Causality and Cointegration Analysis of Third Party Funds, Financing, and Economic Growth in Central Kalimantan (Case Study: PT. Bank Kalteng of the period 2010-2022)

Yuliani Yuliani[1], Alexandra Hukom[2], Miar Miar[3], Benius Benius[4], Dicky Perwira Ompusunggu[5]

{yuliani07br@gmail.com[1], alexandra.hukom@feb.upr.ac.id[2], miar@feb.upr.ac.id[3], benius@feb.upr.ac.id[4], dickyperwira@feb.upr.ac.id[5]}

Faculty of Economic and Business Development, Universitas Palangka Raya, Indonesia[1,2,3,4,5]

Abstract. The study aimed to investigate the relationship among third-party funds, financing, and economic growth in Central Kalimantan from 2010 to 2022. Total third-party funds and financing of PT. Bank Kalteng were the variables used in the study. Meanwhile, Central Kalimantan's Gross Regional Domestic Product (GRDP) represents economic growth. Data were analyzed using Eviews 12 software for the Granger Causality Test and the Johansen Cointegration Test. The findings indicated that economic growth and third-party funding have a one-way causal relationship. There was no correlation between economic growth and funding. Third-party funds and PT. Bank Kalteng have a long history supporting Central Kalimantan's economic progress.

Keywords: causality, cointegration, third party funds, financing, economic growth

1 Introduction

The economy is a topic that is often researched and discussed from various points of view. Because one of the parameters that is widely used to determine whether a country is a developed country or not is its economy. Economic growth is the development of activities in the economic sector which results in the number of goods and services produced in society increasing [1].

In a country, financial institutions have a very important role in the economy. Its role involves the flow of large amounts of money through people's daily activities. This affects business profits, the production of goods and services, and even the economic welfare of a country. Economic development can be seen from the success of financial institutions in absorbing and channeling public funds in an effective and efficient manner.

If financial institutions experience good growth, more financing sources will be allocated to productive economic sectors and ultimately this will increase capital development in the economic sector to increase its productivity in supporting economic growth. The development of financial institutions influences economic growth, and vice versa [2].

The positive performance of financial institutions will have a positive correlation with a country's economic performance. The main source of growth in the real sector of the economy is the financial sector. The unemployment rate and poverty rate will decrease if more third party banking fund allocations are given to the real sector in an economy [3].

Those who have excess funds will invest their funds in financial institutions which will then be distributed to business sectors that need financing. Banks have the ability to mobilize third party funds from the public because this influences banks in expanding credit provision.

Banking as an intermediary institution that channels public funds into investment in productive assets that encourage aggregate output growth, capital accumulation and real sector productivity, the banking industry has an important role in the economy. "Indonesian banking aims to support the implementation of national development in order to increase equality, economic growth and national stability towards improving the welfare of the people at large," this is explained in Law Number 10 of 1998 article 4.

One way of increasing economic growth depends on increasing growth in the financial sector. The positive performance generated in the financial sector will have a direct effect on economic growth. Developments in the financial sector can be the main source of economic growth in the real sector.

PT. Bank Kalteng is a regional government-owned business entity called the Regional Development Bank. PT. Bank Kalteng has three main functions, namely to encourage economic growth and regional development to improve the standard of living of the community, as a depository for Regional Cash, and a source of Original Regional Income. In order to carry out its duties, the PT. Bank Kalteng seeks to collect public funds in the form of savings and distribute them to the community in the form of credit.

Analysis of causality and cointegration between third party funds, financing and economic growth in terms of the development of PT. Bank Kalteng is relevant to study in more depth. The variable used as the most appropriate reflection of economic growth is Gross Domestic Product (GDP). According to the Central Statistics Agency, the economic development of a country as measured by economic growth shows the growth in production of goods and services in an economic area within a certain time interval. This production is measured in the concept of added value created by economic sectors in Central Kalimantan Province which is collectively known as Gross Domestic Product (GDP). GDP growth is the same as economic growth, so to measure a country's economic performance or as a reflection of a government's success in moving economic sectors, GDP can be used as an indicator.

This research will examine the causes and effects and cointegration of third party funds, financing using a case study of Central Kalimantan economic growth at PT. Bank Kalteng for the period 2010-2022. It is hoped that it can provide information regarding the strength of the relationship and long-term impacts between the variables of third party funds, finance and economic growth in Central Kalimantan Province.

2 Research Literature

2.1 Economic growth

Economic growth refers to a region's economic progress or development. Economic growth is characterized by increased production of commodities and services in societal economic activity. Economic growth is measured by the rise in Gross Regional Domestic Product, regardless of whether the increase is smaller or more than population growth or whether it is influenced by changes in the economic structure.

The demand for investment is one of the conditions that must be addressed in order for an economy to attain long-term robust growth [4]. Savings must be expanded to provide investing opportunities. Every economic actor can boost his savings by attempting to save a share of his earnings.

In Neo-Classical Growth Theory, the main elements that affect economic growth and the relative contributions of diverse components are savings, investment, and consumption which all indicate the rate of economic growth [4]. The three types of inputs that affect economic growth are capital, technology, and labor, as well as the degree of economic activity and the function of capital and technical advancemen.

2.2 Third party funds

Third-party funds come from individuals and business entities and are obtained by banks using various deposit products owned by banks. Public funds are the largest funds owned by banks by collecting excess funds in the community. According to Bank Indonesia regulation No.24/16/PBI/2021, bank third-party funds, hereinafter referred to as deposits, are bank obligations to residents in rupiah and foreign currencies. The funds raised by banks will be used to fund real sector activities, namely through financing. The collection of third-party funds at the bank includes savings, deposits, and current accounts.

2.3 Financing

Financing is a financial instrument that lends money to individuals or businesses in order for them to buy items and pay them back over time with interest. Financing is providing money or bills based on a loan agreement between a bank and another party that compels the borrower to pay interest and pay off the debt after a set time.

Financing serves to promote the usefulness of money, the circulation of money, the motivation of company advancement, and the usability of manufacturing commodities and can increase economic stability. This was consistent with previous research by Mulyati & Widiawati (2020) which found that commercial bank lending has a significant positive effect on Tasikmalaya City's gross regional domestic product [5].

2.4 Investment

Investment is a form of deferred consumption that is invested in productive assets. Investment entails creating products and services that can be used to create other goods in society, by using capital to purchase capital goods and production equipment. Interest rates, income

levels, adequate technology improvements, future economic forecasts, and other factors all influence the amount of money invested in the economy.

The findings of a previous study revealed that conventional bank credit variables had no significant influence on economic growth both in the short and long term [6]. In the long run, Islamic bank funding characteristics have a significant positive effect on economic growth, but not in the near run. Based on the results of variable foreign and variable domestic investment, there is no substantial influence on economic growth in the near term, but a considerable negative influence in the long term.

3 Methods

This research uses secondary data from the Central Statistics Agency and the Financial Services Authority for 2010-2022, covering regional data for Central Kalimantan. The scope of this research is limited to regional development banks with the sub-dimensions of third party funds and financing or providing credit as well as economic growth in Central Kalimantan. The approach used is a quantitative empirical approach which allows recording research results in numerical form.

This research is expected to look at the reciprocal relationships between variables, test and verify theories, and also make predictions. Quantitative behavior in general will look at phenomena based on the theory they have. The theories that have been proposed are used as standards in stating whether or not a relationship is appropriate, so that the term ethical truth emerges, namely truth that is based on the theory proposed by the researcher in another sense that has been tested [7].

The descriptive analysis method used in this research is to examine the causes of a particular symptom and can describe the nature of a situation that was currently in progress at the time the research was conducted [8].The data analysis technique consists of various tests, including the Unit Root Test, Long Lag Test, Granger Causality Test, and Johansen Cointegration Test.

4 Results

4.1 Unit root examination

The ADF (Augmented Dickey-Fuller) test is used to determine if the data has root units, indicating that it is not stationary, or whether the data does not contain root units, indicating that it is stationary. Levels are the starting point for unit root testing. If the data used in the form of levels is not steady, testing in the form of first and second differences will be performed.

Table 1. Unit root test.

Variable	ADF Test Statistics			
	Level		First Difference (1st Difference)	
	t-Statistic	Prob.	t-Statistic	Prob.
Third party funds	1.434712	0.9989	-13.25830	0.0000
Financing	3.894927	1.0000	-7.206492	0.0000
Economic growth	-0.267618	0.9218	-11.803960	0.0000

It was possible to conclude that all variables were not yet stationary at the data level (table 1). It is known that all variables have been static at 1% degree in the form of the First Difference. This means that all variables passed the root unit test at the First Difference (1st Difference) level.

4.2 The lag length test

The length of lag assessment was undertaken before executing the Granger Causality test. The lag length was used to determine how long it takes for each variable to influence its previous variables.

Table 2. Lag length test results.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-4137.179	NA	4.93e+69	168.9869	169.1027	169.0309
1	-4121.171	29.40270	3.71e+69	168.7009	169.1642	168.8766
2	-4101.075	34.45017*	2.37e+69*	168.2480*	169.0588*	168.5556*

The best lag length is lag 2 (table 2). Latency two was chosen as the optimal latency because it has the most ratings.

4.3 Granger causality analysis

It was used to determine the causality relationship between PT. Bank Kalteng and economic growth in Central Kalimantan. Through this test, it will be determined whether the three variables have a bidirectional relationship, a unidirectional relationship, or no relationship at all.

Table 3. Granger causality test results.

Null Hypothesis:	Obs	F-Statistic	Prob.
FINANCING does not Granger Cause THIRD PARTY FUNDS	50	17.7637	2.E-06
THIRD PARTY FUNDS does not Granger Cause FINANCING		1.04887	0.3587
ECONOMIC GROWTH does not Granger Cause THIRD PARTY FUNDS	50	7.80612	0.0012
THIRD PARTY FUNDS does not Granger Cause ECONOMIC GROWTH		2.14154	0.1293
ECONOMIC GROWTH does not Granger Cause FINANCING	50	0.60240	0.5518
FINANCING does not Granger Cause ECONOMIC GROWTH		0.32214	0.7263

The Financing variable statistically significantly affected Third Party Funds, while the Third-Party Funds variable statistically did not affect Financing, with probability values of 2.E-06 or 0.0000002 (=0.05) and 0.3587 (>=0.05), respectively, implying unidirectional causality (Table 3). Finally, there was a one-way causality between Financing and Third-Party Funds, which meant that only Financing has a statistically significant effect on Third Party Funds. Furthermore, it did not happen any other way.

With probability values of 0.0012 (=0.05) and 0.1293 (>=0.05), respectively, the Economic Growth variable statistically significantly affected Third Party Funds, indicating a one-way causality relationship between the Economic Growth and Third-Party Funds variables, with only Economic Growth statistically significantly affecting Third Party Funds. And not the other way around.

The Economic Growth variable statistically did not affect Financing significantly with a probability value of 0.5518, and the Financing variable also did not statistically affect Economic Growth, with a probability value of 0.7263, implying that there was no causality for both the Economic Growth and Financing variables.

4.4 The cointegration test of johansen

The Johansen co-integration test seeks to identify whether variables have a long-term influence on one another. The co-integration testing criteria in this study were based on trace static values. If the trace statistic value is more than 5%, then all research variables in the model integrate into the long run.

Table 4. Kointegrasi johansen cointegration test results.

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.466484	49.28658	29.79707	0.0001
At most 1 *	0.291603	17.87330	15.49471	0.0215
At most 2	0.012635	0.635800	3.841465	0.4252

The test level was 5% (0.05), and there were two rank variables connected to cointegration (table 4). This is demonstrated by the trace statistic values of 49.28658 and 17.87330, being

more than the crucial values of 0.05, namely 29.78707 and 15.49471, implying that the variables used have a long-term relationship (cointegration) with each other.

5 Discussion

5.1 Third-party funds, financing, and economic growth: a causality relationship

According to the results of the Granger causality test, there was a one-way causality relationship between economic growth and third-party funds. According to the probability value, the variable gross regional domestic product (GRDP) statistically significantly influenced the variable third-party funds. Still, the variable third-party funds have no effect on the GRDP. This finding contradicts the previous research of Saudah & Nuryadin (2022), who found that third-party funds for economic growth were beneficial and significant in 2016-2018[9]. As a result, this investigation demonstrated that there were variances when observed from various objects, specifically PT. Bank Kalteng. This study showed that economic expansion in Central Kalimantan has an impact on third-party funding. Increases in GRDP as a measure of people's income can lead to a rise in public bank deposits. When people's income, as measured by GRDP, rises, they tend to save more, which leads to an increase in third-party funds in banks.

The consequence of GRDP for third-party funds was that public financial inclusion of banks, particularly deposit products, was improving and that these services can be used to facilitate public operations in cash and non-cash financial transactions. According to the Financial Services Authority's 2022 national financial literacy and education survey, the financial inclusion index in Central Kalimantan has improved to 6.5% from 74.80% to 81.30%. Banking service items will enhance the quality and number of transaction operations as well as the public's ability to store funds.

Furthermore, there was no causal relationship between funding and economic growth from the Granger's causality test. These findings imply that financing has no effect on GDP and that GDP has no effect on funding. Disagreements between research findings and current ideas have been discovered. This finding is supported by the study of Hussanah (2021), which found that finance had no effect on economic growth [10].

However, this finding contradicts to Rafsarjani & Sukama (2014), who found that total conventional bank loans and total Islamic bank funding have a significant impact on economic growth [11]. Similarly, a study by Zumaidah & Soelistyo (2018) found that credit variables strongly affect economic growth [12]. Zachary (2017) found a substantial positive association in overall financing [13]. Supartoyo, et al. (2018) found that credit had a favorable and significant impact on economic growth [14].

Because financing and GDP do not have a causal link, much of the use of cash is directed to less productive industries. According to Bank Indonesia, the composition of loans to commercial banks in Central Kalimantan in the fourth quarter of 2022 was 30.09% of working capital loans, 42.89% of investment loans, and 27.01% of consumer loans. The proportion of consumer loans was significant, resulting in wasteful resource utilization and harming long-term economic growth. To ensure long-term economic growth, the banking sector must play

an active role in economic support by providing timely and enough funding to sectors of the economy with strong development potential.

5.2 Long-term interdependence (cointegration) of third-party funds, financing, and economic growth

The Johansen cointegration test results revealed a long-term association (cointegration) between third-party funding and financing for economic growth in Central Kalimantan. This finding was consistent with Hidayati, et al. [15], who discovered a long-term association (cointegration) between Islamic banking and economic growth in East Java from 2010 to 2017[15]. In the long run, variables from PT. Bank Kalteng proxied by third-party funding and financing, as well as economic growth, were anticipated to move towards equilibrium. As a result, the government would be able to provide assistance for the growth of regional banks owned by the Central Kalimantan government.

The rapid development of banking has aided the province of Central Kalimantan's economic prosperity. The role of banks is directed to be allocated to productive sectors through finance, which has an impact on boosting capital in enterprises, causing an expansion in the real sector economy. An increase in the real sector economy translated into an increase in economic activity, which led to an increase in economic growth.

The findings of this study back up the findings of Rafsansaji & Sukmana (2014), who concluded that conventional and Sharia banking harms the Indonesian economy in the long run [11]. According to Elsahada (2017), particularly long-term factors generally did not have a beneficial influence, while third-party funds and inflation have a large negative effect [13].

6 Conclusion

The results of the Granger causality test show that economic growth and third-party funds have a one-way causal relationship. This means that economic growth has a significant effect on third party funds, but the reverse does not happen. Meanwhile, there is no relationship between economic growth and financing, as proven by statistics from 2010 to 2022. Third party funds are influenced by economic growth, but not vice versa. As a result, economic growth can encourage an increase in third party funding, but not vice versa because there is no causal relationship between economic growth and funding where the two are not related.

The results of the Johansen co-integration test show that third party funds and financing have a long-term relationship with economic growth in Central Kalimantan. The rapid development of banking has helped the economic prosperity of Central Kalimantan province. The role of banking is directed to be allocated to productive sectors through financing, which has an impact on increasing capital in business entities, thereby causing an expansion of the real sector of the economy. An increase in the real sector of the economy is translated into an increase in economic activity, thus having an impact on increasing economic growth.

References

[1] Sukirno, S.: Makro Ekonomi Teori Pengantar, Ed. 3, Cet 24. PT. Raja Grafindo Persada, Jakarta (2012)

[2] Rama, A.: Perbankan Syariah dan Pertumbuhan Ekonomi Indonesia. Signifikan. pp. 2 (2013)

[3] Dermawan, Ryhan Firdausy Noor dkk.: Pengaruh Pembiayaan Bank Syariah, dan Tenaga Kerja Terhadap PDRB Jawa Barat. Vol. 2(2), pp. 368-378. Indonesian Journal of Economics and Management, (2022)

[4] Muchtolifah: Ekonomi Makro. Unesa University Press, Surabaya (2010)

[5] Mulyati, Sri., & Widiawati, S.: Pengaruh Penyaluran Kredit Bank Umum Terhadap Produk Domestik Bruto Kota Tasikmalaya Periode 2013-2017. Vol. 4(4). Jurnal Manajemen, Keuangan dan Komputer, (2020)

[6] Andrea, Deni., & Mukhlis, Imam.: Analisis Pengaruh Kredit Perbankan, Pembiayaan Bank Syariah dan Investasi Terhadap Pertumbuhan Ekonomi di Indonesia Sebelum Pandemi Covid-19 (2015-2019) dan Periode Pandemi Covid-19 Tahun 2020. Vol. 1(9), pp. 844-853. Jurnal Ekonomi, Bisnis dan Pendidikan, (2021)

[7] Abdi, U.R.: Metode Penelitian Sosial dan Ekonomi Teori dan Aplikasi. Alfabeta, Bandung (2012)

[8] Sevilla, G. Consuelo, dkk.: Pengantar Metode Penelitian. IU-Press, Jakarta (2006)

[9] Saudah, Siti., & Nuryadin, M Rusmin.: Pengaruh Indikator Sektor Keuangan (DPK, Kredit dan Investasi) terhadap Pertumbuhan Ekonomi di Kalimantan Selatan. Pp. 338-353. Jurnal Ilmu Ekonomi dan Pembangunan, (2022)

[10] Nur A.: Analisis Hubungan Kausalitas Pembiayaan Bank Syariah dengan Pertumbuhan Ekonomi di Indonesia. (2021)

[11] Rafsarjani, Haqiqi., & Sukmana, R.: Pengaruh Perbankan Atas Pertumbuhan Ekonomi : Studi Kasus Bank Konvensional dan Bank Syariah di Indonesia. Vol. 12(3). Jurnal Aplikasi Manajemen, (2014)

[12] Zumaidah, Lutfi Nofi., & Soelistyo, A.: Pengaruh Total Aset, Dana Pihak Ketiga, dan Kredit pada Bank Umum terhadap Pertumbuhan Ekonomi Provinsi-Provinsi di Indonesia Tahun 2013-2016. Vol. 2(2), pp. 251-263. Jurnal Ilmu Ekonomi, (2018)

[13] Elsahada Z.: Potensi Bank Pembangunan Rakyat Syariah dalam Meningkatkan Pertumbuhan ekonomi di Indonesia Periode Tahun 2010:1 - 2016:12. (2017)

[14] Supartoyo, Yesi Hendriani., Juanda, Bambang., Firdaus, Muhammad., & Effendi, Jaenal.: Pengaruh Sektor Keuangan Bank Perkreditan Rakyat terhadap Perekonomian Regional Wilayah Sulawesi. Vol. 2(1). Jurnal Kajian Ekonomi & Keuangan, (2018)

[15] Hidayati dkk.: Analisis Kausalitas dan Kointegrasi antara Perbankan Syariah dan Pertumbuhan Ekonomi Jawa Timur. Vol. 6(2). Jurnal Ekonomi Syariah, (2019)