74***	532.25***
First Bancorp	6,000	-0.032	3.42	-1.06E+04	0.41	16.42	390.77***	503.35***	14.76**	24.83**	610.81***	1050***
Community Bank System Inc	6,000	0.024	1.88	7.94E+03	0.21	10.64	901.93***	942.02***	29.8***	36.97***	1797.7***	2647.5***
CVB Financial Corp	6,000	0.021	2.34	1.10E+04	0.01	13.37	548.12***	633.72***	33.94***	36.61***	904.52***	1433.5***
WSFS Financial Corp	6,000	0.040	2.27	5.71E+03	-0.35	15.18	658.68***	883.88***	7.71	10.12	1194.5***	2313.1***
Independent Bank Corp (Massachusetts)	6,000	0.023	2.23	9.84E+03	0.10	9.18	492.1***	614.24***	11	13.77	809.43***	1480.4***
First Hawaiian Inc	1,842	-0.013	2.12	-1.58E+04	0.46	13.77	131.41***	151.31***	31***	53.54***	199.85	313.89***
Eastern Bankshares Inc	747	0.013	1.92	1.48E+04	-1.42	17.13	36.51***	36.99***	7.54	12.66	50.5	53.2***
Simmons First National Corp	6,000	0.020	2.28	1.14E+04	0.17	10.16	580.12***	681.58***	42.62***	47.87***	982.89***	1692.5***
Atlantic Union Bankshares Corp	6,000	0.024	2.66	1.11E+04	0.24	14.45	853.74	913.91	33.43	36.82	1556.4	2321.3
Pacific Premier Bancorp Inc	6,000	0.006	3.97	6.65E+04	-0.47	63.18	605.98	934.09	44.38	/9./8	945.05	2023.1
Futton Financial Corp	6,000	0.003	2.17	6./0E+04	-0.11	15.29	823.14	1083.06	/2.44	94.98 25.14***	1555./	5104.2 1622 5***
Dank of Hawan Corporation of Electric	6,000	0.023	1.91	8.22E+03	-0.45	18.50	008./9 821.06***	/12.19 979 66***	28.33	33.10 21.2***	1192.5	1033.3
Seacoast Danking Corporation of Florida	6,000	-0.009	2.95	-3.44E+04	0.05	14.01	021.90 771 16***	0/0.00	9.04	51.5 12.01	1423.3	2220.3
rnst rmancial Bancorp	0,000	0.004	2.34	0.23ET04	0.10	12.2/	//+.+0	114.71	0.35	12.71	1442.3	2207.4

 Table A2:
 Summary and preliminary statistics of bank stock returns and EPU index

Bancorn Inc	5 104	0.010	3.26	1 73E+04	0.02	19.00	308 33***	538 10***	10.65*	26 68***	628 48***	1006 2***
DankUpited Inc	2 281	0.019	2.20	2.02E+04	0.02	22.04	192 50***	522 16***	10.05	20.08	020.40 826.2***	1000.2
BankUnited Inc	5,281	-0.003	2.21	-8.02E+04	-0.95	22.94	482.58	333.10	4.32	50.12 25.0***	820.2	1223.0
Hilltop Holdings Inc	5,097	0.010	1.97	1.93E+04	-0.26	23.58	224.55	249.19	1/./	35.8	313.69	405.54
				S	Small Cap							
First Merchants Corp	6,000	0.007	2.38	3.51E+04	0.07	9.38	808.13***	945.31***	9.67^{*}	10.92	1448.2***	2511.5***
TowneBank	6,000	0.023	2.28	1.01E+04	0.56	16.92	523.42***	570.26***	39.14***	43.57***	871.87***	1141.8***
Washington Federal Inc	6,000	0.013	1.95	1.54E+04	-0.44	25.72	221.87***	314.96***	48.11***	74.92***	298.89***	573.03***
Columbia Financial Inc	1 396	0.008	1.81	2 25E+04	-1.09	13.04	92 37***	97 44***	5.61	31.66***	130 69***	162.06***
UNB Corp	6,000	-0.014	1.85	-1 35E+04	_2 22	278.04	412 18***	445.01***	206.63***	211.02***	410.36***	410 39***
Independent Bank Group Inc	2 712	-0.014	2.25	1 80E±04	0.27	12 24	602.08***	655 26***	24.91***	72 12***	1272 0***	1096 1***
Davis National Com	2,715	0.015	2.55	1.60E±04	-0.57	10.27	822.00***	1020.86***	24.01	/2.12	12/2.9	1960.1
Park National Corp	6,000	0.003	2.21	/.66E+04	0.85	19.27	823.09	1029.86	61.24	82.02	1450	2/39./
NBT Bancorp Inc	6,000	0.019	2.07	1.09E+04	0.31	9.83	463.31	530.78	26.14	27.2	769.71	1194.5
Inter & Co Inc	307	0.089	5.53	6.23E+03	-0.42	8.18	0.57	3.39	0.6	1.97	26.49***	27.31***
Renasant Corp	6,000	0.019	2.26	1.17E+04	0.24	10.17	829.6***	897.87***	22.64***	24.68^{**}	1611.5***	2486.2^{***}
WesBanco Inc	6,000	0.001	2.30	2.57E+05	0.11	8.81	781.43***	868.04^{***}	7.33	14.18	1432***	2378.7^{***}
Banner Corp	6,000	-0.013	2.97	-2.31E+04	-0.16	24.23	463.18***	804.33***	18.24***	23.71**	756.67***	1738.4***
Triumph Financial Inc	2,296	0.070	2.60	3.70E+03	-0.36	12.30	321.8***	402.31***	7.14	40.52***	598.69***	929.37***
Enterprise Financial Services Corp	5,790	0.019	2.57	1.35E+04	0.18	12.48	566.55***	719.36***	33.25***	47.67***	931.85***	1727.5***
OEG Bancorn	6,000	0.023	2.98	1.30E+0.4	-0.43	24.52	1119.02***	1216 14***	26.96***	41 99***	2374 6***	3570 5***
Bank of N T Butterfield & Son I td	1 811	0.025	2.90	3.27E+04	0.15	10.01	103 34***	140.26***	11.04**	53 03***	151 20***	271***
ED Eineneiel Com	1,011	0.007	2.37	1.06E+04	-0.07	17.01	210 67***	215.11***	12.21**	28 40***	506 15***	271 655 65***
	1,011	0.022	2.52	1.00E+04	-0.32	17.51	510.07	313.11	12.21	20.49	390.13	033.03
Trustmark Corp	6,000	0.004	2.07	4.88E+04	0.15	15.45	6/6.49	1043.09	24./1	32.35	1012.6	2440.6
Live Oak Bancshares Inc	2,112	0.026	2.96	1.12E+04	-0.44	10.29	194.89	265.43	25.56	34.11	332.8	620.66
Northwest Bancshares Inc	6,000	0.020	2.01	9.93E+03	0.29	16.94	513.55***	570.19***	48.34***	49.23***	701.21***	962.34***
City Holding Co	6,000	0.041	2.22	5.37E+03	-0.03	12.91	458.16***	506.13***	26.85***	38.77***	748.55***	1115.3***
Heartland Financial USA Inc	6,000	0.019	2.45	1.28E+04	-0.13	13.62	673.65***	736.83***	22.37***	34.48***	1131.1***	1749.8***
Stock Yards Bancorp Inc	6,000	0.032	2.09	6.61E+03	0.26	11.01	1050.93***	1125.76***	37.92***	48.04***	2013.7***	2828.8***
First Commonwealth Financial Corp	6.000	0.005	2.43	4.95E+04	0.05	10.86	493.16***	638.3***	17.93***	32.09***	777.09***	1451.3***
Lakeland Financial Corn	6.000	0.040	2.16	5 36E+03	0.34	13 38	759 9***	817 55***	5.61	31 21***	1395 1***	2054 1***
Pathward Financial Inc	6,000	0.045	2.69	5.91E+03	-0.44	29.77	374 94***	400 27***	8.5	15.13	520 39***	595 34***
Provident Financial Services Inc	5 277	0.045	2.07	1 70E+05	1.00	22.11	921 7***	960.27	28.02***	40.64***	1282 0***	1800***
First Demonstration (Nearth Constitute)	5,577	0.001	2.14	1.70E+03	-1.00	12.30	631.7	000.0	28.03	40.04	1362.9	2152 2***
First Bancorp (North Carolina)	6,000	0.020	2.55	1.29E+04	0.03	12.20	041.25	843.33	10.56	18.2	1155.4	2155.5
National Bank Holdings Corp	2,852	0.017	1.//	1.05E+04	-0.05	11.01	2/6.84	322.18	/.5/	19.27	457.02	/23.34
Westamerica Bancorp	6,000	0.007	1.79	2.73E+04	0.38	10.65	949.75	1065.64	33.14	38.01	1816.7	2986.6
Hope Bancorp Inc	6,000	0.019	2.66	1.39E+04	-0.46	15.48	821.82***	978.79***	29.5	46.84***	1548	2562.5***
Trico Bancshares	6,000	0.025	2.43	9.79E+03	-0.19	40.03	2069.11***	2089.21***	16.77**	25.37***	2210***	2280.1***
Stellar Bancorp Inc	1,513	-0.019	2.57	-1.33E+04	-4.92	111.72	26.76***	34.55***	3.3	22.19**	29.63***	41.19***
First Busey Corp	6,000	-0.010	2.32	-2.31E+04	-0.12	15.47	827.8***	907.09***	13.86**	16.93*	1519.8***	2253***
Nicolet Bankshares Inc	2,681	0.057	1.82	3.18E+03	0.43	13.95	319.69***	329.39***	22.31***	59.49***	552.3***	708.51***
1st Source Corp	6.000	0.019	2.54	1.37E+04	0.17	16.60	634.73***	708.81***	32.86***	35.76***	1061.3***	1531.5***
Customers Bancorn Inc	3 004	0.038	2.88	7 51E+03	-0.33	16.98	345 47***	349 87***	8.03	35.92***	539 14***	667 76***
S&T Bancorn Inc	6,000	0.006	2.00	3 38E+04	-0.12	12.90	308 54***	377 4***	14 75**	18.94**	454 13***	730.95***
Veritev Holdings Inc	2 317	0.014	2.11	1.77E+04	1.55	24.01	238 16***	402.6***	37.03***	84.35***	336 71***	650 7***
Occurrence Financial Com	2,517	0.014	2.40	(52E+04	-1.55	12 (7	238.10	402.0	57.95	14.45	1(25.1***	2527 4***
OceanFirst Financial Corp	6,000	0.003	2.11	0.53E+04	-0.04	13.0/	8/5.05	930.94	/.05	14.45	1625.1	2557.4
Sandy Spring Bancorp Inc	6,000	0.008	2.33	2.96E+04	0.13	12.24	1159.46	1209.06	19.93	32.57	2293.8	3253.9
PacWest Bancorp	6,000	-0.011	3.18	-2.83E+04	-1.76	86.52	1157.31	1224.76	27.53	61.49	1610.2	1772.2
Origin Bancorp Inc	1,383	-0.016	2.30	-1.46E+04	0.07	8.68	257.64***	276.81***	8.22	27.03***	524.32***	813.48***
Berkshire Hills Bancorp Inc	6,000	0.006	2.09	3.56E+04	-0.20	13.27	1143.77***	1209.23***	9.57^{*}	24.79**	2323.7***	3535.2***
Byline Bancorp Inc	1,606	0.003	2.31	6.75E+04	-0.08	12.17	230.5***	307.43***	23.74***	45.19***	393.01***	772.81***
First Bancshares Inc (Mississippi)	5,387	0.024	3.04	1.28E+04	1.06	34.38	190.67***	294.46***	63.4***	84.35***	240.19***	386.28***
Southside Bancshares Inc	6,000	0.036	2.07	5.68E+03	0.07	8.93	673.38***	898.19***	27.14***	30.78^{***}	1179.3***	2314***
Peoples Bancorp Inc	6.000	0.014	2.55	1.79E+04	0.03	13.63	739.41***	863.4***	23.86***	27.05***	1392***	2349***
Preferred Bank	5.800	0.006	2.72	4.76E+04	2.54	76.86	72.4***	87.26***	36.74***	47.03***	87.46***	121.4***
Lakeland Bancorn Inc	6,000	0.011	2.61	2 40E+04	-0.05	16.85	995 41***	1008 73***	21.15***	23 43**	1855 2***	2274 1***
OCP Holdings Inc	6,000	0.030	2.01	7.51E+03	0.05	16.04	460.00***	605 79***	31.32***	40.98***	755 54***	1307 5***
Denarh lie Denaren Ine	6,000	0.030	2.20	7.311:03	0.19	11.02	445 47***	575.97***	16.21**	40.98	700.04***	1367.5
Republic Bancorp Inc	6,000	0.033	2.45	7.39E+03	-0.25	11.82	445.47	5/5.8/	16.31	23.49	/00.96	1251.3
Brookline Bancorp Inc	6,000	0.011	1.91	1.81E+04	0.32	12.98	339.98	406.83	12.95	18.09	510.78	821.87
German American Bancorp Inc	6,000	0.023	2.02	8.82E+03	0.18	8.41	313.69***	366.42***	39.12***	69.39***	476.89***	693.07***
Dime Community Bancshares Inc	6,000	0.011	2.06	1.91E+04	-0.11	14.01	445.82***	471.61***	37.54***	55.37***	687.39***	872.54***
First Citizens Bancshares Inc (Tennessee)	4,156	0.014	1.89	1.38E+04	-1.34	122.02	230.14***	236.74***	19.15***	38.11***	263.67***	269.5^{***}
Bank First Corp	5,628	0.031	1.99	6.48E+03	0.41	46.39	380.71***	647.99***	70.16***	103.37***	511.71***	1029.1***
Capitol Federal Financial Inc	6.000	-0.002	1.42	-9.15E+04	0.30	11.80	715.71***	811.92***	6.84	36.31***	1283***	1884.9^{***}
ConnectOne Bancorn Inc	6 000	0.021	2.20	1.06E±04	-0.09	16.88	539 07***	577 37***	30.17***	46.85***	812.5***	1103 7***
Tompkins Financial Corp	6 000	0.018	2.00	1.08E+04	0.22	9.83	878 23***	918 77***	21 28***	38 96***	1422 3***	2013 7***
Fagle Bancorn Inc	6 000	0.025	2.00	7 105-02	0.22	72 16	162 71***	202 41***	23.20	30.26***	201 40***	304 44***
Eagle Balloup Inc	6 000	0.035	2.47	7.171703	-0.57	23.40	297 12***	202.41	176 55***	102 45***	201.47 592 75***	620 91***
Farmers & Merchants Bancorp	0,000	0.030	2.08	7.01E+03	-0.4/	52.28	30/.40	300.13	1/0.33	195.45	302.73	020.81
First Mid Bancshares Inc	6,000	0.020	1.95	9.62E+03	-0.18	50.28	1306.79	1312.65	/9.11	91.52	1689.9	1/06.9
WTB Financial Corp	5,504	0.020	1.64	8.34E+03	0.96	72.21	38.65***	49.59***	32.63***	43.71***	41.36***	55.23***
Premier Financial Corp (OHIO)	6,000	0.023	2.33	9.96E+03	-0.74	18.89	466.22***	525.09***	28.99***	49.3***	725.15***	1037.1***
Old Second Bancorp Inc	6,000	0.009	3.07	3.41E+04	1.02	22.75	738.66***	833.9***	19.7***	36.88***	1167.2***	1701.3***
Amerant Bancorp Inc	1,303	0.002	6.71	2.76E+05	13.81	435.74	695.85***	125.18***	32.9***	43.35***	15.22**	15.31
Community Trust Bancorn Inc	6,000	0.021	1.99	9.68E+03	-0.12	10.09	699.99***	807.06***	35.3***	39.12***	1291.3***	2111.8***
Heritage Financial Corp	6 000	0.011	1 88	1.71E+04	0.15	9.96	723 86***	845 44***	40.17***	49.11***	1331 3***	2082.2***
Great Southern Bancorn Inc	6 000	0.021	2.15	6.85E+03	0.84	10.90	178 03***	205 9***	10 39*	38 93***	243 58***	343 01***
Great Southern Balloorp nie	0,000	0.031	2.13	0.0010100	0.04	19.00	170.05	203.9	10.37	50.75	27J.J0	5-55.01

HBT Financial Inc	1,011	0.020	2.42	1.20E+04	-0.55	19.72	170.68***	193.58***	7.3	36.1***	296.91***	367.73***
First National Bank Alaska	6,000	0.012	1.84	1.54E+04	-0.45	220.69	698.23***	698.95***	173.18***	185.81***	791.59***	794.63***
Hills Bancorp	5,564	0.034	1.04	3.10E+03	6.21	320.96	108.41***	374.92***	22.9***	27.76***	108.27***	108.32***
Farmers And Merchants Bank of Long Beach	6,000	0.015	1.24	8.27E+03	-0.40	89.68	746.86***	748.03***	76.66***	83.38***	770.97***	778.6***
TrustCo Bank Corp NY	6,000	-0.008	2.11	-2.51E+04	0.07	10.99	1160.01***	1203.42***	16.88***	28.83***	2433.7***	3463.3***
Univest Financial Corp	6,000	0.013	2.33	1.85E+04	0.21	13.14	545.91***	708.68^{***}	25.01***	30.95***	918.55***	1703.6***
Heritage Commerce Corp	6,000	-0.003	2.81	-1.04E+05	-0.09	16.73	1107.37***	1305.9***	13.75**	21.02**	2040.9***	3350***
Capital City Bank Group Inc	6,000	0.015	2.50	1.71E+04	0.12	15.09	777.45***	925.7***	47.93***	65.82***	1400.9***	2263.1***
Predictor Variable												
EPU index	277	125.604	44.84		1.33	6.05	43.36***	43.28***	20.66***	25.44***	60.78***	61.79***

Note: The table contains the summary statistics (Colum 2 - 7), the formal tests for conditional heteroscedasticity (Columns 8 & 9); first-order autocorrelation (Columns 10 & 11) and higher-order autocorrelation (Columns 12 & 13). N is the number of observation points; SD is the standard deviation; CV is the coefficient of variation computed as the ratio of the standard deviation to the mean in proportions; SKEW and KURT represent the skewness and kurtosis values, respectively. *ARCH*(#) denotes the autoregressive conditional heteroscedasticity statistics at specified lags; Q(#) and Q2(#) denote the first and higher-order autocorrelation statistics, respectively, at specified lags. Lags 5 and 10 are considered in this study. For the formal tests, the levels of statistical significance at 1%, 5% and 10% are denoted by ***, ** and *, respectively, with statistical significance indicating the absence. Small Cap represents bank stocks with a market capitalization between \$2 billion and \$10 billion; Large Cap represents bank stocks with a market capitalization above \$10 billion. This categorization is in conformance with Standards & Poor's (S&P) Dow Jones and the MSCI frameworks.