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ARTÍCULO

Are Shariah Banking Financing patterns pro-cyclical? An Evidence from ASEAN Countries

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Abstract: In the modern age, any economic quantity that is positively collated along with overall state economic growth is considered better pro-cyclical. If it is not positively correlated, economic growth could be in a recession. This shows that pro-cycling of economic growth is important to boost the economy. Various factors affect the pro-cyclical economic growth, but among affect the pro-cyclical of the economic growth, but the growth has a positive and significant association with the Shariah bank financing. Therefore, this research investigates whether the Shariah bank financing patterns are pro-cyclical for economic growth in the ASEAN countries. This is because every Islamic finance product has a particular role in promoting growth. For this purpose, Quarterly data were collected for nine countries for 2010Q1-2021Q4. The panel data results indicated that other than Istisna financing, all different types of financing funding had a positive and significant impact on economic growth, while Salam financing has the highest growth potential. This research discovered growth-based weights for popular Islamic finance alternatives, which policymakers can utilise to identify a certain type of financing that should be supported to boost economic growth. Moreover, the study could also add a body of literature in the previous studies to become a new research area in the future. The research could also be considered a pioneer study in the extant literature and significantly affects economic growth.

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1. Introduction

Numerous recessions have previously touched the global economy throughout history due to swings or shocks that resulted in a decline in economic activity. As proven by its lengthy history of economic and financial crises, the Islamic banking sector is innately pro-cyclical. Ambali and Bakar (2014) claimed that the financial sector's instability, which is at the foundation of the recession's problem, is always linked to poor management of bank loan operations. Empirical research proving the existence of pro-cyclical bank financing activities to the business cycle back this up. (Eid, Omar, Khalid, & Ibrahim, 2016; Zulkhibri & Sakti, 2018). In this approach, banking sector pro-cyclicality is defined as the result of a self-reinforcing relationship between the financial sector as well as the overall economy, leading in unsustainable economic growth through upturns and deeper recessions throughout downturns. (Compant, Clément, & Sessitsch, 2010). In other words, the financial sector contributes significantly to the exacerbation of cyclical swings by preventing efficient resource allocation within the economy and adversely affecting credit growth and financial stability, pro-cyclicality in the banking industry, which exacerbates business cycle swings. (Landau, 2009). (Zulkhibri & Sakti, 2018), pro-cyclicality behavior in Islamic banks causes bubbles, negatively influencing the economy. The credit mechanism significantly affects the total of the swings that happen within the economic cycle. (Saadaoui & Hamza, 2020). Pro-cyclicality arises when the economy expands exponentially due to rising GDP, increasing bank lending from both Islamic and conventional banks. (Zulkhibri & Sakti, 2018).

As a result, financial development and growth have received considerable attention. It was initially examined via the lens of conventional banking and remained so in the current research through Islamic banking. The financial industry is inextricably linked to growth for the following reasons. Firstly, financial extension counts as a crucial input in micro and macro-level projects. Indeed, institutionalised financing provisions help to reduce the cost and thus increase the quality of access to the capital (Atrizka, Lubis, Simanjuntak, & Pratama, 2020). Secondly, more benefits of Islamic financial development include the change of the economy toward Shari'ah compliance, a higher level of risk-sharing, and integration rewards with the risk/performance connected with the investment venture, all of which lead to social prosperity. (Badawi, 2014). Even though there is a clear link between financial development and growth, studies conducted also show a two-way causality. These haphazard dimensions are both supply-driven (financial development drives growth) and demand-driven (demand drives growth) (growth causes financial development) (M. S. Hassan & Kalim, 2017). While advocating the role of Islamic economic development, it is pertinent to note that Islamic banking has been the fastest-growing Islamic finance sector for the last two decades. Islamic banking is currently operational in more than 80 countries around the globe. This riba free banking model distinguished by risk-sharing innovation stimulates its growth among Muslim and non-Muslim countries. Investment is an essential factor in the development and economic growth. The establishment of Islamic banks is a viable method to mobilise the financial resources available for the Shari'ah approved projects. The doctrine of Shari'ah-compliant financing assists in maintaining discipline and stability and remains useful in asset creation. Furthermore, transparency is the main feature of the Islamic financial system. Islamic banking has made unprecedented progress over the last two decades.

In this respect, the ASEAN countries have experienced remarkable growth and are considered the main hubs for such ventures. However, besides its core potential, Islamic banking has faced some challenges that may hamper its future growth and potential (M. M. Khan & Bhatti, 2008a). Islamic hubs have served as launching pads for introducing and promoting Islamic banking in western financial markets. In Malaysia, Islamic banking accounts for around 16% of the market. Islamic banking has passed the 50% level in the housing industry, indicating significant development.

The expansion of the Islamic banking industry in various countries boosted their economies and led to extensive development. In several cases, growth in Islamic banking serves as a current source to enhance the macroeconomic efficiency of the country. It suggests that a huge potential exists in such financial ventures (Gheeraert & Weill, 2015). Pratami et al. (2021); Kalim (2020) discussed the possibility of Sukuk bonds to replace the public debt. Regulators serving in Islamic and non-Islamic countries now realise that Islamic banking is a viable option to enhance the financial conditions and pro-cycle the economy.

Keeping in view previous discussion, it has been shown that Islamic banks played an important role in the pro-cycling of the economy. Along with this, empirically, previous studies have various gaps. Previous studies have focused on financing and economic relationships in conventional banks but have little attention on Islamic banks. Secondly, the previous studies are mostly country-specific but unrelated to ASEAN economies. Thirdly, the previous studies have only conducted some Shariah financing patterns like mudarbah, murrabaha, and musharkah but have little attention to major shariah financing patterns. As mentioned in the previous literature, the majority of the financing tools are considered important to enhance the procycling of economic growth. Therefore, other financing patterns, namely Istisna, Ijarrah, and Salam Shariah, could not be ignored for the pro cycling of economic growth. Thus, the current study objective is to investigate whether Shariah bank financing patterns are pro cyclical for the economic development of Islamic banks in ASEAN economies.

2. Literature Review and Hypothesis Development

2.1 Theoretical Review

2.1.1 Musharaka Financing

Musharaka is a type of partnership modelled after a business venture, in which two or more partners contribute funds to run the firm jointly (ElGindi, Said, & Salevurakis, 2009). of Islamic banking argue that partnership contracts are the ideal mode of financing, characterising the true spirit of Islamic banking (Dusuki & Abdullah, 2007). On Profits and rewards are distributed according to a predetermined ratio agreed upon at the time of the contract, and losses are permitted according to the contributed ratio of the invested capital. (Hearn, Piesse, & Strange, 2012). Musharaka (like Mudarabah) is a partnership-based model of business. Due to its profit and loss sharing nature, the proponents the other hand, non-partnership-based contracts do not have the characteristics of profit and loss sharing. So, the non-partnership mode should only be used when the partnership mode of financing is unavailable or cannot be applied.

Additionally, proponents of Musharaka finance assert that, due to the risk and loss sharing characteristic, it contributes to the financial system's stability, incredible allocative efficiency, and GDP growth. (Arshed, Yasmin, & Gulzar, 2020). Islamic banks are currently reluctant to indulge in the partnership-based-based financing mode because of the high risk. There are many studies in which the authors reported related issues (Ahmad & Haron, 2002; F. Khan, 2010). Risk arises when the outcome of an event is unknown. Every type of business faces uncertainties and hence, some banking institutions face more risk while others face less risk (F. Khan, 2010).

To bring risk at a tolerance level, Islamic banks must have a strong management information system (MIS) to monitor, report, and identify the transactions involved. Banks should engage apt experts, including Shari'ah advisors, to review and ensure that the financing proposals are Shari'ah compliant. Islamic banks may hire technical experts to evaluate the feasibility of the new proposals. They can establish the clauses of collateral and third party guarantees to ensure the extent of reliance and redemption or utilisation of collateral in the case of counterparty defaults. Any kind of penalty imposed should be donated to charity, according to the Shari'ah. Periodic reviews of business transactions are recommended to control the operational deficiencies and maintain transparency. These may include an external audit by the external auditor. According to Meera and Razak (2005), there is a positive correlation between Musharaka funding and economic growth.

2.2 Murabaha Financing

Shofawati (2014) explored the practices of Islamic modes of financing in Indonesia, along with other ways of financing funding like Musharaka, Mudarabah and Ijarah. They suggested that the government adopt all those measures that ensure the fulfilment of Fiqh regulations. Further, they empathised with the idea specifically for Murabaha as the same is a source of dominating source of Islamic modes of finance in Indonesia. Murabaha is the most used mode of sale. Murabaha is not a sort of financing but a particular sale agreement in its original Islamic association. It is an excellent Shariah-compliant alternative to debt financing by the conventional banking system. In this sale agreement, the commodity is sold for cost plus profit. In its mechanism, the seller discloses the cost of acquiring the specified product required by the purchaser and the cost of acquiring the specified product and the profit margin. The total price includes cost and profit margin paid in instalments. Thus, Murabaha is not a loan given on interest, which Shariah refuses. Instead, it is a type of financing to purchase a commodity. The banks use Murabaha to facilitate trade financing, and it is flexible enough to facilitate currency exchange and hedging (Alsayyed, 2010). Findings have Bacha (1997) depicted the disjoint association between Murabaha financing and economic growth.

2.3 Mudarabah Financing

Mudarabah is, by nature, a profit/loss bearing contract in Islamic finance, and it was also the most widely practised contract before the advent of Islam. The capital provider is called "Rub ul Maal", which provides the intact capital required to finance a project. However, the other person who offers his expertise and efforts is the entrepreneur, the "Mudarib". According to the pre-agreed ratio, capital gains or profits of the venture are shared between both partners. Whereas all the losses (if any) are entirely borne by the Rub-ul-Maal.

On the other hand, the liability of an entrepreneur is a limited liability to the loss of his time and efforts. In modern times, the application of the Mudarabah contract has been extended to cover various businesses. It is widely used as a simple partnership contract in which one party provides the capital, and the other comes with the labour and expertise. Both the parties share the gains from the business according to the predetermined ratio. The Rab ul Maal completely bears the capital loss, whereas the Mudarib or manager bears to lose his efforts and time. The other uses of the Mudarabah contract include investment accounts and project financing (Rahman, 2010). Mudarabah can be used as an alternative to venture capital given by the conventional financing system as an equity financing strategy. It is a dynamic mechanism for removing interest from society by providing interest-free finance through the Mudarib as the manager of the economy's resources.

In contrast, banks provide financing and share gains and losses, unlike banks in the interest-based financing mode. Interest interest-bearing credit creation is the major source of inflation in the economy. So, interest-free business activities help reduce inflation in the economy and significantly impact employment creation by promoting commercial activities (Arshed et al., 2020). Letter of credit based on Mudarabah is also used to facilitate trade.

Additionally, it is utilised in various service industries, including health care, education, information technology, and communication. Equity finance or profit-sharing under Mudarabah can be used in a wide variety of productive initiatives regardless of the product kind, time duration, or risk involved, as long as the product is Shari'ah legal, marketable, and profitable. (Rahman, 2010).

Equity financing modes are considered high-risk financing modes, where Rab ul mal provides the capital to the Mudarib while completely relying on his ability and integrity (M. K. Hassan & Lewis, 2007). The financier is exposed to market and credit risks (Antonio, 2001; Bacha, 1997). If a bank acts as Rab ul mal, it provides the capital to an external agent and the bank is not allowed to take part in the management of the venture. It creates an agency problem in equity-based financing (Dar & Presley, 2000). So, the financing risk is quite high because of the covert business transactions and the lack of transparency (M. M. Khan & Bhatti, 2008b).

2.4 Istisna Financing

Istisna is comparable to non-participatory finance. Additionally, it is a unique type of sale that is excluded from the specific Fiqh rule (Do not sell because it serves societal needs that cannot be met by traditional financing). It is a contract in which one party agrees to make or construct something following specified specifications for a fixed price that may be paid in one single payment or instalments. The distinguishing element of Istisna is the permissibility of cost and commodity deferral. Shari'ah scholars do not approve such a sale contract because of postponement. However, Istisna is exempted from such constraints because of its economic benefits at large. The possibility of the price paid in instalments is legitimate in the Hanafi school of thought and is also adopted by various IFIs. Currently, Istisna is widely used in the Gulf and Asian countries to finance commercial and industrial projects and finance commercial, industrial projects, and home financing.

In monetary terms, the customer has no direct obligation of repayment. This transaction is considered a high-risk transaction with several inherent risks, unlike other modes of Islamic financing. These risks include the commodity risk, the price of commodity risk and the risk of no performance or the non-delivery risk. To overcome these situations, the banks may have the option of parallel Istisna, where they execute a second contract, and three parties are involved in the parallel Istisna. On the other hand, Islamic banks may require appropriate security or guarantee in the form of a mortgage or hypothecation. Keeping in view the precautionary measures, banks should obtain the Takaful cover for the underlying commodity. In executing the Istisna contract, avoid financing for specialised items such as software of a particular nature. This is because, upon the client's refusal, there will be probably no other buyer. Within the Shari'ah compliant financing framework, a type of asset-backed financing, Istisna fits well that positively contributes to economic growth.

2.5 Ijarah Financing

Uusmani and Taqī ʻUs̲mānī (2002) defined Ijarah financing in his book as "Ijarah contract of Islamic banks includes purchase of a required asset by the customer and allow him to use it against the rental payment that is fixed throughout the tenure, the fundamental feature of Ijarah contract is the ownership of the asset remained with the bank or financial institution till the instalments are being paid by the customer." Hafnida, Maamor, and Abdullah (2015) suggested that in the private sector, the liquidity for the IFIs is not affected when financial intermediation is done using Ijarah. This finding supports several modes of Islamic financing, including Mudarabah, Musharaka, Murabaha, Istisna and Ijarah. Kamali (2007) investigated the importance of Ijarah financing compared to funding interest based. The author opined that Ijarah is the best substitute for the conventional lease and contributes to economic development. It does not adversely affect inflationary pressure compared to the traditional lease.

Also, several empirical researchers support this argument and confirm its effect on profitability, such as Akkas (1996) conducted a study with similar findings in Bangladesh. Since the collapse of conventional banking and interest-based financing modes, people are more inclined to seek a better alternative to traditional financing. Conventional banks were about easy collateral and convenient rules according to the Shari'ah norms. The profit and loss sharing mechanism helps to nurture economic development via the encouragement of the concept of equal income distribution. Financing is provided to SMEs for the high tech machinery to ensure production according to the market needs and expectations (Abdelrahman, Abdullah, & Abas, 2017). Ijarah's financing arrangement is made by the mutual consent of both parties, which leaves no room for doubt among the contracting parties. Since it is asset-backed financing, it is considered more susceptible to ensuring default-free transactions, which mitigate the risk faced by the banking sector that could enhance the economic growth (Saba & AlSayyed, 2010).

2.6 Salam Financing

Muhammad and Chong (2007), discussing the similarities and differences between Salam and Istisna, believed that in Salam financing, the price is paid beforehand, but the required goods are delivered later. Whereas, in the case of Istisna, the cost and goods both are settled afterwards. Mohammed, Ogunbado, and Aziz (2016) recommended that in Nigeria, Salam financing must be implemented to uplift the agricultural output and boost the country's industrial and commerce sectors. Moreover, it will also promote the stable economic growth of the country. Kaleem and Wajid (2009) discussed the application of Bai Al-Salam for financing agriculture in Pakistan. According to the survey's findings, farmers might save a significant amount of money if they purchased the apparatus all at once (Arshed et al., 2020). Yusuf, Muneeza, and Hassan (2011). They came up with a novel agricultural financing model based on Bai Al Salam that they believe is theoretically possible. They continued by stating that Salam is a risky product, which is why it has not gained widespread acceptance in Malaysia. In other words, there is a strong and positive correlation between salam financing and economic growth. (Mohammed et al., 2016).

3. Empirical Review

3.1 Incidence of Shariah Financing and Pro-cycling of Economic Growth

Islamic banking serves as a tool to achieve socio-economic development and justice in society. Riba-free banking solutions are intended to facilitate Shari'ah-compliant financing. These include Mudarabah, Musharaka, Istisna, Salam, and Ijarah, which can all be employed independently or in conjunction to encourage financial development. Islamic banking pro-cycles the economy through an equal income distribution based on its risk-sharing features.

Islamic banking operations and practices always reflect a Shari'ah based environment. The first Islamic bank was founded in Egypt in 1963, and its branch network rapidly expanded in many other countries around the globe, for instance, Malaysia, Iran, Bahrain, Indonesia, and Saudi Arabia. Indonesia and Malaysia's banking systems operate on a Shari'ah-compliant retail basis. Malaysia and Indonesia have emphasised Islamic financing to facilitate commerce and finance. In ASEAN countries, Islamic banks compete based on the quality of their Islamic banking offerings rather than religious considerations. In Kuwait, financing is concentrated in the real estate and petroleum sectors.

Since 1979, in the era of the Islamic revolution in Malaysia, studies have been conducted to form a riba free banking system parallel to the structural development and banking sector reforms. Malaysia primes a competitive and vibrant component of growth and development in the overall Islamic financial system. According to the Bank of Negara Malaysia report, the country has shown a remarkable economic growth record since 1970. Like Indonesia and other developing countries, the Malaysian economy has slightly shifted towards industrialisation and the services sector, contributing more than 80 percent of the GDP that boosts the country's pro-cycling. Recently, many empirical studies agreed that the financial system lubricates the economic vehicle (Mohammed et al., 2016). However, Islamic banks have specialised instruments to target special economic needs unlike the conventional financial system. Indeed, the economy's composition, the banks' expertise, and the need of the hour explain which product provides higher returns in terms of economic growth.

While connecting Islamic banking and finance with growth, one must form the link between them using an appropriate functional form of the estimation model. This study proposes Islamic banking and finance as the injection into the economy that collaborates with the physical capital and labour to yield the desired output. The current theory demonstrates that the development of the banking and finance industry is encouraging to achieve pro-cycling of economic growth since the banking sector operates to mobilise the savings, stimulates innovation in technology and improves the efficiency of the resources. This study hypothesises that the Islamic financial system has the potential to eliminate debt financing and to improve the efficiency of financial resources. (Kalim, 2020). Almighty Allah has guaranteed that the money spent in the way of Allah grows like a seed of a grain which grows in seven branches and each of which yields 100 grains, thus contemplating 700 times growth (Al – Qur'an 59:7). For this purpose, the spending model must ensure that it has no hint of riba (Al – Qur'an 2:276, 3:130, 30:39).

Moreover, money is spent moderately (Al – Qur'an 17:29) and responsibly (Al – Qur'an 8:27; Sahih Muslim 1833a). As a result, the expenditure is accompanied by the blessings of Allah Almighty. Darrat (1988) discovered that riba-free banking is more dynamic and robust in achieving monetary objectives. This form of banking is pro-cyclical and oriented toward sustained and real economic growth.

Moreover, it reduces the inflation rate and boosts employment. While sharing the experience of M. S. Khan and Mirakhor (1990), stressed that the reliance on profit-sharing arrangements makes the Islamic system similar to an equity-based system. These studies suggest that Islamic banking is a better option than non-Islamic banking to deal with the banking crisis. Furqani and Mulyany (2009) found that in the long run, there is a bidirectional relationship between Islamic banking and fixed investments in the country. It also suggested that an increase in the GDP causes development in Islamic banking pro-cycling and not vice versa.

In the ASEAN region, the relationship between Islamic finance and economic growth Kar, Nazlıoğlu, and Ağır (2011) demonstrates a heterogeneous nature across various countries. The relationship is negative for the petroleum exporting ASEAN countries. It is positive but not significant for ASEAN countries without oil. A similar study conducted in the ASEAN region by Goaied and Sassi (2010) showed that banks' development and economic growth are negatively associated with the country's economic growth. However, Islamic financial institutions (IFIs) performed positively, though the empirical relationship is not very strong. In terms of the relationship between Islamic banking and Bangladesh's economic growth, Abduh and Omar (2012) concluded that expansion of Islamic banking results in an increase in economic growth, both in the long and short run. Iran and Indonesia are also struggling to drive their economy into a better position. However, both are known to be established Islamic states. Taking Iran and Indonesia as sample countries, Yazdan and Mohammad Hossein (2012) showed a significant relationship between Islamic financial development and economic growth in both the short-run and the long-run. The relationship appears to be bidirectional. The said research empirically showed the role of the Islamic banking system in enhancing economic growth. According to El-Galfy and Khiyar (2012), the studies about the impact of Islamic banking on development are single-country studies and their findings are difficult to generalise. However, their results suggest that Islamic banking positively contributes to a country's macroeconomic stability.

In Pakistan, a study was conducted using the AID (Assets, Investment and Deposits) model (Hussain & Islam, 2012). The results showed that Islamic banks had shown remarkable growth. In Qatar, the empirical results were reported by (Tabash & Dhankar, 2014). They stated that Islamic banking and finance positively impact economic growth, and Shari'ah-compliant financing is also significantly correlated with economic growth. In UAE, according to Tabash and Dhankar (2014),

In Indonesia, Abduh and Omar (2012) empirically examined the short-run and long-run relationships between Islamic banking and the country's economic growth. They reported a bidirectional relationship between the IFIs and the economic development of Indonesia. While discussing the same concept, Dahduli (2009) studied Islamic banking and finance effectiveness. It has been witnessed that Islamic PLS contracts help to boost economic growth by directing the funding to profitable industries. Kassim, Majid, and Yusof (2009) reported a bidirectional relationship between the IFIs and economic development in Malaysia after considering the financial shocks for Islamic banks from 1997 to 2007. Hafnida et al. (2015) found the positive impact of various Islamic financing modes such as Mudarabah, Musharaka, Murabaha, Ijarah and Istisna on economic development in selected OIC countries. They suggested that the regulators and policymakers prioritise the Islamic mode of financing when proposing a new policy. Khoutem and Nedra (2012) indicated that Islamic financing instruments, including Mudarabah and Musharaka, stimulate economic growth in an economy. Ali (2004) suggested that Islamic finance modes such as Ijarah and Murabaha require Islamic banks to know the purpose of financing. They must ensure that the funds are used for the stated purpose; it keeps the credit tied to the real economic activity throughout the tenure.

Furqani and Mulyany (2009) conducted a study in Malaysia on the relationship between economic growth and the Islamic banking system. They used the cointegration and VECM tests. The findings suggested that Islamic finance and economic growth are favourably associated in the long run.

Hasan and Dridi (2010) revealed that Islamic banks positively contribute to financial stability and macroeconomic growth by making more credit available. Hasan and Dridi (2010) reviewed the literature on the relationship between Islamic banking and economic development. Their study demonstrated that the main channel of economic growth is Islamic banking, in general. They recommended that future research on Islamic banking and economic growth be done using panel data analysis instead of time series analysis. Ledhem and Mekidiche (2020) compared the indicators of CAMELS approach-based performance and its effect on the economic growth of 5 countries. This model showed that very few indicators have a significant effect on economic growth. Most of the previous studies used a single indicator to measure the progress of the Islamic banking sector, such as Islamic banking and finance, Islamic banking assets and/or Islamic banking deposits (Kalim, Mushtaq, & Arshed, 2016). Unlike conventional banking, the financial products of Islamic banks are not perfect substitutes to each other; hence they tend to have a different effect on the economy. A study by Hafnida et al. (2015) used five popular products to assess their effects on economic development. This study extends this model to assess the effects of 7 products using advanced panel data models.

4. Research Framework and Hypothesis Development

Based on the previous discussion, the following research framework of the study has been formulated below.

Based on the above research formulated in the previous literature review discussion, the following research hypotheses are formulated below.

H1: Musharkah Financing is significantly related to the pro-cycling of economic growth of ASEAN countries.

H2: Murabaha Financing is significantly related to the pro-cycling of economic growth of ASEAN countries.

H3: Mudharbah Financing is significantly related to the pro-cycling of economic growth of ASEAN countries.

H4: Istisna Financing is significantly related to the pro-cycling of economic growth of ASEAN countries.

H5: Ijarah Financing is significantly related to the pro-cycling of economic growth of ASEAN countries.

H6: Salam financing is significantly related to the pro-cycling of economic growth of ASEAN countries.

5. Research Methodology

Unlike the conventional banking system, where one lending based, product can suit all financing needs, Islamic finance has developed a portfolio of financing options. These financing options are not perfect substitutes of each other. Hence, each of these products has its role in the growth path. Therefore, the study's objective is to check the impact of Shariah Banking financing patterns on the pro-cycling of economic growth of ASEAN countries. For this purpose, the quantitative research approach and longitudinal research design were applied. The research used the data from 2010 to 2021 quarterly data.

Additionally, Table.1 contains the symbols, construction, and data sources for all variables included in this study. The dependent variable's natural logarithm was approximated using the Gross Domestic Product (GDP). The controlling variables included Labor Resource (L) and Physical Capital (K) in their natural logarithm form. These variables' data were extracted from the World Development Indicators (WDI). At the same time, the country-level aggregate Islamic banking and financing data were removed from the IFSB database. The quarterly data was collected for three ASEAN Muslim countries, namely Malaysia, Indonesia and Singapore, whose data was available for 2016Q1-2020Q4.

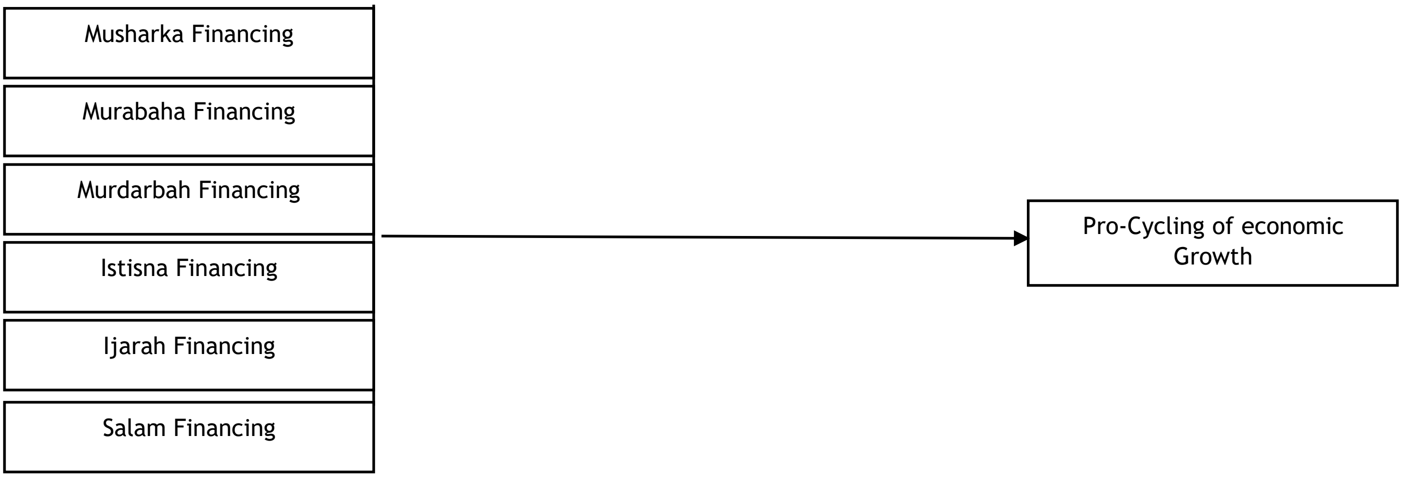

Figure.1: Research Framework

Table.1: Contruction of Variables

Variable Name (Symbol)	**Construction**	**Source**
Gross Domestic Product (GDP)	Natural log	WDI
Labor Force (L)	Natural log	WDI
Capital (K)	Natural log	WDI
Musharaka Financing (MUSF)	% of Total Financing	IFSB
Mudarabah Financing (MUDF)	% of Total Financing	IFSB
Murabaha Financing (MURF)	% of Total Financing	IFSB
Ijarah Financing (IJAF)	% of Total Financing	IFSB
Salam Financing (SALF)	% of Total Financing	IFSB
Istisna Financing (ISTF)	% of Total Financing	IFSB
Others Financing (OTHF)	% of Total Financing	IFSB

5.1 Model and Estimation of Stochastic Equation and Estimation Approach

Based on the research objectives and the variables used are discussed in Table.1, the following is the stochastic equation proposed by this study. The model in this study originates from the Solow growth model, whereby labour and physical capital are considered crucial input for economic growth. Furthermore, this study extends the impact of Islamic financing on development by splitting Islamic funding in terms of different products.

$$GDPit = \alpha 0 + \alpha 1Lit + \alpha 2Kit + \alpha 3MUSFit + \alpha 4MUDFit + \alpha 5MURFit + \alpha 6IJAFit + \alpha 7SALFit + \alpha 8ISTFit + \alpha 10OTHFit + \varepsilon it$$

Here I represent Islamic banks, and t represents the periods. At the same time, εit denotes the randomly distributed factors which could determine growth and are not included in the study with the assumption of having a negligible effect on growth.

Moreover, this study proposes that the pattern in which the dependent and independent variables are changing historically also shows association patterns. Regression analysis compares these changes and calculates the weights for the effects of independent variables on the dependent variable. The composition of the data signifies that it varies across countries and periods, and this two-dimensional variation is not manageable under ordinary least squares (OLS). The unobserved heterogeneity of cross-sections is usually tackled under a fixed effect or a random effect setup Gujarati and Porter (2009), but this model only allows the intercept to be a cross-section variant. Furthermore, new developments in econometrics resulted in a new type of estimation approach called feasible generalised least squares (FGLS). Wherein cross-sectional differences are accounted for through cross-section variant standard errors of the slope coefficients. The advantage of this model is that the cross-sectional variant variance-covariance matrix can be altered to make it more resistant to heteroscedasticity and autocorrelation. M. S. Hassan, Arshed, Tahir, and Imtiaz (2019) utilised this approach to estimate the number of nations per cross-section when the number of countries per cross-section is less than 20.

5.2 Descriptive Statistics

Table.2 descriptive statistics show that the mean value is greater than the standard deviation in the case of GDP, L, K, and MURF, which shows that the mean values well represent the data mean values that represent the data. Additionally, it demonstrates that the standard deviation of the other variables is greater than the mean, showing that the cross-sections are heterogeneous and are not well generalised by a single mean. Finally, the Jarque and Bera (1980) test indicated that the data are either skewed or have a non-standard kurtosis value, leading us to conclude that the overgeneralised Pooled OLS model may not give an adequate representation of the data. This study assumed that the data was asymptotically normal as the overall sample size was above 30 (De Jager, 2008). Figure 8 of the scatter plots show mixed Islamic financing association with economic growth results. Here, while allowing for the quadratic pattern, Musharaka, Salam, Istisna, and other financing modes have a positive association, while others have either a negative or no association with the economic growth of selected countries.

Table.2: Descriptive Statistics

Variables	Obs.	Mean	STD	Growth	Skewness	Kurtosis	JB Test
GDP	132	8.716	1.099	0.003 (0.87)	0.21	1.85	38.8 (0.00)
L	132	16.580	1.284	0.007 (0.69)	-0.03	1.94	29.9 (0.00)
K	132	3.0842	0.276	-0.001(0.91)	-0.32	1.93	28.5 (0.00)
MUSF	132	15.198	20.822	0.04 (0.89)	1.19	2.88	24.1 (0.00)
MURF	132	37.691	19.545	-0.17 (0.54)	0.29	1.91	35.6 (0.00)
SALF	132	2.845	7.338	-0.15 (0.14)	3.48	15.47	80.5 (0.00)
ISTF	132	3.082	5.651	0.03 (0.69)	1.96	5.98	56.46(0.00)
MUDF	132	1.313	2.037	-0.05 (0.11)	1.1	2.53	23.42(0.00)
OTHF	132	10.986	17.897	-0.04 (0.86)	1.32	3.08	27.78(0.00)

Estimation results are provided in Table 4. The probability value of the Wald test indicates that by using 132 country-year observations, the overall model is fit. Further, the intercept is positively significant, which shows that the knowledge and technology component of the growth model positively affects growth. In the case of controlling factors, a 1% increase in labour leads to a 0.26% fall in the GDP, while a 1% increase in capital leads to a 0.58% increase in the GDP. These results are since the selected countries are abundant in labour. Due to this, the labour shows decreasing returns, and the capital offers increasing returns. While comparing the effects of different financing options on growth, only Istisna financing harms it, such that a 1% increase in Istisna financing leads to a 0.02% fall in the GDP, while Mudarabah financing has an insignificant impact on the GDP. This is because historically, Istisna financing has not shown any stable growth. All other types of financing have a positive and significant effect on economic growth. If there is a 1% increase in Musharaka, there is a 0.014% increase in the GDP. Hence, Islamic banks' participation in a joint venture can potently add 0.01% to growth each year.

Similarly, if there is a 1% increase in Murabaha financing, there is a 0.011% increase in the GDP. Likewise, if there is a 1% increase in Ijarah financing, there is a 0.01% increase in the GDP. This shows that trading-based financing can add 0.01% to GDP growth. If there is a 1% increase in Salam financing, there is a 0.06% increase in the GDP. Surprisingly, when Islamic banks participate in food necessity production, it makes the highest contribution to GDP growth. Iftikhar and Mahmood (2017) asserted the role of agri-financing on food security. Lastly, if there is 1% increase in other types of financing, then there is a 0.03% increase in the GD.

In the case of controlling factors, a 1% increase in labour leads to a 0.26% fall in the GDP, while a 1% increase in capital leads to a 0.58% increase in the GDP. These results are because the selected countries are abundant in labour. Due to this, the labour shows decreasing returns, and the capital offers increasing returns. While comparing the effects of different financing options on growth, only Istisna financing harms it, such that a 1% increase in Istisna financing leads to a 0.02% fall in the GDP, while Mudarabah financing has an insignificant impact on the GDP. This is because historically, Istisna financing has not shown any stable growth. All other types of financing have a positive and significant effect on economic growth. If there is a 1% increase in Musharaka, there is a 0.014% increase in the GDP. Hence, Islamic banks' participation in a joint venture can potentially add 0.01% to growth each year.

Table.3: Estimation Results

FGLS Regression Estimates - Dep. Var. Economic Growth		
Variables	**Coefficients**	**Prob.**
L	-0.275	0.000
K	0.591	0.002
MUS	0.015	0.000
MUR	0.012	0.001
SAL	0.052	0.000
IST	-0.032	0.000
IJA	0.013	0.000
MUD	0.005	0.767
OTH	0.031	0.000
Cons	9.949	0.000
Obs	132	
Cross sections	3	
Wald (prob)	1434.7	0.000

The estimation results show that Salam financing has the highest positive effect on economic growth out of all these financing options. This indicates that when Islamic banking facilitates the agriculture sector, it has the highest potency to stimulate economic growth. Hence, focusing on the Salam financing will help promote the primary and food production market, which in turn will assist in reducing the cost of food and agricultural goods and eventually stabilise growth and inflation.

6. Conclusion and Policy Implications

This study aimed to determine whether shariah bank financing patterns are pro-cyclical for Islamic bank economic growth in ASEAN economies. AS, the financial industry's contribution to economic growth, particularly the banking sector, is extensively documented in the literature. Indeed, Islamic banking's contribution to growth is gaining speed. Unlike conventional funding, this study proposes that the lending model can be used for any economic necessity. On the other hand, Islamic baking items are custom-made to meet the economic needs of the economy. This means that Islamic banking products are not ideal substitutes, so their impact on economic growth varies. - The current study explored the differences in the historical impact of the various Islamic banking products on economic growth. Using the panel data of 3 economies, the panel FGLS model was applied. The model was constituted on the value addition of the role of the banking sector on the Solow growth model. The results showed that other than Istisna financing, all other financing products positively affect economic growth. The case of Istisna was different because of its volatile nature. This led us to conclude that regardless of the financial product used in Islamic financing, though based on assets, they positively influence the economy.

Policymakers should use any Islamic banking product with the confidence that it has a -promoting effect and removes the element of riba from the economy. Moreover, the study implications are more numerous. From the positive perspective, we could support the view that Islamic banking strengthens economic stability, which has a positive pro-cyclical process in the ASEAN economies. In addition, the present study also helped to know about the economic growth between Islamic banks and commercial banks. The differences within the pro-cycling of economic growth between the Islamic and conventional banks lead to the fact that the banks' gap is considered conditional for the banks.

Future studies can explore the markets of different Islamic banking products regarding their stability and determine the options that can help boost the economy. Moreover, the prospective research could also be between the comparison of Islamic and conventional banks. In addition, the other ASEAN countries could be used in future studies to increase the research generalizability.

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