“The impact of bank credits on non-oil GDP: evidence from Azerbaijan”

AUTHORS
Shahriyar Mukhtarov
Sugra Humbatova
İlgar Seyfullayev

ARTICLE INFO
Shahriyar Mukhtarov, Sugra Humbatova and İlgar Seyfullayev (2019). The impact of bank credits on non-oil GDP: evidence from Azerbaijan. Banks and Bank Systems, 14(2), 120-127. doi:10.21511/bbs.14(2).2019.10

DOI
http://dx.doi.org/10.21511/bbs.14(2).2019.10

RELEASED ON
Monday, 10 June 2019

RECEIVED ON
Wednesday, 24 April 2019

ACCEPTED ON
Monday, 03 June 2019

LICENSE
This work is licensed under a Creative Commons Attribution 4.0 International License

JOURNAL
“Banks and Bank Systems”

ISSN PRINT
1816-7403

ISSN ONLINE
1991-7074

PUBLISHER
LLC “Consulting Publishing Company “Business Perspectives”

FOUNDER
LLC “Consulting Publishing Company “Business Perspectives”

© The author(s) 2019. This publication is an open access article.
Abstract

This study explores the relationship between bank credits, exchange rate and non-oil GDP in Azerbaijan, utilizing FMOLS, CCR and DOLS co-integration methods to the data spanning from January 2005 to January 2019. The results from the different co-integration methods are consistent with each other and approve the presence of a long-run relationship among the variables. Estimation results reveal that there is a positive and statistically significant impact of bank credits and exchange rate on the non-oil GDP in the long run for the Azerbaijani case which are in line with the expectations and with the theoretical findings discussed in theoretical framework section. This finding also indicates that a 1% increase in credit and real exchange rate increases non-oil GDP by 0.51% and 0.56%, respectively. The results of this paper are useful for the policymakers and promote the economic literature for further researches in the case of oil-rich countries.

Keywords
economic growth, financial development, exchange rate, co-integration, Azerbaijan

INTRODUCTION

In recent years, a slowdown in economic growth in developing countries and increased volatility in global financial markets make it necessary to concentrate on issues of lending to the real economy.

Practice shows that large volume and growth rates of credit investments do not always generate an adequate response, sometimes stimulation of demand (for instance, subprime mortgage crisis in 2007–2008 in the United States) and temporarily limiting the negative impact of structural problems on the economy create the illusion of economic growth. At the same time, an increase in financial losses and difficulties in meeting regulatory standards show the existence of problems in the banking sector with risk management; and the motive for profit maximization prevails over the motive to prevent risks. Moreover, when we add inefficient use of resources to these facts, we can predict systematic risks for the whole economy created by poor credit management.

In Azerbaijan, the overall volume of non-performing loans amounted to AZN 0.16 billion (1 USD = 0.82 AZN), which is 2.2% of credit portfolio in 2008. However, those numbers increased to AZN 0.98 billion (1 USD = 0.78 AZN) and 5.3% in 2014 and to AZN 1.6 billion (1 USD = 1.7 AZN) or up to 12.2% in 2018, respectively (CBAR, 2019a). Only in 2017 and 2018, licenses of two banks and 42 credit organizations were terminated in Azerbaijan (FIMSA, 2019).
The credit risks in the economy of Azerbaijan are also increasing due to the multiplier effect of a low level of diversification. The decline in oil prices in the years 2014–2015 led to a sharp decline in economic growth, which is accompanied by a credit crisis (Mukhtarov et al., 2018).

Over the past 25 years, the highest amount of loans in Azerbaijan was observed in 2015 – AZN 21.7 billion (39.9% of GDP). It was a year that the economy of Azerbaijan twice experienced the devaluation of the national currency – the exchange rate of AZN fell by almost two times against the USD (Mukhtarov et al., 2019). In the next two years, the decline in credit investments in the economy amounted to 24-28% per year. The negative trend changed only in 2018 and the volume of loans amounted to AZN 13 billion (40.1% less than the level of 2015). During the last three years, the share of loans in GDP decreased from 39.9% to 16.4% (SSCA, 2019).

Of particular interest are the results of Azerbaijan in the report of the World Economic Forum on the Global Competitiveness Index for 2018. Azerbaijan’s rank is 69th among 140 countries, and its weakest positions are observed precisely in the indicators of financial sector (96th) and macroeconomic stability (126th). The 99th place in terms of volume of domestic credit to the private sector, the 92nd place in terms of soundness of banks, the 119th rank in terms of market capitalization, and the 118th rank in terms of non-performing loans show that the country has persistent problems in the field of financing economic growth. Relatively high – the 40th rank in lending to small and medium enterprises shows that loans are more available financing source for enterprises at the moment in Azerbaijan (World Economic Forum, 2018).

These facts actualize research of bank credits as a tool to diversify the economy. Reducing liquidity problems and stimulating demand loans can support the non-oil sector of the economy (Humbatova & Hajiyev, 2016). From these points of view, it is concluded and hypothesized that bank credit may boost GDP.

After reviewing the related studies devoted to the investigation of the impacts of financial development as proxied by the bank credits on economic growth, one can say that the financial development has a significant role in economic growth for oil-rich economies. Azerbaijan is an oil-rich country, has realized some macroeconomic and financial reforms, particularly in banking sector and faced some challenges, and 46% of its budget is being financed through transfers from State Oil Fund of the Republic of Azerbaijan. Hence, to avoid resource-based macroeconomic challenges and reach sustainable development, Azerbaijani policymakers need to develop non-oil sectors for avoiding resource based macroeconomic problems. As discussed related literature concludes, providing financial resource to non-oil sectors is one of the ways for a resource-rich economy to accelerate reforms on economic diversification to reach sustainable development.

Considering the importance of the issue, this empirical study has investigated the impacts of bank credits on economic growth in the case of Azerbaijan, which is abundant by its oil and gas resources, and, one of the fastest growing economies in the last decade. The main driving forces of this remarkable economic growth are its crude oil and gas extractions that pump foreign currency to the economy and attract foreign investors. The average annual economic growth of the economy in the last 15 years is about 5%. In 2017, the share of fuel exports in the total merchandise exports was 90.1%, which indicates the strong dependency of the economy on oil and gas revenues (WB data, 2018).

Considering the points mentioned above, the aim of this study is to explore the effect of bank credits on the non-oil GDP in Azerbaijan, as an oil-rich economy.

According to the authors, the contributions of the current research to the literature are as follows:

a) It is the first study using quarterly data which cover the period after devaluation for assessing the long-run effect of bank credits on non-oil GDP in Azerbaijan.

http://dx.doi.org/10.21511/bbs.14(2).2019.10
b) It is the first study where different co-integration methods, namely, FMOLS, CCR and DOLS are used to examine the relationship between bank credits and non-oil GDP for Azerbaijani case.

c) It is the first study in the financial development-economic growth nexus, which examines the role of the exchange rate in the non-oil economic sector considering the effect of devaluation in Azerbaijan. In addition, this study is also useful for researchers and policy makers to understand the role of bank credits in economic growth for macroeconomic stability and sustainable development in Azerbaijan and other oil-rich economies.

The remainder of the paper is structured as follows. The previous detailed studies are first reviewed, followed by the information about data and econometric methodology. Then the obtained results and the related discussion are provided. The last section describes conclusion and policy implications.

1. LITERATURE REVIEW

The relationship between credits and economic growth in the case of different countries has been investigated by a large number of studies in economic literature.

In the context of credits and economic growth, Akpansung and Babalola (2011) evaluated the bank credit influence on economic growth in the case of Nigeria, employing Two-Stage Least Squares (TLS) to the data spanning from 1970 to 2008. The results show a positive impact of private sector credit on economic growth. Iqbal et al. (2012) studied the impact of private saving and private credits on economic growth in Pakistan utilizing ARDL technique to the data ranging from 1993 to 2007. They found a positive and statistically significant effect of credits on economic growth. The link between bank credits and economic growth was also investigated by G. Gozgor and K. Gozgor (2013) for twenty Latin American countries. They used panel co-integration technique for empirical analysis. The results approved the presence of a long-run relationship between variables. In addition, the employed panel causality test concluded unidirectional causality running from domestic credits to economic growth.

Ben et al. (2014) studied the relationship between domestic credits and economic growth in Tunisia employing Autoregressive Distributed Lag model (ADRL) method. They revealed a positive and significant effect of bank credit on economic growth. Their results concluded that a 1% increase in the private credit resulted in a 3.36% increase in real GDP per capita.

Using the bank credit as a measure of financial development, Bongini et al. (2017) explored the impact of bank credits on the economic growth for Central, Eastern and South-Eastern European countries. The study employed the GMM method for the time series data of 1995–2014. The estimation results showed that bank credit increases economic growth.

Aljebrin (2018) studied the impact of private sector’s bank credits on the economic growth in Saudi Arabia by applying the FMOLS method for the period of 1990–2016. The study concluded a positive and significant long-term impact of domestic bank credit on the economic growth. Choong (2012) also obtained positive and statistically significant impact of credit on economic growth for 95 developed and developing economies.

Parallel to above mentioned studies, a positive link between credits and economic growth are obtained by Banu (2013) for Romania, by Önder and Özyıldırım (2013) for Turkey, by Timsina (2014) for Nepal, by Osman (2014) for Saudi Arabia, by Yakubu and Affoi (2014) for Nigeria, by Samargandi et al. (2014) for Saudi Arabia, by Korkmaz (2015) for 10 European countries, by Pistoresi and Venturelli (2015) for Germany, Italy, and Spain, by Mahish (2016) for Saudi Arabia, by Ananzeh (2016) for Jordan, by Puatwoe and Piabuo (2017) for Cameroon, by Paul (2017) for Nigeria.

On the other hand, Al-Zubi et al. (2006) studied the relationship between financial development as proxied by the private credit and economic growth for eleven Arab countries. For this purpose, they used pooled OLS technique, random
effect model and fixed effect model. The study concluded a negative and statistically significant
effect of private credits on the economic growth. Mahran (2012) also analyzed the link between fi-
nancial development and real GDP employing the ARDL model for Saudi Arabia. The study conclud-
ed a negative and statistically significant private
credit impact on real GDP, either in the long- or
short-run period.

Iheanacho (2016) evaluated the link between fi-
nancial sector development and economic growth
for Nigeria applying the ARDL method for the
period of 1981–2011. The results revealed that the
credits as proxy of financial development have
long-term insignificant and negative impact on
economic growth, while short-term significantly
negative impact.

In addition, numerous studies conducted by Cevik
and Rahmati (2013), Samargandi et al. (2014), by
Anyanwu (2014), Quixina and Almeida (2014),
Adeniyi et al. (2015), and Nwani and Orie (2016)
found a weak or negative link between credits and
economic growth.

In the case of Azerbaijan, prior research con-
ducted by Hasanov and Huseynov (2013) ex-
amined the bank credits effect on non-oil eco-
nomic growth using ARDL Bounds Testing
approach, Johansen’s approach, and Engle-
Granger methodology. Authors found a posi-
tive impact of bank credits on non-oil economic
growth. Koivu and Sutela (2005) evaluated the
link between financial sector development and
economic growth for 25 transition economies
(including Azerbaijan) using fixed effect model
and found financial development as proxied by
credit increasing economic growth. Muxhtarov
et al. (2018) evaluated the relationship among
energy consumption, economic growth and fi-
nancial development in Azerbaijan. Different
co-integration methods, namely, Autoregressive
Distributed Lags Bounds co-integration
test, Gregory-Hansen co-integration test and
Johansen co-integration test are applied to see
long-run relationship among the variables. The
results approve the presence of long-term rela-
tionship between financial development as
proxied by bank credit, energy consumption
and economic growth. Muxhtarov et al. (2016a,
2016b), Muxtarov and Mikayilov (2016) also
found that bank credits are an important trans-
mission channel of monetary policy to affect ag-
grate output in Azerbaijan.

In the outcomes of the above-mentioned studies,
there are a few studies related to the impact of
bank credits on economic growth in Azerbaijan.
Overall, Azerbaijan is a unique case to examine
the effect of bank credits on the economic
growth of non-oil sectors. Therefore, the main
purpose of this article is to fill in this gap by em-
ploying different co-integration tests to observe
the long-term relationship between bank credits
and economic growth. The results of this article
will suggest to researchers and policy makers to
comprehend the role of bank credits in economic
growth for macroeconomic stability and sustaina-
ble development goals in Azerbaijan and other de-
veloping oil-rich countries.

2. ECONOMETRIC
METHODOLOGY
AND DATA

For empirical analysis, the study uses monthly
data over the period of January 2005 to January
2019 for the following variables: credits (CRD),
real exchange rate (REXC) and non-oil GDP
(NGDP). All data set have been retrieved from
the Central Bank of the Republic of Azerbaijan
(CBAR, 2019). Non-oil GDP is the depend-
ent variable. The non-oil GDP is measured by
non-oil sector output deflated by the consum-
er price index (CPI). Credits is the main inde-
dependent variable, and measured by bank cred-
its to the private sector in a million constant
manats. Prior literature, like Demetriades and
Hussein (1996), King and Levine (1993), Levine
(2002), Oluitan (2009), Ang (2008), Jalil et al.
(2010), Beck (2011), Banu (2013), Hasanov and
Huseynov (2013), found that private bank cred-
its boost the economic growth. The real ex-
change rate (REXC) is also used as a control
variable, which may have an effect on the eco-
nomic growth. The REXC is measured in na-
tional currency per US dollar. This variable was
used in many previous studies, such as Egert
(2009), Habib and Kalamova (2007), Sturm et al. (2009), Hasanov and Huseynov (2009), Hasanov and Samadova (2010), Hasanov (2010, 2011), Hasanov and Huseynov (2013), Mukhtarov (2018), Mukhtarov et al. (2019), who found that REXC has a significant effect on main macroeconomic factors. All variables have been transformed into the natural logarithmic form.

The relationship between credits, exchange rate and non-oil GDP is explored utilizing the different co-integration methods in this study. In the empirical part, stationarity and unit root of variables will be tested, then the long-run co-integration relationship, and then the long-run relationship between credits, exchange rate and non-oil GDP will be estimated. The Augmented Dickey-Fuller (ADF) test by Dickey and Fuller (1981) is applied for unit root exercise, while for analyzing the co-integration relationship, the Engle-Granger test by Engle and Granger (1987), and the Phillips-Ouliaris test by Phillips and Ouliaris (1990) are utilized. Next, three co-integration methods are used to analyze the long-run relationship. First, Fully Modified Ordinary Least Squares Method (FMOLS) is used as a main tool, then Canonical Cointegrating Regression (CCR) and Dynamic Ordinary Least Squares (DOLS) methods are utilized for the robustness check.

The above-mentioned methods are extensively used in vast studies, they are not discussed in this study. The detailed information about these methods has been mentioned in Dickey and Fuller (1981), Engle and Granger (1987), Phillips and Ouliaris (1990), Phillips and Hansen (1990), Saikkonen (1992), Park (1992) and Stock, Watson (1993), and others.

### 3. EMPIRICAL RESULTS AND DISCUSSION

First, unit root problems of the used variables are checked by employing ADF unit root test. Results of the ADF test are provided in Table 1. Table 1 shows that all the variables are non-stationary at their levels but become stationary at first difference. Therefore, they can be analyzed for the co-integration relationship.

| Variables | Panel A: Level | Panel B: 1st difference | Results |
|-----------|---------------|-------------------------|---------|
|           | Actual value  | Actual value            |         |
| NGDP      | –0.099707     | –3.813951***            | (I(1))  |
| CRD       | –1.593282     | –12.33008***            | (I(1))  |
| REXC      | –0.218238     | –9.24939***             | (I(1))  |

Note: *, ** and *** accordingly show null hypothesis rejection at 10%, 5% and 1% significance levels.

For co-integration relationship, the Engle-Granger and the Phillips-Ouliaris co-integration tests are employed and results are given in Table 2. Both co-integration tests show the co-integration relationship among the variables.

|                   | Engle-Granger | Phillips-Ouliaris |
|-------------------|---------------|------------------|
| Tau-stat          | –7.7271       | –7.6433          |
| (0.00)            | (0.00)        |                  |
| z-stat            | –88.126       | –85.117          |
| (0.00)            | (0.00)        |                  |

Note: p-values are provided in parentheses.

Therefore, after approving the presence of co-integration among the variables, the long-run relationship can be estimated. For this purpose, FMOLS, CCR and DOLS methods are used to analyze the long-run relationship among the variables. The estimation results are provided in Table 3.

In terms of significance and magnitude, the long-run coefficients of the three methods are statistically significant and close to each other. As was mentioned in the methodology section, priority is given to the FMOLS method, the results of which are presented in the first row of Table 3. The study finds a positive and statistically significant effect of bank credits on non-oil GDP at the 1% level. The results indicate that a 1% increase in credits results in 0.51% increase in non-oil GDP. Regarding the financial development-economic
growth nexus, the results are similar to those of many previous studies like Akpansung and Babalola (2011), Hasanov and Huseynov (2013), Osman (2014), Samargandi et al. (2014), Yakubu and Affoi (2014), Mahish (2016), Paul (2017), and Aljebrin (2018), who also found a positive effect of bank credits on economic growth in oil-rich countries. It is also found that the effect of real exchange rate on non-oil GDP is positive and statistically significant at the 5% level. This indicates that a 1% increase in real exchange rate (depreciation of national currency) increases non-oil GDP by 0.56%. This result is appropriate with the economic theory. According to the theory, an increase in exchange rate (depreciation of the national currency) leads to an increase in net exports. In addition, rise in the net export resulted in increase in GDP.

CONCLUSION

The study examines the impact of credits and exchange rate on non-oil GDP. First, unit root problems of variables are tested. The results concluded that they are stationary at first differenced form, hence variables can be tested for the long-run co-integration relationship. Engle-Granger and Phillips-Ouliaris tests confirm co-integration relationship among bank credits, exchange rate and non-oil GDP in Azerbaijan. The FMOLS, CCR and DOLS techniques are used to evaluate the long-run relationship among these variables. Estimation results of FMOLS show that credits and real exchange rate increase non-oil GDP in the long run, namely, a 1% increase in credit and real exchange rate increases non-oil GDP by 0.51% and 0.56%, respectively. The related policy implication and key findings of this study are that policymakers should focus on bank credits to boost economic growth in order to diversify economy for reaching sustainable development in Azerbaijan and also promote the economic literature devoted to economic growth and financial development in oil-rich countries.

REFERENCES

1. Adeniyi, O., Oyinlola, A., Omisakin, O., & Egwaikhide, F. O. (2015). Financial development and economic growth in Nigeria: Evidence from threshold modelling. Economic Analysis and Policy, 47, 11-21. https://doi.org/10.1016/j.eap.2015.06.003
2. Akpansung, A. O., & Babalola, S. J. (2011). Banking Sector Credit and Economic Growth in Nigeria: An Empirical Investigation. CBN Journal of Applied Statistics, 2(2), 51-62.
3. Aljebrin, M. A. (2018). Non-Oil Trade Openness and Financial Development Impacts on Economic Growth in Saudi Arabia. International Journal of Economics and Financial Issues, 8(5), 251-260.
4. Al-Zubi, K., Al-Rjoub, S., & Abu-Mhareb, E. (2006). Financial development and economic growth: A new empirical evidence from the MENA countries, 1989–2001. Applied Econometrics and International Development, 6(3), 137-150. Retrieved from http://www.usc.es/economet/journals1/aeid/aeid6311.pdf
5. Ananzeh, I. E. (2016). Relationship between bank credit and economic growth: Evidence from Jordan. International Journal of Financial Research, 7(2), 53-63. http://dx.doi.org/10.5430/ijfr.v7n2p53
6. Ang, B. J. (2008). What are the mechanisms linking financial development and economic growth in Malaysia? Economic Modeling, 25(1), 38-53. https://doi.org/10.1016/j.econmod.2007.04.006
7. Anyanwu, J. C. (2014). Factors affecting economic growth in Africa: Are there any lessons from China? African Development Review, 26(3), 468-493. https://dx.doi.org/10.1111/1467-8268.12105
8. Banu, I. M. (2013). The Impact of Credit on Economic Growth in the Global Crisis Context.
9. Beck, T. (2011). Finance and oil: Is there a resource curse in financial development? (Unpublished Working Paper). Washington, D.C.: International Monetary Fund.
10. Ben, J. K., Boujelbène, T., & Helali, K. (2014). Financial development and economic growth: New evidence from Tunisia. Journal of Policy Modeling, 36(5), 883-898. http://dx.doi.org/10.1016/j.jpolmod.2014.08.002
11. Bongini, P., Iwanicz-Drozdowska, M., Smaga, P., & Witkowski, B. (2017). Financial Development and Economic Growth: The Role of Foreign-Owned Banks in CESEE Countries. Sustainability, 9(335), 1-25.
12. Central Bank of Azerbaijan (CBAR). (2019 a). Retrieved from https://www.cbar.az/page-42.mon-
13. Dickey, D., & Fuller, W. (1981). Autoregressive Time Series with error correction: representation, estimation and testing. Econometrica, 49(4), 1057-1072.

14. Engle, R. F., & Granger, C. W. J. (1987). Co-integration and error correction: representation, estimation and testing. Econometrica, 55(2), 251-276. Retrieved from http://www.nituzov.com/Nik_Site/Niks_files/Research/papers/stat_arb/EG_1987.pdf

15. Hasanov, F., & Huseynov, F. (2013). Bank credits and non-oil economic growth: Evidence from Azerbaijan. International Review of Economics and Finance, 22(6), 875-892.

16. Hasancioğlu, E. (2016). The Impact of Financial Development on Economic Growth in Nigeria: An ARDL Analysis. Economies, 4(26), 1-12. http://dx.doi.org/10.3390/economies4040026

17. Iqbal, M. Z., Ahmad, N., & Hussain, Z. (2012). Impact of Savings and Credit on Economic Growth in Pakistan. Pakistan Journal of Social Sciences, 32(1), 39-48.

18. Iqbal, M. Z., Ahmad, N., & Hussain, Z. (2012). Impact of Savings and Credit on Economic Growth in Pakistan. Pakistan Journal of Social Sciences, 32(1), 39-48.

19. Mackinnon, J. G. (1996). The impact of real oil price on real effective exchange rate: The case of Azerbaijan (Discussion Paper Series No. 1041). DIW Berlin German Institute for Economic Research. Retrieved from http://www.diw.de/documents/publikationen/73/diw_01.c.359129.de/dp1041.pdf

20. Iqbal, M. Z., Ahmad, N., & Hussain, Z. (2012). Impact of Savings and Credit on Economic Growth in Pakistan. Pakistan Journal of Social Sciences, 32(1), 39-48.

21. Iqbal, M. Z., Ahmad, N., & Hussain, Z. (2012). Impact of Savings and Credit on Economic Growth in Pakistan. Pakistan Journal of Social Sciences, 32(1), 39-48.

22. Iqbal, M. Z., Ahmad, N., & Hussain, Z. (2012). Impact of Savings and Credit on Economic Growth in Pakistan. Pakistan Journal of Social Sciences, 32(1), 39-48.

23. Iqbal, M. Z., Ahmad, N., & Hussain, Z. (2012). Impact of Savings and Credit on Economic Growth in Pakistan. Pakistan Journal of Social Sciences, 32(1), 39-48.

24. Iqbal, M. Z., Ahmad, N., & Hussain, Z. (2012). Impact of Savings and Credit on Economic Growth in Pakistan. Pakistan Journal of Social Sciences, 32(1), 39-48.
39. Mukhtarov, S., Hasan, S., & Mammadov, E. (2016a). Factors that increase credit risk of Azerbaijani banks. Journal of International Studies, 11(2), 63-75. http://dx.doi.org/10.14254/2071-8330.2018/11-2-5

40. Mukhtarov, S., Mikayilov, C., & Mammadov, Z. (2016b). The effectiveness of exchange rate channel in Azerbaijan: an empirical analysis. Banks and Bank Systems, 14(1), 111-121. http://dx.doi.org/10.21511/bbs.14(1).2019.10

41. Mukhtarov, S., Yüksel, S., & Mammadov, E. (2016c). The relationship between financial development and economic growth: evidence from Cameroon. Financial Innovation, 3(25), 1-18.

42. Oliver, R. (2012). Bank credit and economic growth: The Nigerian experience. International Business and Management, 5(2), 102-110. https://doi.org/10.3968/j.ibr.1923842820120502.104

43. Önder, Z., & Özüyıldırım, S. (2013). Role of bank credit on local growth: Do politics and crisis matter? Journal of Financial Stability, 9(1), 13-25. http://dx.doi.org/10.1016/j.jfs.2012.12.002

44. Nwani C., & Orie, J. B. (2016). Credit, venture capital and regional economic growth. Journal of Economics and Finance, 34(4), 783-820.

45. Park, J. Y. (1992). Canonical co-integrating regressions. Econometrica, 60(1), 119-143. http://dx.doi.org/10.2307/2951679

46. Phillips, P. C. B., & Hansen, B. E. (1990). Statistical inference in instrumental variables regression with I(1) processes. Review of Economics Studies, 57(1), 99-125. https://doi.org/10.2307/2297545

47. Phillips, P. C. B., & Ouliaris, S. (1990). Asymptotic properties of residual based tests for co-integration. Econometrica, 58(1), 165-193. http://dx.doi.org/10.2307/2938339

48. Phillips, P. C. B., & Hansen, B. E. (1990). A simple estimator of the moving average parameter for integrated time series. Econometrica, 58(1), 165-193. http://dx.doi.org/10.2307/2938339

49. Pistoresi, B., & Venturelli, V. (2015). Credit, venture capital and regional economic growth. Journal of Economics and Finance, 39(4), 742-761. http://dx.doi.org/10.1007/s12197-013-9277-8

50. Puatwoe, J. T., & Piabuo, S. M. (2017). Financial sector development and economic growth: evidence from Cameroon. Financial Innovation, 3(25), 1-18.

51. Quixina, Y., & Almeida, A. (2014). Financial Development and Economic Growth in a Natural Resource Based Economy: Evidence from Angola (FEP Working Papers No. 542). Retrieved from http://wps.fep.up.pt/wps/wp542.pdf

52. Saikkonen, P. (1992). Estimation and testing of cointegrated systems by an autoregressive approximation. Econometric Theory, 8(1), 1-27. Retrieved from https://www.jstor.org/stable/3532143

53. Saikkonen, P. (1992). Estimation and testing of cointegrated systems by an autoregressive approximation. Econometric Theory, 8(1), 1-27. Retrieved from https://www.jstor.org/stable/3532143

54. Stock, J. H., & Watson, M. (1993). A simple estimator of cointegrating vectors in higher order integrated systems. Econometrica, 61(4), 783-820.

55. Sturm, M., Gurtner, F., & Alegre, J. G. (2009). Fiscal policy challenges in oil-exporting countries: A review of key issues (Occasional paper series No. 104). European Central Bank. Retrieved from http://www.ecb.int/pub/pdf/scopapers/ecbop04.pdf

56. Timsina, N. (2014). Impact of Bank Credit on Economic Growth in Nepal (NRB Working Paper No. 22). Nepal Rastra Bank. Retrieved from https://ideas.repec.org/p/nrb/wpaper/v22y2014p1-23.html

57. Uddin, G., Sjö, B., & Shahbaz, M. (2013). The causal nexus between financial development and economic growth in Kenya. Economic Modelling, 35, 701-707. http://dx.doi.org/10.1016/j.econmod.2013.08.031

58. World Bank (WB). (2018). World development indicators. Retrieved from https://data.worldbank.org/indicator/

59. World Economic Forum (2018). Global Competitiveness Report 2018. Retrieved from https://www.weforum.org/reports/the-global-competitiveness-report-2018

60. Yakubu, Z., & Affoi, A. (2014). An analysis of commercial banks’ credit on economic growth in Nigeria. Current Research Journal of Economic Theory, 6(2), 11-15. Retrieved from http://maxwellsci.com/print/crjet/v6-11-15.pdf

http://dx.doi.org/10.21511/bbs.14(2).2019.10