Research Journal of Finance and Accounting
ISSN 2222-1697 (Paper) ISSN 2222-2847 (Online) DOI: 10.7176/RJFA
Vol.10, No.2, 2019

Implication of Capital Liquidity to the Profitability of Commercial Banks in Indonesia

Y.B. Suhartoko[1] Fransiskus X Lara Aba[2]
Faculty Economics and Business, Atma Jaya Catholic University of Indonesia
Karol Wojtyla Building 6 Floor, Jalan Jenderal Sudirman 51 Jakarta 12930

Abstract
This study aims to determine whether there are implications of liquidity core capital on the profitability of commercial banks book IV in 2012 - 2016 in Indonesia, other things also to know the magnitude of the influence of capital adequacy and liquidity on bank profitability. The variables to measure bank profitability are Loan to Deposit Ratio (LDR), Capital Adequacy Ratio (CAR), and Return on Asset (ROA). The sample of this research is 5 banks in Indonesia from 2012 until 2016. This research method use multiple linear regression. The research hypothesis was tested using F-test statistic and T-test statistic. The analysis shows that CAR is proportional to ROA, but LDR is inversely proportional to ROA. LDR has a significant negative effect (with p-value 0.026) on ROA. If the LDR value is too high, it means that the bank does not have sufficient liquidity to cover its obligations to customers is Third Party Fund (TPF).
Keywords: Implication, Capital Liquidity, Profitability, Commercial Banks
DOI: 10.7176/RJFA/10-2-12

1. Introduction

Banking is a financial institution that becomes the intermediary between parties in need of funds and excess funds. As an intermediary, banks carry out operational activities that are based on government regulations (Doris & Roger ; 2013; Beccalli, Anolli & Borello:2015; Huang & Ratnovski:2011; Köhler:2015; Tan & Floros:2012; Chmielewski & Krzesniak:2003). In Indonesia, banks apply prudential principles in accordance with Law Number 10 of 1998 concerning Banking in article 1. In the implementation of the regulation, banks take an active role in advancing the economy of a country as shown by the growth of banks that will have a direct impact on the growth of the country (Abdul, et all., 2011; Adams & Mehran., 2008; Agoraki., et all., 2010; Bektas & Kaymak., 2008; Kosmidou: 2008; Ben & Goaied: 2001; Henningsen: 2010). To achieve that objective, the bank must really function well; among them are financial intermediary, service function, and transmission function. To be able to perform the function then the bank must have good fund management. As part of managing the use of bank funds should pay attention to 3 things, namely: liquidity, security, and income. Liquidity is the ability of a bank to settle short-term financial obligations that can be found or that are due (Loran, Victor and Lu., 2010; Bektas, & Kaymak., 2009; Brissimis., et all., 2008; Busta., 2007; Donaldson & Davis:1991; Fiordelisi & Mare:2014; Hoggarth, Milne, & Wood:1998). The bank is said to be 'liquid' if it can fulfill its debt obligations, and can fulfill the loan request without suspension.

In addition to the above, capital is something that determines the size of bank profits, because basically this is the capital invested by the bank to make a profit (Bryman & Cramer: 1997; de Haan & Poghosyan: 2012: Liikanen: 2012; Shleifer & Vishny: 2010). Capital accumulation is directly proportional to the accumulation of profits, meaning that the greater the capital the greater the profit. Efforts to meet the level of capital adequacy as regulated by Bank Indonesia are important to note as the level of capital adequacy describes the ability of banks to overcome risks or losses that may arise (Calomiris & Kahn: 1991; Flamini, McDonald & Schumacher: 2009; Gabaix & Landier:2008; Uhde & Heimeshoff: 2009; Tahir & Bakar: 2009; Vukovic, et all: 2009). Furthermore, a high level of capital will increase the cash reserves that can be used to improve bank profitability. Conversely, the level of liquidity is inversely proportional to the level of profitability, if the liquidity of banks is high then the profitability is low, and vice versa if liquidity is low then profitability is high (Isik & Hassan., 2003; Kapopoulos & Lazaretou., 2007; Radzic & Yuce.,2008; Altaee.. et all: 2013; Rose & Hudgins:2008). However, liquidity should not be eliminated, liquidity must be maintained in accordance with management policies for short-term debt.

2. Research Methods

In doing this research, we use multiple linear regression method to know the implication of liquidity of core capital to bank book profitability IV year 2012 -2016. In this study we use variables such as:

2. 1. Capital Adequacy Ratio (CAR),

It is a capital adequacy ratio that indicates the ability of banks to provide funds used to overcome the potential risk of loss (Beltratti & Stulz., 2009; Ivashkovskaya, Ivantsova & Stepanova.,2012;Demirgüç-Kunt & Huizinga:2010; Drehmann & Nikolaou: 2010; Farhi & Tirole: 2012; Vickers:2011). This ratio is important because by keeping the CAR at a safe limit (at least 8% or 0.08), it also protects customers and maintains the

stability of the financial system as a whole. The greater the CAR value reflects an improved banking capability in the face of possible risk of loss (Jemrić & Vujičić., 2002; Stefanelli & Cotugno:2010; Beck, De Jonghe & Schepens: 2013; Mishkin:1999; Vu & Turnell: 2011). CAR can be obtained by dividing the total capital with risk-weighted assets (RWA), such as the formula below:

$$CAR = capital / ATMR \times 100\%$$

2.2. Loan to Deposit Ratio (LDR),

LDR (Loan to Deposits Ratio) is a ratio that measures the ability of banks to meet short-term liabilities (can be called liquidity) by dividing total loans to total Third Party Funds. Bank liquidity needs to be managed to meet the needs when customers take their funds and disburse loans (credit) to borrowers (Košak & Čok.,2008; Stančić., et all: 2012a; Amidu & Wolfe:2013; Karimzadeh: 2012). If the LDR is too high, it means that the bank does not have sufficient liquidity to cover its obligations to customers. Conversely, if the LDR value is too low it means that the bank has adequate liquidity but may have lower revenues, as it is known by the banking world to generate income through credit channeled. LDR can be calculated by:

$$LDR = (total\ credit\ to\ third\ party\ non\text{-}bank) / (total\ third\ party\ funds) \times 100\%$$

2.3. Return on Assets (ROA)

ROA (Return On Assets) is a ratio that measures the ability of banks to generate profit or profit (can be called profitability) by comparing net income with resources or total assets owned (Matić & Papac 2010., Micco, Panizza, & Yanez., 2007; Pathan, Skully & Wickramanayake:2007;Boot & Thakor: 2000; Nair & Fissha:2010; Claessens, Demirgüç-Kunt & Huizinga: 2001; Sufian: 2009). Its function is to see how effectively banks use their assets in generating revenue. The greater the value of ROA means the better the ability of banks in generating profits. The formula for calculating ROA is:

$$ROA = (net\ profit\ before\ tax) / (total\ assets) \times 100\%$$

The data we collect is secondary data taken from the annual financial report of Bank Books IV which is represented by Bank Mandiri, BRI, BNI, BCA and CIMB Niaga in 2012-2015 (Bank Mandiri: 2017; Bank Central Asia: 2017; Bank Negara Indonesia: 2017; Bank CIMB Niaga: 2017; Bank Indonesia: 2017). The analytical technique that we use is with multiple linear regression method, so that the following equation is obtained:

$$\boldsymbol{ROA = \beta_1 + \beta_2\, CAR + \beta_3 LDR + u}$$

Partial test or individual significance to determine whether the independent variables (CAR and LDR) individually affect the dependent variable (ROA) with other assumptions variable constant. Level of significance used is 0.05 or 5%. If the probability value of the free variable is less than 0.05 then it can be said that variable has a significant influence. Whereas if the probability value of the free variable is more than 0.05, it can be concluded that the variable has no significant effect on ROA (La Porta., et all.,2002; Mian., 2003; Stančić, et all.,2012; Curak, Poposki & Pepur:2012; Hannan & Prager: 2009; Laeven, Ratnovski & Tong: 2014; Viñals, et all: 2013; Bonin., Hasan & Wachtel: 2008; Delis & Papanikolaou:2009; Tesfay: 2016). Wald-test to test the significance of simultaneously independent variables ie CAR and LDR against ROA. If the probability of F-stat is less than its significance level (0.05), it can be indicated that the CAR and LDR simultaneously have a significant effect on the ROA.

3. Result And Discussion

Several banking activities are increasing rapidly, therefore the Financial Services Authority as the regulatory body issues the Regulation of the Financial Services Authority Number 6 / POJK.03 / 2016 on Business Activities and Office Networks Based on Core Bank Capital. This regulation is positively responded by all banks, as evidenced by the increase in capital owned by PT Bank CIMB Niaga Tbk to become Book IV. Capital owned by banks is currently being upgraded to comply with the regulations of Financial Sevice Authtority because with the different classification of Commercial Bank Business Activities, the facilities that can be given are also different. Then banks that manage the public funds are faced by various risks that have an effect on fluctuations in bank financial statements and especially for bank profits.

Table: 1. Descriptive Statistics

	Mean	Std. Deviation
Y_ROA	0.032740	0.010456
X1_CAR	0.174944	0.010953
X2_LDR	0.853372	0.076469

In the banking industry the risk of failure is usually caused by failure in handling credit portfolio and

mismanagement of the company resulting in financial difficulties and even the failure of the banking business, which ultimately can harm the national economic activities and harm the community as the owner of the funds.

Based on the calculation can be obtained that the standard deviation of ROA of 1% and the average value of 3%. ROA is important for banks because ROA is used to measure the company's effectiveness in generating profits by utilizing its assets. ROA is the ratio between profit after tax to total assets. The greater the ROA shows the better the company performance, because the rate of return is greater (Bobirca & Miclaus., 2007; Košak., 2011; Mirzaei, Moore, & Liu: 2013; Stiroh:2004a; Coelli & Rao:2005). The bank ratios affect ROA are: ROA, CAR, LDR, BOPO, and NPL (Blaszczyk., et all.,2003; Tochkov & Nenovsky., 2011; Adusei:2015).

CAR standard deviation of 1% and the average value of 17.4%, it shows that during the period 2012-2016 statistically capital adequacy already meets the minimum standard set ie 8%. The LDR ratio has a standard deviation of 7% with an average value of 85%.

CAR is an important factor for banks in the development of business and accommodates losses and reflects the health of banks aimed at maintaining public trust to banks, protecting public funds to the banks concerned and to meet the standards. With strong capital will be able to maintain public confidence in the bank concerned, so that people believe to raise funds to the bank, the funds collected are then channeled back to the bank to the community through credit. Credit can encourage income so that it can generate interest, from the interest that the bank earns profit / profit.

With this level of profit banks can improve the strong capital structure so as to form a healthy financial condition. Capital factor is very important in carrying out bank operational activities and to support all its needs, with the quality of the management in the management of banking activities will get the expected profit level. With good management of a bank will continue to increase capital by taking into account the capital health indicator that is CAR, then profitability will also increase.

T-test; Regression results show that CAR has a positive and significant influence (with p-value 0.0032) on ROA, meaning that when the capital adequacy of banks increases then bank profitability will also increase along with the increase in capital.

LDR has significant negative effect (with p-value 0.026) on ROA. If the LDR value is too high, it means that the bank does not have sufficient liquidity to cover its obligation to the customer. Therefore, the increasing LDR ratio will increase the bank's obligation to finance the credit so that bank profitability will decrease.

LDR is the ratio between the amount of credit granted to the amount of third party funds collected from the public. In terms of health assessment, a healthy bank is a bank with a high LDR level. This means that the bank is quite active in channeling credit to the community. While the profit or profit is an indication of the success of a business entity. In addition to performing the intermediary function, profitability is a goal to be achieved by a bank.

Profitability ratios are from a large number of policies and management decisions in using bank resources. Through profitability analysis can be known the efficiency and effectiveness of a bank for a certain period of time. The credit expansion factor shown by the LDR ratio is very important by the bank in performing its intermediary function in order to obtain the profit earned from the difference between the interest income of the loan and the interest expense of the spread. With the improvement and management of good credit channeling will encourage a bank to improve its ability to earn profit.

Test-f; Based on the following results, the probability of F-statistic is 0.0045 smaller than 0.05, it can be concluded both variables CAR and LDR have a significant effect simultaneously on ROA.

4. Conclusion

Based on statistical data, it can be concluded that the standard deviation of ROA of 1% and the average value of 3%. CAR standard deviation of 1% and the average value of 17.4%, it shows that during the period 2012-2016 statistically capital adequacy already meets the minimum standard set 8%. The LDR ratio has a standard deviation of 7% with an average value of 85%.

The result of regression of T-statistic test, it can be concluded that CAR has a positive and significant influence (with p-value 0.0032) to ROA, meaning that when the capital adequacy of banks increases then bank profitability will also rise as capital increases.

LDR has significant negative effect (with p-value 0.026) on ROA. If the LDR value is too high, it means that the bank does not have sufficient liquidity to cover its obligation to the customer. Therefore, the increasing LDR ratio will increase the bank's obligation to finance the credit so that bank profitability will decrease.

Based on the results of regression F-statistic test can be concluded that the probability of F-statistics is 0.0045 smaller than 0.05, it can be concluded both variables CAR and LDR have a significant influence simultaneously on ROA.

References

Adams, R. B., & Mehran, H. (2008, June). Corporate performance, board structure, and their determinants in the banking industry (Report No. 330). Federal Reserve Bank of New York Staff.

Abdul Kader, H., Adams, M., Hardwick, P., & Jean Kwon, W. (2011). An analysis of cost efficiency and the impact of corporate governance on takaful insurance operations (Working Paper SBE 2011/2) Wales: School of Business and Economics, Swansea University.

Adusei, M. (2015). Bank profitability: Insights from the rural banking industry in Ghana. Cogent Economics & Finance, 3, 1078270.

Agoraki, M. K., Delis, M. D., & Staikouras, P. K. (2010). The effect of board size and composition on bank efficiency. International Journal of Banking, Accounting and Finance, 2, 357–386.

Altaee, H. H. A., Talo, I. M. A., & Adam, M. H. M. (2013). Testing the financial stability of banks in GCC countries: Pre and post financial crisis. International Journal of Business and Social Research (IJBSR), 3, 93–105.

Amidu, M., & Wolfe, S. (2013). Does bank competition and diversification lead to greater stability? Evidence from emerging markets. Review of Development Finance, 3, 152–166.

Bank Mandiri., (2017). Bank Mandiri Indonesia Reports anual, http://ir.bankmandiri.co.id/phoenix.zhtml?c=146157&p=irol-reportsAnnual

Bank Central Asia., (2017). BCA Indonesia Annual R eportshttps://www.bca.co.id/id/Tentang-BCA/Hubungan-Investor/Laporan-Tahunan

Bank Negara Indonesia., (2017). Bank Negara Indonesia Annual Report Analysis. http://www.bni.co.id/portals/1/bni/beranda/lelang%20pengadaan/docs/jasa-agency-annual-report-2016.pdf

Bank CIMB Niaga., (2017). Bank CIMB Niaga Indonesia "Annual Report Analysis". https://www.cimbniaga.com/in/about-us/hubungan-investor/annual-reports.html

Bank Indonesia, (2017). Centaral bank Indonesia, "Annual Report Analysis". http://www.bi.go.id/

Beccalli, E., Anolli, M., & Borello, G. (2015). Are European banks too big? Evidence on economies of scale. Journal of Banking & Finance.

Beck, T., De Jonghe, O., & Schepens, G. (2013). Bank competition and stability: Cross-country heterogeneity. Journal of Financial Intermediation, 22, 218–244.

Bektas, E., & Kaymak, T. (2008). East meets west? Board characteristics in an emerging market: Evidence from turkish banks. Corporate Governance: An International Review, 16, 550–561.

Bektas, E., & Kaymak, T. (2009). Governance mechanisms and ownership in an emerging market: The case of Turkish banks. Emerging Markets Finance and Trade, 45, 20–32.

Beltratti, A., & Stulz, R. (2009). Why did some banks perform better during the credit crisis? A cross-country study of the impact of governance and regulation (Working Paper No. 15180). NBER.10.3386/w15180

Blaszczyk, B., Hashi, I., Radygin, A., & Woodward, R. (2003). Corporate governance and ownership structure in the transition: The current state of knowledge and where to go from here (CASE Network Studies and Analyses No. 264, CASE-Center for Social and Economic Research).

Ben Naceur, S., & Goaied, M. (2001). The determinants of the Tunisian deposit banks'performance. Applied Financial Economics, 11, 317–319.

Bobirca, A., & Miclaus, P. (2007). Corporate governance: A South-Eastern European perspective (Paper No. 3272). MPRA.

Bonin, J., Hasan, I., & Wachtel, P. (2008). Banking in transition countries. Discussion Papers 12. Institute for economies in transition, Bank of Finland, BOFIT.

Boot, A., & Thakor, A. (2000). Can relationship banking survive competition? The Journal of Finance, 55, 679–713.

Brissimis, S. N., Delis, M. D., & Papanikolaou, N. I. (2008). Exploring the nexus between banking sector reform and performance: Evidence from newly acceded EU countries (Working Paper No. 73). Athens: Bank of Greece.

Bryman, A., & Cramer, D. (1997). Quantitative data analysis with SPSS for windows: A guide for social scientists. London: Routledge.

Busta, I. (2007). Board effectiveness and the impact of the legal family in the European banking industry. Paper presented at the meeting of FMA European Conference, Barcelona, Spain.

Calomiris, C., & Kahn, C. (1991). The role of demandable debt in structuring optimal banking arrangements. American Economic Review, 81, 497–513.

Chmielewski, T., & Krzesniak, A. (2003). Individual characteristics influencing bank profitability in Poland. Financial Stability Report, National Bank of Poland.

Claessens, S., Demirgüç-Kunt, A., & Huizinga, H. (2001). How does foreign entry affect domestic banking markets?. Journal of Banking and Finance, 25, 891–911.
Coelli, T. J., & Rao, D. S. (2005). Total factor productivity growth in agriculture: A Malmquist index analysis of 93 countries, 1980–2000. Agricultural Economics, 32, 115–134.
Curak, M., Poposki, K., & Pepur, S. (2012). Profitability determinants of the Macedonian banking sector in changing environment. Procedia - Social and Behavioral Sciences, 44, 406–416.
de Haan, J., & Poghosyan, T. (2012). Size and earnings volatility of US bank holding companies. Journal of Banking & Finance, 36, 3008–3016.
Delis, M. D., & Papanikolaou, N. I. (2009). Determinants of bank efficiency: Evidence from a semi parametric methodology. Managerial Finance, 35, 260–275.
Demirgüç-Kunt, A., & Huizinga, H. (2010). Bank activity and funding strategies: The impact on risk and returns. Journal of Financial Economics, 98, 626–650.
Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. Australian Journal of Management, 16, 49–64.
Doris Neuberger & Roger Rissi., (2013). Macro Prudential Banking Regulation : Does One Size Fit All ?, University of Rostock : Germany. Department of Economics
Drehmann, M., & Nikolaou, K. (2010). Funding liquidity risk: Definition and measurement (BIS Working Papers, No. 316). Bank for International Settlements. Retrieved from http://www.bis.org/publ/work316.htm
Farhi, E., & Tirole, J. (2012). Collective moral hazard, maturity mismatch, and systemic bailouts. American Economic Review, 102, 60–93.
Fiordelisi, F., & Mare, D. S. (2014). Competition and financial stability in European cooperative banks. Journal of International Money and Finance, 45, 1–16.
Flamini, V., McDonald, C., & Schumacher, L. (2009). The determinants of commercial bank profitability in Sub-Saharan Africa (IMF Working Papers Series, WP/09/15, pp. 1–32).
Gabaix, X., & Landier, A. (2008). Why has CEO pay increased so much? Quarterly Journal of Economics, 123, 49–100.
Hannan, T. H., & Prager, R. A. (2009). The profitability of small single-market banks in an era of multi-market banking. Journal of Banking and Finance, 33, 263–271.
Henningsen, A. (2010). Estimating censored regression models in R using the cens Reg Package. København: University of Copenhagen.
Hoggarth, G., Milne, A., & Wood, G. (1998). Alternative routes to banking stability: A comparison of UK and German banking systems. Bank of England Bulletin, 5, 55–68.
Huang, R., & Ratnovski, L. (2011). The dark side of bank wholesale funding. Journal of Financial Intermediation, 20, 248–263.
Ivashkovskaya, I., Ivantsova, O., & Stepanova, A. (2012). Corporate governance and strategic bank performance: International evidence. 9th Workshop on Corporate Governance, Brussels, Belgium.
Isik, I., & Hassan, M. K. (2003). Efficiency, ownership and market structure, corporate controle and governance in the Turkish banking industry. Journal of Business Finance and Accounting, 30, 1363–1421.
Jemrić, I., & Vujičić, B. (2002). Efficiency of banks in croatia: A DEA approach (Working Paper). Croatian National Bank.
Kapopoulos, P., & Lazaretou, S. (2007). Corporate ownership structure and firm performance: Evidence from Greek firms. Corporate Governance: An International Review, 15, 144–158.
Karimzadeh, M. (2012). Efficiency analysis by using data envelop analysis model: Evidence from Indian banks. International Journal of Latest Trends in Finance and Economic Sciences, 2, 228–237.
Köhler, M. (2015). Which banks are more risky? The impact of business models on bank stability. Journal of Financial Stability, 16, 195–212.
Košak, M. (2011). Ownership structure and performance of the banking sector: The evidence from six Balkan countries. Economic Research, 24, 331–354.
Košak, M., & Čok, M. (2008). Ownership structure and profitability of the banking sector: The evidence from the SEE region. Proceedings of Rijeka Faculty of Economics: Journal of Economics and Business, 26, 93–122.
Kosmidou, K. (2008). The determinants of banks' profits in Greece during the period of EU financial integration. Managerial Finance, 34, 146–159.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (2002). Investor Protection and Corporate Valuation. Journal of Finance, 57, 1147–1170.
Laeven, L., Ratnovski, L., & Tong, H. (2014). Bank size and systemic risk: Some international evidence. International Monetary Fund, Mimeo.
Liikanen. (2012). Special report of Liikanen Committee to overhaul European banking industry.

Loran Chollete, Victor de la Pena, Ching Lu. (2010). "International Diversification : A Copula Approach". University of Stavanger : Norway. Department of Economics

Matić, B., & Papac, N. (2010). Osobine sustava korporativnog upravljanja u bankama u Bosni i Hercegovini [Characteristics of the Corporate Bank Governance System in Bosnia and Herzegovina]. Ekonomski Vjesnik / Econviews: Review of Contemporary Entrepreneurship, Business, and Economic Issues, 1, 80–92.

Mian, A. (2003). Foreign, private domestic and government banks: New evidence from emerging markets. Mimeo, University of Chicago.

Micco, A., Panizza, U.,& Yanez, M. (2007). Bank ownership and performance. Does politics matter? Journal of Banking and Finance, 31, 219–241.

Mirzaei, A., Moore, T., & Liu, G. (2013). Does market structure matter on banks' profitability and stability? Emerging vs. advanced economies. Journal of Banking and Finance, 37, 2920–2937.

Mishkin, F. S. (1999). Financial consolidation: Dangers and opportunities. Journal of Banking and Finance, 23, 675–691.

Nair, A., & Fissha, A. (2010). Rural banking: The case of rural and community banks in Ghana (Agriculture and Rural Development Discussion Paper 48). Washington, DC: The World Bank.

Pathan, S., Skully, M., & Wickramanayake, J. (2007). Board size, independence and performance: An analysis of Thai banks. Asia-Pacific Financial Markets, 3, 211–227.

Radzic, J., & Yuce, A. (2008). Banking development in the former Yugoslavian Republics. International Business and Economics Research Journal, 7, 35–47.

Rose, P. S., & Hudgins, S. C. (2008). Bank management & financial services. New York, NY: McGraw-Hill.

Shleifer, A., & Vishny, R. W. (2010). Unstable banking. Journal of Financial Economics, 97, 306–318.10.

Stančić, P., Čupić, M., & Barjaktarović Rakočević, S. (2012). Influence of board size and composition on bank performance – case of Serbia. Actual Problems of Economics, 134, 466–475.

Stančić, P., Todorović, M., & Čupić, M. (2012a). Value-based management and corporate governance: A study of Serbian corporations. Economic Annals, 57, 93–112.10.2298/EKA1293093S

Stefanelli, V., & Cotugno, M. (2010). An empirical analysis on board monitoring role and loan portfolio quality measurement in banks. Journal of Management and Governance Workshop, Performance Measurements and Corporate Governance, Pisa, Italy.

Stiroh, K. (2004a). Do community banks benefit from diversification? Journal of Financial Services Research, 25, 135–160.

Sufian, F. (2009). Determinants of bank efficiency during unstable macroeconomic environment: Empirical evidence from Malaysia. Research in International Business and Finance, 23, 54–77.

Tahir, I. M., & Bakar, N. M. A. (2009). Evaluating efficiency of Malaysian banks using data envelopment analysis. International Journal of Business and Management, 4, 96–106.

Tan, Y., & Floros, C. (2012). Bank profitability and GDP growth in China: A note. Journal of Chinese Economic and Business Studies, 10, 267–273.

Tesfay, T. (2016). Determinants of commercial banks efficiency: Evidence from selected commercial banks of Ethiopia. International Journal of Scientific and Research Publications, 6, 551–556.

Tochkov, K., & Nenovsky, N. (2011). Institutional reforms, Eu accession, and bank efficiency in transition economies: Evidence from Bulgaria. Emerging Markets Finance and Trade, 47, 113–129.

Vickers Report. (2011). Independent commission on banking. Retrieved August 3, 2015, from http://www.ecgi.org/documents/icb_final_report_12sep2011.pdf

Uhde, A., & Heimeshoff, U. (2009). Consolidation in banking and financial stability in Europe: Empirical evidence. Journal of Banking and Finance, 33, 1299–1311.

Viñals, J., Pazarbasioglu, C., Surti,J., Narain, A., Erbenova, M., & Chow, J. (2013). Creating a safer financial system: Will the Volcker, Vickers, and Liikanen structural measures help? (IMF Staff Discussion Note 13/04). Retrieved from https://www.imf.org/external/pubs/ft/sdn/2013/sdn1304.pdf

Vu, H., & Turnell, S. (2011). Cost and Profit Efficiencies of Australian Banks and the Impact of the Global Financial Crisis. Economic Record, 87, 525–536.

Vukovic, V., Kozetinac, G., & Kostic, D. (2009). Impact of global financial crisis on banking profitability: The case of Serbia. Financial Systems Integration of Balkan Countries in the European Financial System: Impact of Global Crisis, Institute of Economic Sciences, 1, 15