The Dynamics of Economic Growth in Underdeveloped Regions: A Case Study in Indonesia*

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Abstract

This study aims to determine the response of regional economic growth to the financial performance of regional economies in regard to the liquidity conditions, saving-investment gaps, trade openness, inflation, as well as the national economic growth. The basic logic theory of research uses the principles of open economics and financial intermediary systems. The data used in this study are secondary data, and the form of data is a quarterly time series for the period from 2008 to 2019. The data were obtained from various publications, such as the Central Statistics Agency (CSA), Regional Financial Economics Statistics (RFES), Indonesian Banking Statistics (IBS), and the Financial Services Authority (FSA). Data processing was done through VAR/VECM analysis; short-term and long-term equilibrium analyses were carried out. The results of the analysis illustrate that regional economic growth and the conditions of liquidity, saving-investment gaps, trade openness, inflation, and national economic growth are related and lead to significant impact variations in the provinces of Papua and West Papua. In conclusion, the findings of this research support the leading supply hypothesis and reformulate the strategy and policy of economic development, bearing in mind that there are still many underdeveloped districts in these two provinces.

1. Introduction

Presidential Regulation Number 131 Year 2015 concerning the Determination of Underdeveloped Regions in 2015–2019 explicitly states that there remain 122 lagging category regency-level regions in Indonesia. Most of the disadvantaged areas are in Eastern Indonesia. The province of Papua has the most disadvantaged areas at 25 districts, while the province of West Papua has eight districts.

The disadvantaged areas in the Papua province zone include the districts of Merauke, Jayawijaya, Nabire, Yapen Islands, Biak Numfor, Paniai, Puncak Jaya, Boven Digoel, Mappi, Asmat, Yahukimo, Bintang Mountains, Tolikara, Sarmi, Keerom, Waropen, Supiori, Memberamo Raya, Nduga, Lanny Jaya, Middle Memberamo, Yalimo, Puncak, Dogiyai, Intan Jaya, and Deiyai. Meanwhile, the West Papua province includes the disadvantaged districts of Teluk Wondama, Teluk Bintuni, Sorong Selatan, Sorong, Raja Ampat, Tambrauw, and Maybrat.

The economic performance of Papua from 2008 to 2019 (quarterly) in terms of regional GDP growth (REG) averaged 4.39%, with a minimum REG of −31.97%, maximum 9.12%, and standard deviation 16.57%. Meanwhile, the West Papua REG averaged 9.21%, with a minimum REG of −9.87%, maximum 34.42%, and standard deviation 10.7%. This proves that the economic conjuncture in the two provinces is unstable, though the economic stability in West Papua is better than in Papua. The banking performance of Papua in terms of the level of fund mobility as indicated by

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the loan-to-deposit ratio (LDR) averaged 313.42%, with a minimum LDR of 132.43%, maximum 391.65%, and standard deviation 68.26%. Meanwhile, the LDR in West Papua averaged 82.31%, with a minimum LDR of 38.73%, maximum 118.43%, and standard deviation 18.13%. This proves that the condition of financial stability in West Papua is better than in Papua.

The phenomenon suggests that Papua and West Papua need effective and efficient development and economic growth. The financial and banking sector need to be able to sustain the growth of the real sector on an ongoing basis. They must be effective for promoting a mutual symbiosis and achieve a steady and safe economy. For this reason, the formulation of development and economic growth in Papua and West Papua must be reviewed. Reformulation in economic growth should be reviewed through various approaches, including approaches from the financial aspect.

The relation between the financial sector and economic growth is also seen in the theory of monetary policy transmission. In general, monetary transmission through interest rate channels as explained by Mishkin (2016) suggests that an increase in interest rates directly affects two sides, first increasing the cost of capital and, thereby, reducing interest in investing (assuming in interest rates interest and the condition of ceteris paribus). Less investment then reduces aggregate supply. Second, an increase in interest rates increases the interest income of savers, which, on the one hand, increases their purchasing power (income effect) but, on the other hand, reduces the interest rate in consuming (substitution effect). Both net effects determine the amount of consumption, which ultimately affects aggregate demand (AD). This opinion is supported by Nualtaranee (2001) and Bui (2020). Nualtaranee (2001) states that the strong relationship between real interest rates and asset prices is a key factor in the monetary transmission mechanism. A change in the real interest rate will have an impact on the cost of capital, which will affect the value of assets and investment decisions. In the banking sector, tight monetary policy usually, through the contraction of liquidity in the economy, limits the ability of banks to obtain funds. This will put pressure on interest rates to rise, thereby increasing the cost of capital as reflected by the cost of borrowing imposed by banks. This increase will cause a decrease in spending on investment goods and durable goods and reduce AD and Y, Q (output). Bui (2020) states that the determinants of developments that affect finance in Vietnam are the real estate market, economic growth, the consumer price index (CPI), and the global financial crisis. This finding is essential for the Vietnamese authorities in providing practical solutions to build a sustainable and synchronous financial development. This is empirical evidence relating to an overview of financial developments in developing countries, so it is not only valuable for Vietnam but also important for other developing countries.

The conditions and objective phenomena that are occurring in Papua and West Papua, as well as relevant previous research, inspired a review of how the formulation of economic development and growth should be executed in the future based on real conditions. Therefore, this study aims to examine the response of economic growth to liquidity and risk changes, saving-investment gaps, trade openness, regional inflation, and national economic growth, through short-term and long-term analyses, in Papua and West Papua, Indonesia.

2. Literature Review

Economic development is a process of change that is continuously pursued to improve the welfare of a community. One indicator of the successful implementation of economic development that can be used as a macro benchmark is economic growth, as observed through changes in GDP within a region. Higher GDP indicates better economic activity obtained from the rate of growth of GDP at a constant price (Todaro & Smith, 2015). The association between economic growth and liquidity and risk, saving-investment gaps, trade openness, and inflation can be explained through the basic equation of the open economy system in equilibrium theory, banking intermediation, and monetary transmission, as well as previous research.

The identity of the national open economic income account explains that $Y = C + I + G + NX$. This means that AD = aggregate demand for domestic. Output (Y) consists of household consumption (C), investment by the business and household sector (I), government purchases (G), and net exports or net foreign demand (NX). NX is defined as $EX - IM$ = trade balance. Starting with the national income account's identity again, $Y = C + I + G + NX$. Subtracting C and G from both sides, we obtain $Y - C - G = I + NX$. Since $Y - C - G = S$, where S = savings, we now have $S = I + NX$. Subtracting I from both sides yields a new equation, $S - I = NX$. The form of the national income account's identity equation illustrates that an economy must always be the same as the difference between savings and investments; $(S - I) = NX$; $(S - I)$ = net foreign investment; NX = balance of trade (BOT) = $EX - IM$ = export $-$ import. Starting again, $Y = C + I + G + NX$. After some manipulation, the national income account's identity can be rewritten as $NX = Y - (C + I + G)$, where NX = net export, Y = output, and $(C + I + G)$ = domestic expenditure. This equation demonstrates that in an open economy, domestic spending does not need to be the same as the output of goods and services. If output exceeds domestic expenditure, we export the difference (net exports are positive). If output is less than domestic expenditure, we import the difference (negative net exports). Net capital outflow = trade balance; $(S - I) = NX$. If $(S - I)$ and NX are positive, we have a trade surplus. A donor country in the world financial market that exports more goods than it

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imports, if $(S − I)$ and NX are negative, has a trade deficit. In contrast, a debtor country in the world financial market that imports more goods than it exports, has a balanced trade if $(S − I)$ and NX = 0, because the import value is equal to the export value. Net capital outflow = trade balance. Therefore, in the macroeconomics equation, it is increasingly clear that there is a link between economic growth and changes in liquidity, risk, saving-investment gaps, and trade openness (Mankiw, 2019).

According to Mishkin (2016), financial intermediation is vital to the economy because it can direct the flow of funds from unproductive parties to those who are productive in managing them. Furthermore, it will drive the economy to become more efficient and dynamic. This statement is further supported by Nor (2015), who states that the financial sector as the main catalyst contributes positively to economic growth. A functioning financial sector can increase economic growth by reducing transaction costs, reducing market friction, and ensuring capital flows are directed to the most productive use. Several studies that have documented the relationship between banking and economic growth include Samargandi, Fidrmuc, and Ghosh (2014), who studied the impact of financial development on economic in Saudi. Adeniyi, Oyinlola, and Egwhaikide (2015), who examined the impact of financial reforms on Nigeria's economic growth. Ductor and Grechyna (2015), who explored the interdependence between financial development and its impact on economic growth.

Empirical research has demonstrated that regional economic growth (REG) is closely related to the development of liquidity and risk, saving-investment gaps, trade openness, regional inflation, and the national economy. For this reason, it is important to know how these variables impact economic growth in Papua and West Papua. Several empirical studies have shown that banking activities can sustain economic growth. Camba and Camba (2020); Berger and Sedunov (2017); Thierry, Jun, Eric, Yannick, and Landry (2016) conclude that there is a positive impact on bank credit liquidity on GDP, while Abduh and Chowdhury (2012) find that Islamic banking has a positive impact on long-term and short-term economic growth in Bangladesh.

Todaro and Smith (2015) identify the relation between economic growth and saving and investment, stating that economic growth in a region is strongly supported by indicators of savings and domestic investment used to determine the level of economic growth and development. Economic development, through efforts to increase economic growth, is associated with increasing national income both overall and per capita so that problems such as unemployment, poverty, and the imbalance of income distribution is expected to be solved through the trickle-down effect.

Research proving the linkage between trade openness and economic growth was conducted by Nowbutsing (2014), who concludes that trade openness is a means to promote growth through research and development and wider market access. Furthermore, Zeren and Ari (2013) explain that countries that trade internationally and are able to export comparatively superior goods and import goods need to encourage long-term production processes that will bring the country to a pace of growth and sustainable open economic development. The trade does not economic openness to economic growth; in fact, Dreher (2006) states that trade openness reduces social and environmental standards, increasing poverty levels in developing countries and increasing financial crises in a country. This is an obstacle for economic openness to economic growth. Tahir and Azid (2015), who suggest that economic growth is related to inflation, conclude that low inflation indicates a stable economic environment that has a positive impact on economic growth. The inflation rate is fluctuating; it slows the economic growth increase. Meanwhile, Bibi and Rashid (2014) conclude that inflation is negatively related to the economic growth in Pakistan.

3. Data and Methodology

The data used in this study are secondary data, and the form of data is a quarterly time series from the period from 2008 to 2019. The data were obtained from various publications, such as the Central Statistics Agency (CSA), Regional Financial Economics Statistics (RFES), Indonesian Banking Statistics (IBS), and the Financial Services Authority (FSA). The data types with their magnitudes and sources are presented in Table 1.

The basic model of this research is as follows:

$$Y_t = \alpha_0 + \sum_{i=1}^{k} \beta_i Y_{t-1} + e_t \tag{1}$$

where Y_t = endogenous variable vector (REG$_t$, LDR$_t$, NPL$_t$, GIS$_t$, OT$_t$, NEG$_t$); α = constant; β = matrix coefficient for lag−1; ε = residual; t = period; and k = order of the VAR model. Based on this model, by entering the seven variables used in this study, the VAR equation that will be formed according to the variable to be analyzed is as follows:

$$\begin{aligned}
\text{REG}_t = \alpha &+ \sum_{i=1}^{k} \beta\, \text{REG}_{t-1} + \sum_{i=1}^{k} \delta\, \text{LDR}_{t-1} \\
&+ \sum_{i=1}^{k} \theta\, \text{NPL}_{t-1} + \sum_{i=1}^{k} \eta\, \text{GIS}_{t-1} \\
&+ \sum_{i=1}^{k} \psi\, \text{OT}_{t-1} + \sum_{1=1}^{k} \lambda\, \text{INF}_{t-1} \\
&+ \sum_{i-1}^{k} \mu\, \text{NEG}_{t-1} + e_t
\end{aligned} \tag{2}$$

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Table 1: Types and Sources of Data

Notation	Definition	Formula	Unit	Source
REG	Regional Economic Growth	$= \Delta GDPR_{(t)} / GDPR_{(t-1)} * (100)$	%	RFES, IBS
LDR	Loan-to-Deposits Ratio	= Loan / Deposits * (100)	%	IBS, FSA
NPL	Non-Performing Loan	= Bad Debt / Loan * (100)	%	IBS, FSA
GIS	Gap of Saving-Investment	= (Investment − Saving) / GDP * (100)	%	IBS CSA
OT	Openness Trade	= (Export + Import) / GDP * (100)	%	IBS CSA
INF	Inflation	$= \Delta CPI_{(t)} / CPI_{(t-1)} * (100)$	%	IBS, RFES
NEG	National Economic Growth	$= \Delta GDPN_{(t)} / GDPN_{(t-1)} * (100)$	%	IBS CSA

Note: FSA: Financial Services Authority; CSA: Central Statistics Agency; IBS: Indonesia Bank Statistics; RFES: Regional Financial Economics Statistics; ΔGDP: $GDP_{(t)} - GDP_{(t-1)}$; ΔCPI: $(CPI_{(t)} - CPI_{(t-1)})$.

where α = constant; β, δ, θ, η, ψ, λ, η = coefficient; REG = regional economic growth (constant price at 2010), LDR = loan-deposit ratio, NPL = non-performing loan, GIS = saving-investment gap, OT = openness trade, and NEG = national economic growth (constant price at 2010).

The general equation,

$$X_t = A_0 + A_1 X_{t-1} + A_2 X_{t-2} + ... + A_p X_{t-p} + e_t \qquad (3)$$

where X_t = vector containing n variables ($n \times 1$); A_0 = intercept vector ($n \times 1$); A_1 = matrix coefficient ($n \times n$); and e_t = vector disturbance variable. Based on the previous equation, to obtain answers to long-term problems (long-term relationships), the VAR model must be combined with VECM to yield the following equation:

$$\Delta X_t = \sum_{i=1}^{k} \tau_i \Delta X_{t-1} + \mu_0 + \mu_{1t} + \alpha\beta\mu_{t-1} + e_t \qquad (4)$$

The error term (ε_{1t}, ε_{2t}, ε_{3t}, ..., ε_{5t}), which is the residual (alleged error term), is the main focus. ε_{it} can be interpreted as innovation or shock from the variable we want so that the impact of the shock of a variable on other variables can be analyzed. The estimation of the presented VAR and VECM equations will cause the number of parameters to be equal to the number of equations (exact identified) so that errors ε_{1t}, ε_{2t}, ε_{3t}, ..., ε_{5t} can be identified and pure innovation can be obtained from ε_{1t}, ε_{2t}, ε_{3t}, ..., ε_{5t}.

4. Results and Discussion

4.1. Results

Before the VAR estimation is discussed, an examination of the stationary test results, determination of the optimal lag, stability test, and co-integration test are carried out. The stationary test of data was conducted with the Augmented Dicky–Fuller (ADF) test using α = 5% (significance level 95%). The criterion is that if t–ADF is less than the MacKinnon critical value or prob-value < 5%, then the data used are stationary (do not contain unit roots). Testing the roots of this unit was carried out at a level up to the first difference. The result of all stationary data at the first difference level shows some are not stationary and some are stationary.

Determining the amount of lag in the VAR system was valuable to show how long the reaction of a variable to other variables was. The determination of the optimal lag was also done to eliminate the problem of autocorrelation in the VAR system. Determination of the optimal lag was based on the values of Akaike information criteria (AIC), final prediction error (FPE), Hannan–Quinn information criterion (HQ), and Schwarz information criterion (SC). Based on these criteria, the research found that the optimal lag for the Papua and West Papua models is lag–3. The VAR model is stable if the root has a modulus (absolute value) of less than one. According to the results of the VAR stability test on lag–3 in the Papua model, the modulus value is less than one and ranges from 0.361 to 0.936. The West Papua model with lag–3 also obtained modulus values of less than one, which range from 0.335 to 0.910; no root lies outside the unit circle/ VAR satisfies the stability condition. This indicates that the VAR system used in this study is stable. A co-integration test was then conducted to determine whether the variables that are stationary at the first difference level are co-integrated. The co-integration test used in this study was the Johansen test, which compared the trace statistic with its critical value. If the trace statistic value was greater than the critical value, then there was co-integration in the equation system. The research found that in both models (Papua and West Papua), co-integration occurred. This indicates that the variables tested have a linear combination relationship that is stationary (co-integration) in the long run. Thus, this study can use the VECM model because all stationary data are at first difference and there is co-integration between variables.

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The diagnostic test results for the Papua and West Papua models using the portmanteau diagnostic test in lag-3 showed no serial residual correlation in each lag. This is shown by all values from statistics Q greater than $\alpha = 5\%$, Ho is accepted, there is no serial correlation. This means that lag-3 is the best VECM model.

4.1.1. Short-term Equilibrium Analysis

Table 2 provides a summary of the short-term VECM analysis results showing that REG is influenced by INF, LDR, NPL, GIS variables, OT, and NEG. Based on the VECM model, there is also a proven mechanism for adjusting the process from short term to long term, which is indicated by the significant negative coefficient of speed of adjustment (SOA). In Papua, the coefficient SOA = −1.1999 (significant), while, in West Papua, the coefficient SOA = −0.713 (significant). This demonstrates that there is a significant impact of previous REG on the current period's REG.

This is because, in Papua and West Papua, there is an economic growth target to be achieved in the coming period, which is targeted in the current period based on empirical data. In essence, there are targets that have an impact on realization. Table 2 illustrates that, according to the short-term equilibrium analysis, REG in Papua in the short term is influenced by D(REG[−1]), positive; D(OT[−1]), positive; and D(NEG[−1]), significantly negative; while, in West Papua, REG is significantly affected by D(REG[−1], D(REG[−3]), positive; D(INF[−2]), D(INF[−3]), negative; D(LDR[−1]), D(LDR[−2]), positive; D(OT[−1]), negative; and D(NEG[−1]), negative.

4.1.2. Long-term Equilibrium Analysis

Overall, the results of the VECM long–term estimation (Table 3) indicate that in Papua, economic growth (REG) is significantly influenced by INF(–1), LDR(–1), NPL(–1), GIS(–1), OT(–1), and NEG(–1). Meanwhile, REG in West Papua is only influenced by INF (–1), LDR (–1), OT(–1), and NEG(–1); while NPL(–1) and GIS(–1) are not significant.

LDR and NPL. The results of the study indicate that liquidity impacts economic activity, as illustrated by the significant positive LDR coefficient in Papua and West Papua. The impact of LDR (liquidity) on REG is greater in West Papua than in Papua. This is indicated by the LDR coefficients in Papua (0.119) and West Papua (0.547). Meanwhile, in Papua, the NPL coefficient = −4.123 (significant negative effect), but the NPL has no effect on REG in West Papua.

In this study, the GIS variable in Papua showed a positive coefficient of 2.184 (significant), while, in West Papua, the coefficient of GIS = 0.605 (non-significant). Such conditions indicate that domestic saving is insufficient to finance real-sector investment. Therefore, FDI comes in to support the economy. The greater saving-investment gap illustrates that domestic savings are less dominating investment financing. The results for Papua indicate that GIS influence on REG is positive (significant).

In West Papua, the OT coefficient is −0.111, which shows that each increase in the index of trade openness by 1% will reduce West Papua's economic growth rate by 0.111%. Since a downturn in the economy means that the poverty level rises, this indicates that, in the long run, international trade will increase poverty.

Table 2: Analysis of VECM – Short Term

Variables	Papua		West Papua	
	Coef.	*t*-test	Coef.	*t*-test
CointEq1	−1.19994***	[−5.46144]	−0.71293***	[−2.73163]
D(REG[−1])	0.51130***	[3.03151]	0.81210***	[3.47127]
D(REG[−3])	0.17650	[1.18687]	0.46827**	[2.22654]
D(LDR [−1])	0.06457	[0.53603]	0.42462***	[3.58471]
D(LDR[−2])	0.11730	[1.05418]	0.36351***	[3.66355]
D(OT[−1])	0.64439***	[2.63025]	−0.10298*	[−1.89765]
D(INF[−2])	0.02818	[0.02701]	−2.35862***	[−2.98642]
D(INF[−3])	−0.82511	[−0.75818]	−2.47526***	[−2.76934]
D(NEG[−1])	−6.49299*	[−1.72601]	−11.88821**	[−2.52704]
C	−1.33269	[−0.78695]	−2.24036*	[−1.91193]

Note: ***Significant at α = 1%; **Significant at α = 5%; *Significant at α = 10%.

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Table 3: VECM – Long-Term Equilibrium

Variables	Papua		West Papua	
	Coef.	*t*-test	Coef.	*t*-test
LDR(−1)	0.11948***	[3.63749]	0.54676***	[8.50071]
NPL(−1)	−4.12256***	[−4.16858]	−0.49081	[−0.78614]
GIS(−1)	2.18405***	[3.18616]	0.60427	[0.69615]
OT(−1)	0.77389***	[3.02806]	−0.11060***	[−3.55730]
INF(−1)	−1.86603***	[−3.74824]	1.25271***	[3.26997]
NEG(−1)	−8.84637***	[−3.67265]	−16.96077***	[−11.2157]
C	−55.2943		24.79463	

Note: ***Significant at α = 1%; **Significant at α = 5%; *Significant at α = 10%.

In Papua, the OT coefficient is 0.774, which indicates that each increase in the index of trade openness by 1% will increase the level of economic growth in Papua by 0.774%. Since an increase in economic growth means the level of poverty decreases, this indicates that, in the long run, international trade will impact the decreasing poverty rate (due to rising economic growth).

In Papua, the impact of negative INF on economic growth is significant. This indicates that inflation and economic growth move in opposite directions. If inflation rises 1%, it will be followed by a decrease in economic growth of 1.866%. In West Papua, if inflation rises by 1%, it will be followed by an increase in economic growth of 1.253%. The positive impact of inflation on economic growth is due to demand-pull inflation.

The NEG coefficient is −8.846 (significant) in Papua and −16.961 (significant) in West Papua. Indonesia's relatively stable economic growth evidently has an impact on the economic growth of the provinces of Papua and West Papua, which are more volatile with high intensity.

4.2. Discussion

The impact of liquidity and risk. The loan-to-deposit ratio (LDR) represents the regional liquidity conditions of the province. A greater LDR means faster mobility of funds, signifying an increase in economic activity. Non-performing loans (NPLs) represent the risk of bank credit financing. A high LDR means the mobility of public funds in the area is improving. The adequacy of liquidity strengthens AD and the AS, such that equilibrium shifts to the right and the economy grows. Meanwhile, if the NPL rises, this means the risk is higher for the mobility of public funds in the area, and the fund's mobility decreases. The impact weakens AD and the AS such that the equilibrium shifts to the left and economic activity decreases. This research is in line with the

findings of Olilingo and Putra (2020) who states that between bank credit and economic growth has a significant positive correlation in Indonesia. Abusharbeh (2017) demonstrates that bank credit is positively related to economic growth. This illustrates that the development of the banking industry tends to increase the productive capacity of the Palestinian economy. There is a strong tangible benefit of the banking credit policy due to its significant effect on the Palestinian economy.

The impact of trade openness. The results of this study are in line with the findings of Hameed and Nazir (2009) who demonstrate that economic globalization can reduce poverty in the long run. However, the benefits of economic globalization for a country's economy also depend on domestic macroeconomic policies, market structure, initial economic conditions, the quality of institutions, and the degree of political stability. Ozcan and Kar (2016); Okungbowa and Eburajolo (2014); Oyewale and Amusat (2013); Fischer (2003) offer similar conclusions. The benefits of free trade for the poor will only be felt in the long term. Therefore, various other efforts are needed so that the poor benefit from international trade. This can be realized if trade policies can empower and protect small economic actors so they can compete in world trade. Bist (2018) argues that trade openness has a significant positive relationship with economic growth, confirming the validity of the trade-led growth hypothesis. The results indicate that the role of trade openness is particularly important for Pakistan because trade enables the attraction of technological knowledge. The greater magnitude shows that trade openness contributes better to economic growth in Pakistan.

The impact of the investment-saving gap. The GIS variable reflects the difference level of investment (gross domestic capital formation) and the availability of public savings funds. If I > S (investment is greater than savings), the value of GIS increases. This means that the availability

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of public funds is insufficient to meet investment, so the shortfall is covered by foreign debt and foreign direct investment (FDI) to support the economic balance. The results of this study are in line with Nguyen (2020) and Baiashvili and Gattini (2020), who concluded that the impact of FDI on growth was significantly positive, especially in countries that performed better. These results are also in line with Dellis, Sondermann, and Vansteenkiste, (2017); Sabir, Rafique, and Abbas (2019); Hayat (2016).

The impact of inflation. In West Papua, there is a positive impact of inflation on economic growth due to demand-pull inflation. There has been a right shift in AD and AS, but AD > AS, so output agrees with the price level. That is, in the province of West Papua, AD = $(C + I + G + X) - M$ grew more than Q (output produced). There is excess demand, which drives the growth of regional production. In business language, the positive effect of inflation on production occurs because the inflation rate exceeds the increase in production cost, so marginal revenue (MR) > marginal cost (MC), which encourages producers to further increase their production and sales. This finding is in accordance with Dinh (2020), who state that the inflation rate is positively related to economic growth. The results support monetary policy in Vietnam.

This finding is also consistent with Tahir and Azid (2015), who demonstrate that a low inflation rate in a country indicates a stable economic environment that has a positive impact on economic growth. However, if the inflation rate fluctuates, it will complicate or slow the increase in a country's economic growth. In Papua, the impact of negative inflation on economic growth is significant. The price level rises, followed by a decrease in economic growth, and vice versa. Such conditions address that the cause of inflation is cost-push inflation. This is graphically illustrated by AD (relatively fixed) while the AS shifts to the left, so aggregate output decreases. In business language, this negative effect of inflation on production occurs because the increase rate in production costs surpasses the increase in output prices, so MC > MR, and producers will tend to reduce their production or sales. This finding is in accordance with Barro (1997), who concludes that inflation negatively affects economic growth. High inflation will slow economic growth, and vice versa; if the government is able to keep inflation at a low level, the effect is that accelerating economic growth will be more easily achieved. Moreover, Bibi and Rashid (2014) state that inflation is also negatively related to economic growth in Pakistan, while Bist (2018) asserts that inflation does not affect economic growth.

The impact of national economic growth. The relationship between NEG and REG is analogous to the relationship between the Composite Index of Capital Market and the Issuer Price Index (individual). Market movements affect the movement of individual stock prices. This study found

that the influence of Indonesia's economic growth on REG (Papua and West Papua) is negative (significant). The NEG coefficient is -8.846 in Papua and -16.961 in West Papua. Indonesia's relatively stable economic growth evidently has an impact on the economic growth of Papua and West Papua, which are more volatile with high intensity.

5. Conclusion and Recommendations

5.1. Conclusion

According to the results of the descriptive and inferential analyses of VAR/VECM, along with their discussion, overall regional economic growth (REG) variables in Papua and West Papua are related to REG, liquidity, risk, trade openness, saving-investment gaps, and national economic growth. The findings of this study are consistent with Patrick (1966) and Lee (2007), who explain that there are at least two possible relationships between financial variables and real-sector variables. The first is the relationship of financial development following economic growth. Economic growth will increase the demand for financial products, thereby increasing financial market and credit activities. Thus, the development of the financial sector is demand-following. The second is the relationship of financial development as a determinant of economic development or supply leading. This leading supply hypothesis suggests that causality comes from financial development toward real growth, where the development of the financial sector is a necessary condition but not sufficient to guarantee sustainable economic growth.

The economic condition in Papua. Under normal conditions, the impact of REG is positive in the short run, the impact of economic liquidity is positive in the long run, the impact of NPL is negative in the long run, and the impact of the saving-investment gap on the economic growth of Papua is positive in the long run. Moreover, normally, the impact of trade openness is positive in the short and long run, the impact of inflation on economic growth in Papua is negative in the long run due to cost-push inflation, and the impact of Indonesian GDP growth on the GDP growth of Papua is negative in the short and long run.

In conclusion, first, according to the short-run analysis, the response of the GDP growth of Papua has a positive impact on GDP growth; however, Papua's trade openness has a negative impact on its national economic growth. Second, according to the long-run analysis, the response of the economic growth of Papua has a positive impact on liquidity; however, Papua's trade openness has a negative impact on its NPLs, inflation, and national economic growth.

The economic condition in West Papua. Normally, in West Papua, the impact of REG on REG is significantly positive in the short run, and the impact of liquidity on REG in West Papua is significant in the short and long run.

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Moreover, normally, the impact of trade openness on REG is negative in the short and long run, the impact of inflation on REG is positive in the short and long run, and the impact of national economic growth on REG is negative in the short and long run.

Overall, according to the short-run analysis, the response of the economic growth of West Papua has a positive impact on economic growth and liquidity. However, it has a negative impact on trade openness, inflation, and national economic growth. According to the long-run analysis, the response of the economic growth of West Papua has a positive impact on liquidity and inflation. However, it has a negative impact on trade openness and national economic growth.

5.2. Implications

To improve, maintain, and enhance the economic development stability of Papua and West Papua, the local government needs an early warning system (EWS) to detect the dynamics of economic development. The value and purpose of the EWS is to detect the symptoms of shock that has occurred and has the potential to disrupt the course of the economy's health and stability. This EWS should adopt the seven variables used in this study as its core variables. In addition, the seven variables in this research should be considered as inputs in formulating future economic development strategies and policies.

In the financial sector, the governments of Papua and West Papua must further increase the citizen movement in saving. This method will increase regional saving, which has the potential to normalize and reduce the saving-investment gap and risk liquidity management. This is important considering that the LDR in Papua is still too high and bank funding is mostly sourced from the money market, which leads to high costs. Increasing regional domestic saving is a key factor to improve the stability of credit and investment growth, which has the potential to strengthen the aggregate demand (AD) and aggregate supply (AS) for sustainable real output growth.

Export-import management must lead to net exporter countries in the world market, particularly in West Papua, which must quickly improve its balance of trade. Meanwhile, in Papua, although the contribution of trade openness to economic growth proved to be positive under normal conditions, the regional economic reaction will decline in the event of a shock. An attempt to carry out international trade in each region must strive to export comparatively superior goods and import needed goods to encourage.

The intensification and improvement of the management system for controlling inflation stability must be increased to maintain growth stability. This is important considering that inflation in Papua is caused by cost-push inflation, while, in West Papua, the cause is demand-pull inflation.

The control of inflation should focus on reducing production costs; as a result, the MC decreases, which will bring the region forward in sustainable growth and economic development. Marginal profit then rises, such that production grows. The production processes in the long run taking advantage of opportunities for the impact of national economic growth is important because, under normal conditions, the impact of the national economy on GDP growth in Papua and West Papua is negative in the short and long run.

5.3. Recommendations

To increase regional saving, the financial sector's performance must be creative and innovative in raising public funds. Various approaches must be taken, from how to utilize high tech to the use of local wisdom. Furthermore, the performance of the financial sector should lead to increased financial inclusion and financial literacy, which has the potential for financial development to sustain regional economic development in the long term.

The local economic resources must lead to the development of manufacturing industries that lead to product diversification and increase the added value of export commodities to strengthen trade openness. To improve the performance of the service trade balance, local governments need to encourage the performance of the tourism industry, the insurance industry, and shipping. The local regional government must also synergize with the central government to immediately reduce the import of raw materials or supporting materials by finding substitutes from within the country, continuing to reduce oil and gas imports as world oil prices rise by optimizing the B20 program, and so on.

Furthermore, the Ministry of Industry of the local area must determine import needs by looking at what goods are needed by the local economy, whether it is in the form of raw materials or capital goods, and whether they are truly strategic to support regional economic activities. Finally, they should identify industrial needs and proceed with policy adjustments in the fields of taxation, customs, and other fiscal policies.

References

Abduh, M., & Chowdhurry, N. T. (2012). Does Islamic Banking Matter for Economics Growth in Bangladesh? *Journal of Islamic Economics, Banking and Finance*, *8*(3), 104–113.

Abusharbeh, M. T. (2017). The Impact of Banking Sector Development on Economics Growth: Empirical Analysis from Palestinian Economy. *International Journal of Finance & Economics 6*(11), 2306–2316.

Adeniyi, O., Oyinlola, A., Omisakin, O., & Egwhaikide, F. O. (2015). Financial Development and Economics Growth in

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Journal of Asian Finance, Economics and Business Vol 8 No 4 (2021) 0643–0651

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Nigeria: Evidence from Threshold Modelling. *Economics Analysis and Policy*, *47*(c), 11–21.

Baiashvili, T., & Gattini, L. (2020). Impact of FDI on Economics growth: The Role of Country Income Levels and Institutional Strength, *EIB Working Papers*) 2020/02, ISBN 978-92-861-4574-2, European Investment Bank (EIB), Luxembourg, http://dx.doi.org/10.2867/846546

Bibi, S., & Rashid, H. (2014). Impact of Trade Openness, FDI, Exchange Rate and Inflation on Economics Growth: A Case Study of Pakistan. *International Journal of Accounting and Financial Reporting, 4*(2), 236–257.

Bist, J. P. (2018). Financial Development and Economics Growth: Evidence from a panel of 16 African and non-African low-income countries. *Cogent Economics and Finance*, *6*(1), 1449780. doi:10.1080/23322039.2018.1449780

Berger, Allen N., & Sedunov, John. (2017). Bank Liquidity Creation and Real Economic Output *Journal of Banking and Finance.* Available at SSRN: https://ssrn.com/abstract=2515361 or http://dx.doi.org/10.2139/ssrn.2515361

Bui, T. N. (2020). Financial Development in Vietnam: An Overview. *Journal of Asian Finance, Economics and Business*, *7*(9), 169–178. https://doi.org/10.13106/JAFEB.2020.VOL7.NO9.169

Camba, A. C. J., & Camba, A. L. (2020). The Dynamic Relationship of Domestic Credit and Stock Market Liquidity on the Economic Growth of the Philippines. *Journal of Asian Finance, Economics and Business*, *7*(1), 37–46. https://doi.org/10.13106/JAFEB.2020.VOL7.NO1.37

Dinh, D. V. (2020). Impulse Response of Inflation to Economic Growth Dynamics: VAR Model Analysis. *Journal of Asian Finance, Economics and Business*, *7*(9), 219–228. https://doi.org/10.13106/JAFEB.2020.VOL7.NO9.219

Dellis, K., Sondermann, D., & Vansteenkiste, I. (2017). Determinants of FDI Inflows in Advanced Economies: Does the Quality of Economics Structures Matter? *Working Paper Series 2066, European Central Bank.*

Dreher, A. (2006). The influence of Globalization on Taxes and Social Policy: An empirical analysis for OECD countries. *European Journal of Political Economy*, *22*(1), 179–201.

Ductor, L. & Grechyna, D. (2015). Financial Development, Real Sector, and Economics Growth. (2015). *International Review of Economics & Finance*, *37*, 393–405.

Fischer, S. (2003). Globalization and its Challenges. *The American Economic Review*, *93*(2), 1–30.

Hameed, A., & Nazir, A. (2009). Economic Globalization and its Impact on Poverty and Inequality: Evidence from Pakistan. *ECO Economic Journal, 1*, 1–21.

Hayat, A. (2016). Foreign Direct Investment, Institutional Frame work and Economics Growth. *MPRA Paper, 74563*, 1–13.

Lee, J. (2007). Financial Intermediation and Economic Growth: Evidence from Canada. *Fordham Economics Discussion Paper Series* (05), Fordham University, Department of Economics.

Mankiw, N. G. (2019). *Macroeconomics* (10th ed.). New York, NY: Worth.

Mishkin, S. F. (2016). *The Economics of Money, Banking, and Financial Markets*. Boston: Pearson Addison Wesley.

Nguyen, H. H. (2020). Impact of Foreign Direct Investment and International Trade on Economic Growth: Empirical Study in Vietnam. *Journal of Asian Finance, Economics and Business*, *7*(3), 323–331. https://doi.org/10.13106/JAFEB.2020.VOL7.NO3.323

Nor, H. H. M. N. (2015). Financial Development and Economics Growth: A Survey of Literature. *Proceeding of the 2nd International Conference on Management and Muamalah* (2nd ICoMM) 16th – 17th, e-ISBN: 978-967-0850-25-2

Nowbutsing, B. M. (2014). The Impact of Openness on Economics Growth: Case of Indian Ocean Rim countries. *Journal of Economics and Development Studies, 2*(2), 407–427.

Okungbowa, F. O. E., & Eburajolo, C. O. (2014). Globalization and Poverty Rate in Nigeria: An empirical analysis. *International Journal of Humanities and Social Science*, *4*(11), 126–135.

Olilingo, F. Z., & Putra, A. H. P. K. (2020). How Indonesia Economics Works: Correlation Analysis of Macroeconomics in 2010 - 2019. *Journal of Asian Finance, Economics and Business*, *7*(8), 117–130. https://doi.org/10.13106/JAFEB.2020.VOL7.NO8.117

Oyewale, I.O., & Amusat, W. A. (2013). Impact of Globalization on Poverty Reduction in Nigeria. *Interdisciplinary Journal of Contemporary Research in Business*, *4*(11), 475–484.

Ozcan, G., & Kar, M. (2016). Does Foreign Trade Liberalization Reduce Poverty in Turkey? *Journal of Economic and Social Development*, *3*(1), 157–173.

Patrick, H. (1966). Financial Development an Economics Growth in Underdeveloped Countries. *Economics Development and Culture Change, 14*(2), 174–189.

Sabir, S., Rafique, A., & Abbas, K. (2019). Institutions and FDI: Evidence from Developed and Developing Countries. *Financial Innovation*, *5*(1), 1–20.

Samargandi, N., Fidrmuc, J., & Ghosh, S. (2014). Financial Development and Economics Growth in an Oil-Rich Economy: The case of Saudi Arabia. *Economics Modelling, 43*, 267–278.

Tahir, M., & Azid, T. (2015). The Relationship Between International Trade Openness and Economic Growth in the Developing Economies: Some new dimensions. *Journal of Chinese Economic and Foreign Trade Studies, 8*(2), 123–139.

Thierry, B., Jun, Z., Eric, D. D., Yannick, G. Z. S., & Landry, K. Y. S. (2016). Causality Relationship Between Bank Credit and Economics Growth Evidence from A Time Series Analysis on A Vector Error Correction Model in Cameroon. *Social and Behavioral Sciences*, *235,* 664–671.

Todaro, M. P., & Smith, S. C. 2015. *Economic development* (12th ed.). London, UK: Pearson Education Limited.

Zeren, F., & Ari, A. (2013). Trade Openness and Economic Growth: A Panel Causality Test. *International Journal of Business and Social Science, 9,* 300–318.