

Asset versus equity acquisitions by financial institutions

Jennifer Brodmann¹ | Charles Armah Danso²  |
Surendranath Rakesh Jory³  | Thanh Ngo⁴ 

¹Department of Accounting, Finance and Economics, College of Business Administration & Public Policy, California State University, Dominguez Hills, Carson, California, USA

²Department of Finance, Law & Real Estate, College of Business and Economics, California State University, Los Angeles, Los Angeles, California, USA

³Department of Banking and Finance, Southampton Business School, University of Southampton, Southampton, United Kingdom

⁴Department of Finance and Insurance, College of Business, East Carolina University, Greenville, North Carolina, USA

Correspondence

Charles Armah Danso, Department of Finance, Law & Real Estate, College of Business and Economics, California State University, Los Angeles, Los Angeles, CA 90032, USA.

Email: cdanso@calstatela.edu

Abstract

We examine the impact of asset versus equity acquisitions in generating firm value for financial institutions. We find that acquirers experience statistically and economically significantly higher cumulative abnormal returns in asset acquisitions compared to equity acquisitions. We analyze the announcement-period returns and find that investors' reaction to asset acquisitions by financial institutions is met more favorably than are equity acquisitions. When employing the difference-in-differences approach, we find that asset acquisitions entail improved operating performance.

JEL CLASSIFICATION

G20, G21, G34

1 | INTRODUCTION

Financial institutions (FIs) engage in mergers and acquisitions (M&As) to increase market size and benefit from potential economies of scale. Besides economic motives, there are managerial motives to engage in M&As, especially by CEOs with equity-based compensations (Bliss & Rosen, 2001) and bonuses (Liu et al., 2017). Several researchers (e.g., Kowalik et al., 2015; Megginson, 2005; Phung & Troege, 2019) find there are also political motives to facilitate M&As among FIs. The strict regulatory structure that accompanies acquisitions of FIs, particularly banks, suggests that many of the M&A transactions produce a wide range of results for the combined institutions

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and their shareholders. To differentiate between acquisitions that yield favorable effects against those that yield unfavorable effects for the shareholders of FIs, we consider whether the acquisition of a target's assets as well as the assumption of some of its liabilities (termed "asset acquisitions") elicit different wealth effects from the acquisition of target FI equity (termed "equity acquisitions").

The debate over the wealth effects between asset and equity acquisitions has been examined in the corporate finance literature (Jory & Madura, 2009; Jory et al., 2012; Jory et al., 2021). However, and to the best of our knowledge, this issue has not been looked at in the banking literature. An FI can perform an asset acquisition whereby it both acquires the assets (both financial and nonfinancial) of another FI and assumes some of the target firm's liabilities, mainly customer deposits. Alternatively, the acquiring FI may purchase a majority share ownership in the target FI. The former is an example of asset acquisition, and the latter is an example of an equity acquisition. These two types of acquisitions, though transferring assets under the control of the acquirer, differ in the form of the acquisition. How different these two forms of acquisitions are in the financial industry remains to be answered. We fill a gap in the literature by examining the wealth effects of asset versus equity acquisitions among FIs.

There is ample evidence in the literature that not all bank acquisitions yield the same results performance-wise. For example, Brune et al. (2015) find that capital-constrained banks are associated with better post-acquisition performance. This may be due to the lower premiums they pay to acquire targets and their preference to finance acquisitions with cash. There is also evidence that the timing of the acquisition matters in addition to the financial strength of the target, the location of the acquirers, and whether the acquisition takes place during a crisis period (Shen et al., 2020). Therefore, we contribute to this line of the literature whereby the wealth effects of the acquisition are conditioned on the type of acquisition.

We research the S&P's Global Market Intelligence SNL database from 1991 to 2018. We categorize 3322 deals by US-based FIs as follows: 131 asset acquisitions and 3191 equity acquisitions. Using stock return data from the Center for Research in Security Prices (CRSP) database, we find that acquirers experience statistically and economically significant higher cumulative abnormal returns (CARs) in asset acquisitions than in equity acquisitions. Similarly, asset acquisitions are associated with higher long-term stock performance relative to equity acquisitions. The better stock performance of asset acquirers is justified because we find that asset acquirers are associated with better operating performance than are equity acquirers. We explore the value drivers of asset acquisitions among FIs. Our findings remain consistent despite several robustness tests.

2 | LITERATURE REVIEW, THEORY, AND HYPOTHESES

2.1 | Literature on M&As among FIs

There is substantial literature on mergers, especially among banks. As such, studies point to both the benefits and drawbacks of these mergers. For instance, Houston and Ryngaert (1994) find positive and significant overall gains from bank mergers. Berger et al. (1999) report that US bank consolidation has come to the rescue of inefficient banks. Becher (2000) finds that bank mergers provide wealth-enhancing synergies. Conversely, Rhoades (1998) does not find increases in efficiency in horizontal bank mergers. Amel et al. (2004) find that mergers in the financial sector deliver minimal benefits to managerial efficiency or economies of scope.

Some studies differentiate wealth-enhancing mergers from those that are unable to add wealth. Linder and Crane (1993) find that mergers with previously acquired banks perform better than mergers with new banks. Casu et al. (2016) find that acquisitions of securities firms yield higher risk compared to acquisitions of insurance companies.

2.2 | Literature on asset and equity acquisitions

Although there are several studies on asset acquisitions (e.g., Alexander et al., 1984; Comment & Jarrell, 1995; Hite et al., 1987; Jain, 1985; John & Ofek, 1995; John and Sadjahin, 2010; Jory et al., 2021; Jovanovic & Rousseau, 2002; Kaplan & Weisbach, 1992; Lang et al., 1995; Sicherman & Pettway, 1992; Warusawitharana, 2008; Yang, 2008) and a lesser number of equity acquisitions (e.g., Hege et al., 2009; Slovin et al., 2005), there is not much evidence on the comparison between the two aside from one study focusing on the global market (Jory et al., 2012) and another one on the real estate investment trust (REIT) industry (Huerta-Sanchez et al., 2020). Both types of acquisition are subject to target firm valuation (Fu et al., 2013), agency problems (Fung et al., 2009), executive compensation (Fung et al., 2009), among other effects. Nevertheless, evidence supporting the favorable effects of asset acquisitions is more prevalent (Jain, 1985; Sicherman & Pettway, 1992).

2.3 | Asset versus equity acquisitions among FIs

2.3.1 | Asset acquisitions

An example of an asset acquisition is Merchants & Marine Bank's acquisition of Heritage First Bank's asset in August 2011. The acquisition is described as follows:

Merchants & Marine Bank, Pascagoula, Mississippi announced today that it has entered into an agreement to acquire the assets, including all loans, and assume certain liabilities, including all deposits, of two branches of Heritage First Bank, a subsidiary of Heritage First Bancshares, Inc., headquartered in Rome, Georgia. The two branches are located at 1820 Gulf Shores Parkway, Gulf Shores, Alabama and 8331 Alabama Highway 227, Crossville, Alabama with total assets of approximately \$55 million.

Royce Cumbest, Chairman of the Board, President and Chief Executive Officer of Merchants & Marine Bank, stated, "We are acquiring branches and moving into markets with strong growth potential which will provide a greater opportunity for enhanced shareholder value."

Merchants & Marine Bank anticipates retaining all active employees located at both locations.

Merchants & Marine Bank is a Mississippi banking corporation headquartered in Pascagoula and has total assets of \$545 million. The acquisition is subject to approval by state and federal regulators and the transaction is expected to close in the fourth quarter of 2011.¹

Another example of an asset acquisition by an FI is United Fidelity Bank's acquisitions of the assets of First City Bank of Florida. The acquisition is described as follows:

United Fidelity Bank, fsb ("United"), announced today that it has entered into a purchase and assumption agreement with the Federal Deposit Insurance Corporation ("FDIC") to assume all deposits and certain other liabilities and to purchase essentially all of the assets of First City Bank of Florida, a full service community bank headquartered in Ft. Walton Beach, Florida. With this

¹Source: <https://www.sec.gov/Archives/edgar/data/1432405/000095012311073659/c21033exv99w1.htm>

acquisition, United's seventh since May 2014, United Fidelity will now operate a total of 19 banking centers.²

Although these are only two examples, a review of the asset deals points to the fact that the acquirer does not assume all the liabilities of the target in asset acquisitions. Thus, the likelihood that the acquirer leaves the problematic liabilities of the target FI out of the deal is maximized in asset acquisitions. Such flexibility is not permitted in equity acquisitions.

Asset acquisitions are also popular among financially weakened, undercapitalized targets and/or during crisis periods. Purchasing the equity of an undercapitalized bank poses a significant problem for the acquirer. For instance, under the Bank Holding Company Act, the equity acquirer should file a capital restoration plan within days of acquiring the equity of an undercapitalized bank. Such issues do not arise if the deal is structured as an asset acquisition because the acquirer does not assume the undercapitalization of the target.

The assumptions that asset acquisitions perform superior to equity acquisitions and that assets acquired tend to be of financially weakened targets and/or during periods of crisis are consistent with the findings of Shen et al. (2020). They find significant gains when acquiring weak targets and during banking crises though they do not differentiate between asset and equity acquisitions. Our study, therefore, can be seen as an examination of what drives the wealth difference documented in Shen et al. (2020).

Acquisitions of assets are rare in the financial industry as it is a rare opportunity to purchase a target's assets and leave the liabilities aside. Asset acquisitions are made possible with the help of a regulator or large sponsor. Such acquisitions tend to be of distressed banks. With the regulator's approval, the acquirer takes over the assets of a distressed bank and assumes certain liabilities, principally customer deposits. The remaining liabilities of the distressed target are left behind under the stewardship of the government. This acquisition method became even more popular following the 2007–2008 subprime mortgage crisis in the United States. Indeed, 80% of our sample of asset acquisitions occurs after 2006. Banks that suffered significant losses were forced to sell their risky assets at fire sale prices following the crisis.

Under normal circumstances, the seller would want to maximize the proceeds from the sales to maximize gains. In the case of distressed FIs, the government wants to hand control back to an acquirer with the expertise to turn around the FI's fortunes to avoid a crash in the financial system. The seller's motivation is not necessarily to maximize gains from the sale. However, we argue that staying under government ownership increases the costs to the government to keep the operations of the distressed FI ongoing. Thus, to the government, the discount allowed on the sale may well be significantly smaller than the cost of keeping the distressed FI under government ownership.

The Bank for International Settlements (2018) reports that there has been a shift in bank business models since the crisis, with banks in the United States and other developed economies selling their trading arms in favor of traditional banking activities.³ Many such sales have occurred at discounted prices (US Treasury, 2009) to benefit the acquiring FIs.⁴ Such fire sales happen not only during the crisis of 2007–2008 but also tend to occur when an FI has reached the nadir, for example, the unwinding of Long-Term Capital Management (LTCM) (see also Caballero & Simsek, 2010).

Although the prices received in asset sales may not reflect long-run potential and are far below the value in best use, the losses to sellers represent significant gains for acquirers (Shleifer & Vishny, 2011). For this reason, we hypothesize that the wealth effects of asset acquisitions for acquiring-firm shareholders are positive.

Asset acquisitions yield a tax benefit to the acquirer that is not available with equity acquisitions. The acquirer can increase the tax basis of the assets to their fair market value and then allocate that value in the form of a higher depreciation amount over the asset's useful life. This in turn reduces the corporation's tax return after the acquisition. In sum, asset acquisitions make possible increased depreciation and impairment deductions.

²Source: <https://www.bankofstcroix.com/united-fidelity-bank-assumes-deposits-and-acquires-assets-of-first-city-bank-of-florida-ft-walton-beach-florida/>

³Source: www.bis.org/publ/arpdf/ar2018e.htm

⁴Source: <https://www.fiscal.treasury.gov/files/reports-statements/financial-report/09frusg.pdf>

Conversely, an equity acquisition is recorded as an investment in the acquirer's balance sheet. It does not allow a step-up in the basis of the individual assets owned as part of the acquisition to their fair market value. Thus, the tax basis in the target firm's stock is equal to the purchase price, and the assets transferred to the acquirer remain at their original value as in the target firm's balance sheet before the acquisition. Again, this tax advantage of the asset acquisition is expected to increase the net worth of the acquirer relative to the equity acquisition alternative.

2.3.2 | Equity acquisitions

Equity acquisitions resemble a merger of two FIs. An example is the merger between Equity Bank and American State Bank & Trust, where Equity Bank's parent company, Equity Bancshares, is the acquirer (Kelley, 2021). Kansas Bank Commissioner David Herndon classified the acquisition as, "Based on the asset size of the resulting institution, it would be the largest merger of state-chartered banks in Kansas" (Kelley, 2021).

A review of equity deals suggests that they are the most common form of acquisition, and yet some of their acquisitions dwarf the average size of asset acquisitions. A simple comparison of median values between the two subsamples suggests that the median equity deal value is \$33.7 million whereas the asset deal value is \$27.913 million. At the 25th percentile, the difference is wider: \$13 million versus \$5 million. We further find that the relative size of the deal in relation to the acquirer exerts a negative wealth effect. As such, the larger size of equity deals acts as an impediment to the ability of the acquirer to extract wealth from the target after the acquisition.

The legal consideration of equity acquisitions is more onerous than that of an asset acquisition. For instance, there is no requirement for the bank holding company (BHC) to provide additional capital to cover the acquired assets. If the same deal were structured as an equity acquisition, the BHC must stand ready to furnish that capital on demand and with no cap (by the Federal Reserve under the "source of strength doctrine").⁵

The empirical evidence on the wealth effects of acquirers in bank mergers is mixed. Several studies report negative wealth effects (e.g., Cornett & De, 1991; Houston & Ryngaert, 1994, 1997; Trifts & Scanlon, 1987). However, few studies report the opposite, that is, a positive effect (e.g., Becher, 2000; James & Wier, 1987; Neely, 1987). We suspect that segregating asset acquisitions from equity acquisitions will shed additional light on the actual effects of bank mergers, which we hypothesize to be negative.

3 | DATA

Our sample is obtained from S&P's Global Market Intelligence SNL database from 1991 to 2018. Our data set does not account for sales of assets by FIs to meet regulatory capital limits or the sales of selected assets (e.g., 10% of total assets) by an FI. For example, a bank may elect to convert some of its risky assets into cash by selling them to an acquirer so that its ratio of equity capital to risky assets rises. In our data set, the sale of assets refers to the alternative of buying the target FI's equity. Following the sale, the target either ceases to exist or has transferred complete control of its operations to the acquirer. We retain a final sample of M&A deals by FIs for which we can identify the acquirer firms in the CRSP database. Table 1 presents the sample distribution and business lines. In Panel A, 131 deals are classified as asset acquisitions and 3191 deals are classified as equity acquisitions by SNL. Results for business lines also show a variety of businesses in the financial industry spread across different geographical areas in the United States.

⁵Source: <https://www.lexology.com/library/detail.aspx?g=63bddf78-dabe-4d6d-98e7-c4b99bec3b>

TABLE 1 Sample distribution.

	Equity acquisitions		Asset acquisitions	
	Freq.	Percent	Freq.	Percent
<i>Panel A: Distribution by announcement years</i>				
1991	84	2.63	2	1.53
1992	144	4.51	1	0.76
1993	231	7.24	1	0.76
1994	222	6.96	1	0.76
1995	166	5.2	1	0.76
1996	164	5.14	1	0.76
1997	204	6.39	2	1.53
1998	200	6.27	4	3.05
1999	136	4.26	2	1.53
2000	105	3.29	3	2.29
2001	84	2.63	5	3.82
2002	85	2.66	4	3.05
2003	114	3.57	2	1.53
2004	114	3.57	4	3.05
2005	127	3.98	0	0
2006	106	3.32	9	6.87
2007	89	2.79	4	3.05
2008	42	1.32	4	3.05
2009	22	0.69	9	6.87
2010	32	1	9	6.87
2011	51	1.6	9	6.87
2012	59	1.85	6	4.58
2013	75	2.35	3	2.29
2014	109	3.42	7	5.34
2015	108	3.38	12	9.16
2016	99	3.1	11	8.4
2017	122	3.82	8	6.11
2018	97	3.04	7	5.34
Total	3191	100	131	100
<i>Panel B: Distribution by acquirer industry</i>				
Asset manager	6	0.19	0	0
Bank	3052	95.64	115	87.79
Broker-dealer	29	0.91	5	3.82
Financial technology	2	0.06	0	0

TABLE 1 (Continued)

	Equity acquisitions		Asset acquisitions	
	Freq.	Percent	Freq.	Percent
Insurance underwriter	8	0.25	1	0.76
Savings bank/thrift/mutual	82	2.57	6	4.58
Specialty lender	12	0.38	4	3.05
<i>Panel C: Distribution by target industry</i>				
Asset manager	130	4.08	33	25.19
Bank	2168	68.09	10	7.63
Broker-dealer	63	1.98	9	6.87
Financial technology	40	1.26	14	10.69
Insurance broker	96	3.02	17	12.98
Insurance underwriter	12	0.38	0	0
Investment company	1	0.03	0	0
Not classified	62	1.95	12	9.16
Savings bank/thrift/mutual	475	14.92	0	0
Specialty lender	137	4.3	36	27.48
<i>Panel D: Distribution by acquirer region</i>				
Mid Atlantic	536	16.8	30	22.9
Midwest	883	27.67	42	32.06
Northeast	149	4.67	10	7.63
Southeast	936	29.33	28	21.37
Southwest	331	10.37	6	4.58
West	356	11.16	15	11.45
<i>Panel E: Distribution by target region</i>				
Mid Atlantic	500	15.99	17	18.68
Midwest	772	24.7	22	24.18
Northeast	154	4.93	5	5.49
Southeast	868	27.77	20	21.98
Southwest	456	14.59	10	10.99
West	376	12.03	17	18.68

Note: This table reports frequency statistics for equity acquisitions and asset acquisitions by year, industry for target and acquirer, and by geographic region.

Table 2 presents summary statistics for the equity acquisition subsample in Panel A and the asset acquisition subsample in Panel B. The mean (median) equity acquisition deal value is \$300,134 million (\$33,700 million) and the mean (median) asset acquisition deal value is \$795,000 million (\$27,913 million). The mean (median) equity acquisition total assets are \$41,500,000 million (\$4,383,100 million) and mean (median) asset acquisition deal value is \$165,000,000 million (\$11,200,000 million). The equity acquisition mean (median) relative size percentage is

TABLE 2 Sample descriptive statistics.

Variable	Equity acquisitions		Asset acquisitions		Mean diff.	t-stats.	Wilcoxon stat.
	N	Mean	N	Mean			
DEAL VALUE	3191	300,134	131	795,000	494,866	1.342	-2.258***
ACQ.ASSET	3191	41,500,000	131	165,000,000	123,500,000	3.567***	6.292***
RELSIZE (%)	3191	2.170%	131	1.049%	-0.011	-4.960***	-8.355***
RELATED TARGETS	3191	0.685	131	0.107	-0.578	-20.407***	-13.701***
CASH ONLY	3191	0.196	131	0.473	0.277	6.255***	7.682***
ACQ.ROA (%)	3191	21.945	131	23.898	1.953	-1.624	-2.797***
ACQ.LIQUIDITY (%)	3191	9.251	131	10.118	0.866	1.354	0.065
ACQ.EQUITY/ASSET (%)	3177	211.879	125	170.571	-41.308	3.583***	4.121***

Note: This table reports summary statistics for the variables used in this study. DEAL VALUE is the deal value in \$ million. All other variables are defined in the Appendix.

*** $p < 0.01$.

2.170% (0.899%) and the asset acquisition mean relative size percentage is 1.049% (0.207%). Almost 20% of the equity acquisition deals and 47.3% of asset acquisition deals are paid with only cash. The average return on assets (ROA) for equity acquisition acquirers is 21.95% and that for asset acquisition acquirers is 23.90%.

4 | METHODOLOGY AND RESULTS

4.1 | Acquirer's CARs

The first question we examine is how investors react to asset acquisitions versus equity acquisitions. To measure investors' interest, we compute the acquirer's announcement-period CARs. Relative to day 0, which is the day of deal announcement, we model the acquirer's daily returns in the (-255, -31)-day window using the following two alternative models:

Fama–French three-factor model with CRSP equally weighted (EW) index as the market benchmark:

$$R_{it} = \alpha_i + \beta_1 R_{mt} + \beta_2 \text{SMB}_t + \beta_3 \text{HML}_t + \varepsilon_{it} \quad (1)$$

Fama–French four-factor model with CRSP EW index as the market benchmark:

$$R_{it} = \alpha_i + \beta_1 R_{mt} + \beta_2 \text{SMB}_t + \beta_3 \text{HML}_t + \beta_4 \text{UMD}_t + \varepsilon_{it}, \quad (2)$$

where R_{it} is the excess return of firm i on day t . R_{mt} is the excess return on the CRSP EW index on day t . SMB_t , HML_t and UMD_t are the size premium factor, book-to-market premium factor, and momentum factor from Kenneth French's website.⁶

We compute parameter estimates using the pre-event period's daily returns following Equations (1) and (2). Then, we use the parameter estimates to compute the predicted returns for acquirers in the event period. We subtract the acquirers' actual returns in the event period from the predicted returns to obtain the abnormal returns. We then calculate the CARs over several alternative windows, that is, (-2,+1) and (-1,+1), which capture the market reaction to the acquisition news in the event period.

Panel A of Table 3 reports the CARs between equity acquisitions and asset acquisitions for acquirers. The results consistently show that acquirer CARs are more statistically and economically significant for asset acquisitions than for equity acquisitions. The results are consistent regardless of estimation method and windows. Thus, the findings support the prediction that asset acquisitions will generate positive value.

The univariate tests of announcement-period returns could be driven by different factors related to deal and bidder characteristics. Therefore, we conduct multivariate tests of regression on acquirer CARs and report the results in Table 3. In these regressions, we control for factors known to affect returns and include a dummy variable representing asset acquisitions. We report the results of ordinary least squares (OLS) regressions in Panel B using the following model:

$$y_i = \alpha_i + \beta_1 \text{ASSET ACQUISITIONS}_i + \beta_2 \text{RUNUP}_i + \beta_3 \text{RELSIZE}_i + \beta_4 \text{PUBLIC TARGETS}_i + \beta_5 \text{RELATED TARGETS}_i + \beta_6 \text{CASH ONLY}_i + \beta_7 \text{LN(L. ACQ. ASSET)}_i + \beta_8 \text{L. ACQ. ROA}_i + \beta_9 \text{L. ACQ. LIQUIDITY}_i + \beta_{10} \text{L. ACQ. EQUITY/ASSET}_i + \varepsilon_{it}. \quad (3)$$

The dependent variables (y_i) are the acquirers' CARs in (-2, +1) and (-1, +1) windows, in alternate regressions. We estimate the CARs from the Fama–French four-factor model using the CRSP EW index for the market

⁶https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

benchmark shown in Panel A and from the Fama–French four-factor model with Fama–French 48-sector returns as the market benchmark (Panel B). The independent variable of interest is the dummy variable for asset acquisitions (ASSET ACQUISITIONS). We control for the acquirer stock price runup in the (−30,−10) window before the announcement date as well as year and the acquirer's business fixed effects. The *t*-statistics are

TABLE 3 Cumulative abnormal returns.

<i>Panel A: Univariate comparisons</i>					
	Equity acquisitions	Asset acquisitions	Difference	<i>t</i> -stats.	Wilcoxon stats.
Model 1	−0.300%	0.900%	1.200%	3.41***	3.44***
Model 2	−0.300%	0.700%	1.000%	3.04***	3.07***
Model 3	−0.300%	0.800%	1.100%	3.38***	3.54***
Model 4	−0.300%	0.700%	1.000%	3.21***	3.23***
<i>Panel B: Regressions of CARs</i>					
Variable	Model 1	Model 2	Model 3	Model 4	
ASSET ACQUISITIONS	0.040 (3.535**)	0.033 (3.395**)	0.043 (5.361***)	0.037 (5.368***)	
RUNUP	0.020 (11.030***)	0.011 (3.799***)	0.020 (8.656***)	0.010 (2.843**)	
RELSIZE	−0.059 (−5.179***)	−0.072 (−7.744***)	−0.057 (−4.986***)	−0.068 (−6.783***)	
PUBLIC TARGETS	−0.178 (−54.141***)	−0.181 (−54.659***)	−0.178 (−43.812***)	−0.182 (−45.501***)	
RELATED TARGETS	0.015 (6.246***)	0.022 (7.845***)	0.018 (6.590***)	0.027 (9.023***)	
CASH ONLY	0.038 (1.741)	0.047 (2.350*)	0.038 (1.815)	0.047 (2.425*)	
LN(LACQ.ASSET)	−0.072 (−10.021***)	−0.074 (−16.071***)	−0.070 (−9.002***)	−0.070 (−12.679***)	
ACQ. ROA	0.013 (3.431**)	0.016 (5.958***)	0.013 (2.759**)	0.017 (5.509***)	
LACQ. LIQUIDITY	−0.002 (−0.144)	−0.017 (−1.056)	−0.003 (−0.214)	−0.018 (−1.352)	
LACQ.EQUITY/ASSET	0.022 (2.649**)	0.020 (2.963**)	0.025 (2.906**)	0.022 (3.659**)	
Constant	0.009 (2.800**)	0.013 (3.418**)	0.008 (2.267*)	0.011 (2.777**)	
Observations	3231	3231	3231	3231	
Adj. <i>R</i> ²	0.0657	0.0681	0.0645	0.0671	
Year fixed effects	Yes	Yes	Yes	Yes	

TABLE 3 (Continued)

<i>Panel B: Regressions of CARs</i>				
Variable	Model 1	Model 2	Model 3	Model 4
Industry fixed effects	Yes	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes	Yes

Note: This table reports the results from analyses on cumulative abnormal returns (CARs). Panel A reports results from univariate comparisons for equity and asset acquisitions. CARs are estimated from the Fama–French three- or four-factor model using the Center for Research in Security Prices (CRSP) equally weighted (EW) index as the market benchmark. Model 1 is Fama–French three-factor model CARs (-2,+1), Model 2 is Fama–French three-factor model CARs (-1,+1), Model 3 is Fama–French four-factor model CARs (-2,+1), and Model 4 is Fama–French four-factor model CARs (-1,+1). Panel B reports results for multivariate analyses with CARs as the dependent variables. The variables are defined in the Appendix. The *t*-statistics are reported in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

calculated based on clustered standard errors by the acquirer's business. All financial variables are measured at the end of the fiscal year before the announcement. The variables are defined in the Appendix.

The multivariate results in Panel B of Table 3 are consistent with the univariate results in Panel A. The coefficient on asset acquisitions is positive and significant at the 5% level in Models 1 and 2, where the dependent variable is computed using the Fama–French three-factor model for the (-2,+1) and (-1,+1) windows, respectively. Results are similar and significant at the 1% level in Models 3 and 4, where CARs are computed using the Fama–French four-factor for similar event windows. Based on the results in Models 1 and 2, asset acquisitions outperform equity acquisitions by 4.0% and 3.3%, respectively. The results can be interpreted as asset acquisitions, on average, producing higher acquirer CARs than equity acquisitions, consistent with the earlier prediction of positive value generation for asset acquirers.

4.2 | Endogeneity issues

In this section, we conduct additional robustness checks to address potential self-selection bias and confounding effects.

4.2.1 | Self-selection bias

To address for a possible self-selection bias (e.g., better performing acquirers elect to undertake asset acquisitions in the first place), we use Heckman two-stage regressions. In the first stage, we conduct a logistic regression to determine the probability of acquiring an asset. The predictor variables and their definitions are provided in the Appendix. Then, we determine the predicted probabilities from the first-stage regression to find the inverse Mills ratios. These are included in the second-stage regressions of CARs. Table 4 presents the results of the two-stage analysis. The coefficients of ASSET ACQUISITIONS in the models are positively and statistically significant, consistent with the findings in Table 3.

4.2.2 | Entropy balancing and propensity score matching

Our baseline results may reflect the diverging characteristics between asset acquirers and equity acquirers rather than the positive effects of asset acquisitions. To account for this issue, we conduct our main analysis employing a

TABLE 4 Heckman self-selection regressions of cumulative abnormal returns.

Variable	Model 1	Model 2	Model 3	Model 4
ASSET ACQUISITIONS	0.045 (5.477***)	0.038 (5.293***)	0.042 (3.514**)	0.033 (3.322**)
INVERSE MILLS	0.956 (1.282)	0.092 (0.095)	0.604 (0.767)	-0.097 (-0.096)
RUNUP	0.021 (7.497***)	0.010 (2.509*)	0.021 (9.735***)	0.011 (3.460**)
RELSIZE	-0.054 (-4.512**)	-0.066 (-6.147***)	-0.056 (-4.611***)	-0.070 (-6.924***)
PUBLIC TARGETS	-0.175 (-42.695***)	-0.181 (-42.604***)	-0.175 (-52.817***)	-0.180 (-51.454***)
RELATED TARGETS	0.022 (8.157***)	0.030 (9.374***)	0.018 (7.683***)	0.025 (8.560***)
CASH ONLY	0.040 (1.770)	0.049 (2.246*)	0.040 (1.721)	0.050 (2.204*)
LN(L.ACQ.ASSET)	-0.077 (-10.784***)	-0.074 (-14.262***)	-0.078 (-11.970***)	-0.078 (-17.856***)
L.ACQ.ROA	0.167 (1.423)	0.035 (0.228)	0.114 (0.923)	0.005 (0.032)
L.ACQ.LIQUIDITY	0.251 (1.197)	0.006 (0.024)	0.160 (0.717)	-0.041 (-0.147)
L.ACQ.EQUITY/ASSET	-0.084 (-0.966)	0.009 (0.087)	-0.050 (-0.542)	0.027 (0.238)
Constant	-0.172 (-1.110)	0.003 (0.017)	-0.098 (-0.599)	0.041 (0.215)
Observations	3099	3099	3099	3099
Adj. R^2	0.0644	0.0675	0.0653	0.0683
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes	Yes

Note: This table reports the regressions of cumulative abnormal returns (CARs) for (-2, +1) and (-1, +1) windows computed from the Fama–French three- or four-factor model using the Center for Research in Security Prices (CRSP) equally weighted index as the market benchmark. Model 1 is Fama–French three-factor model CARs (-2, +1), Model 2 is Fama–French three-factor model CARs (-1, +1), Model 3 is Fama–French four-factor model CARs (-2, +1), and Model 4 is Fama–French four-factor model CARs (-1, +1). We control for the inverse Mills ratios obtained from the multinomial logistic regressions. INVERSE MILLS is calculated from the predicted probability of pursuing asset acquisitions. All other variables are defined in the Appendix. The t-statistics are reported in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

TABLE 5 Entropy matching.

<i>Panel A: Firm characteristics after entropy matching</i>							
Variable	Equity acquisitions			Asset acquisitions			Std. diff.
	Mean	Variance	Skewness	Mean	Variance	Skewness	
LN(L.ACQ.ASSET)	16.726	5.089	0.333	16.743	5.094	0.310	0.007
L.ACQ.ROA	1.067	0.295	0.530	1.068	0.296	0.524	0.002
L.ACQ.LIQUIDITY	23.874	265.881	1.107	23.898	266.156	1.102	0.001
L.ACQ.EQUITY/ASSET	10.107	7.423	1.120	10.118	7.431	1.108	0.004
<i>Panel B: Regressions of CARs after entropy matching</i>							
Variable	Model 1	Model 2	Model 3	Model 4			
ASSET ACQUISITIONS	0.103 (7.160***)	0.104 (9.234***)	0.106 (4.731***)	0.093 (4.627***)			
RUNUP	0.049 (1.527)	0.042 (1.052)	0.068 (1.754)	0.056 (1.256)			
RELSIZE	0.066 (3.572**)	0.104 (9.117***)	0.062 (3.504**)	0.100 (10.704***)			
PUBLIC TARGETS	-0.156 (-8.996***)	-0.189 (-8.744***)	-0.158 (-11.641***)	-0.190 (-10.468***)			
RELATED TARGETS	-0.002 (-0.149)	0.016 (1.852)	-0.002 (-0.176)	0.011 (1.326)			
CASH ONLY	-0.009 (-0.127)	-0.031 (-0.428)	-0.032 (-0.424)	-0.045 (-0.611)			
LN(L.ACQ.ASSET)	-0.143 (-9.678***)	-0.054 (-3.010**)	-0.140 (-8.605***)	-0.050 (-2.423*)			
L.ACQ.ROA	-0.008 (-0.500)	-0.029 (-1.089)	-0.005 (-0.327)	-0.031 (-1.273)			
L.ACQ.LIQUIDITY	0.138 (1.963*)	0.034 (0.411)	0.143 (1.802)	0.041 (0.453)			
L.ACQ.EQUITY/ASSET	-0.016 (-0.346)	-0.005 (-0.073)	-0.001 (-0.023)	0.012 (0.165)			
Constant	-0.006 (-0.379)	-0.008 (-0.390)	-0.009 (-0.513)	-0.011 (-0.515)			
Observations	3,231	3,231	3,231	3,231			
Adj. R ²	0.150	0.133	0.147	0.125			
Year fixed effects	Yes	Yes	Yes	Yes			

(Continues)

TABLE 5 (Continued)

<i>Panel B: Regressions of CARs after entropy matching</i>				
Variable	Model 1	Model 2	Model 3	Model 4
Industry fixed effects	Yes	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes	Yes

Note: This table reports results from the entropy balancing (EB) procedure. Panel A reports the mean, variance, and skewness for both asset acquisitions and equity acquisitions as well as standard deviations to demonstrate the similarity of the matched sample. Panel B reports results from the matched samples using the EB procedure. Model 1 is Fama–French three-factor model CARs (–2, +1), Model 2 is Fama–French three-factor model CARs (–1, +1), Model 3 is Fama–French four-factor model CARs (–2, +1), and Model 4 is Fama–French four-factor model CARs (–1, +1). The variables are defined in the Appendix. The *t*-statistics are reported in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

weighted sample derived by entropy balancing (EB) and propensity score matching (PSM). We follow Canil et al. (2019) in applying EB. It calculates weights for each control observation. Their first, second, and third moments are equal to those of the treated observations and effectively compare acquirers in asset acquisitions to acquirers in equity acquisitions weighted to have similar covariates. This process ensures that the higher order moments (e.g., variance and skewness) of covariate distributions are similar across treated and control samples. Conversely, PSM assigns integer weights only to matched observations (see also Shipman et al., 2017).

Table 5 reports the results from the EB procedure. Panel A presents the distribution of the control variables after the EB procedure. The standardized differences between the treated subsample (e.g., acquirers in asset acquisitions) and the control subsample (e.g., acquirers in equity acquisitions) are the differences in means between the two subsamples divided by the standard deviation of the treated sample for each covariate. According to Normand et al. (2001) and Austin (2011), a standardized difference less than 10% indicates a negligible difference in the mean of a covariate between treatment groups and control groups. Panel B presents the results from the weighted OLS regressions. The results are qualitatively similar to the baseline results in Table 3. The association between ASSET ACQUISITIONS and CARs continues to be positive and significant. Thus, our results are robust to a weighted sample design.

Table 6 reports the results from the PSM procedure. In Panel A, we compare the CARs between acquirers in asset acquisitions and propensity-matched acquirers in equity acquisitions. The CARs are significantly higher among acquirers in asset acquisitions. Panel B reports the regressions of CARs using acquirers in asset acquisitions and propensity-matched acquirers in equity acquisitions. The coefficient on ASSET ACQUISITION continues to be positive and significant.

4.2.3 | Acquirer's buy-and-hold abnormal returns

Analyses of CARs indicate a more favorable response to asset acquisitions than to equity acquisitions by FIs. It is essential to examine post-acquisition long-run stock price performance because several studies show that the stock market effect continues beyond the announcement date (Agrawal et al., 1992; Moeller et al., 2003). Although a successful acquisition may lead to positive stock returns after the announcement, in the long run, corrections to (positive) overreaction to the announcements are expected to manifest in the form of long-term negative stock returns. In this section, we examine the long-run stock price performance of acquirers. We compute 12-, 24-, and 36-month buy-and-hold returns (BHRs) for acquirers and then subtract the corresponding BHR on the CRSP EW index from the acquirer's BHR. The difference is the acquirer's buy-and-hold abnormal returns (BHARs).

Panel A of Table 7 reports statistics for the 12-, 24-, and 36-month BHARs after the M&A announcement and draws comparisons between the BHARs related to asset acquisitions and equity acquisitions for acquirers. Acquirers in asset

acquisitions outperform acquirers in equity acquisitions in all windows. However, the differences are statistically significant only in the (+1, +24)-month and (+1, +36)-month windows and they are 8.70% and 13.90%, respectively.

Panel B of Table 7 reports the results of OLS regressions of acquirer BHARs, where the dependent variable is BHAR. BHAR corresponds to the 12-, 24-, or 36-month post-announcement windows in separate regressions

TABLE 6 Propensity score matching.

<i>Panel A: Univariate comparisons</i>					
Model	Equity acquisitions	Asset acquisitions	Diff.	t-stats.	Wilcoxon stats.
Model 1	-0.300%	0.800%	1.100%	2.46**	2.47**
Model 2	-0.300%	0.600%	0.900%	2.16**	1.95**
Model 3	-0.300%	0.800%	1.100%	2.47**	2.61***
Model 4	-0.400%	0.600%	1.000%	2.30**	2.14**
<i>Panel B: Regressions of CARs</i>					
Variable	Model 1	Model 2	Model 3	Model 4	
ASSET ACQUISITIONS	0.125 (3.517**)	0.099 (2.471*)	0.121 (3.573**)	0.070 (1.988*)	
RUNUP	0.031 (0.969)	0.012 (0.299)	0.064 (1.820)	0.044 (0.941)	
RESIZE	0.071 (1.764)	0.120 (2.929**)	0.066 (1.726)	0.114 (2.934**)	
PUBLIC TARGETS	-0.076 (-2.450*)	-0.157 (-4.724***)	-0.087 (-3.632**)	-0.161 (-5.773***)	
RELATED TARGETS	-0.034 (-0.746)	-0.029 (-0.567)	-0.037 (-0.889)	-0.064 (-1.383)	
CASH ONLY	0.074 (0.748)	0.048 (0.506)	0.057 (0.600)	0.044 (0.472)	
LN(LACQ.ASSET)	-0.195 (-7.963***)	-0.095 (-3.633**)	-0.159 (-5.998***)	-0.078 (-2.936**)	
L.ACQ.ROA	-0.043 (-2.746*)	-0.080 (-3.843**)	-0.046 (-3.188**)	-0.085 (-4.665***)	
L.ACQ.LIQUIDITY	0.124 (1.500)	0.026 (0.356)	0.134 (1.468)	0.042 (0.497)	
L.ACQ.EQUITY/ASSET	0.079 (1.560)	0.091 (1.382)	0.113 (2.038)	0.136 (2.124)	
Constant	0.064 (11.774***)	0.065 (9.833***)	0.053 (13.292***)	0.060 (10.118***)	
Observations	221	221	221	221	
Adj. R ²	0.0662	0.0437	0.0676	0.0547	
Year fixed effects	Yes	Yes	Yes	Yes	

(Continues)

TABLE 6 (Continued)

Panel B: Regressions of CARs				
Variable	Model 1	Model 2	Model 3	Model 4
Industry fixed effects	Yes	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes	Yes

Note: This table reports results from propensity score matching (PSM). Panel A reports the cumulative abnormal returns (CARs) and compares CARs between equity and asset acquisitions. Panel B reports the results from the regressions of CARs as the dependent variable using acquirers in asset acquisitions and propensity-matched acquirers in equity acquisitions. Model 1 is Fama–French three-factor model CARs (-2, +1), Model 2 is Fama–French three-factor model CARs (-1, +1), Model 3 is Fama–French four-factor model CARs (-2, +1), and Model 4 is Fama–French four-factor model CARs (-1, +1). The variables are defined in the Appendix. The *t*-statistics are reported in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

reported in Models 1, 2, and 3, respectively. The main independent variable of interest is the dummy variable for deals representing asset acquisitions (ASSET ACQUISITIONS). The coefficient on ASSET ACQUISITIONS_{*i*} is positive and significant at the 1% level in all three windows (Models 1–3). This is consistent with the univariate results reported in Panel A. Asset acquisitions have approximately increases of 3.0%, 3.7%, and 4.4% in BHARs over 1, 2, and 3 years postannouncement, respectively. Overall, these results suggest that asset acquisitions generate more long-term returns than do equity acquisitions and are consistent with our predictions.

4.3 | Acquirer's operating performance changes

In this section, we analyze how asset acquisitions versus equity acquisitions affect the acquirers' operating performance by tracking the changes in the following variables: ROA, ROE, NET INTEREST MARGIN, and YIELD/COST SPREAD. The variables are defined in the Appendix.

We employ the difference-in-differences approach to evaluate the impacts of asset acquisitions versus equity acquisitions on acquirers' operating performance. Table 8 reports the regressions of acquirers' operating performance using the data in the (-3, +3)-year window around the announcement date. The variable of interest is the interaction term between the dummy variable ASSET ACQUISITIONS and the dummy variable AFTER for the periods after the acquisitions. The coefficient on the interaction term is positive and significant in the regressions of ROA (Model 1) and YIELD/COST SPREAD (Model 4), suggesting that asset acquisitions yield increases in operating performance.

4.4 | Detangling the effects of bank size

The financial sector is highly regulated, has a higher barrier to entry, and is dominated by several large institutions encapsulated by the too-big-to-fail phenomenon to indicate the importance of these institutions. Consequently, size plays a significant role in the ability to undertake M&As and the bargaining power an acquirer may have. For example, an article from the *American Banker* states that most banking sector M&As include sellers that are smaller than the buyers (Davis, 2020). In this section, we test whether the effectiveness of asset acquisitions is contingent on acquirer size.

We sort our sample into size terciles and run regressions for our measures of performance separately. We report results of regressions of CARs (Table 9), BHARs (Table 10), and operating performance (Table 11) separately for the tercile subsamples based on the acquiring firm's assets in the year before the announcement date.

TABLE 7 Long-run stock price performance.

<i>Panel A: Univariate comparisons</i>					
Windows	Equity acquisitions	Asset acquisitions	Diff.	t-stats.	Wilcoxon stats.
(+1,+12) months	-6.100%	-2.300%	3.800%	1.449	1.532
(+1,+24) months	-12.100%	-3.400%	8.700%	2.132**	1.888*
(+1,+36) months	-16.400%	-2.500%	13.900%	2.736***	2.571***
<i>Panel B: Regressions of BHARs</i>					
Variable	Model 1	Model 2	Model 3		
ASSET ACQUISITIONS	0.030 (5.337***)	0.037 (4.260***)	0.044 (4.427***)		
RELSIZE	-0.135 (-29.842***)	-0.161 (-68.139***)	-0.113 (-60.055***)		
RELATED TARGETS	0.010 (0.713)	-0.016 (-2.006*)	-0.018 (-4.063***)		
PUBLIC TARGETS	0.095 (8.338***)	0.100 (12.263***)	0.086 (12.013***)		
LN(L.ACQ.ASSET)	-0.037 (-37.837***)	-0.041 (-18.406***)	-0.003 (-0.312)		
L.ACQ.ROA	-0.050 (-4.409***)	0.082 (11.611***)	0.238 (15.577***)		
L.ACQ.LIQUIDITY	0.056 (5.381***)	0.101 (31.903***)	0.116 (9.636***)		
L.ACQ.EQUITY/ASSET	0.063 (4.386***)	0.083 (6.066***)	0.120 (2.957**)		
Constant	-0.282 (-1.782)	-0.725 (-11.558***)	-4.388 (-7.600***)		
Observations	3235	2993	2689		
Adj. R ²	0.0193	0.0443	0.0847		
Year fixed effects	Yes	Yes	Yes		
Industry fixed effects	Yes	Yes	Yes		
Clustered std. err.	Yes	Yes	Yes		

Note: This table reports the results of long-run price performance examining buy-and-hold abnormal returns (BHARs) after merger and acquisition announcements. Panel A presents the univariate comparisons of (+1,+12)-, (+1,+24)-, and (+1,+36)-month windows for equity acquisitions, asset acquisitions, and the difference between equity and asset acquisitions. Panel B presents the results for ordinary least squares (OLS) BHAR regressions on asset acquisitions. The BHARs correspond to the 12-, 24-, and 36-month postannouncement windows in alternate regressions reported in Models 1, 2, and 3, respectively. The main independent variable of interest is the dummy variable for deals with asset acquisitions (ASSET ACQUISITIONS). The variables are defined in the Appendix. The t-statistics are reported in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

TABLE 8 Long-run operating performance.

Variable	Model 1	Model 2	Model 3	Model 4
ASSET ACQUISITIONS	-0.005 (-0.427)	-0.009 (-0.710)	-0.002 (-0.469)	-0.014 (-1.240)
AFTER	-0.081 (-7.907***)	-0.098 (-20.808***)	-0.091 (-8.290***)	-0.061 (-5.948***)
ASSET ACQUISITIONS × AFTER	0.009 (2.961**)	0.007 (1.327)	0.004 (0.684)	0.016 (2.043*)
RESIZE	-0.072 (-5.970***)	-0.056 (-8.793***)	0.045 (4.294***)	0.037 (3.376**)
RELATED TARGETS	0.022 (6.245***)	0.017 (7.254***)	0.091 (13.229***)	0.093 (15.728***)
PUBLIC TARGETS	0.019 (8.374***)	0.013 (10.557***)	0.016 (3.695**)	0.026 (7.211***)
LN(L.ACQ.ASSET)	0.094 (9.930***)	0.120 (34.872***)	-0.178 (-26.426***)	-0.222 (-48.258***)
L.ACQ.EQUITY/ASSET	0.447 (3.502**)	0.051 (1.621)	0.248 (2.471**)	0.244 (3.360**)
Constant	4.765 (3.040**)	11.172 (3.070**)	0.872 (0.615)	-0.331 (-0.291)
Observations	21,032	21,021	21,032	20,895
Adj. R^2	0.407	0.148	0.361	0.249
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes	Yes

Note: This table reports the regressions of acquirers' operating performance using data in the (-3,+3)-year window around the announcement date. The variable of interest is the interaction term between the dummy variable ASSET ACQUISITIONS and the dummy variable AFTER for the periods after the acquisitions. Model 1 measures return on assets, Model 2 measures return on equity, Model 3 measures net interest margin, and Model 4 measures the ratio of yield and cost spread. We use a difference-in-differences approach requiring 3 years before and 3 years after the announcement date for regression specifications. The variables are defined in the Appendix. The *t*-statistics are reported in parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table 9 reports the results for regressions where CARs are the dependent variable and control for similar variables as in Table 3. The results for Terciles 1, 2, and 3 are reported in Models 1, 2, and 3, respectively. We observe statistically significant results for Models 1 and 2 at the 10% and 1% levels, respectively. From the results, asset acquisitions exhibit approximately 6.1% higher CARs than equity acquisitions for small banks, and approximately 9.3% higher CARs for medium banks. There is no evidence of higher CARs among large banks. Overall, we interpret the results as indicating larger FIs do not drive our findings.

Table 10 reports regressions where BHARs are the dependent variable, and the sample is separated along terciles. We use 12-, 24- or 36-month post-announcement windows and control for similar variables as in Table 7.

TABLE 9 Cumulative abnormal returns by bank size terciles.

Variable	Model 1	Model 2	Model 3
ASSET ACQUISITIONS	0.061 (2.550*)	0.093 (4.479***)	-0.019 (-1.274)
RUNUP	0.044 (20.989***)	0.010 (3.971**)	-0.031 (-6.163***)
RELSIZE	-0.055 (-9.216***)	-0.013 (-0.887)	-0.183 (-3.715**)
PUBLIC TARGETS	-0.128 (-23.908***)	-0.202 (-12.172***)	-0.186 (-11.561***)
RELATED TARGETS	0.060 (14.970***)	0.025 (1.913)	-0.023 (-2.308*)
CASH ONLY	0.044 (7.526***)	0.036 (1.171)	0.030 (1.105)
LN(L.ACQ.ASSET)	-0.064 (-22.061***)	0.037 (9.699***)	-0.065 (-4.095***)
L.ACQ.ROA	0.028 (7.281***)	-0.032 (-1.160)	0.030 (0.849)
L.ACQ.LIQUIDITY	-0.065 (-3.327**)	0.034 (1.023)	0.017 (1.115)
L.ACQ.EQUITY/ASSET	0.030 (2.722*)	0.007 (0.552)	0.024 (0.830)
Constant	0.050 (30.805***)	-0.034 (-7.190***)	0.008 (1.064)
Observations	1095	1093	1043
Adj. R ²	0.0535	0.0697	0.0990
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes

Note: This table reports the results for regressions where cumulative abnormal returns (CARs) are the dependent variable and control for similar variables as in Table 3. The results for Terciles 1, 2, and 3 are reported in Models 1, 2, and 3, respectively. Model 3 measures small banks, Model 2 measures medium banks, and Model 1 measures large banks. The variables are defined in the Appendix. The t-statistics are reported in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

The results for 12-, 24-, and 36-month windows are reported in Panels A, B, and C, respectively. Results for Terciles 1, 2, and 3 are reported in Models 1, 2, and 3, respectively. We observe varying degrees of statistical significance for 12- and 24-month windows along tercile groups. Specifically, in Panel A, the coefficient on asset acquisitions is statistically significant for medium and large banks at the 1% level. In contrast, in Panel B, the coefficient is statistically significant for small and medium banks at the 5% and 10% levels, respectively. In Panel C, the

TABLE 10 Long-run stock price performance by bank size terciles.

Variable	Model 1	Model 2	Model 3
<i>Panel A: BHARs in (+1, +12)-month window</i>			
ASSET ACQUISITIONS	-0.001 (-0.178)	0.059 (6.744***)	0.047 (6.406***)
RELSIZE	-0.188 (-100.968***)	-0.115 (-93.518***)	-0.099 (-4.094***)
RELATED TARGETS	0.008 (0.335)	0.022 (1.322)	0.019 (2.270*)
PUBLIC TARGETS	0.129 (10.872***)	0.159 (8.861***)	0.007 (0.743)
LN(L.ACQ.ASSET)	-0.076 (-36.275***)	-0.037 (-13.716***)	-0.034 (-3.573**)
L.ACQ.ROA	-0.021 (-3.411**)	-0.072 (-2.241*)	-0.085 (-3.748**)
L.ACQ.LIQUIDITY	0.054 (1.889)	0.034 (2.540*)	0.038 (3.693**)
L.ACQ.EQUITY/ASSET	0.022 (7.924***)	0.188 (5.001***)	0.026 (3.245**)
Constant	0.422 (30.986***)	-0.480 (-1.780)	0.377 (2.450*)
Observations	1053	1105	1077
Adj. R ²	0.0363	0.0218	0.00777
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes
<i>Panel B: BHARs in (+1, +24)-month window</i>			
ASSET ACQUISITIONS	0.031 (3.908**)	0.054 (2.466*)	0.033 (1.464)
Constant	-0.231 (-10.941***)	-1.149 (-51.662***)	-0.596 (-3.458**)
Observations	957	1038	998
Adj. R ²	0.0727	0.0441	0.0220
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes
Other control variables	Yes	Yes	Yes
<i>Panel C: BHARs in (+1, +36)-month window</i>			

TABLE 10 (Continued)

Variable	Model 1	Model 2	Model 3
ASSET ACQUISITIONS	0.033 (49.330***)	0.051 (2.514*)	0.054 (7.974***)
Constant	-0.620 (-41.416***)	-5.630 (-17.308***)	-0.902 (-5.708***)
Observations	845	946	898
Adj. R^2	0.139	0.0796	0.0437
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes
Other control variables	Yes	Yes	Yes

Note: This table reports the results for regressions where buy-and-hold abnormal returns (BHARs) are the dependent variable and the sample is separated along terciles. We use 12-, 24-, and 36-month post-announcement windows and control for similar variables as in Table 7. The results for 12-, 24-, and 36-month windows are reported in Panels A, B, and C, respectively. Results for Terciles 1, 2, and 3 are reported in Models 1, 2, and 3, respectively. The variables are defined in the Appendix. The t -statistics are reported in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

coefficient for asset acquisitions is significant at the 1% level for small and large banks, and significant at the 10% level for medium banks. From the results, asset acquisitions have higher BHARs than equity acquisitions and the findings do not appear to be driven by the size of banks. Thus, the main findings from earlier analyses reported in Table 7 hold.

Table 11 reports the results for regressions along tercile groups where measures of long-term operating performance are the dependent variables using similar explanatory variables as in Table 8. The results for ROA, ROE, NET INTEREST MARGIN, and YIELD/COST SPREAD are reported in Panels A, B, C, and D, respectively. Results for Terciles 1, 2, and 3 are reported in Models 1, 2, and 3, respectively. We find statistical significance at varying levels for the coefficient on asset acquisitions for all measures of operating performance except ROA, and the results are qualitatively similar to Table 8. Overall, we interpret these results as indicating that size does not drive the findings.

4.5 | Detangling management quality

Previous research finds a positive market return when assets are transferred from a poorly managed firm to a well-managed firm (measured by Q-ratio) (Datta et al., 2003), reflecting a more diverse asset base. To determine whether our results are driven by the quality of the bidding bank, we perform CARs regressions separately for the subsamples of high versus low Q-ratio. We use the sample median Q-ratio as the cutoff point to separate the two subsamples.

In Table 12, we perform CARs regressions separately for the subsamples of high-Q acquirers and low-Q acquirers (based on sample median). The results show that ASSET ACQUISITIONS have significantly higher CARs (than equity acquisitions) among low-Q acquirers. The coefficient on ASSET ACQUISITIONS is not statistically

TABLE 11 Long-run operating performance by bank size terciles.

Variable	Model 1	Model 2	Model 3
<i>Panel A: ROA</i>			
ASSET ACQUISITIONS	-0.011 (-0.532)	-0.012 (-0.853)	0.021 (1.246)
AFTER	-0.129 (-13.892 ^{***})	-0.068 (-6.644 ^{***})	-0.049 (-2.343 [*])
ASSET ACQUISITIONS × AFTER	-0.005 (-0.459)	0.018 (3.050 ^{**})	0.005 (0.622)
RESIZE	-0.097 (-7.243 ^{***})	-0.054 (-8.516 ^{***})	-0.008 (-0.561)
RELATED TARGETS	0.007 (8.713 ^{***})	0.019 (2.236 [*])	0.016 (1.569)
PUBLIC TARGETS	0.017 (2.136)	0.011 (2.143 [*])	-0.005 (-0.878)
LN(L.ACQ.ASSET)	0.053 (5.848 ^{***})	0.045 (4.466 ^{***})	0.027 (1.301)
L.ACQ.EQUITY/ASSET	0.258 (9.204 ^{***})	0.633 (3.417 ^{**})	0.424 (2.979 ^{**})
Constant	-0.067 (-0.891)	1.993 (0.859)	5.924 (4.251 ^{***})
Observations	6983	7051	6998
Adj. R ²	0.161	0.587	0.344
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes
<i>Panel B: ROE</i>			
ASSET ACQUISITIONS	-0.011 (-0.591)	-0.034 (-2.802 ^{**})	0.028 (1.420)
AFTER	-0.148 (-16.908 ^{***})	-0.082 (-14.309 ^{***})	-0.047 (-9.503 ^{***})
ASSET ACQUISITIONS × AFTER	-0.004 (-0.426)	0.034 (41.626 ^{***})	-0.011 (-1.242)
Constant	0.416 (1.437)	1.021 (0.332)	36.706 (20.178 ^{***})
Observations	6976	7047	6998
Adj. R ²	0.107	0.161	0.270

TABLE 11 (Continued)

Variable	Model 1	Model 2	Model 3
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes
Other control variables	Yes	Yes	Yes
<i>Panel C: NET INTEREST MARGIN</i>			
ASSET ACQUISITIONS	-0.040 (-12.533***)	-0.049 (-4.153***)	0.047 (4.998***)
AFTER	-0.092 (-18.369***)	-0.095 (-13.269***)	-0.095 (-3.614**)
ASSET ACQUISITIONS × AFTER	0.011 (7.132***)	-0.018 (-1.880)	0.007 (1.462)
Constant	5.799 (49.420***)	2.287 (1.468)	-1.412 (-0.586)
Observations	6983	7051	6998
Adj. R^2	0.323	0.339	0.407
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes
Other control variables	Yes	Yes	Yes
<i>Panel D: YIELD/COST SPREAD</i>			
ASSET ACQUISITIONS	-0.077 (-3.408*)	-0.056 (-6.114***)	0.050 (2.168*)
AFTER	-0.070 (-31.235***)	-0.052 (-3.431**)	-0.074 (-3.078**)
ASSET ACQUISITIONS × AFTER	0.029 (3.103*)	-0.022 (-1.351)	0.022 (3.678**)
Constant	5.011 (60.264***)	1.379 (0.846)	-4.797 (-1.962)
Observations	6931	7028	6936
Adj. R^2	0.160	0.190	0.318
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes

(Continues)

TABLE 11 (Continued)

Variable	Model 1	Model 2	Model 3
Clustered std. err.	Yes	Yes	Yes
Other control variables	Yes	Yes	Yes

Note: This table reports the results for regressions along tercile groups where measures of long-term operating performance are the dependent variables. We use operating variables and control variables as in Table 8. Results for ROA, ROE, NET INTEREST MARGIN, and YIELD/COST SPREAD are reported in Panels A, B, C, and D, respectively. Results for Terciles 1, 2, and 3 are reported in Models 1, 2, and 3, respectively. The variables are defined in the Appendix. The t-statistics are reported in parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

significant among high-Q acquirers. The χ^2 statistics for the differences in the coefficients on ASSET ACQUISITIONS (4.74 and 2.86) between the two subsamples are statistically significant.

Datta et al. (2003) argue that Tobin's Q is a proxy for managerial performance and that high Tobin's Q suggests poor management and low Tobin's Q suggests good management. Consistent with Datta et al.'s (2003) arguments, our result suggests that asset acquisitions incite more favorable market reactions among firms with better managerial performance as compared to firms with lower managerial performance.

4.6 | Segmenting by forms of payment

Next, we segment our results by form of payment to examine whether cash deals may be driving our results. We perform the CARs regressions separately for the subsamples in cash-only and non-cash-only deals (e.g., deals with stock only payments or stock-cash payments). Table 13 reports the results.

The results in Table 13 show that ASSET ACQUISITIONS have significantly higher CARs (than equity acquisitions) only among non-cash-only deals. The χ^2 statistics for the differences in the coefficients on ASSET ACQUISITIONS (5.44 and 4.46) between the two subsamples are statistically significant at the 5% level. This result suggests that the positive CARs among asset acquisitions (as compared to equity acquisitions) are not simply driven by the higher cash payment among these acquisitions.

We perform BHARs regressions for the cash-only subsample and separately for the non-cash-only subsample (e.g., deals with stock only payments or stock-cash payments). Similar to the results for the CARs, ASSET ACQUISITIONS have significantly higher BHARs (than equity acquisitions) among non-cash-only deals. The χ^2 statistics for the differences in the coefficients on ASSET ACQUISITIONS (3.15 and 3.56) between the two subsamples are statistically significant at the 5% level.

In the long-run operating performance regressions, the coefficient on ASSET ACQUISITIONS is positive and significant in the regressions of ROA and ROE in the non-cash-only subsample but is insignificant in the cash-only subsample. The χ^2 statistics for the differences in the coefficients on ASSET ACQUISITIONS between the two subsamples are statistically insignificant. There is no evidence of a difference in operating performance between asset and equity acquirers.

4.7 | Segmenting before and after the financial crisis

Next, we segment before and after the financial crisis because asset deals after the financial crisis are monitored differently and are significantly different from before the crisis. We perform CARs, BHARs, and long-run operating performance regressions separately for the subsamples in the pre-crisis (1991–2006) and post-crisis (2010–2018)

TABLE 12 Regressions of cumulative abnormal returns by acquirer pre-acquisition's Tobin's Q.

Variable	Panel A: FF four-factor model CARs (-2, +1)		Panel B: FF four-factor model CARs (-1, +1)	
	Model 1	Model 2	Model 3	Model 4
	Low Q	High Q	Low Q	High Q
ASSET ACQUISITIONS	0.086 (3.179*)	0.019 (1.142)	0.067 (2.987*)	0.030 (1.825)
RUNUP	0.011 (3.748**)	0.011 (4.778***)	-0.016 (-8.649***)	0.015 (11.897***)
RESIZE	0.008 (0.565)	-0.158 (-11.123***)	-0.010 (-1.032)	-0.162 (-9.118***)
PUBLIC TARGETS	-0.210 (-118.737***)	-0.146 (-21.895***)	-0.210 (-78.986***)	-0.157 (-19.209***)
RELATED TARGETS	-0.068 (-5.538**)	-0.050 (-6.463***)	-0.077 (-8.065***)	-0.033 (-5.083***)
CASH ONLY	0.044 (4.252**)	-0.016 (-1.520)	0.041 (4.824**)	0.006 (0.650)
LN(L.ACQ.ASSET)	0.058 (1.815)	0.035 (2.718**)	0.082 (2.801*)	0.026 (2.075*)
L.ACQ.ROA	0.040 (33.612***)	-0.017 (-1.339)	0.068 (37.826***)	-0.042 (-5.421***)
L.ACQ.LIQUIDITY	-0.011 (-0.729)	0.013 (5.955***)	-0.031 (-1.938)	0.006 (2.702**)
L.ACQ.EQUITY/ASSET	0.016 (2.682*)	0.073 (15.146***)	-0.014 (-1.448)	0.100 (24.937***)
Constant	0.020 (3.919**)	0.006 (1.318)	0.029 (5.428**)	-0.002 (-0.769)
χ^2 stats.	4.74**		2.86*	
Observations	1595	1597	1595	1597
Adj. R^2	0.0849	0.0669	0.0879	0.0711
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes	Yes

Note: This table reports the results from analyses of cumulative abnormal returns (CARs) split by Tobin's Q. CARs are computed around (-2,+1) and (-1,+1) windows using the Fama-French (FF) four-factor models with the Center for Research in Security Prices (CRSP) equally weighted index as the market benchmark. The variables are defined in the Appendix. The t-statistics are reported in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

TABLE 13 Methods of payment.

Variable	Panel A: Regressions of CARs by payment method				Panel B: Regressions of BHARs by payment method			
	FF four-factor CARs (-2, +1)		FF four-factor CARs (-1, +1)		BHARs (+1, +12)		BHARs (+1, +36)	
	Cash only	Non-cash only	Cash only	Non-cash only	Cash only	Non-cash only	Cash only	Non-cash only
ASSET ACQUISITIONS	0.017 (0.75)	0.06 (4.110***)	0.013 (0.56)	0.056 (4.066***)	0.004 (0.17)	0.029 (2.870**)	0.009 (0.56)	0.049 (3.105**)
RELIZE	0.05 (4.50***)	-0.073 (-6.39***)	0.093 (8.72***)	-0.092 (-8.39***)	-0.114 (-3.03**)	-0.134 (-23.48***)	-0.145 (-4.53***)	-0.141 (-71.74***)
PUBLIC TARGETS	-0.027 (-2.16*)	-0.194 (-42.23***)	0.012 (2.07*)	-0.203 (-32.27***)	-0.031 (-0.71)	0.023 (2.78**)	0.003 (0.15)	0.013 (3.15**)
RELATED TARGETS	-0.088 (-4.42***)	-0.067 (-34.23***)	-0.067 (-4.94***)	-0.068 (-46.83***)	0.062 (1.26)	0.111 (25.31***)	0.021 (0.54)	0.119 (42.03***)
LN(LACQASSET)	0.036 (2.52*)	0.02 (2.61**)	0.054 (4.82***)	0.028 (3.39**)	-0.113 (-6.09***)	-0.028 (-13.93***)	-0.021 (-1.17)	-0.017 (-6.08***)
LACQROA	-0.017 (-0.35)	0.032 (1.87)	-0.021 (-0.50)	0.042 (2.77**)	-0.114 (-5.24***)	-0.047 (-2.94**)	-0.232 (-8.45***)	-0.109 (-18.20***)
LACQLIQUIDITY	0.001 (0.26)	-0.008 (-0.64)	-0.036 (-4.91***)	-0.022 (-1.93)	0.033 (4.50***)	0.056 (4.07***)	0.035 (2.01)	0.041 (3.02**)
LACQEQUITY/ASSET	0.02 (0.58)	0.023 (1.19)	0.026 (0.62)	0.01 (0.63)	0.154 (5.57***)	0.05 (1.84)	0.059 (2.54*)	0.032 (1.07)
RUNUP	-0.112 (-11.48***)	0.05 (20.50***)	-0.075 (-6.42***)	0.028 (15.22***)				
Constant	-0.02 (-1.31)	0.028*** (13.25***)	-0.026* (-2.13*)	0.029*** (8.99***)	-0.08 (-0.34)	-0.27 (-0.92)	1.312** (3.23**)	0.45 (0.90)

TABLE 13 (Continued)

Variable	Panel A: Regressions of CARs by payment method				Panel B: Regressions of BHARs by payment method			
	FF four-factor CARs (-2, +1)		FF four-factor CARs (-1, +1)		BHARs (+1, +12)		BHARs (+1, +36)	
	Cash only	Non-cash only	Cash only	Non-cash only	Cash only	Non-cash only	Cash only	Non-cash only
χ^2 stats.	5.44**		4.46**		3.15**		3.56**	
Observations	667	2564	667	2564	669	2566	669	2566
Adj. R ²	0.0283	0.082	0.0236	0.0867	0.0101	0.0211	0.0187	0.0274
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel C: Regressions of operating performance in crisis versus noncrisis periods								
Variable	ROA		ROE		NET INTEREST MARGIN		YIELD/COST SPREAD	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Cash only	Non-cash only	Cash only	Non-cash only	Cash only	Non-cash only	Cash only	Non-cash only
ASSET ACQUISITIONS	0.034 (2.582**)	-0.020 (-1.485)	0.027 (1.676)	-0.024 (-2.242*)	0.070 (4.970**)	-0.039 (-9.083**)	0.060 (3.595**)	-0.054 (-4.875**)
AFTER	-0.047 (-6.450***)	-0.093 (-10.040***)	-0.088 (-9.080***)	-0.100 (-35.858***)	-0.053 (-9.134***)	-0.105 (-7.950***)	-0.018 (-3.921**)	-0.076 (-5.438***)
ASSET ACQUISITIONS × AFTER	0.001 (0.152)	0.012 (3.012**)	0.008 (0.561)	0.007 (3.781***)	-0.015 (-3.579**)	0.014 (1.095)	0.003 (0.368)	0.022 (1.826)
RELIZE	-0.147 (-3.156**)	-0.055 (-8.724***)	-0.071 (-5.127***)	-0.059 (-8.684***)	0.064 (2.439*)	0.040 (6.519***)	0.029 (1.574)	0.037 (3.816**)
RELATED TARGETS	0.033 (2.947**)	0.012 (2.220*)	0.027 (2.265*)	0.012 (2.723**)	0.099 (6.345***)	0.086 (16.218***)	0.097 (6.294***)	0.089 (24.536***)

(Continues)

TABLE 13 (Continued)

	<i>Panel C: Regressions of operating performance in crisis versus noncrisis periods</i>							
	ROA Model 1	Model 2	ROE Model 3	Model 4	NET INTEREST MARGIN Model 5	Model 6	YIELD/COST SPREAD Model 7	Model 8
PUBLIC TARGETS	-0.010 (-2.371*)	0.015 (3.664**)	-0.019 (-2.181*)	0.016 (9.133***)	-0.005 (-0.729)	0.016 (2.168*)	-0.003 (-0.222)	0.024 (3.208**)
LN(LACASSET)	0.080 (7.974***)	0.097 (11.421***)	0.131 (22.989***)	0.118 (26.360***)	-0.200 (-17.924***)	-0.171 (-30.126***)	-0.245 (-47.198***)	-0.215 (-63.525***)
LAC/EQUITY/ASSET	0.512 (2.506*)	0.434 (4.673***)	0.137 (1.735)	0.014 (0.693)	0.215 (1.963)	0.261 (2.783**)	0.228 (3.334**)	0.250 (3.288**)
Constant	4.248 (1.863)	4.965 (4.095***)	-0.135 (-0.014)	16.913 (7.213***)	1.481 (1.145)	0.588 (0.408)	0.291 (0.304)	-0.667 (-0.529)
χ^2 stats.	1.62		1.32		2.41*		0.80	
Observations	4353	16,679	4350	16,671	4354	16,678	4307	16,588
Adj. R ²	0.506	0.372	0.111	0.168	0.364	0.367	0.280	0.242
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table reports multivariate results split by payment methods. Panel A presents cumulative abnormal returns (CARs) using the Fama-French (FF) four-factor model. Panel B presents the buy-and-hold abnormal returns (BHARs), and Panel C presents operating performance measures for payment methods during crisis and noncrisis periods. In Panel C, the variable of interest is the interaction term between the dummy variable ASSET ACQUISITIONS and the dummy variable AFTER for the periods after the acquisitions. The variables are defined in the Appendix. The t-statistics are reported in parentheses.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

TABLE 14 Multivariate analyses in crisis versus noncrisis subsamples.

Variable	FF four-factor model CARs (-2, +1)		FF four-factor model CARs (-1, +1)	
	Model 1 Precrisis	Model 2 Postcrisis	Model 3 Precrisis	Model 4 Postcrisis
ASSET ACQUISITIONS	0.028 (3.749**)	0.070 (3.048**)	0.021 (3.040**)	0.066 (4.918***)
RUNUP	0.003 (2.433*)	0.042 (5.709***)	-0.008 (-3.487**)	0.027 (3.437**)
RELSIZE	-0.115 (-6.101***)	0.074 (4.236***)	-0.143 (-8.605***)	0.091 (4.951***)
PUBLIC TARGETS	-0.145 (-87.383***)	-0.317 (-26.458***)	-0.142 (-64.312***)	-0.348 (-35.150***)
RELATED TARGETS	-0.096 (-9.603***)	-0.038 (-1.475)	-0.105 (-11.269***)	-0.036 (-1.425)
CASH ONLY	-0.005 (-2.358*)	0.058 (4.032***)	0.002 (2.072*)	0.045 (3.620**)
LN(LACQASSET)	0.054 (6.026***)	-0.041 (-0.689)	0.069 (7.165***)	-0.040 (-0.832)
LACQROA	0.011 (0.826)	-0.011 (-0.477)	0.025 (3.609**)	-0.017 (-0.940)
LACQLIQUIDITY	-0.001 (-0.177)	-0.007 (-0.095)	-0.005 (-0.675)	-0.028 (-0.375)

(Continues)

TABLE 14 (Continued)

Variable	FF four-factor model CARs (-2, +1)		FF four-factor model CARs (-1, +1)	
	Model 1 Precrisis	Model 2 Postcrisis	Model 3 Precrisis	Model 4 Postcrisis
L.ACQ.EQUITY/ASSET	0.031 (3.749**)	0.035 (1.696)	0.012 (1.797)	0.045 (2.287*)
Constant	0.029*** (5.110***)	0.008 (0.755)	0.038*** (6.712***)	0.005 (0.475)
χ^2 stats.	0.08		0.43	
Observations	2272	805	2272	805
Adj. R ²	0.0639	0.0970	0.0660	0.111
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Clustered std. err.	Yes	Yes	Yes	Yes
Variable	BHARs (+1, +12)		BHARs (+1, +36)	
	Model 1 Precrisis	Model 2 Postcrisis	Model 3 Precrisis	Model 4 Postcrisis
ASSET ACQUISITIONS	0.010 (2.118)	0.048 (3.213**)	0.020 (2.621*)	0.029 (1.911)
RELSIZE	-0.134 (-82.619***)	-0.190 (-9.450***)	-0.120 (-56.815***)	-0.206 (-33.128***)
PUBLIC TARGETS	0.104 (11.155***)	0.117 (4.448**)	0.105 (21.122***)	0.055 (6.444**)

TABLE 14 (Continued)

Variable	BHARs (+1, + 12)		BHARs (+1, + 36)	
	Model 1 Precrisis	Model 2 Postcrisis	Model 3 Precrisis	Model 4 Postcrisis
RELATED TARGETS	0.007 (0.529)	-0.032 (-2.113*)	0.007 (1.590)	-0.042 (-3.263**)
LN(LACQASSET)	-0.022 (-5.298***)	-0.137 (-3.980***)	-0.017 (-7.152***)	-0.121 (-6.305***)
LACQROA	-0.017 (-1.927)	-0.099 (-1.563)	-0.018 (-3.487**)	-0.309 (-3.393**)
LACQLIQUIDITY	0.034 (3.731**)	0.139 (3.779***)	0.018 (1.289)	0.250 (3.297**)
LACQEQUITY/ASSET	0.032 (2.359*)	-0.062 (-0.941)	-0.046 (-4.340**)	-0.019 (-0.470)
Constant	-0.054* (-2.579*)	0.398 (1.371)	0.048 (1.628)	1.122** (3.075**)
χ^2 stats.	2.38		2.10	
Observations	2271	796	2271	796
Adj. R ²	0.0156	0.0552	0.0211	0.0925
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes

(Continues)

TABLE 14 (Continued)

<i>Panel B: Regressions of BHARs in crisis versus noncrisis periods</i>									
Variable	BHARs (+1, + 12)		BHARs (+1, + 36)		BHARs (+1, + 36)		BHARs (+1, + 36)		Model 4 Postcrisis
	Model 1 Precrisis	Model 2 Postcrisis	Model 3 Precrisis	Model 4 Postcrisis	Model 5 Precrisis	Model 6 Postcrisis	Model 7 Precrisis	Model 8 Postcrisis	
Clustered std. err.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Panel C: Regressions of operating performance in crisis versus noncrisis periods</i>									
Variable	ROA		ROE		NET INTEREST MARGIN		YIELD/COST SPREAD		Model 8 Postcrisis
	Model 1 Precrisis	Model 2 Postcrisis	Model 3 Precrisis	Model 4 Postcrisis	Model 5 Precrisis	Model 6 Postcrisis	Model 7 Precrisis	Model 8 Postcrisis	
ASSET ACQUISITIONS	0.022 (3.128**)	-0.019 (-1.022)	0.016 (1.456)	-0.034 (-1.364)	-0.014 (-17.721***)	0.010 (0.558)	-0.028 (-3.945**)	-0.003 (-0.111)	-0.004 (-0.119)
AFTER	-0.094 (-32.735***)	0.040 (2.502**)	-0.106 (-62.220***)	0.068 (6.162***)	-0.135 (-122.240***)	-0.013 (-0.596)	-0.095 (-44.158***)	-0.002 (-0.119)	0.021 (2.106)
ASSET ACQUISITIONS × AFTER	-0.017 (-19.688***)	0.025 (2.906**)	-0.018 (-3.197**)	0.031 (2.029*)	-0.018 (-5.265***)	0.015 (1.105)	-0.002 (-0.695)	0.021 (2.106)	0.067 (5.463***)
RELIZE	-0.085 (-12.843***)	-0.042 (-2.248*)	-0.053 (-11.011***)	-0.052 (-7.679***)	0.045 (7.237***)	0.075 (5.846***)	0.037 (4.766***)	0.078 (6.796***)	-0.011 (-0.576)
RELATED TARGETS	0.031 (5.049***)	-0.006 (-0.564)	0.015 (3.468**)	0.005 (0.743)	0.099 (24.053***)	0.077 (4.504***)	0.089 (31.676***)	0.078 (6.796***)	-0.011 (-0.576)
PUBLIC TARGETS	0.024 (12.867***)	-0.011 (-1.255)	0.006 (2.823**)	-0.014 (-1.352)	0.012 (20.328***)	-0.010 (-0.578)	0.021 (34.766***)	-0.011 (-0.576)	-0.287 (-17.105***)
LN(LACQASSET)	0.138 (18.754***)	0.000 (0.004)	0.155 (40.557***)	-0.003 (-0.427)	-0.134 (-54.567***)	-0.272 (-17.262***)	-0.174 (-59.859***)	-0.287 (-17.105***)	-0.287 (-17.105***)

TABLE 14 (Continued)

Variable	Panel C: Regressions of operating performance in crisis versus noncrisis periods											
	ROA		ROE		NET INTEST MARGIN		YIELD/COST SPREAD					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8				
	Precrisis	Postcrisis	Precrisis	Postcrisis	Precrisis	Postcrisis	Precrisis	Postcrisis				
L.ACQ.EQUITY/ASSET	0.329 (11.071***)	0.455 (2.635**)	0.059 (5.207***)	-0.038 (-0.935)	0.234 (18.188***)	0.262 (1.400)	0.190 (15.791***)	0.291 (1.750)				
Constant LIQUIDITY	3.242*** (8.232***)	5.337*** (2.784**)	-2.535 (-1.640)	24.306*** (7.436***)	0.567*** (2.632**)	0.495 (0.210)	0.063 (0.316)	-1.954 (-0.638)				
χ^2 stats.	6.71***		5.32***		4.08**		2.11					
Observations	14,998	4890	14,988	4887	14,999	4887	14,987	4769				
Adj. R ²	0.198	0.566	0.0855	0.0463	0.260	0.343	0.191	0.331				
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Clustered std. err.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				

Note: Panel A reports the results from analyses on cumulative abnormal returns (CARs) split by crisis and non-crisis periods. CARs are computed around (-2,+1) and (-1,+1) windows using the Fama-French (FF) four-factor model with the Center for Research in Security Prices (CRSP) equally weighted index as the market benchmark. Panel B presents buy-and-hold abnormal returns (BHARs). Panel C presents operating performance measures for payment methods during crisis and noncrisis periods. In Panel C, the variable of interest is the interaction term between the dummy variable ASSET ACQUISITIONS and the dummy variable AFTER for the periods after the acquisitions. The variables are defined in the Appendix. The t-statistics are reported in parentheses.

*p < 0.10; **p < 0.05; ***p < 0.01.

periods. Table 14 reports the results. Panel A reports results for CARs, Panel B for BHARs, and Panel C for operating performance.

In the CARs regressions, the coefficient on ASSET ACQUISITIONS is positive and significant in both subsamples in the pre-crisis (1991–2006) and post-crisis (2010–2018) periods. The χ^2 statistics for the differences in the coefficients on ASSET ACQUISITIONS (0.08 and 0.43) between the two subsamples are statistically insignificant, suggesting that the crisis has little to no effect on our findings.

In the BHARs regressions, the coefficient on ASSET ACQUISITIONS is positive in both subsamples in the pre-crisis (1991–2006) and post-crisis (2010–2018) periods. However, the coefficient is statistically significant only for the post-crisis period. The χ^2 statistics for the differences in the coefficients on ASSET ACQUISITIONS (2.38 and 2.10) between the two subsamples are not statistically significant.

In the long-run operating performance regressions, the coefficient on ASSET ACQUISITIONS is negative in the regressions of ROA, ROE, and NET INTEREST MARGIN in the pre-crisis period (1991–2006) but positive in the post-crisis period (2010–2018). The χ^2 statistics for the differences in the coefficients on ASSET ACQUISITIONS between the two subsamples are statistically significant. As argued earlier, asset acquisitions were more common after rather than before the crisis. In many instances, the sale was forced and facilitated with the assistance of the regulatory bodies, ensuring that acquirers have the best chance to generate returns from the acquired assets. The empirical evidence of favorable operating performance among asset acquirers after the crisis is consistent with the state of affairs.

In undocumented results, we test whether our findings differ based on the frequency of acquisitions by the bidder before the current acquisition but find no such effects. In additional robustness checks, we run our analysis only with the acquirers still operating 2 years after the announcement. Our findings remain qualitatively the same.

5 | CONCLUSION

We explore the motivation behind bank M&As and the effect of deal structure on value generation and performance. Specifically, we examine asset versus equity acquisitions for FIs and the valuation effect of deals for the acquirer. We predict a positive effect for short-term, long-term, and operating performance for asset acquisitions compared to equity acquisitions. Overall, we find support for better short- and long-term performance and operating performance for asset acquisitions. Although our study does not consider the magnitude of asset acquisitions, future research can uncover the relation between the gains to acquirers and the size of the assets acquired.

ORCID

Charles Armah Danso  <http://orcid.org/0000-0001-9432-1515>

Surendranath Rakesh Jory  <http://orcid.org/0000-0002-8265-0001>

Thanh Ngo  <http://orcid.org/0000-0003-4950-1474>

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APPENDIX: VARIABLE DEFINITIONS

Variable	Definition
ASSET ACQUISITIONS	Dummy variable for asset acquisitions
RUNUP _{<i>i</i>}	Acquirer stock price runup in the (–30, –10)-day window preceding the announcement date
RELSIZE _{<i>i</i>}	Ratio of the deal value to the acquirer total asset
RELATED TARGETS _{<i>i</i>}	Dummy variable for acquisitions by acquirers and targets in the same business
PUBLIC TARGETS _{<i>i</i>}	Dummy variable for acquisitions of publicly traded targets
CASH ONLY _{<i>i</i>}	Dummy variable for cash-only acquisitions
LN(L. ACQ. ASSET) _{<i>i</i>}	Natural log of the acquirer total asset before the acquisition
L. ACQ. ROA _{<i>i</i>}	Acquirer return on asset percentage
L. ACQ. LIQUIDITY _{<i>i</i>}	Acquirer liquidity ratio
L. ACQ. EQUITY /ASSET	Equity-to-asset percentage
LN(L.TIER 1 CAPITAL)	Natural log of lagged Tier 1 capital
L.ROA	Lagged returns on asset

Variable	Definition
LOG(FIRM SAME STATE)	Logarithm of the number of financial institutions in the same state
ROA	Ratio of net income to average assets
ROE	Ratio of net income to average equity
NET INTEREST MARGIN	Ratio of net interest income to average earning assets
YIELD/COST SPREAD	Yield on earning assets (which is the ratio of total interest and dividend income to average earning assets) minus the cost of interest-bearing liabilities (which is the ratio of total interest expense to average interest-bearing liabilities)
