Are sharia bank financings in Indonesia procyclical?

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Article Info

Abstract

Purpose – The study aims to determine whether Islamic banks' debt financing and equity financing are procyclical or counter-cyclical.

Methodology – The data used in this study cover eight Islamic commercial banks and span from 2008 to 2020, thereby including 72 observations. The analysis employs the dynamic panel data model estimated using the GMM method (Generalized Method of Moments).

Findings – The debt-based financing, under *murabahah, salam, istishna*, and *ijarah* contracts, did not display clear procyclical or counter-cyclical behavior. In contrast, equity financing based on *mudharabah* and *musyarakah* contracts demonstrated procyclical characteristics concerning economic fluctuation.

Implications – Policymakers need to pay more attention to Islamic banks with a greater proportion of equity financing for both micro and macroprudential policy purposes since procyclicality is likely to be associated with higher risks. Similarly, Islamic banks with greater proportion of equity financing need to watch carefully the behavior of their equity financing concerning its effect on risks for the purpose of their risk management and prudential policy.

Originality – This research paper fills in the absence of studies that examine which category of Islamic bank financing – debt-based or equity-based financing - is more procyclical.

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Introduction

The financial cycle, which is closely intertwined with banks' lending, hardly be detached from the business cycle. Expansion of businesses that include Micro, Small, and Medium Enterprises (MSMEs), especially in their early stages, is often associated with the expansion of banks' loans. Similarly, the contraction of businesses, initiated by business losses and failures, is likely inseparable from the contraction of banks' loans. According to Bank Indonesia (2021), 62.9 million new business units have emerged and grown quickly over the past ten years, and lending, corporatization, and capacity building have been responsible for the growth of MSMEs.

In addition, Government support for sharia-based business cycles is also evident when the government issues State Sharia Securities (SBSN), also known as state sukuk, in anticipation of a global financial crisis. In line with the Masterplan of the Islamic Financial Economy (MEKSI 2019-2024), Bank Indonesia is currently working on establishing a blueprint for the Islamic financial economy. This blueprint encompasses various aspects such as empowerment, development, strengthening research, assessment, and education in Islamic finance.

Both state and private banks with foreign and local ownership likely play a crucial role in distributing loans to cooperatives and other business units. When studying the behavior of conventional and Islamic banks in Indonesia when making a financing choice, Pratami et al. (2021) compared financing models between conventional and Islamic banks with both local and foreign ownership. The result shows that conventional commercial banks exhibit procyclical behavior, meaning that the financing provided by these banks is positively correlated with business turnover. On the other hand, Islamic banks display counter-cyclical behavior during times of crisis and in various economic conditions. The result is in line with the findings of Cull and Martínez Pería, (2013) and De Haas and Van Lelyveld (2014), with a significant portion of the empirical research on the lending cycle of commercial banks having been primarily focused on developing markets rather than relatively smaller and less established regional banks.

According to Godlewski et al. (2018), larger banks tend to reduce the counter-cyclical effects on cooperative banks. In contrast, cooperative banks have demonstrated their ability to maintain financial stability without relying on foreign shareholders, unlike commercial banks, which often depend on foreign shareholders for support. Other literature discusses lending patterns in more detail, including cooperative banks in Poland that provide loans to SMEs. In addition, Cull and Martínez Pería (2013) found that state banks were procyclical in the Eastern European Area, but were counter-cyclical in South America and in terms of bank ownership. In contrast to previous studies, this research specifically examines the financing patterns of Islamic commercial banks. It aims to observe the business cycle from the perspective of Micro, Small, and Medium Enterprises (MSMEs) and other business aspects through the lens of Islamic banking. The study emphasizes the role of Islamic banking in fostering economic growth while adhering to the fundamental principles of Islamic law.

In this paper, the researcher begins by highlighting the specific lending channels offered by Islamic banks and their contribution to the economic growth observed during the onset of the recession in 2020. Indonesia currently holds the fourth position in the Islamic Finance Development Index, with the potential to rise to the second soon. This development is closely linked to the increasing awareness among the majority Muslim community in Indonesia regarding the utilization of services provided by Islamic banks. However, previous literature has discussed the potential deviation of Islamic banks from their ideals (Weill & Zins, 2021), which include principles such as prohibiting interest rates, restricting investment in speculative assets, avoiding unethical practices, and adhering to shariah principles (Farooq & Zaheer, 2015; Lubis et al., 2019). It is important to address the limited understanding among ordinary Indonesians who may perceive Islamic banks solely based on Sharia principles without a deeper comprehension of the underlying concepts (Addury, 2017). This lack of understanding makes them susceptible to external influences and potential issues.

According to the Islamic Financial Services Council in 2019, Islamic banking assets have more than doubled in the last two decades, from $660 billion to $1.57 trillion in 10 years from 2008 to 2018. This is inextricably linked to the benefits they receive from the disbursed loans. Islamic banks have been distributing loans with debt financing via sale and purchase contracts and leases and equity financing via profit-sharing contracts. The profit-sharing pattern for Islamic banks (PLS) is to share risk between creditors and debtors with an initial agreement based on the distributive justice principle. However, this contradicts the findings that PLS tends to be disintermediated (Beck et al., 2013).

So far, no research has specifically discussed the procyclical nature of financing in Islamic banks in terms of financing type. Islamic banks' financing is divided into debt financing (via sale and purchase contracts and leases) and equity financing (via profit-sharing contracts). Previous studies have focused on financing in Islamic banks in general. Several reviewed literature tried to investigate the existence of links between procyclicality and such factors as asset ownership and quality, bank size, and bank reliance on foreign share ownership.

The purpose of this study is to thoroughly investigate the pattern of financing in Islamic banks related to company turnover situations. The key variable in this study is the usage of two types of financing in Islamic banks. This study is limited to the sample period before the economic

slowdown when the Covid-19 pandemic struck. Therefore, the data collection period was based on the 2008-2009 monetary crisis through 2020. Moreover, the findings of this work are predicted to enrich Islamic banking literacy, which can serve as a motivator for future researchers to align with the Islamic economics curriculum in universities and add to the literature on Islamic finance studies. The role of Islamic banks at that time could help mitigate the global crisis's harmful effects (Beck et al., 2013; Farooq & Zaheer, 2015; Hasan & Dridi, 2011; Soedarmono et al., 2017).

Literature Review

This study provides an in-depth insight into the nature of Islamic commercial bank lending trends that has yet to be investigated. This paper aims to determine which loan pattern, debt financing or equity financing, has a more favorable effect on long-term economic stability. Aysan and Ozturk (2018) point out similarities between Islamic banks' loan patterns and procyclical conventional banks in Turkey. This observation has sparked significant discussion and generated a considerable body of literature on the lending cycles of various banking systems, including conventional private banks, state banks, foreign-owned banks, cooperative banks, and Islamic banks.

The perspective presented by Aysan and Ozturk (2018) contradicts the notion that the involvement of Islamic banks in ensuring economic stability cannot be separated from their social objectives of poverty reduction and promoting distributive justice, which goes beyond the sole focus on profitability (Aysan & Ozturk, 2018; Mansour et al., 2015; Venardos, 2006). The profitability discussion in Cornett et al. (2010) revealed that the profitability obtained by 16 state banks operating in 16 Asian countries is also much lower, with a higher risk, than that of private banks. However, this problem recovered after the Asian region's economic crisis improved. This study builds on previous research, which found that state banks' profitability is lower than private banks. This is because politicians in India, Pakistan, Brazil, and Italy use government loans to provide political protection, which leads to poor credit allocation and a high level of non-performing financing in government banks (Bertay et al., 2015; Carvalho, 2014; Cole, 2009; Khwaja & Mian, 2005; Sapienza, 2004).

Furthermore, a study comparing two Islamic banking systems in Malaysia and Indonesia discovered that the former was counter-cyclical while the latter was procyclical (Ascarya et al., 2016). Bertay et al. (2015) and Ibrahim (2016) investigated the nature of government banks in the business cycle with a sample of 32 high-income countries and 79 developing nations, including Indonesia, creating a sample of 1633 banks that cover the 1999-2010 period. Its findings indicate that lending in high-income nations is less procyclical than in developing countries. This highlights a new fact: State banks can supply reliable credit even in an unpredictable financial scenario, even if credit distribution is inadequate.

Albertazzi and Bottero (2014) conduct another study that compares the resilience of banks in Italy after the Lehman Brothers crisis by comparing cross-border foreign banks with domestic banks. His findings show that foreign banks make a minor contribution and are procyclical. Previously, Bofondi et al. (2018) compared the capabilities of international banks in the pre-Lehman Brothers and post-Lehman Brothers collapse periods, finding that an increase in the supply of credit given by foreign banks is less influenced by financial market shocks than domestic banks.

The originality of this study stems from the need for more particular research examining the pattern of Islamic bank funding from debt or equity financing, which is more procyclical, as explained in the preceding literature. This motivates researchers to dig deeper than these two notions to find conclusions that do not contradict the fundamentals of Islamic law in practice. The difficulties encountered while writing this paper are a lack of data, limited time, and a large body of literature against Islamic commercial banks in practice. These include running a socially just business with partners, not viewing customers as debtors and creditors, and being involved in a positive business cycle promoting economic growth.

The main hypothesis of this study is that funding Islamic banks is not procyclical, given their important role during the economic crisis. Researchers also extend the analysis to include another hypothesis. Procyclical lending in a kind of credit pattern is sensitive to local conditions in

Indonesia, exacerbating economic conditions during severe default periods. Of course, central bank monetary policy influences banks' lending decisions and regulatory credit crunch (Akinsola & Ikhide, 2018).

Research Methods

The Financial Services Authority, Bank Indonesia, and the World Bank provided data for this study. The data used in this study came from eight Islamic commercial banks, with 72 observations from 2008 to 2020. As with Pratami et al. (2021), this analysis only uses data from one nation, Indonesia. This is because the researchers attempted to eliminate the effect of heterogeneity while employing multi-country items. Furthermore, Indonesia was chosen as the subject since it has the world's largest Muslim population (Rizvi et al., 2020)

This study aims to analyze the behavior of financing in Islamic banks when viewed from the type of financing. This is done to determine whether Islamic banks are procyclical or counter-cyclical regarding business turnover. The specifications of the model used follow the basic model of (Bertay et al., 2015; Micco & Panizza, 2006) as follows:

$$\delta Debtfi_{it} = \alpha_i + \beta\delta Debtfi_{it-1} + \beta\delta GDP_t + \beta INF_t + \beta X_{it-1} + \epsilon_{it} \tag{1}$$

$$\delta Equityfi_{it} = \alpha_i + \beta\delta Equity_{it-1} + \beta\delta GDP_t + \beta INF_t + \beta X_{it-1} + \epsilon_{it} \tag{2}$$

Based on this equation, $\delta Debtfi$ is the growth of bank i's debt financing at time t, $\delta Equityfi$ is the growth of bank i's equity financing at time t, δGDP is economic growth at time i, INF is inflation at time t, X is the control variable for bank i at time t. The data are analyzed using the dynamic panel data model estimated using the GMM (Generalized Method of Moments) method owing to Verbeek (2004). The purpose of using the dynamic panel method with the GMM approach is to control the bias related to simultaneity.

Results and Discussion

This section contains descriptive statistics derived from research data, regression estimation results, GMM debt financing test results, GMM equity financing test results, and the validity test.

Descriptive Statistics

Table 1 reports the variables used in this study. Debt financing growth has a mean value of 33.5, a minimum value of -43.20, and a maximum of 625.70. The standard deviation is 89.43 and more than the variable's mean value, demonstrating the large volatility of debt financing. The same is true of the equity financing growth variable, with a mean value of 46.44, a minimum value of -23.56, a maximum value of 1008.79, and the standard deviation value of 121.49, which is greater than the mean, indicating poor data distribution. In addition to these two, other variables have a reasonably excellent level of data dispersion, as shown by their standard deviation and mean values.

Table 1. Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Debt Financing Growth	33.52	89.43	-43.20	625.70
Equity Financing Growth	46.44	121.49	-23.56	1008.79
Size	0.97	1.15	0.01	5.30
Log_DPK	29.57	1.69	25.84	32.36
CAR	22.52	21.63	10.60	195.14
NPF	3.09	2.92	0.00	22.04
BOPO	95.80	19.26	73.00	215.58
GDP Growth	4.78	2.14	-2.07	6.22
Inflation	4.73	1.83	1.92	10.23
Log_Kurs	9.39	0.18	9.10	9.58
BI Rate	6.05	1.42	3.75	9.25

GMM Debt Financing Test

Table 2 presents the outcomes of data testing using the Generalised Method of Moments (GMM) method. Four regressions were run in the first test with debt financing growth as the dependent variable. The first model includes GDP growth and inflation only; the second model adds two macroeconomic control variables, namely exchange rates and benchmark interest rates of Bank Indonesia; the third model takes consider internal control variables of banks, such as size, NPF, CAR, NPS, and BOPO; and the fourth model includes all control variables. This first test's results met the standards for the validity and consistency of the Sargan and Arellane-Bond tests' results.

Table 2. Debt Financing Model

Variables	(1) debfi_g	(2) debfi_g	(3) debfi_g	(4) debfi_g
L.debfi_g	0.149***	0.075	0.092*	0.042
	(0.056)	(0.054)	(0.051)	(0.042)
gdp_g	0.188	-0.859	0.279	0.013
	(1.217)	(1.219)	(1.473)	(1.229)
Inf	2.531	3.780	0.177	4.862*
	(1.870)	(2.966)	(2.270)	(2.765)
Size			3.261	12.282
			(7.659)	(8.676)
log_dpk			-19.442**	-11.888
			(9.402)	(8.813)
Car			-0.029	0.097
			(0.143)	(0.229)
Npf			1.901	2.064*
			(1.405)	(1.157)
Bopo			-0.876**	-0.940**
			(0.436)	(0.444)
log_kurs		-87.071***		-81.021**
		(19.647)		(32.045)
bi_rate		-2.679		-4.315
		(3.440)		(3.464)
Observations	72	72	72	72
Number of banks	8	8	8	8
Arellano-Bond 1	0.2169	0.2289	0.2109	0.2795
Arellano-Bond 2	0.5228	0.5634	0.8294	0.863
Sargan	0.6438	0.7717	0.7527	0.7936

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * <0.10

The study's findings in Table 2 reveal that debt financing is neither procyclical nor contra-cyclical during the observation period. This may be observed in the rise of GDP and inflation, which do not affect the growth of debt finance. BOPO and the currency rate are two variables that constantly influence the expansion of debt finance. BOPO had a coefficient of -0.876 in the third regression test and -0.960 in the fourth. This suggests that when Islamic banking cannot maintain its efficiency due to higher operating costs, Islamic banks will limit debt-based financing. Previous research by Addury (2019) discovered that the efficiency of Islamic banks has a substantial influence on the performance of Islamic banks.

On top of that, in the second and fourth estimated regression models, the exchange rate consistently affects debt financing with negative coefficients, -87.071 and -81.021, respectively, indicating that increased depreciation tends to reduce debt financing growth. This is because debt finance is based on *murabahah, salam, istishna,* and ijarah contracts (Antonio, 2001), which customers utilize to purchase products, many of which are imported goods that become more expensive during increased depreciation of the local currency. This causes the exchange rate to have unfavorable effects on debt financing growth.

GMM Equity Financing Test

Furthermore, the test results for the equity financing growth model is reported in Table 3.

Table 3. Equity Financing Model

| Variables	(1) equityfi_g	(2) equityfi_g	(3) equityfi_g	(4) equityfi_g
L.equityfi_g	0.315***	0.287***	0.320***	0.292***
	(0.020)	(0.026)	(0.034)	(0.031)
gdp_g	2.936**	1.743*	2.447**	1.571
	(1.286)	(0.958)	(0.997)	(1.057)
Inf	1.095	-6.279	0.528	-5.862
	(3.207)	(4.592)	(3.051)	(3.658)
Size			1.647	12.116
			(11.553)	(10.634)
log_dpk			-6.305	3.283
			(7.966)	(8.388)
Car			-0.488***	-0.375**
			(0.182)	(0.177)
Npf			-3.311***	-2.845***
			(1.010)	(1.024)
Bopo			1.058**	1.129***
			(0.467)	(0.433)
log_kurs		-62.783		-95.469*
		(42.119)		(55.341)
bi_rate		8.800**		9.635**
		(3.470)		(3.962)
Observations	71	71	71	71
Number of bank	8	8	8	8
Arellano-Bond 1	0.3075	0.2892	0.2987	0.2161
Arellano-Bond 2	0.2988	0.379	0.3096	0.3962
Sargan	0.1328	0.1251	0.0798	0.1115

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.10

The same four regression models are used in the second test. The estimated models met the standards for the validity and consistency of the Sargan and Arellane-Bond tests' results. The results indicate that equity financing of Islamic banks exhibits a procyclical nature. This is evident from the significant and positive contributions of GDP growth, as reflected by the coefficients of 2.936 in the first, 1.743 in the second, and 2.447 in the third. Increased (decreased) economic growth tends to increase (decrease) Islamic banks' equity funding growth. This finding is consistent with the result of Aysan and Ozturk (2018) that financing provided by Islamic banks is also procyclical. In addition to GDP growth, CAR, with coefficients of -0.88 and -0.375 in the third and fourth regressions, respectively, as expected, has significant and negative effects on equity financing growth.

Similarly, as expected, NPF negatively affects equity financing growth, with coefficients of -3.311 and -2.845 in the third and fourth regressions, respectively. Not as expected, increased BOPO tends to reduce equity financing growth, with coefficients of 1.058 and 1.129 in the third and fourth regressions, respectively. Finally, Bank Indonesia Interest Rate positively affects equity financing growth, with coefficients of 8.800 and 9.635 in the second and fourth regressions, respectively.

Based on these two findings, this research concludes that a more in-depth analysis is required before determining that financing in Islamic banking is more procyclical. This is because the proportion of equity financing in Islamic banks is smaller than debt financing; during the observation period, debt financing had an average of IDR 10,021,171,345,316, while equity

financing had an average of IDR 5,128,572,172,504. Furthermore, the comparison between debt financing and equity financing in this study can be seen in the following graph:
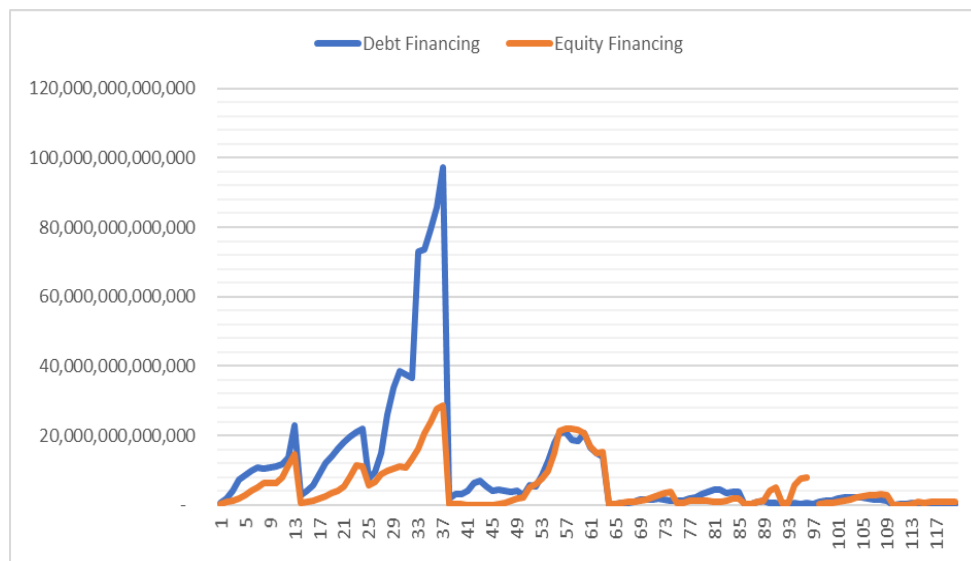
Figure 1. Comparison between Debt Financing and Equity Financing

Conclusion

Islamic banks are vital as intermediary organizations since they can stimulate economic growth. Islamic banks have a role to play in encouraging economic expansion while maintaining the Islamic legal foundation inherent in their nature and social objectives. This study establishes whether debt and equity financing structures are procyclical or contra-cyclical. The findings show that during the observation period, the debt-based financing (constructed using *murabahah, salam, istishna,* and ijarah contracts) is neither procyclical nor contra-cyclical. This may be observed in the rise of GDP and inflation, which have no impact on the growth of debt finance. BOPO and the exchange rate depreciation constantly influence debt finance growth.

Different results were found in equity financing (based on *mudharabah* and *musyarakah* contracts), that this type of financing is procyclical concerning economic growth. Economic expansion encourages Islamic banks to expand their equity financing and vice versa.

This research realizes that it is necessary to conduct a deeper analysis of the pattern and nature of financing in Islamic banks before granting a procyclical label. This is because the share of equity financing in Islamic banks is lower than the proportion of debt financing. The study's research weakness is that it only looks at one country, Indonesia. This is because the researchers attempted to reduce the influence of heterogeneity while using resources from multiple countries. Furthermore, Indonesia was picked as the object since it has the world's largest Muslim population.

As a result, this research offers recommendations to address these concerns by analyzing the wider objectives of Islamic banking in alignment with ongoing research efforts that support government programs. This aims to establish Indonesia as a trailblazer in developing the Islamic financial system. For policymakers, the findings of this research serve as a basis for understanding the need for government and private-sector capital infusion to stabilize lending during times of severe economic downturns. Ultimately, this objective aligns with Bank Indonesia's mission and collaboration with the National Committee and Sharia Finance (KNEKS).

Author Contributions

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