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RETESTING OF PROCYCLICALITY IN INDONESIAN SHARIA BANKING DURING THE COVID-19

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ABSTRACT

Introduction: The Covid-19 pandemic is unique because the financial sector is usually affected earlier when a shock occurs, but in this incident, the real industry is more affected. Differences of opinion regarding procyclicality maintain the importance of early indication.
Methods: This study aims to reexamine procyclicality in Islamic banking using the VAR/VECM method.
Results: The results show that Islamic banks are proxies that support economic development without causing bubbles.
Conclusion and suggestion: The avoidance of MAGHRIB (Maysir, Gharar and Riba) ultimately makes Islamic banks have financing characteristics that are different from conventional loans.

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INTRODUCTION

Market liquidity fluctuates from time to time. Empirical research shows that these fluctuations are related to the state of the economy. The difference between liquid assets and liquid assets is more excellent in recessions, and liquidity crises are usually associated with economic downturns. From the Bretton Wood agreement that occurred in 1970 until 2017, Laeven and Valencia (2018) identified 151 banking crises, 236 currency crises, and 74 debt crises.

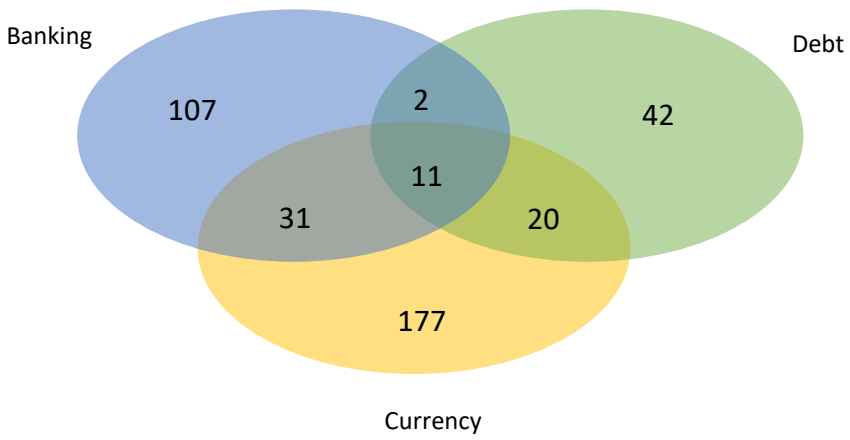

Figure 1. Crisis That Occurred Since the Bretton Wood Agreement
Source : Laeven & Valencia (2018)

The banking crisis was recorded as the second-largest crisis that ever occurred and was the cause of the situation in the 2000s. Banking has the nature of procyclicality because it directly touches the real sector of the economy. This interaction will tend to strengthen the amplitude of the business cycle, which can cause systemic instability in the financial system (Ascarya et al, 2016).

COVID-19 is an unexpected event that stops all economic systems (Ozdemir et al., 2022). This creates widespread uncertainty in macroeconomic fundamentals. Governments worldwide design policies to combat the negative impact on the economy. The effects seen during the COVID-19 pandemic resulted in many companies experiencing difficulties in operation and productivity of a company (Suginam et al., 2021).

The covid pandemic is unique because, in other crises, the financial system, which is "much more vulnerable" to shocks, will usually show a noticeable effect. However, in the case of COVID-19, the real sector, which is considered more resilient in withstanding wonders, is actually "battered". In Indonesia, money flows more dominantly in the financial industry than in the real sector, causing liquidity to reach the real sector after a period of time. This statement was supported by the deputy governor of Bank Indonesia (BI), which stated that BI had provided liquidity of around 5% of GDP. However, this liquidity was still circulating in the financial sector, causing liquidity to accumulate there.

Procyclicality is an inherent component of banking (Diamond & Dybvig, (1983); Holmstr¨om & Tirole, (1998); Kashyap et al, (2002)). This economic and financial cycle explanation is often known as the “financial accelerator” (Borio et al., 2001). Leroy &

Lucotte (2019) show that lending to 16 European banks is more procyclical in economies with weak bank competition. As can be seen from previous empirical research, the procyclicality of lending is influenced by many factors, including macroprudential policies and competition between banks. The macroprudential policy aims to enhance financial stability by reducing risks from excessive procyclicality in the financial sector and linkages between financial intermediary institutions. Procyclicality indicates the tendency of the financial system to amplify economic fluctuations, and the essence of this mechanism is the self-reinforcing interaction between funding constraints, asset prices, and risk-taking (Olszak & Kowalska, 2022).

Bouvatier et.al., (2012) shows that credit in 17 OECD countries is procyclical but does not seem affected by the banking market structure. Aysan & Ozturk (2018) investigated bank credit in Türkiye. The results of this study indicate that banking credit in Türkiye is procyclical. This study also looks at the procyclicality differences between Islamic and conventional banking. However, the differences are not too significant. Procyclicality in Turkish banking is driven by competition between conventional and Islamic banking. Ibrahim (2016) tested conventional credit and financing in Malaysian banking, concluding that conventional banking credit is more procyclical than Islamic banks.

Several researchers have examined banking procyclicality in Indonesia, such as Ascarya et.al., (2016), who concluded that Islamic banking is more procyclical than conventional banking. However, the majority of these studies took place before the Covid-19 pandemic. Ali et al., (2021) explained that Covid-19 does not only have an impact on health but also the business cycle and lifestyle. Therefore, this study aims to re-examine the procyclicality of Islamic banking in Indonesia.

LITERATURE REVIEW

Procyclicality, in a simple concept, is defined as an interaction between the financial system and the real economy that reinforces each other (Kouretas et al., 2020). This mutually reinforcing interaction is a financial accelerator concept that works through the propagation of leverage or loans and collateral value mechanisms. According to Landau (2009), procyclicality refers to the tendency of financial variables to fluctuate around trends during economic cycles. Increased procyclicality means fluctuations with a broader amplitude.

A broader definition of procyclicality would include three components which cannot be easily distinguished in real life:

1. Fluctuations around the trend
2. Changes in the trend itself
3. Possible cumulative deviations from the equilibrium value

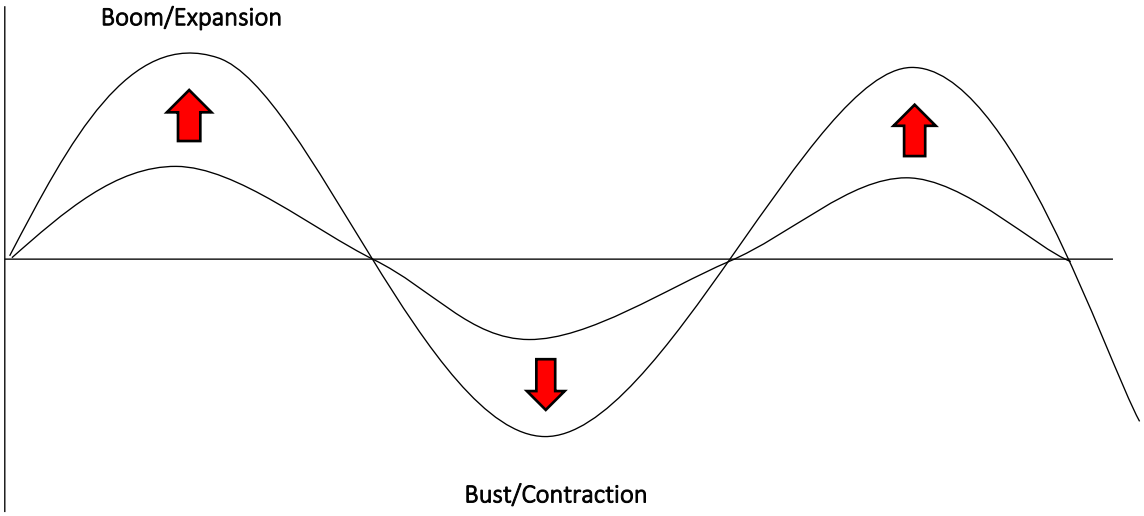

Figure 2. Business Cycle and Procyclicality Behavior
Source: Bank Indonesia (2016)

This points to the policy challenges facing regulators. They should identify when purely cyclical fluctuations turn into something different, either a change in trend itself or the start of a cumulative process (Landau 2009). All parties agree with procyclicality when the financial system is in a contractionary phase, but many parties may have different opinions when the financial system is in an expansionary phase. Procyclicality is a logical consequence of a process in which the financial sector finances economic growth. Therefore, the behaviour of the financial sector, especially banking, will naturally lead to procyclism (Kouretas et al., 2020). At a time when economic growth increases and macroeconomic stability is maintained, the confidence and optimism of economic actors will increase, thereby encouraging capital inflows. Furthermore, this condition triggers an increase in asset prices and collateral values. Increasing the value of the collateral will ultimately improve the balance sheets of banks and companies, thus encouraging an increase in the demand and supply of credit. Conversely, risk-averse behaviour increases when economic conditions deteriorate and encourages capital outflows. Companies and banks will make adjustments to maintain capital levels. As a result, the amount of credit decreased as well as output.

Procyclicality can also be interpreted as a mechanism that influences three cycles, namely the business cycle, the financial cycle, and the risk-taking behaviour cycle. Ascarya & Rahmawati (2015) explains the relationship between these three cycles in her writing.

Table 1. Relationship between Business Cycle, Risk Taking Behavior Cycle and Financial Cycle

Phase	Business Cycle	The Risk-Taking Behaviour Cycle	Finance Cycle
Expansion	• Stable Macroeconomics • Economic growth has increased	• Level of confidence and optimism has increased • High level of risk taking • Demand for credit has increased	• Risk values fall, interest rates fall • Asset prices are rising, pushing up collateral values • *Leverage* increases • The flow of foreign capital is increasing • Credit extension increases
Contraction	• Increasing macro volatility • Economic activity is declining	• Market confidence is falling • Prevention of risk taking • Demand for credit fall	• The bank performs develaraging • Provision for loan losses increased • Interest rate spreads increased • Credit supply fell • Decreased capital flows

The procyclicality of the financial sector, especially banking, which occurs through the financial accelerator mechanism, is influenced by several factors, as cited by (Panetta et al., 2009) state that advances in communication technology, such as the ease of obtaining reliable information about debtors, play a role in increasing probability. On the one hand, technological advances have increased efficiency in monitoring and evaluating debtors. But on the other hand, this condition also results in a lack of customer interaction, which can lead to underpricing risk.

Research on credit procyclicality has been a significant topic in many economic publications, but the goals of the researchers may vary, such as Granville and Mallick, (2009); Bouvatier et al., (2012), (2014). However, because procyclicality is the initial alarm in anticipating a crisis, it is necessary to re-examine procyclicality in Indonesia.

RESEARCH METHODS

Data analysis technique in this research used *Vector Autoregressive (VAR) / Vector Error Correlation Model (VECM)*. The type of data used in this research is secondary data which is quantitative. Secondary data is research data obtained through intermediary media (obtained and recorded by other parties). The secondary data used in this study comes from Sharia Banking Statistics on the website of the Financial Services Authority, Bank Indonesia, obtained from the official website. The secondary data used is time series data from 2004 to 2020.

Table 2. Operational Definitions of Variables

Dependent Variable	
Real Financing	The real financing variable in the procyclicality model is the total of financing obtained from SPS and divided by CPI to obtain real value from Islamic banking financing
Independent Variable	
IPI	The monthly index of IPI (Industrial Production Index) is taken from the table "Monthly Production Index of Medium and Large Industries" BPS
SATISFACTION	The level of a margin between Islamic banks taken from SEKI-BI table 1.25
NPF	Bad financing is taken from SPS data
ICTA	Ratio of Capital divided by Islamic banking assets obtained from SPS

Model for Testing Procyclicality in Islamic Banks

Tests for procyclicality have been previously carried out by Utari (2012) with models:

$$Yit = \text{f macro var, bank lever var, dummy var, other var} + et \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where the macro variables are real GDP and real short-term interest rates, bank levels are LTA, BOPO and capital. The dummy variables for foreign and non-foreign banks and other variables are market capitalization, IRD and Building Property Price Index. In addition Ascarya et al (2016) with the following models:

$$dLRFN = \alpha_1 + \alpha_2 \text{dGDP} + \alpha_3 \text{NPFt} + \alpha_4 \text{dIMM} + \alpha_5 \text{dICTA} + \varepsilon t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

The model used in this study adopts (Ascarya et al, 2016) model as follows:

$$dFIN = \alpha_1 + \alpha_2 \text{dGDP} + \alpha_3 \text{NPFt} + \alpha_4 \text{dIMM} + \alpha_5 \text{dICTA} + \varepsilon t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Is known

dRFin : First difference from ln (Total Financing/CPIt) t is the monthly time period
dGDP : First difference from IPI
dNPF : First difference from Non-Performing Finance or bad financing
dIMM : First difference from the Money Market between Islamic Banks
dICTA : First difference from Islamic Capital to Assets

RESULT AND ANALYSIS

Tabel 3. Stationarity Test

Variable	*Unit Root Test*			
	Level		*1st Difference*	
	Prob	Keterangan	Prob	Keterangan
Real Financing	1.0000	Not stationary	0.0000	Stationary
ICTA	0.8667	Not stationary	0.0000	Stationary

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IPI	0.7732	Not stationary	0.0000	Stationary
NPF	0.5038	Not stationary	0.0000	Stationary
IMM	0.3480	Not stationary	0.0000	Stationary

Based on the unit root test, all variables are not stationary at the level but stationary at the 1st difference.

Table 4. Lag Optimum Test

Lag	LogL	LR	FPE	AIC	SC	HQ
1	1451.375	NA	3.29e-13	-14.55485	-14.13672*	-14.38557*
2	1479.794	53.93752	3.17e-13*	-14.58973*	-13.75348	-14.25118
3	1495.220	28.49064	3.50e-13	-14.49204	-13.23766	-13.98420

The results of the optimum lag test on the procyclicality model show an astric sign at the first lag in all tests. Therefore, the optimum lag in the procyclicality testing model is in the first lag.

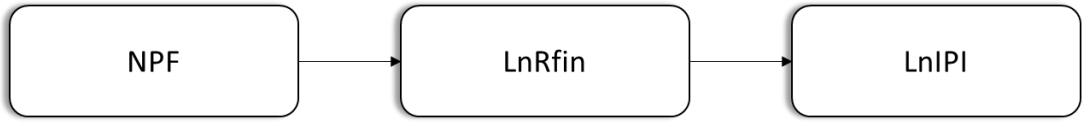

Figure 3. Granger Causality Test

Granger causality test shows one direction of causality, where npf affects LnRfin (real financing) affects LnIPI (output).

Tabel 5. VECM Long Term Test

VARIABLE	COEFFICIENT	T-STATISTIK
LNIPI(-1)	-3.171473	**[-7.19172]**
ICTA(-1)	5.570870	[1.07420]
NPF(-1)	0.286301	**[2.24509]**
IMM(-1)	0.285490	**[3.03347]**

In the long-term vecm test, apart from the ICTA variable, all are significant to real financing. In the long run, changes that occur in GDP will change real financing almost three times. While the NPF and PUAS variables are negative, meaning that every time these two variables change, real financing will decrease.

Tabel 6. Short Term VECM

VARIABEL	KOEFISIEN	T-STATISTIK
CointEq1	-0.006101	**[-5.60713]**
D(LNRFIN(-1))	0.12971	[1.79271]
D(LNRFIN(-2))	0.077084	[1.07838]
D(ICTA(-1))	-0.142936	[-0.64935]
D(ICTA(-2))	0.031213	[0.14362]
DIPI(-1)	-0.053632	[-1.43490]
DIPI(-2)	-0.032122	[-0.86318]
DNPF(-1)	0.004303	**[2.17076]**
DNPF(-2)	0.001272	[0.62865]
DPUAS(-1)	0.000627	[0.95533]
DPUAS(-2)	-0.000497	[-0.77512]

In the short-term test, there are not many significant variables, only integration which indicates that the VECM test is correct, and the NPF variable in the previous period.

Analysis

Discussion on procyclicality still needs to be improved. The counter-argument states that procyclicality should be given more attention and assumes that this situation is a natural consequence if the financial sector encourages the real sector. Apart from these problems, economists only naturally pay attention to the surrounding economic conditions and indicate risks that can threaten them. When analyzed between the Granger causality test and the long-term test results, Islamic banking still does not have a bubble.

The one-way causality shown in Figure 4 proves Islamic bank financing is healthier for the economy. NPF causes real financing, and real financing causes IPI, not vice versa. This means that the role of the accelerator is carried out without causing risk. Supporting this statement, the results of the VECM long-term test show that the IPI coefficient and real financing are positive. This mutual encouragement indicates that Islamic banking is procyclical. However, the Granger causality test shows that NPF does not cause real financing, indicating that no bubbles are created. This does not mean that the more real financing, the greater the NPF following research by Ascarya et al. (2016) and Ibrahim (2016).

The threatening risk of procyclicality is not when the economy is booming but when the economy is contracting. The reason is that when the economy is sluggish, the financial sector, which should be a stimulus to the economy, limits its liquidity, which can worsen

the economy. The Covid 19 pandemic finally forced the economy to stagnate.

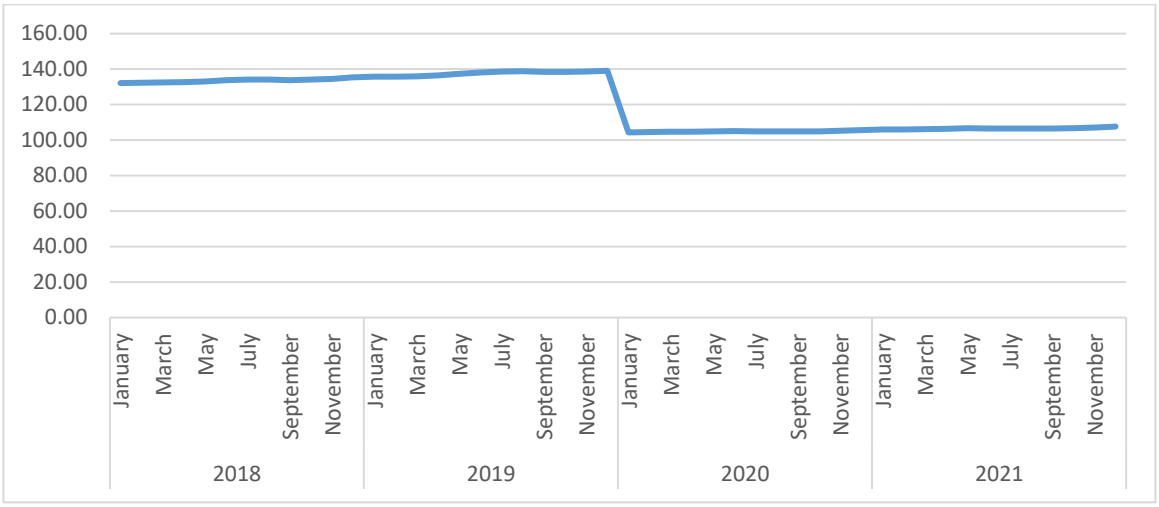

Chart 1. Consumer Price Index 2018 – 2021

The Consumer Price Index (CPI) shows that at the beginning of the pandemic, there was a decline in the economy due to restrictions on activities that occurred. This incident needs to be anticipated. However, a surprising thing happened during the pandemic.

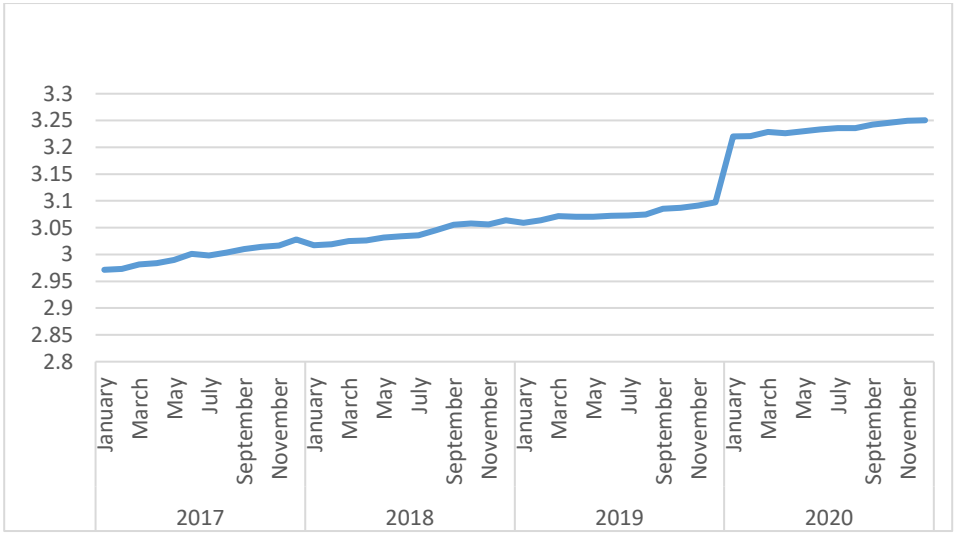

Chart 2. Financial Real 2017 – 2020

Instead of experiencing a decline, financing increased during the initial period of the pandemic. Therefore, this reason is enough to explain that procyclicality in Islamic banking encourages the economy without causing other risks.

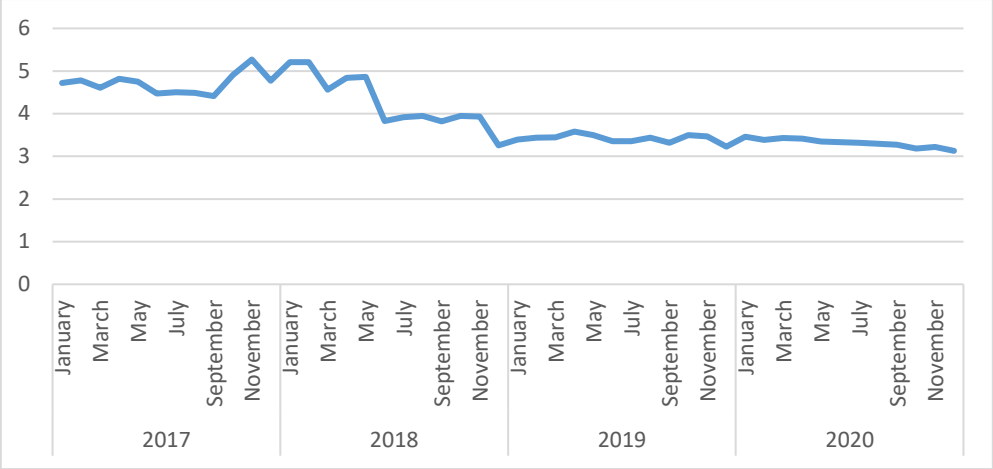

Chart 3. NPF Bank Syariah periode 2017 – 2020

This graph reinforces the previous theory that Islamic banks do not cause economic bubbles. Because in the early period of the pandemic, real financing increased, but the NPF decreased. This is caused by Islamic banking obeying the commands of ALLAH SWT, who orders to stay away from MAGHRIB (Maysir, Gharar, and Riba). The nature of financing and credit is quite different. Unlike conventional banks, which set interest, cooperation-based financing (syirkah) divides profits based on margins or profits earned with a predetermined portion (nisbah). When interest rates are raised, credit to conventional banks will decrease because creditors tend to be reluctant to pay high interest. In contrast to sharia banking profit sharing, where increased financing makes Islamic banking more enthusiastic to channel financing because the amount of funds obtained is greater. The core point is that Islamic banking implements the economic value of time, where the benefits are obtained through economic activity.

CONCLUSION

It is proven that the proximate nature does not include the provocative nature, which does not cause bubbles. Strengthening evidence that Islamic banks are proxies that do not cause bubbles, real financing data has proven to have increased at the start of the Covid-19 period, and NPF has decreased. Protocols that do not cause bubbles boost the economy. Islamic banks do not cause bubbles because they use the principle of staying away from MAGHRIB (Maysir, Gharar and Riba). The avoidance of MAGHRIB ultimately makes Islamic banks have financing characteristics that are different from conventional loans.

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