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Bank Capital And Liquidity Creation: The Case Of Jordanian Commercial Banks

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Abstract

This study examines the effect of bank capital on liquidity creation for the Jordanian commercial banks listed on the Amman Stock Exchange, 2008-2017. The data consist of balanced panel data of 13 commercial banks, amounting to 130 annual observations over the duration of the study. Three proxies of liquidity creation are used: The Berger and Bouwman (2009) cat nonfat measure, the inverse net stable funding ratio, and the Gross loan ratio. The Vector Auto-Regression (VAR) model, Granger Causality and Co-integration tests are used to test the hypotheses of the research. The findings reveal a statistically significant negative long-run relationship between bank capital and liquidity creation measured by Berger and Bouwman (2009) proxy for Jordanian commercial banks over the duration of the study. However, no short-run or causal relationship is detected.

Keywords: bank capital, Basel Committee, commercial banks, Jordan, liquidity creation.

I Introduction

The creation of liquidity, along with risk transfer, is one of the most important functions for banks (Chaabouni et al., 2018). Creation of liquidity is the process in which non-liquid assets are converted into liquid liabilities (Umar et al., 2017). Liquidity is created either by the conversion of illiquid assets -to-liquid liabilities (Diamond and Dybvig, 1983) or through off-balance sheet activities (Kashyap et al., 2002). Creation of liquidity is vital for the economy to function properly, and banks are important financial intermediaries which play a key role in the provision of liquidity through financing long-term illiquid assets with short-term liquid liabilities. In other words, banks create liquidity by maintaining illiquid assets and providing cash to the rest of the economy.

Banks create liquidity by allowing depositors to withdraw funds upon request and simultaneously grant loans to borrowers with illiquid assets (Bryant, 1980), which not only fosters business but also ultimately promotes social welfare (Bernanke, 1983; Diamond and Rajan, 2001; Cranebum and Thakur, 2007). Bank liquidity is generally created by financing long-term illiquid assets with relatively short-term liquidity liabilities on the balance sheet (Diamond and Dybvig, 1983). Off-balance sheet activities are also created by providing loan commitments and generating claims on liquid funds (Holmstrom and Tirole, 1998, Kashyap et al., 2002). Thus, modern banks work with both illiquid assets and loan commitments to provide liquidity to stimulate the economy (Le, 2019).

The recent financial crisis has led to the Basel Committee on Banking Supervision, in which new capital rules, known as the Basel III reforms, have been put forth. The financial crisis was attributed to low levels of solvency of bank budgets. These reforms have culminated in more strength capital requirements (Horváth et al.,2014**)**, as the importance not only of the solvency of banks but also of the creation of liquidity is emphasized. The reforms have also been instrumental in contributing to financing the economy and facilitating transactions between economic agents (Al-Khouri, 2012).

Capital affects liquidity creation either negatively, as higher capital requirements may prohibit the creation of liquidity or positively, as the implementation of the strongest banking capital requirements in Basel III potentially lead to greater security and greater liquidity creation (Berger et al.,2016).

Berger and Bouwman (2009) claim that the liquidity creation concept is a viable measure of the bank's overall ability to transfer maturity in the economy and represents both activities within and outside the balance sheet, not to mention that it may be replace other indicators that only attract the bank's credit activity.

This study examines the effect of bank capital on liquidity creation in Jordanian commercial banks over the period 2008-2017. More specifically, the study seeks to determine whether or not a causal relationship exists on the short- or long-run. Three proxies of liquidity creation are utilized: Berger and Bouwman (2009) cat nonfat measure, the inverse net stable funding ratio, and the Gross loan ratio. Vector Auto-Regression (VAR) model, Granger Causality test and Co-integration tests are used to achieve the objectives of the research.

To the best of these researchers' knowledge, this is the first study in Jordan to examine the effect of bank capital on liquidity creation. The findings are potentially important to local investors, foreign investors, regulators and academics, interested in whether or not bank capital is a potential determinant of the liquidity creation in Jordanian commercial banks. The current research may help to determine the potential costs to the economic implications of the capital requirements in Basel III in the Jordanian financial context. Furthermore, the study is an opportunity to analyze the volume and evolution of liquidity creation in Jordanian commercial banks over the period of the study relative to that reported by Berger and Bouwman (2009) for American banks.

2 Review of Related Literature

There is a plethora of international research on the relationship between bank capital and liquidity creation. However, these researchers focus on summarizing the recent empirical research that has significantly contributed to the finance literature. For example, Horváth et al. (2014**)** examined the relationship between capital and liquidity creation, using Granger-causality tests in a dynamic GMM panel estimator framework on an exhaustive dataset of Czech banks from 2000 to 2010. Horváth et al. reported an extensive expansion of liquidity creation over the period of their study, albeit slowed by the financial crisis, which was mainly driven by large banks. They further reported that capital negatively Granger-cause liquidity creation and that liquidity creation Granger-cause capital reduction which, in turn, supports claims that Basel III reforms may not only reduce liquidity creation but that greater liquidity creation can may reduce bank solvency, suggesting a trade-off between the financial stability induced by stronger capital requirements and those of increased liquidity creation.

Umar and Sun (2016) examined the effect of non-performing loans (NPLs) on bank liquidity creation and potential moral hazard problems in 197 listed and unlisted between 2005 and 2014. Using a combination of the generalised method of moments (GMM) estimation, fixed and random effect model and pool data techniques, they reported a decline in total liquidity creation by Chinese banks and an increase in NPLs ratio following a continuous decline between 2005 and 2012. They claim that liquidity creation by Chinese banks does not depend on NPLs ratio, which has been corroborated by a further analysis

of small and large banks which has also revealed no evidence of moral hazard problem in Chinese banks.

Fungáčová et al. (2017) examined the effect of introducing deposit insurance on the relationship between bank capital and liquidity creation in Russian banks over the period from 1999 to 2007. They found an inverse relationship between the creation of bank liquidity and capital and no effect for the introduction of deposit guarantee on the relationship between bank capital and liquidity creation. The findings reveal that introducing a deposit insurance scheme has a limited effect on the inverse relationship between bank capital and liquidity creation. The implication is that better capitalized banks tend to create less liquidity.

Umar et al. (2017) examined the effect of changes in bank capital on liquidity creation, as they tested "financial fragility – crowding out" and "risk absorption" hypotheses for 136 listed and unlisted Indian banks between 2000 and 2014. The findings revealed a negative relationship between narrow measure of bank liquidity creation and capital, supporting "financial fragility – crowding out" for "cat nonfat" measure of liquidity creation in Indian banks. However, no relationship was found between "cat fat" of measure liquidity creation and capital, except for listed banks and those in the pre-crisis period in which "risk absorption" hypothesis holds.

Similarly, Chaabouni et al. (2018) tested the "risk absorption" hypothesis and the "financial fragility-crowding out" hypothesis in the UK and French banking industry over the period 2000 to 2014. They used Berger and Bowman's (2007) approach to measure liquidity creation, the quantile regression (QR), instrumental variables QR, classical ordinary least squares (OLS), and panel regression to deal with the mixed findings of previous research. They reported a homogenous inverse association between the variables across quintiles of liquidity creation distribution.

Umar et al. (2018) analysed the relationship between bank regulatory capital and liquidity creation in publicly listed banks of BIRCS countries between 2003 and 2014. Two-stage least-squares regression was used to control endogeneity. The findings revealed that an increase in bank capital negatively affects bank liquidity creation, which supports the "financial fragility-crowding out" hypothesis.

Le (2019) investigates the interrelationship between liquidity creation and bank capital in Vietnamese banks between 2007 and 2015. The findings showed that large banks contributed a strong growth in liquidity creation in Vietnam over the period of the study. The findings also showed that off-balance sheet activities play a small part in liquidity creation, not to mention that a negative two-way relationship exists between liquidity creation and bank capital in Vietnam.

Sahyouni and Wang (2019) examined liquidity creation in 491 conventional and Islamic commercial banks across 18 MENA countries between 2011 and 2016 to test the potential relationship between liquidity creation and bank performance. Using panel data techniques, conventional banks were found to create more liquidity than Islamic banks which, in turn, created more liquidity per asset than conventional banks. Using return on average equity measure, the analysis revealed a significant negative correlation between liquidity creation and bank performance but no significant relationship between liquidity creation and return on average assets of MENA banks. Moreover, no difference in the relationship between liquidity creation and bank performance was found between Islamic and conventional banks.

Zhang and Deng (2020) analysed how the liberalisation of interest rates affects the creation of bank liquidity. Based on panel data for 145 banks in China over the period 1997 to 2015, they reported that interest rate liberalisation has a non-linear effect on the creation of bank liquidity, and the relationship between them is inverted U-shaped (vix., as interest rate liberalisation progresses, the creation of bank liquidity increases and then decreases). They also found that interest rate liberalisation affects the creation

of bank liquidity through bank risk-taking, as the liberalisation of interest rates leads to changes in banking risk which, in turn, leads to changes in the creation of bank liquidity.

Le and Pham (2021) examined the interrelationships between liquidity creation, banking capital and credit risk in selected emerging economies between 2012 and 2016. Using Berger and Bouwman (2009) approach to measure the formation of liquidity, the finding revealed a positive interrelationship between bank capital and credit risks after controlling for liquidity creation. The results also revealed that credit risk negatively affects liquidity creation. The findings also revealed a negative two-way relationship between liquidity creation and banking capital in these emerging economies and a positive relationship between capital and credit risk.

Sahyouni et al. (2021) examined the amount of liquidity created by banks, how the composition of liquidity changes over time, the soundness, and the relationship between CAME ratios and liquidity creation of banks in MENA countries. The findings revealed that the CAME rating system, as an indicator of bank soundness, correlates negatively with the creation of bank liquidity, as capital adequacy, management efficiency, and earning power ratios affect the balance sheet components to create liquidity whereas the asset quality ratio affects its off-balance sheet component.

3 Methodology

A sample of 13 Jordanian commercial banks listed in ASE was drawn from the population of all Jordanian commercial banks over the period between 2008 and 2017. Islamic banks are not considered because their operations differ from those of conventional banks.

Table (1) outlines the variables in the regression equation in this study, which include the dependent, independent, and control variables. Table (1) also shows the symbol of each variable, its measurement method, its explanatory equations, and the source of the variables.

Table (1): Variables of the Study

Variables	Measure	symbol	source
Panel A: Dependant variable (liquidity creation, LC)			
Berger and Bouwman (2009) BB measure	Cat nonfat (BB) = (1/2* illiquid assets+ 1/2* liquid liabilities –1/2*	BB	
	liquid assets – 1/2 illiquid liabilities and equity) / total asset		Angora and Roulet 2011
Inverse net stable funding ratio (INSFR) measure	INSFR = (required amount of stable funding /Available amount of stable funding)	INSFR	
Gross loan ratio measure	Gross loan ratio = (Net Direct Credit Facilities/ total assets)	LR	
Panel B: Independent variable			

Variables	Measure	symbol	source
(capital)			
capital	Capital = owner's equity / total assets	Capital	
Panel C: control variables			
Earnings Volatility	the standard deviation of the bank's return on assets measured over the previous three years	Std. Dev.	Horváth et al. (2014)
Credit Risk	the ratio of non- performing loan to total loans	NPL	
Z-Score	the return on assets plus Capital divided by Earnings Volatility	Z-Score	
Size	the log of total assets	Size	
Market Share	the market share of total deposits for each bank	Mkt Share	
Inflation and Unemployment	These macroeconomic data come from the Central bank of Jordan and Department of Statistics.	INF and UNEMP	

In order to achieve the objectives of the study, the following modelis used to examine the effect of bank capital on liquidity creation (Horváth et al., 2014):

LC it = β0 + β1 capital it + β2 NPL it + β3 Z-score it + β4 Std. Dev. it + β5 Size it + β6 Mkt Share it + β7 INF t + β8 UNEMP t +Є it ……... ……..... …..…. **(1)**

To test the short term dynamic relationship between capital and liquidity creation, vector auto regressive model (VAR) and Granger causality tests are used over the period of the study.

In order to test the long run equilibrium relationship between capital and liquidity creation, panel co-integration tests are used (Panel PP-Statistic and Panel ADF-Statistic).

Unit root tests

To test for a unit root, Dickey-Fuller (1979) method was used to examine the null hypothesis that Ø=1 in the following equation:

$Y_t = ØY_{t-1} + u_t$ ……..……...…**(2)**

against the one-side alternative Ø<1. Thus the hypotheses of interest are H_0: series contains a unit root versus H_1: series is stationary. In practice; however, the following regression is used rather than (2):

$\Delta Y_t = \varphi Y_{t-1} + u_t$ ……..…..……...**(3)**

so that a test of Ø =1 is equivalent to a test of φ = 0 (ø - 1= φ).

Co-integration test

To test for the co-integration between bank capital and liquidity creation, the Johansen

(1988) method based on Vectors Auto correlations (VAR) was used. Consider a set of g variables ($g \geq 2$) that are I (1) and which are assumed to be co-integrated. A VAR with k lags containing these variables could be set-up:

$$Y_t = \beta_1 Y_{t-1} + \beta_2 Y_{t-2} + \cdots + \beta_k Y_{t-k} + u_t \quad \text{(4)}$$

In order to use the Johansen test, the VAR (4) above needs to be turned into a vector error correction model (VECM) of the form:

$$\Delta Yt = \prod Yt{-}k\, \Delta Yt{-}k + Γ1\Delta Yt{-}1 + Γ2\Delta Yt{-}2 + \ldots + Γk{-}1\Delta Yt{-}(k{-}1) + ut \quad \text{(5)}$$

Where $\Pi = (\sum_{i=1}^{k} \beta_i) - I_g$ and $Γ_i = (\sum_{j=1}^{i} \beta_i) - I_g$

The test for co-integration between the Ys is calculated by looking at the rank of the Π matrix via its eigenvalues. The eigenvalues, denoted λi, are put in ascending order $\lambda 1 \geqq \lambda 2 \geqq \ldots \lambda g$. If λs are unit roots, in this context they must be less than 1 in absolute value and positive and λ1 will be the largest (i.e., closest to 1) while λg will be the smallest. If the variables are not co-integrated, the rank of Π will not be significantly different from zero, so $\lambda i \approx 1$ for any i. There are two test statistics for the co-integration under the Johansen approach:

A_i: is a 4 × 4 matrix of coefficients. e_t: is a 4 × 1 vector of error terms.

P: is the optimal lag order set to render the error terms serially uncorrelated.

4 Results and Discussion

Table (2): Descriptive statistics

The Trace: $\lambda_{trace}(r) = -T\sum_{i=r+1}^{g} \ln(1-\lambda_1)$ ……..**(6)**

and the Max-eigenvalue: $\lambda_{max}(r, r+1) = -T \ln(1-\lambda_{r+1})$……**(7)**

where **r** is the number of co-integrating vectors under the null hypothesis.

Johansen and Juselius (1990) provide critical values for the two statistics. If the test statistic is greater than the critical value from Johansen's tables, reject the null hypothesis that there are r cointegrating vectors in favour of the alternative that there is r+1 (for λ_{trace}) or more than r (for λ_{max}).

Granger causality test

This study uses the Granger causality test for examining the causality between bank capital and liquidity creation using time-series data-based approach as it provides a powerful test to investigate the causality in varied types of situation and to test whether bank capital "Granger- cause" liquidity creation and vice versa. The following model is tested.

$$X_t = A_0 + \sum_{i=1}^{p} A_i X_{t-i} + e_t \quad \text{(8)}$$

Where

A_0: is a 4 × 1 vector of constant terms.

Descriptive Statistics

Table (2) reports the descriptive statistics of the variables of the study.

Item	Mean	Median	Maximum	Minimum	Std. Dev.
BB	0.3254	0.3336	0.4975	0.1403	0.0688
INSFR	0.6420	0.6476	1.0809	0.4598	0.0898
LR	0.4736	0.4810	0.6028	0.3148	0.0668
Capital	0.1395	0.1388	0.2196	0.0928	0.0261
NPL	0.0720	0.0647	0.2593	0.0129	0.0387
Z-Score	144.165	80.3856	1478.84	12.9711	199.092
Std. Dev.	0.0024	0.0018	0.0105	0.0001	0.0020
Mkt Share	0.0769	0.0374	0.5566	0.0055	0.1245
Size	9.2918	9.2781	10.412	8.4407	0.4317
UNEMP	0.1309	0.1280	0.1528	0.1190	0.0111
INF	0.0347	0.0368	0.1308	-0.0088	0.0411

The mean value of the liquidity creation in Jordan measured by (BB) measure is %33 over period of the study. However, when NSFR is used as a proxy for LC, the mean value is %64. The LC mean value when LR is used as a proxy is %47. The maximum values of BB, NSFR, and LR are %50, 1, and %60 respectively. While the minimum values of BB, NSFR, and LR are %14, %46, and %31 respectively. The capital ratio of the Jordanian commercial bank has a mean value of %14 over the period of the study, a maximum value of %22, and a minimum value of %9.

Table (3) shows the correlation matrix between the variables of the study

Table (3): The correlation matrix between the variables of the study

Item	BB	INF	LR	Mkt Share	NPL	INSFR	Size	Std. Dev.	UMEMP	Z-Score
BB	1.00	-0.100	0.7663	-0.218	-0.307	0.7055	-0.059	-0.0195	0.3679	0.0115
INF	-0.10	1.00	0.0589	0.00	0.036	0.0763	-0.120	-0.0496	-0.3460	0.0045
LR	0.7663	0.0589	1.00	-0.190	-0.168	0.7944	-0.155	0.0429	0.2835	0.0572
Mkt Share	-0.2185	0.00	-0.190	1.00	-0.046	-0.2082	0.8671	-0.0037	0.00	-0.0660
NPL	-0.3074	0.0366	-0.168	-0.046	1.00	-0.1386	-0.203	0.1402	-0.1957	-0.0524
INSFR	0.7055	0.0763	0.794	-0.208	-0.138	1.00	-0.167	0.1146	0.2251	-0.0291
Size	-0.0593	-0.120	-0.155	0.867	-0.203	-0.1672	1.00	-0.0288	0.1176	-0.0317
Std. Dev.	-0.0195	-0.049	0.0429	-0.003	0.140	0.1146	-0.028	1.00	0.0222	-0.4860
UNEMP	0.3679	-0.346	0.2835	0.00	-0.195	0.2251	0.117	0.0222	1.00	-0.0413

Item	BB	INF	LR	Mkt Share	NPL	INSFR	Size	Std. Dev.	UMEMP	Z-Score
Z-Score	0.0115	0.004	0.0572	-0.066	-0.052	-0.0291	-0.031	-0.4860	-0.0413	1.00

Table (3) shows that market share and bank size are highly correlated with a correlation coefficient of %87, so that we exclude Market share from analysis. All other correlation values are less than 70% (Gujarati and Porter, 2003) which indicates no multicollinearity problem.

Unit Root Tests

Table (4) shows that some values are stationary such as inflation, while other variables, such as unemployment, are not stationary (i.e., they have a unit root). Thus, we use the first difference for the non-stationary variables.

Table (4): Unit Root Test

Variables	Statistic	Probability
BB	-0.63516	0.2627
Capital	-5.27071	0.000
LR	0.27287	0.6075
Mkt Share	0.9774	0.8358
NPL	-4.41543	0.000
INSFR	-4.36641	0.000
Z-Score	-3.47701	0.0003
Size	1.5166	0.0647
Std. Dev.	-9.73219	0.000
INF	5.474497	0.0027
UNEMP	-0.739047	0.7865

VAR model results

Table (5) shows the VAR model estimation results. No statistically significant effect of capital on liquidity creation is detected for the Jordanian commercial banks over period of the study. When liquidity creation is measured by BB proxy, Model 1 shows that there is a statistically significant negative effect of NPL, which represents the credit risk on liquidity creation with a coefficient of (-0.30615).

Moreover, there is a statistically significant effect of unemployment on liquidity creation with a positive coefficient of (0.756629). The analysis also shows no statistically significant effect of lagged Capital (-1), Size, and INF on liquidity creation. Similarly, no statistically significant effect of lagged Capital (-2), Capital, Z-Score, and Std. Dev. Are found on liquidity creation.

When liquidity creation is measured by NSFR proxy, Model 2 shows that there is a statistically significant negative effect of NPL, which represents the credit risk on liquidity creation with a coefficient of (-0.429224). Moreover, there is a statistically significant effect of unemployment on liquidity creation with a positive coefficient of (1.801739). Also, results show that there is no statistically significant effect of lagged Capital (-2) and Size on liquidity creation. Moreover, that there is no statistically significant effect of lagged Capital (-1), Capital, Z-Score, Std. Dev., and INF on liquidity creation.

When liquidity creation is measured by LR proxy, Model 3 shows that there is a statistically significant negative effect of NPL which represent the credit risk on liquidity creation with a coefficient of (-0.251575). Moreover, there is a statistically significant effect of unemployment on liquidity creation with a positive coefficient of (0.899755). Also, results show that there is no statistically significant effect of lagged Capital (-2), size, and INF on liquidity creation. Moreover, there is no statistically significant effect of lagged Capital (-1), Capital, Z-Score, and Std. Dev. on liquidity creation.

Table (5): VAR results

Variables	Model 1	Model 2	Model 3
	BB	INSFR	LR
Capital (-1)	-0.348131	0.205825	0.123137
(t-value)	-1.18371	0.39309	0.40066
Capital (-2)	0.092484	-0.573404	-0.290831
(t-value)	0.32680	-1.16807	-1.00498
Capital	0.176132	0.217593	0.025263
(t-value)	1.60324	1.07707	0.23115
Z-Score	0.0000114	0.00000289	0.0000303
(t-value)	0.59358	0.08554	1.59011
Size	-0.014387	-0.015903	-0.001749
(t-value)	-1.57037	-0.97873	-0.19196
Std. Dev.	0.215714	1.225774	1.768947
(t-value)	0.10337	0.32354	0.84965
NPL	-0.30615	-0.429224	-0.251575
(t-value)	-2.94105	-2.36351	-2.43472
INF	-0.120107	0.425418	-0.14104
(t-value)	-0.60245	1.18566	-0.70665
UNEMP	0.756629	1.801739	0.899755
(t-value)	1.95270	2.69723	2.32157
R-squared	0.557703	0.524826	0.532843
Adj. R-squared	0.531649	0.473732	0.504116
# of observations	130	130	130

Granger Causality Tests

Table (6) shows the results of the Granger Causality Tests. Table (6) shows no statistically significant Granger Causality between capital and liquidity creation measured by BB. The results also show no statistically significant Granger Causality between capital and liquidity creation measured by LR and no statistically significant Granger Causality between capital and liquidity creation measured by INSFR.

Table (6): Granger Causality Tests

Null hypothesis	F-Statistic	Probability
Capital does not Granger Cause BB	2.20044	0.1161
BB does not Granger Cause Capital	0.18099	0.8347
LR does not Granger Cause Capital	1.44967	0.2396
Capital does not Granger Cause LR	1.41441	0.2479
INSFR does not Granger Cause Capital	0.67736	0.5103
Capital does not Granger Cause INSFR	2.21044	0.115

Co-integration Test

Table (7) shows the results of the Co-integration tests. The analysis reveals a statistically significant negative long run (co-integration) relationship between liquidity creation and capital. The results also show a statistically significant long run (co-integration) relationship between BB and capital. However, no statistically significant long run (co-integration) relationship is found between INSFR and capital. Moreover, there is no statistically significant long run (co-integration) relationship between LR and capital. The negative effect of bank capital on liquidity creation in Jordanian commercial banks supports the" financial fragility-crowding out" hypothesis.

Table (7): Co-integration Test

Item	Statistic	Probability
Panel PP-Statistic (BB & capital)	-2.159661	0.0154
Panel ADF-Statistic (BB & capital)	-2.90952	0.0018
Panel PP-Statistic (INSFR& capital)	-1.205818	0.1139
Panel ADF-Statistic (INSFR & capital)	0.107824	0.5429
Panel PP-Statistic (LR & capital)	-0.811596	0.2085
Panel ADF-Statistic (LR & capital)	0.319775	0.6254

ADF: Augmented Dickey Fuller. PP: Phillips and person.

5 Conclusions and Recommendations

This study investigates the effect of bank capital on liquidity creation in Jordanian commercial bank over the period between 2008 and 2017. The results show that there is a statistically significant negative long-run equilibrium relationship between bank capital and liquidity creation measured by Berger and Bouwman (2009) proxy in Jordanian commercial banks over the period of

the study. This result supports the "financial fragility-crowding out" hypothesis. There is no statistically significant short run dynamic effect of bank capital on liquidity creation in Jordanian commercial banks over the period (2008-2017). This finding is robust to the proxy of liquidity creation used. Three proxies of liquidity creation are used Berger and Bouwman (2009), Inverse net stable funding ratio, and Gross loan ratio. There is no statistically significant causal relationship between bank capital and liquidity creation in Jordanian commercial banks over the period (2008-2017). This finding is also robust to the proxy of liquidity creation used.

Regulators and policy makers are recommended to concern themselves with bank capital because of its effect on liquidity creation. These parties are recommended to merge banks in order to have large capital to increase liquidity creation which will, in turn, improve the economy and foster economic growth. The results of the current study are consistent with those of Fungáčová et al. (2017) and Chaabouni et al. (2018) who reported a statistically significant negative long-run equilibrium relationship between bank capital and liquidity creation. However, the current results are inconsistent with those of Horváth et al. (2014) who found a statistically significant negative causal relationship between bank capital and liquidity creation.

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