

Bank Credit Growth and Trust: Does Institutional Quality Matter? Evidence from the Association of Southeast Asian Nations

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This study investigated whether the quality of governance, trustworthiness, and confidence impacts bank credit growth. In addition, we examined credit growth cyclicality in 10 members of the Association of Southeast Asian Nations. By employing data concerning 282 banks between 2012 and 2019, this study found that trustworthiness boosted bank credit growth. Overall, the increased quality of governance was found to increase credit growth, except for the specific indicators of voice and accountability and political stability, which were found not to influence bank credit growth. Moreover, similar to prior findings in related fields, the empirical results of this study confirmed the complementary effect of informal and formal institutions on bank credit growth. Lastly, results indicated that banks were pro-cyclical regarding credit growth. Overall, the results of this study highlighted the role of the supervisory powers of governments in boosting credit expansion, mainly during economic upturns.

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I. Introduction

The investigation of bank credit growth has attracted the attention of academics and policy makers, especially in the aftermath of the global financial crisis, due to the consequences of credit boom–bust cycles on the economy. Despite credit booms exposing systemic risks to banks, making them vulnerable to financial crises, bank credit growth remains the main driver for domestic investment, production, and consumption, thereby bolstering macroeconomic stability, especially in bank-based emerging economies (Gozgor 2018). Besides, domestic credit growth reduces the incentive for private sector to borrow from external sources, which adversely affects the exchange rate and inflation rate, creating pressure for macroeconomic instability (Obstfeld 2012). Therefore, policy makers typically adopt policies to stimulate domestic credit growth such as public bailouts, deposit insurance or blanket guarantees, capital injections, and the nationalization of problem banks (Ibrahim and Rizvi 2018). Similarly, academics have investigated the factors stabilizing bank credit. They found that bank-specific factors—such as bank capital, profitability, efficiency, leverage, stability and ownership (Al-Khouri and Arouri 2016), bank type (Albaity et al. 2021), macroeconomic factors and monetary policy (Elekdag and Han 2015), and income and money supply (Gozgor 2018)—stabilized bank credit.

Trust, which reflects social norms and values, has recently captured academics and policy makers' attention. Studies have observed that trust is eventually involved in every lending decision (Guiso, Sapienza, and Zingales 2004). Trust impacts financial development and economic growth (Garretsen, Lensink, and Sterken 2004), and it facilitates bilateral trade (Guiso, Sapienza, and Zingales 2009), stock market participation (Guiso, Sapienza, and Zingales 2008), peer-to-peer lending (Lu et al. 2020), stock market liquidity (Ng, Ibrahim, and Mirakhor 2016), and economic freedom (Graafland 2020). However, trust's role in bank credit growth has yet to be explored in the empirical literature. Therefore, this study investigated whether and how trust promotes domestic credit growth, as trust could facilitate domestic bank credit growth differently. First, trust reduces conflicts of interest between banks and borrowers and minimizes information asymmetries concerning lending with regard to formal information such as business plans, financials, and credit ratings (Dudley and Zhang 2016). Second, trust increases market participation and deposit supply,

decreases the cost of bank funds and lending rates fluctuations, and accelerates domestic credit growth (Guiso, Sapienza, and Zingales 2008). Third, trust reduces opportunistic attitude of borrowers and increases information flows to banks, reducing agency problem and loan monitoring costs, which facilitates credit growth by reducing moral hazards and the adverse selection problem of banks (Hasan et al. 2017).

Besides, the role of trust in bank credit growth depends on governance quality. Good governance disciplines market behavior. It facilitates the functioning of intermediation processes (Gani and Rasul 2020). One strand of trust-related literature identifies a substitutive association with the quality of governance (QOG), postulating the notion that trust is essential to operate in markets where the QOG is poor. According to Knack and Keefer (1997), poor economies indicate that trust in combination with a weak institutional framework could be crucial for economic development, thus implying a substitutive relationship between trust and institutional quality. Similarly, regarding financial growth, Guiso, Sapienza, and Zingales (2004) suggested that trust is crucial for implementing financial contracts when legal framework cannot guarantee them. However, Rooney and Murthy (2020) argued that social mechanisms, such as trust, have been demonstrated to coexist with formal institutional frameworks, allowing individuals' wealth creation. Garretsen, Lensink, and Sterken (2004) observed that social norms and legal frameworks impacted economic growth. Yet, existing literature is inconclusive regarding the findings of Mccannon, Asaad, and Wilson (2018), who concluded that there was a complementary relationship between trust and contracts. As a formal institution, governance quality may provide a channel for maintaining the trust and penalizing distrust (Ng, Ibrahim, and Mirakhor 2016). In that regard, Bjørnskov and Méon (2015) suggested that documented positive links of trust with growth and productivity were channeled through strong institutional structures, specifically via consistency of judicial and economic institutions. Such results implied that trust and institutional quality do not have a substitutive relationship. Thus, given that empirical literature has tended to investigate the role of trust and formal institutional quality in boosting economies, it is interesting to study their impact on banks' credit growth and whether these two forces coexist. Thus, this study's first and second objectives were to investigate the roles played by the informal institution of trust and formal institutional quality on banks' credit growth.

Extensive studies have been carried out to investigate links between bank credit growth and the business cycle. Most of these studies have examined the ownership or type of bank (e.g., private versus [vs.] public domestic vs. foreign, or Islamic vs. conventional). The results of these studies have been mixed; in some cases, one type of

bank has outperformed the others, or there has been no difference between banks (Zins and Weill 2018, Weill and Zins 2021). This study examined whether banks in members of the Association of Southeast Asian Nations (ASEAN) were pro-cyclical or otherwise. Al-Khouri and Arouri (2016) indicated that a positive and significant coefficient of gross domestic product (GDP) meant that higher GDP growth boosted bank credit growth in line with the idea of the pro-cyclicality of lending expansion behavior. Meanwhile, the coefficient of GDP may take a negative and significant value supporting the counter-cyclicality of credit growth during a slowdown in the economy (Ibrahim 2016).

In selecting an appropriate sample to investigate the role of trust and governance on credit growth, the banking sectors of ASEAN member countries captured our attention. The ASEAN region has seen unique banking industry liberalization and restructuring, based on the experience of a credit boom and bust in the 1990s, and the subsequent adoption of the ASEAN Banking Integration Framework. The banking sector in the region remains a significant source of private sector financing, dealing with more than 82% of the region's financial assets (Asian Development Bank 2013). ASEAN countries liberalized their banking sectors in the early 1990s, removing banks' interest rate ceilings and reserve requirements, promoting credit growth, and supporting economic growth (Cook 2008). However, this liberalization, which created significant bank credit growth, fueled an economic bubble in the early 1990s, resulting in a bust in 1997. The 1997/98 Asian financial crisis was due to substandard bank regulation, poor institutional quality, and the loss of individuals' trust in the banking system (Noman, Sok Gee, and Isa 2017). In response to the 1997/98 Asian financial crisis, ASEAN policy makers undertook various emergency policy measures in the banking sector—such as the introduction of blanket guarantees, capital injections to distressed banks, the closure of nonviable banks, and the transfer of nonperforming loans to public banks—to restore public trust in the banking system and to stabilize the economy (Noman, Sok Gee, and Isa 2017). In addition, ASEAN countries have gone through tremendous banking sector reforms in the form of privatizations, mergers, acquisitions, cross-border financial integration, and the adoption of international best practices in banking supervision and regulation [e.g., explicit deposit insurance, the Basel III accords for capital regulation, market discipline, and risk management (Noman, Sok Gee, and Isa 2018)] to improve institutional quality and bring discipline to the market. These banking sector reforms and regulations have changed the landscape of the region's financial architecture as evidenced by the steady rise of bank credit to the private sector as a percentage of GDP from 2006 to 2019 (Ha et al. 2020).

This study's contribution to the existing literature is twofold. First, to the authors' knowledge, this is the first study to include trustworthiness and confidence as one measure of trust in financial markets, together with macro-governance variables, to measure bank credit growth in ASEAN economies. These two components explain the external voluntary and nonvoluntary governance indicators that are important in gauging the banking sector. Trustworthiness in financial markets, combined with governance and regulatory supervision, might help developing economies to avoid crises (Kanagaretnam et al. 2019). Similarly, Hussain et al. (2020) and Kamarudin et al. (2020) indicated that country governance had received little attention during the global financial crisis. In addition, it has been demonstrated that increased regulatory governance can damage the economy (Martens et al. 2021). Second, in Hofstede's (1980) cultural dimensions, the ASEAN region's individualism scores indicated that the region's countries were classified as collectivistic societies. It has been argued that individuals in collectivistic societies must follow group norms, suggesting that values are defined at the group level rather than the individual level (Pitlik and Rode 2016). In addition, Fuentelsaz, González, and Maicas (2019) indicated that the cultural dimension was different between countries and contributed to the behavior of their societies. This outcome meant that trust in authority was higher in such societies than in individualistic cultures. Hence, the findings of this study explain whether government policies should target enhancing trust or expanding the regulatory and oversight powers of institutions.

The rest of this paper is organized as follows. Section II describes existing literature relevant to trust, institutional quality, and bank credit growth. Section III is devoted to the data and methodology used in this study. The results and a discussion are provided in Section IV. Section V offers a conclusion to the paper.

II. Literature Review

A. Trust and Bank Credit Growth

The nexus of trust and credit growth closely connects with those research fields where trust is generally of great importance. The potential advantages of trust relate to coordination and a decline in transaction costs. Gambetta (2000) described trust as the desire to behave advantageously without harming others, motivating others to collaborate. Arrow (1972) treated trust as an integral part of economic transactions, where decreased trust could explain the economic backwardness of some countries to a large extent. Similarly, Coleman (1994) highlighted the importance of trust in

minimizing opportunistic behaviors in transactions, while Knack and Keefer (1997) concluded that collaborative behaviors minimized agency problems, moral hazards, and monitoring costs.

Theoretical evidence on the trust–credit growth nexus refers to information asymmetries among the parties conducting economic transactions, as financial agreements require adequate transparency (La Porta, Lopez-De-Silanes, and Shleifer 2006). As information asymmetries are more common in countries with low levels of trust, it is expected that this will negatively affect their credit growth. Ferrary (2003) argued that when banks, acting as agents, issue credit, they risk not receiving back the amount of credit granted to borrowers. Although financial institutions possess risk management techniques that minimize information asymmetry, they also rely on trust. This is because the validity of available information and the accuracy of risk assessments may depend on the prevalent trustworthiness where the transactions take place. Consequently, in high-trust environments, it can be expected that credit-issuing institutions would be more likely to offer financial capital with better terms since they would deem these to be less risky loans (Hasan et al. 2017).

Demand also has a link with trust. Guiso, Sapienza, and Zingales (2004) proposed a framework where investors' demand for stocks relied on the expected returns and risk aversion. Among other factors, this was correlated with the possibility that a transaction's counterpart would behave sincerely. Guiso, Sapienza, and Zingales (2008) concluded that it was more probable that people would suspect any provided information in a low-trust environment, which could discourage their involvement in credit markets. Moro and Fink (2013) suggested that trustworthiness promoted the availability of reliable information, thereby reducing the asymmetries of information and facilitating monetary transactions.

The available empirical evidence widely supports the arguments of this study's authors. Concerning the nexus of trust and finance, Calderón, Chong, and Galindo (2002) reported a positive association between trustworthiness and various bank-level factors such as bank assets, financial efficiency, net profit margins, and banks' overhead costs. Trust was also an important determinant of stock markets (Ng, Ibrahim, and Mirakhor 2016). Trust showed a positive association with households' banking services usage in emerging countries, specifically for countries with low education and law enforcement levels. Recently, trust was also a significant determinant of liquidity in financial markets (Blau 2017).

The existing literature suggests a positive link between trust and small and medium-sized enterprises' short-term finance and repayment capacity in firm-level studies (Moro and Fink 2013). Moreover, trade finance provisions have been

positively associated with trust. Wu, Firth, and Rui (2014) concluded that trust enabled firms to manage institutional hurdles in financing their operations. Li, Wang, and Wang (2017) revealed that companies with headquarters in high-trust countries appeared to have a lower level of cash risk.

In microfinance, similar evidence concerning the trust–finance nexus has been identified in the context of developing economies. High trust improves credit flows, which positively correlate with repayment ratios (Karlan 2007). The findings of other studies have revealed that trust has reduced lending and monitoring costs for banks (Heikkilä, Kalmi, and Ruuskanen 2016). Borrowers behave less opportunistically in trustworthy societies. This is because banks may not need to spend heavily investigating borrowers' creditworthiness before disbursing loans and monitoring investments after paying loans, both of which lower banks' lending costs. Hence, reduced lending costs lower lending rates, consequently enhancing overall banking credit growth and economic activity in a trustworthy society.

B. Trust, Institutional Quality, and Bank Credit Growth

Boix and Posner (1998) claimed that governments bear lower compliance costs for regulations and policies where trust levels are higher since there will be no requirement to build and manage complicated monitoring systems. This is because trust influences people's perceptions regarding their peers' behavior. For instance, if people demand that others should pay taxes and follow environmental laws, it is expected that they will also act in the same manner. This is connected to the societal costs of diverging from the law. Moreover, government actions that can be effective in the long run require compromises in the short run. People in high-trust countries are more likely to support such decisions since they depend on government requirements and the assurance of the potential advantages of such policies.

Trust allows political elites at various tiers of government to collaborate successfully and not cause problems for their peers. Similarly, when trust and mutual norms are strong, competing parties are more able to overcome their disputes (Knack and Putnam 2002), while reforms are easier to enforce. For example, Heinemann and Tanz (2008) stated that countries with higher trust levels could effectively introduce reforms that strengthened economic freedom. Similarly, Berggren, Daunfeldt, and Hellstrom (2016) found a significant role of trust in speeding up the enforcement of reforms, whereas higher levels of trust also promoted constructive legal and political reforms and served as a barrier to negative reforms (Berggren and Bjørnskov 2017). In the context of bank lending, the lack of a regulatory framework due to poor

institutional quality may have exacerbated banks' risk-taking behavior, making them unstable and vulnerable to banking crises (Anginer et al. 2018). For instance, because of weak governance systems, less stringent supervision encourages banks to offer risky loans to ventures based on mere political ties instead of project feasibility, which in the long term raises problems for banks (Beck, Demirgüç-Kunt, and Levine 2006). Alternatively, a sound institutional framework improves supervision and credit market competition through alternative modes of finance, which impacts banks' risk-taking behavior and restricts them from granting risky loans (Ashraf, Arshad, and Yan 2017). In a nutshell, the governance structure defines the effectiveness of a country's banking system, affecting its lending activities, as banks operate within the existing governance framework.

III. Methodology

Many studies have investigated the impact of bank credit growth on reinforcing financial stability and boosting economic growth. Such rapid credit growth has led to significant benefits for individuals looking to channel their savings profitably and facilitated the development and economic growth of the financial system. Nevertheless, the swift pace of credit growth has raised concerns about macroeconomic and prudential risks. Thus, studying the factors affecting credit growth is crucial for policy makers. This study included factors that affect credit growth in the ASEAN region, in which new factors were appended to common ones. This study's core objective was to examine the impact of the QOG and trustworthiness on credit growth as well as the cyclicity of banks.

A. Sample

The initial sample consisted of 341 banks (both conventional and Islamic banks) from the 10 members of ASEAN, utilizing annual data from 2012 to 2019. All bank-level data were calculated from the BankFocus database provided by Fitch Ratings, IBCA, and Bureau Van Dijk. For homogeneity purposes, the following institutions, central banks, government development banks, investment banks, and finance houses were excluded. The dataset avoided double-counting parent and subsidiary banks following Apergis, Fafaliou, and Polemis (2016). The BankFocus consolidation coding system was used to eliminate double entries in the dataset. Lastly, mergers and acquisitions could have influenced the data. Following Claessens and Van Horen (2014), once an acquisition or merger occurred, the old bank data were

replaced with the new bank data. Banks with missing credit growth values for more than 2 years were removed from the sample. Final sample comprised 282 banks (250 conventional and 32 Islamic banks). Data on the QOG were obtained from the Worldwide Governance Indicators project of the World Bank, which reported over the period 1996–2017 for six aggregate dimensions of governance. The trustworthiness and confidence indicators and GDP per capita were obtained from DataStream. Details of all the variables, short definitions, sources, and expected signs are provided in Appendix 1.

B. Model Specifications and Regression Framework

A similar set-up to Albaity et al. (2021) was used to estimate the following model to evaluate the factors determining credit growth:

$$\begin{aligned} CG_{i,j,t} = & \gamma_0 + \gamma_1 CG_{i,j,t-1} + \gamma_2 SIZE_{i,j,t} + \gamma_3 LIQ_{i,j,t-1} + \gamma_4 DEP_{i,j,t-1} \\ & + \gamma_5 \Delta EQ_{i,j,t} + \gamma_6 SOL_{i,j,t} + \gamma_7 \Delta GDPC_{j,t} + \gamma_8 Trust_{j,t} \\ & + \gamma_9 QOG_{j,t} + \gamma_{10} IS_{i,j,t} + \varphi(Year)_t + \delta_i + \varepsilon_{i,j,t}, \end{aligned} \quad (1)$$

where $CG_{i,j,t}$ and $CG_{i,j,t-1}$ denote, respectively, credit growth and its lagged value for bank i in country j during year t . Bank-level variables $SIZE_{i,j,t}$, $LIQ_{i,j,t-1}$, $DEP_{i,j,t-1}$, $\Delta EQ_{i,j,t}$, and $SOL_{i,j,t}$, are represented, respectively, by natural logarithms of assets for bank size, lagged liquidity, lagged deposits, growth rate of equity, and solvency of bank i in country j during year t . Only these five commonly used bank-specific variables were included to alleviate the potential of multicollinearity. $\Delta GDPC_{j,t}$ represents GDP per capita. $Trust_{j,t}$ is the change in trustworthiness and confidence, which represents the effective regulation and supervision of financial markets. $QOG_{j,t}$ denotes the six qualities of governance indicators, used individually and then aggregated as the average across the six indices. $IS_{i,j,t}$ is a dummy variable equal to 1 for Islamic banks and 0 for conventional banks. Lastly, year and individual effects were included to capture the time and bank effects.

To estimate equation (1), a two-step generalized method of moments (2S-GMM) model was used, as proposed by Blundell and Bond (1998). For the data in the study, the use of a 2S-GMM model was justified by the number of years (T) being smaller than the number of banks (N). Multicollinearity was checked using the variance inflation factor. The goodness of the regression was first ensured by checking that the model was not subject to the serial correlation of order 2. This was confirmed when the AR1 of the model was significant, indicating the existence of autocorrelation in the first lag. Still, the AR2 was insignificant, suggesting no autocorrelation in the second order. Second, it was ensured that the choice of instruments was valid. Yet again,

Hansen's *J* test confirmed the model's specification. Lastly, the results of the Wald test ensured the goodness of fit for all the regression models.

1. The Lagged-Dependent Variable

Similar to Bertay, Demirgüç-Kunt, and Huizinga (2015) and Albaity et al. (2021), this study used bank credit growth as a dependent variable. It was computed as the annual percentage change in the total loans of different banks. The lagged-dependent variable was included to capture persistency and any potential dynamics in credit growth, matching the bank's target and economic conditions. A finding that it was positive and significant would suggest that the previous period's lending stimulated the subsequent year's credit growth, which could entail persistent financial deepening (Ibrahim 2016).

2. Bank-Level Measures

In model specification, bank size was included as a control variable. This study followed Bian and Deng (2017) and Albaity et al. (2021) in using the natural log of total assets to represent bank size. Researchers have found a negative and significant relationship between bank size and credit growth, suggesting that credit portfolios of larger banks grow at much slower rates than smaller banks (Ibrahim 2016). To reduce risk, larger banks may seek ramified diversification, including non-intermediation activities, which may erode credit growth proportion (Ibrahim 2016). A lagged liquidity ratio was included in the model specification. Empirical studies have reported a positive impact of the "liquidity effect" on banks' loan supply (Brei, Gambacorta, and Peter 2013). This study followed the proxy used by Bertay, Demirgüç-Kunt, and Huizinga (2015). Banks with greater liquidity can shelter their loan portfolios simply by relying on their large buffer of trading securities during economic slowdowns. Conversely, banks with less liquidity are more likely to opt to contract their loans if they find the level of their securities holdings is below a certain threshold (Kashyap and Stein 2000).

The ratio of lagged bank deposits to total liabilities was included to control for the funding policies of ASEAN banks' dependence on deposits to allocate loans. This measure is similar to that used by Bertay, Demirgüç-Kunt, and Huizinga (2015). The impact of the funding ratio on credit growth is controversial, which is possibly explained by pro-cyclicality. A positive and significant coefficient shows a bank's credit dependence on deposits (Ibrahim 2016). However, during a slowdown in the economy, deposits might not be used to expand credit if the sign turns out to be

negative (Cucinelli 2016). Banks tend to channel deposit resources to different investment avenues to mitigate risk during recessions, reducing the proportion of credit granted (Cucinelli 2016).

Solvency was an essential factor to consider in the existing bank credit growth literature. This study measured bank solvency using total liabilities to total assets ratio for each bank-year observation. Therefore, if banks mainly allocated new debt to grant more loans, credit growth increased, meaning increased insolvency (de Haas and van Lelyveld 2010). Conversely, a bank could resort to equity, mainly through its retained earnings, to serve loan growth needs, but rarely through new equity issuance, thereby also leading to enhanced solvency (de Haas and van Lelyveld 2006). This study followed Albaity et al. (2021) in measuring solvency as total liabilities over total assets.

The growth rate of equity over GDP deflator was included to control for bank capitalization. The effect of bank capitalization on loan growth has been studied in both regular times and during crises (Brei, Gambacorta, and Peter 2013). Well-capitalized banks are likely to expand their credit growth with a positive and significant impact, as found by de Haas and van Lelyveld (2006). In contrast, de Haas and van Lelyveld (2010) found a negative and significant relationship with credit growth, suggesting banks are risk-averse and expand their credit gradually. A U-shaped relationship was discovered by Calem and Rob (1999), which was explained by banks' risk attitude toward coverage of bankruptcy costs imposed by deposit insurance. Therefore, this study used the growth rate of equity over GDP deflator as a proxy for bank capitalization, following Bertay, Demirgüç-Kunt, and Huizinga (2015).

3. Trustworthiness and Confidence

A trustworthiness and confidence index, ranging from 1 (lowest) to 7 (highest), was used in this study. The index is based on three dimensions: (i) assessment of the soundness of banks, (ii) effectiveness of supervision and regulation of the securities exchange, and (iii) extent of borrowers' and lenders' rights and legal protections (Ng, Ibrahim, and Mirakhor 2015). Since these components indirectly reflect other embedded components—such as deposit insurance, capital buffer, available liquidity, and loan-to-deposit ratio—it can be asserted that the trustworthiness and confidence index is a holistic measure of regulatory and oversight policies (Albaity, Noman, and Saadaoui Mallek 2021). In addition, trust in banks will act as implicit deposit insurance and make explicit deposit insurance complementary to the banking sector's success (Grigorian and Kryshko 2019). Moreover, there is strong evidence that deposit insurance contributes to financial stability because it increases trust and confidence in

the banking system (Jameaba 2018). We followed Ng, Ibrahim, and Mirakhor (2015), who considered trustworthiness and confidence as an informal institution. The evolution of formal and informal institutions is intertwined (Ng, Ibrahim, and Mirakhor 2015, 2016). The functioning of informal institutions depends upon the existence of norms or rules that serve as the basis of social trust (Fukuyama 1995). The trustworthiness and confidence variable was obtained from the Global Competitiveness Index, published by the World Economic Forum. Recent research has been carried out on general trust, and it has been commonly concluded that trust fuels economic prosperity and financial system development (Guiso, Sapienza, and Zingales 2004). Lending has been viewed as a trust-intensive process, where credit risk could be exacerbated or alleviated accordingly. Thus, more trust can trigger an increased supply of loans granted to households (Guiso, Sapienza, and Zingales 2004). Hence, trust is positively linked with credit expansion (Chen, Liu, and Wang 2016). Yet, Hagendorff, Lim, and Nguyen (2022) found banks with more trusting CEOs attributed higher loans with a lower interest spread. They reported that trust relieved adverse selection by replacing the hassles of formal contract and its provisions, and overwhelmed any biases caused by borrowers. Since the correlation between trustworthiness and confidence and some governance indicators was high, this study adopted the change of trustworthiness and confidence to avoid multicollinearity issues.

4. GDP per Capita

Banks' loan portfolios can be adjusted due to macroeconomic shocks or business cycles. Therefore, growth in GDP per capita could be included to control country-level influences on credit growth (Bertay, Demirgüç-Kunt, and Huizinga 2015). Positive and significant coefficients mean that higher GDP growth boosts credit growth, in line with the idea of the pro-cyclicality of lending expansion behavior (Al-Khouri and Arouri 2016). Meanwhile, the coefficient could take a negative and significant value, supporting the counter-cyclicality of credit growth during an economic slowdown (Ibrahim 2016).

5. Quality of Governance

Studies using all six country governance indicators have been limited. The literature shows that country-level governance received little attention regarding the global financial crisis (Hussain et al. 2020, Kamarudin et al. 2020). Additionally, it has been indicated that an increased level of macro-governance can damage the economy (Martens et al. 2021). For instance, Saada (2017) indicated that governance practices

might also affect bank stability and credit risk. This study used the QOG variable obtained from the Worldwide Governance Indicators project over the period 1996–2019 to investigate the influence of regulatory practices on credit growth. The composite indicator includes voice and accountability (VA), political stability (PS), government effectiveness (GE), regulatory quality (RQ), control of corruption (CC), and the rule of law (RL). These indices were constructed based on survey information from governments, nongovernmental organizations, individuals, and firms. Good governance provides suitable infrastructure for development. Particularly, bank supervisory policies can be viewed as internal catalysts designed to boost information disclosure and transparency, representing a pillar of decision-making for investors (Beck, Demirgüç-Kunt, and Levine 2006). Greater internal control is not always adequate to maintain bank performance and stability, and as such external or market governance can be more effective (Barth et al. 2013). Supervisory intervention can signal expected support for troubled banks and a more stable operating environment (Calderón and Schaeck 2016). Fernández and González (2005) found that ongoing oversight acted as a corrective force of risk-taking behavior through information disclosure requirements and external auditing requirements. Kanas et al. (2019) studied the role of intervention quality on financial stability and found a nonlinear relationship at different levels of competition. Recently, Albaity et al. (2021) investigated the role of the QOG on risk-taking behavior and found that it increased the risk in banks in the Middle East and North Africa. Others, however, have suggested that substantial supervisory oversight can cause moral hazard problems, leading to heightened risk (Akins et al. 2016). For instance, Kim, Surroca, and Tribó (2014) found that when banks expected bailouts after attaining a targeted threshold, this could lead to more significant credit growth and a higher share of nonperforming loans. This study has contributed to the debate and attempted to shed light on the role of overall governance (the composite measure) and the six QOG indicators on bank credit growth in ASEAN countries. The overall measure and the individual six measures ranged from -2.5 (weak) to 2.5 (strong).

6. Conventional versus Islamic Banks

Studies have attempted to segregate Islamic and conventional banks concerning stability, profitability, and bank loan allocation. A dummy variable was included in the regression model to ascertain if Islamic banks' credit growth was more pronounced than conventional banks. Farooq and Zaheer (2015) demonstrated that, during crises, Islamic banks were less prone to deposit withdrawals. Thus, these banks tend to grant more new loans, and their lending decisions were less sensitive to changes in deposits.

Ibrahim (2016) found that the financing decisions of Islamic banks could be counter-cyclical. Therefore, their results supported Islamic banks' stability assumption to stabilize credit expansion.

IV. Empirical Results

A. Descriptive Statistics

Table 1 reports descriptive statistics for banks operating in the 10 ASEAN countries included in this study from 2012 to 2019. The first variable was credit growth, which showed that the sampled banks in ASEAN countries had various values of credit growth. All countries had growth rates that are at least 10% except for Brunei Darussalam and Thailand. The second variable is the trustworthiness and confidence index, which showed moderate values below 5.0 for all sampled countries except Malaysia and Singapore, which had values of 5.6 and 6.2, respectively. The majority had values between 4.0 and 4.7, which is considered moderate for all the countries. The average index score for the ASEAN region was 4.6. The scale ranges from 1 to 7, where 7 indicates the most trustworthy institutions—the average for the ASEAN region suggested that institutions are reasonably trusted. The global median of the trustworthiness indicator is 4.2, which is below the index score of the majority ASEAN countries. The six QOG variables (VA, PS, GE, RQ, CC, and RL) and the overall QOG showed mixed mean values. The VA ranged from -1.73 in the Lao People's Democratic Republic (Lao PDR) to 0.14 in Indonesia, with all countries having a mean value of -0.51 , indicating that the VA for ASEAN is lower than the global average (-0.02). This outcome suggests that citizens of these countries did not contribute to selecting their representatives in government and had lower freedom of expression and less independent media. For PS, the following countries showed negative values: -0.51 , -0.94 , and -1.05 , respectively, for Indonesia, Thailand, and the Philippines. Six other countries showed positive values ranging from 0.02 and 1.42 , which were moderate scores, given that the upper limit was 2.5 . Similarly, positive (negative) values were higher (lower) than the global average of -0.06 . Countries with negative values had a greater risk of political instability than other ASEAN-sampled countries. GE was positive for half of the countries. The GE scores in five ASEAN countries with negative values ranged from -0.74 to -0.04 . Conversely, Singapore, Brunei Darussalam, Malaysia, Thailand, and the Philippines showed positive GE scores ranging from 2.20 to 0.07 . The positive (negative) values of GE for ASEAN countries were higher (lower) than the global mean value of -0.02 .

Table 1. Descriptive Statistics by Member Countries of the Association of Southeast Asian Nations, 2012–2019

Country	CG	Trust	VA	PS	GE	RQ	CC	RL	QOG	SIZE			ΔGPPC (%)		
										LIQ _{t-1}	DEP _{t-1}	ΔEQ	SOL	SOL	
BRU	0.04	4.45	-0.76	1.14	1.08	0.84	0.65	0.59	0.59	4.60	0.43	0.91	0.06	0.87	2.24
CAM	0.08	0.39	0.18	0.11	0.16	0.21	0.11	0.11	0.04	2.00	0.09	0.04	0.09	0.03	0.92
	0.24	4.69	-1.11	0.02	-0.7	-0.46	-1.2	-1.01	-0.74	0.60	0.37	0.66	0.12	0.71	5.49
INO	0.51	0.10	0.09	0.11	0.11	0.08	0.11	0.06	0.02	0.90	0.20	0.28	0.24	0.23	0.19
	0.10	4.22	0.14	-0.51	-0.04	-0.16	-0.45	-0.40	-0.24	5.90	0.16	0.84	0.12	0.84	3.93
LAO	0.24	0.23	0.05	0.08	0.17	0.06	0.14	0.09	0.08	13.70	0.08	0.17	0.30	0.10	0.31
	0.13	4.09	-1.73	0.38	-0.59	-0.78	-0.96	-0.83	-0.75	0.79	0.27	0.81	0.21	0.84	5.35
MAL	0.21	0.09	0.05	0.20	0.17	0.05	0.06	0.06	0.06	0.12	0.16	0.17	0.63	0.11	1.04
	0.09	5.56	-0.30	0.15	0.97	0.70	0.24	0.52	0.38	20.30	0.25	0.73	0.08	0.88	3.65
MYA	0.36	0.47	0.14	0.10	0.09	0.07	0.12	0.07	0.07	34.00	0.19	0.21	0.24	0.10	0.58
	0.39	3.99	-1.13	-0.98	-0.74	-0.78	-0.77	-0.97	-0.77	0.68	0.21	0.93	0.16	0.86	5.45
PHI	0.60	0.05	0.31	0.11	0.09	0.06	0.19	0.04	0.05	0.59	0.08	0.04	0.43	0.09	1.32
	0.16	4.44	0.08	-1.05	0.07	-0.03	-0.49	-0.41	-0.31	8.12	0.18	0.88	0.15	0.84	4.97
SIN	0.28	0.14	0.07	0.20	0.07	0.03	0.06	0.07	0.06	12.70	0.14	0.11	0.45	0.13	0.33
	0.08	6.20	-0.09	1.42	2.20	2.13	2.11	1.81	1.60	167.00	0.13	0.83	0.06	0.90	2.27
	0.11	0.30	0.09	0.13	0.05	0.10	0.04	0.05	0.03	148.00	0.06	0.11	0.11	0.02	1.29

Continued.

Table 1. *Continued.*

Country	CG	Trust	VA	PS	GE	RQ	CC	RL	QOG	SIZE			ΔGDPPC (%)		
										LIQ _{t-1}	DEP _{t-1}	ΔEQ	SOL	SOL	
THA	0.06	4.60	-0.81	-0.94	0.32	0.20	-0.41	-0.06	-0.28	27.10	0.17	0.69	0.07	0.84	3.11
	0.12	0.26	0.26	0.24	0.05	0.07	0.04	0.10	0.04	31.50	0.11	0.18	0.12	0.10	1.69
VIE	0.12	4.16	-1.39	0.17	-0.06	-0.48	-0.49	-0.20	-0.41	5.60	0.27	0.70	0.05	0.88	5.22
	0.14	0.16	0.03	0.10	0.13	0.14	0.05	0.25	0.08	9.98	0.23	0.22	0.19	0.11	0.68
Total	0.12	4.55	-0.51	-0.24	0.13	-0.05	-0.37	-0.21	-0.21	13.00	0.22	0.77	0.10	0.84	4.36
	0.29	0.59	0.66	0.55	0.57	0.53	0.53	0.53	0.42	37.80	0.17	0.21	0.29	0.13	1.10

BRU = Brunei Darussalam, CAM = Cambodia, INO = Indonesia, LAO = Lao People's Democratic Republic, MAL = Malaysia, MYA = Myanmar, PHI = Philippines, SIN = Singapore, THA = Thailand, VIE = Viet Nam.

Notes: The first and second rows in each country represent the mean value and standard deviation, respectively. CG is Credit Growth, Trust is the change in trustworthiness and confidence index, VA is voice and accountability, PS is political stability, GE is government effectiveness, RQ is regulatory quality, CC is control of corruption, RL is rule of law, QOG is the average of the six governance variables, SIZE is the natural log of total assets, LIQ_{t-1} is lagged liquidity, DEP_{t-1} is lagged deposits, ΔEQ is growth rate in equity, SOL is solvency ratio, and ΔGDPPC is the growth rate of gross domestic product per capita.

Source: Authors' calculations.

Accordingly, GE positive (negative) values indicated that the quality of public services and policy formulation and implementation is high (low) in ASEAN countries. Globally, the mean for the RQ value was -0.02 , and it was negative for six of the ASEAN countries and positive for the remaining four. The worst case was the Lao PDR, which scored -0.78 , followed by Viet Nam and Cambodia at -0.48 and -0.46 , respectively, and Indonesia and the Philippines, which scored -0.16 and -0.03 , respectively. The highest positive value was for Singapore (2.13), followed by Brunei Darussalam (0.84), Malaysia (0.70), and Thailand (0.20). This suggested that the governments of these countries had effectively formulated and implemented policies that allowed for private sector development. The CC was negative for seven ASEAN countries ranging from -1.2 to -0.41 . However, Singapore, Brunei Darussalam, and Malaysia scored 2.11, 0.65, and 0.24, respectively. These countries had higher control-of-corruption scores than the global average of -0.04 . Lastly, for RL, more than half of the countries showed negative values, including Cambodia (-1.01), the Lao PDR (-0.83), Indonesia (0.40), the Philippines (-0.41), Viet Nam (-0.20), and Thailand (-0.06). The score for the RL for these countries was lower than the global average of -0.04 . As with CC, Singapore, Brunei Darussalam, and Malaysia each had positive RL values, ranging from 1.8 for Singapore to 0.5 for Malaysia. This showed that ASEAN countries have effective property rights and judicial systems. Finally, the average of the six governance variables, the QOG, showed similar results to those for RL and CC. More than half of the countries scored negative values, and the same three countries had positive average values. In summary, Singapore, Brunei Darussalam, and Malaysia each showed positive means across all seven variables except for VA, where they each had negative values.

Mean bank asset size varied across the ASEAN countries, led by Singapore at \$167 billion and followed by Thailand at \$27.1 billion, Malaysia at \$20.3 billion, the Philippines at \$8.1 billion, Indonesia at \$5.9 billion, Viet Nam at \$5.6 billion, Brunei Darussalam at \$4.6 billion, the Lao PDR at \$0.8 billion, and Cambodia at \$0.6 billion. Bank size indicated possible scale economy benefits and “too big to fail” subsidies. ASEAN banks had lagged liquidity ratios from a low of 13% in Singapore to a high of 43% in Brunei Darussalam, with the latter having the region’s most liquid banks. Lagged deposits ratio exceeded 50% for all of the sampled ASEAN countries, with Brunei Darussalam at more than 90%; the Philippines, the Lao PDR, and Indonesia at more than 80%; Malaysia and Viet Nam at 73% and 70%, respectively; and Thailand and Cambodia at less than 70%. Equity growth rates were relatively low in ASEAN economies, ranging from 21% for the Lao PDR to 5% for Viet Nam. All ASEAN countries had a solvency ratio of more than 80%, except for Cambodia at

71%. The GDP per capita growth rate was positive for ASEAN countries, suggesting positive growth over the past decade (Table 1).

B. Regression Results

Table 2 reports the results for the 2S-GMM models between all variables and bank credit growth in ASEAN countries. The results were reported in seven specifications, where all the bank-specific and country-specific data were the same, except for the governance variables. Included in each model were one of the six QOG variables and the average of the six governance variables to examine the effect of trust and each of the governance variables on the bank credit growth.

Trustworthiness and confidence in financial markets were positive and significant in all specifications. This suggested that an increase in trustworthiness and confidence leads to greater bank credit growth. This result was similar to Chen, Liu, and Wang (2016) who found a positive link between trust and access to bank loans in the People's Republic of China. Similarly, Hagendorff, Lim, and Nguyen (2022) found that greater bank CEO trust increased the size of loans borrowed and lowered the interest rate spread. Further, bank manager trust was positively related to the number of loans granted while negatively related to risk (Moro and Fink 2013). Although deposit insurance and capital requirement are essential to increase efficiency, promote competitiveness, and protect against bank runs during volatile periods, they appear not to be sufficient. Deposit insurance can exacerbate moral hazard for both banks and depositors due to the availability of a safety net (Noman et al. 2022). Therefore, it can be argued that trustworthiness and confidence might reduce banks' moral hazard and excessive risk-taking behavior.

The six QOG variables and the average of those six variables showed mixed results with regard to bank credit growth. For instance, VA and PS appeared to be negative and insignificant in affecting bank credit growth. Chortareas, Girardone, and Ventouri (2012) found VA and CC to be negatively related to bank performance in less developed economies. They suggested that increasing supervisory powers in less developed economies might point to excessive government intervention, reducing bank lending and credit allocation.

These results were opposite to those of Garretsen, Lensink, and Sterken (2004), who observed that positive societal trust coincided with institutional quality in explaining economic growth in different countries. Conversely, GE, RQ, CC, and RL showed positive and significant impacts on bank credit growth. These results were similar to those of Kamarudin, Sufian, and Md. Nassir (2016), who found a positive

Table 2. Two-Step Generalized Method of Moments Results of the Relationship between Bank Credit Growth, Trustworthiness, and Quality of Governance Indicators

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
CG _{t-1}	0.2368*** (0.0564)	0.2466*** (0.0588)	0.2537*** (0.0567)	0.2439*** (0.0546)	0.2464*** (0.0546)	0.2568*** (0.0574)	0.2457*** (0.0550)
SIZE	0.0054* (0.0028)	0.0059** (0.0029)	0.0022 (0.0032)	0.0025 (0.0034)	0.0033 (0.0030)	0.0030 (0.0030)	0.0038 (0.0030)
LIQ _{t-1}	0.1279* (0.0714)	0.1074 (0.0697)	0.1277** (0.0648)	0.1281** (0.0636)	0.1323** (0.0653)	0.1257* (0.0654)	0.1352** (0.0652)
DEP _{t-1}	-0.0502 (0.0394)	-0.0597 (0.0368)	-0.0548 (0.0361)	-0.0597 (0.0370)	-0.0592 (0.0362)	-0.0503 (0.0361)	-0.0581 (0.0368)
ΔEQ	0.2675*** (0.0629)	0.2658*** (0.0608)	0.2663*** (0.0614)	0.2618*** (0.0626)	0.2706*** (0.0615)	0.2670*** (0.0616)	0.2710*** (0.0615)
SOL	0.1397 (0.0908)	0.1260 (0.0911)	0.1572* (0.0891)	0.1686* (0.0953)	0.1475* (0.0864)	0.1446* (0.0875)	0.1476* (0.0865)
ΔGDPPC	0.0255*** (0.0067)	0.0251*** (0.0071)	0.0282*** (0.0054)	0.0301*** (0.0060)	0.0276*** (0.0055)	0.0264*** (0.0054)	0.0271*** (0.0054)
Trust	0.1265*** (0.0234)	0.1235*** (0.0234)	0.1281*** (0.0232)	0.1288*** (0.0233)	0.1299*** (0.0232)	0.1271*** (0.0231)	0.1275*** (0.0232)
Dummy (1 = Islamic)	0.0188 (0.0217)	0.0210 (0.0214)	0.0062 (0.0203)	0.0086 (0.0202)	0.0114 (0.0203)	0.0091 (0.0201)	0.0087 (0.0210)
VA	-0.0006 (0.0119)						
PS		-0.0041 (0.0146)					
GE			0.0293** (0.0140)				

Continued.

Table 2. Continued.

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
RQ				0.0286* (0.0148)			
CC					0.0240* (0.0126)		
RL						0.0257* (0.0131)	
QOG							0.0247 (0.0168)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,089	1,089	1,089	1,089	1,089	1,089	1,089
Number of banks	282	282	282	282	282	282	282
Number of instruments	26	26	26	26	26	26	26
Wald test (<i>p</i> -value)	58.59***	54.64***	58.79***	59.93***	56.61***	57.21***	57.09***
AR(1) (<i>p</i> -value)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) (<i>p</i> -value)	0.416	0.384	0.397	0.393	0.399	0.387	0.407
Hansen's <i>J</i> test (<i>p</i> -value)	0.163	0.100	0.312	0.284	0.272	0.268	0.249
VIF	1.28	1.23	1.31	1.32	1.28	1.28	1.29

2S-GMM = two-step generalized method of moments, AR = autoregressive, VIF = variance inflation factor.
 Notes: The dependent variable is bank credit growth. For the bank-level data: CG is credit growth, SIZE is the natural log of total assets, LIQ_{*t-1*} is lagged liquidity, DEP_{*t-1*} is lagged deposits, ΔEQ is the growth rate in equity, SOL is solvency ratio, Dummy is equal to 1 if the bank is Islamic and 0 otherwise. For the macro-data: VA is voice and accountability, PS is political stability, GE is government effectiveness, RQ is regulatory quality, CC is control of corruption, RL is rule of law, QOG is the average of the six governance variables, ΔGDPPC is the growth rate of gross domestic product per capita, and Trust is the change in trustworthiness and confidence index. Robust standard errors are shown in parentheses. *, **, and *** denote the significance at the 10%, 5%, and 1% levels, respectively.
 Source: Authors' calculations.

link between bank efficiency and six QOG indicators in Gulf Cooperation Council countries. This finding pointed to the complementary relationship between trustworthiness and effective governance in promoting credit growth. Previous studies have found that better GE increases efficiency and enhances government credibility (Hwang and Akdede 2011). Kamarudin et al. (2020) pointed out that GE was the government's involvement in formulating and implementing policies and regulations that led to better bank performance. Therefore, this study expected better GE to improve credit growth. RQ was found to enhance the performance of banks due to solid and rigorous policy formulation and implementation (Beltratti and Stulz 2009, Kamarudin et al. 2020). In addition, better RQ means better accountability of government employees and, therefore, better bank performance (Kamarudin et al. 2020). Lensink, Meesters, and Naaborg (2008) also found that improved RL promoted credit growth, as did higher CC (Chortareas, Girardone, and Ventouri 2012). It was found that delays in litigation and arbitration processing impacted banks negatively; therefore, better RL reduced the cost of litigation and arbitration and ultimately led to better credit growth (Kamarudin et al. 2020). Similarly, abiding by the law, the efficiency of the courts, and contract enforceability imply improved RL. These factors can minimize the uncertainty of carrying out business transactions, improve capital inflows, and enhance investment opportunities, leading to increased credit growth.

The results indicated that lagged credit growth was positive and significant for all specifications, suggesting that the previous year's credit growth positively impacted the current year's credit growth. For bank-specific variables, it was found that lagged liquidity had positive and significant influence on bank credit growth in six specifications. This result implied that banks in ASEAN countries with high liquidity lent more than less liquid banks. This was contrary to the findings of de Haas and van Lelyveld (2010), who suggested that banks with higher liquidity had less lending. Similarly, Allen et al. (2017) found that conservative banks grew more slowly.

Alternatively, equity growth rate positively and significantly influenced bank credit growth. Equity growth rate was positive and significant in influencing bank credit growth. This result was similar to Košak et al. (2015), who found a positive link between the equity growth rate and bank lending, meaning that a higher equity ratio encourages banks to increase lending. However, this result contradicted Aysan and Ozturk (2018), who found that a higher equity ratio led to lower lending.

The GDP per capita growth rate positively influenced bank credit growth for the country-specific variables. This result indicated that higher economic growth led to more bank loans, supporting the pro-cyclicality of bank credit growth in ASEAN

Table 3. 2S-GMM Estimation for Conventional Banks Results

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
CG _{t-1}	0.625*** (0.144)	0.656*** (0.140)	0.620*** (0.142)	0.655*** (0.141)	0.635*** (0.143)	0.643*** (0.145)	0.635*** (0.143)
SIZE	0.007** (0.003)	0.003 (0.003)	0.005 (0.003)	0.004 (0.003)	0.005 (0.003)	0.005 (0.003)	0.005* (0.003)
LIQ _{t-1}	0.250** (0.098)	0.245** (0.099)	0.224** (0.101)	0.246** (0.099)	0.252** (0.099)	0.245** (0.099)	0.249** (0.099)
DEP _{t-1}	0.042 (0.047)	0.044 (0.044)	0.048 (0.046)	0.041 (0.045)	0.038 (0.045)	0.039 (0.045)	0.040 (0.045)
ΔEQ	0.281*** (0.070)	0.286*** (0.068)	0.287*** (0.069)	0.285*** (0.069)	0.281*** (0.069)	0.283*** (0.070)	0.281*** (0.069)
SOL	0.100 (0.085)	0.087 (0.082)	0.093 (0.090)	0.094 (0.082)	0.099 (0.083)	0.105 (0.083)	0.100 (0.084)
ΔGDPPC	0.010 (0.008)	0.014* (0.008)	0.008 (0.008)	0.017** (0.007)	0.014* (0.008)	0.016** (0.008)	0.013* (0.008)
Trust	0.138*** (0.053)	0.166*** (0.053)	0.145*** (0.051)	0.167*** (0.054)	0.147*** (0.051)	0.156*** (0.054)	0.145*** (0.052)
VA	0.000 (0.010)						
PS		0.041*** (0.013)					
GE			0.028* (0.017)				
RQ				0.039*** (0.013)			

Continued.

Table 3. *Continued.*

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
CC					0.024** (0.011)		
RL						0.029** (0.011)	
QOG							0.024* (0.013)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	692	692	692	692	692	692	692
Number of banks	282	282	282	282	282	282	282
Number of instruments	26	26	26	26	26	26	26
Wald test (<i>p</i> -value)	58.59***	54.64***	58.79***	59.93***	56.61***	57.21***	57.09***
AR(1) (<i>p</i> -value)	0.0494	0.0449	0.0506	0.0457	0.0486	0.0481	0.0485
AR(2) (<i>p</i> -value)	0.5002	0.4643	0.5019	0.4689	0.4903	0.4831	0.4904
Hansen test (<i>p</i> -value)	0.2342	0.243	0.2294	0.2429	0.2349	0.2274	0.2352

2S-GMM = two-step generalized method of moments, AR = autoregressive.
 Notes: The dependent variable is bank credit growth. For the bank-level data, CG is credit growth, CG_{t-1} is the lagged CG, SIZE is the natural log of total assets, LIQ_{t-1} is lagged liquidity, DEP_{t-1} is lagged deposits, ΔEQ is the growth rate in equity, SOL is solvency ratio, TR is the change in trustworthiness and confidence index, VA is voice and accountability, PS is political stability, GE is government effectiveness, RQ is regulatory quality, CC is control of corruption, RL is rule of law, QOG is the average of the six governance variables, and $\Delta GDPPC$ is the growth rate of gross domestic product per capita. Robust standard errors are shown in parentheses. *, **, and *** denote the significance at the 10%, 5%, and 1% levels, respectively.
 Source: Authors' calculations.

(Al-Khouri and Arouri 2016). This was contrary to Jeon and Wu (2014) and Ibrahim (2016), who found a negative link between bank credit growth and GDP growth.

Lastly, a dummy variable was included to compare bank credit growth between Islamic and conventional banks. The results were consistent in showing that there was no significant difference between Islamic and conventional banks in ASEAN countries.

Regarding the model's goodness of fit, the AR1 was significant, indicating autocorrelation in the first lag. However, AR2 was insignificant, which suggested no autocorrelation in the second order. Variance inflation factor results suggested the nonexistence of a multicollinearity problem.

C. Robustness Check

This study split the sample and ran the 2S-GMM model for conventional banks and found that the results were consistent, and it seemed that conventional banks drove the results (Table 3). In addition, this study ran the same model but used an interaction between Islamic banks with trust as a robustness check. The results in Table A2.1 in Appendix 2 show that the result was similar to Table 2, where trust positively impacted credit growth. Moreover, the same four governance variables, plus their averages, were positive and significant. Lastly, model diagnostics indicated that the model passed the required benchmarks.

In addition, this study used two different techniques to estimate the model of the study. A dynamic GMM estimator with linear and nonlinear moments, developed by Kripfganz and Schwarz (2019), was used, and the result was found to be consistent with the 2S-GMM. Moreover, this study used the dynamic fixed-effect estimator and found that the result was consistent with the 2S-GMM model. The results are in Tables A2.2 and A2.3 in Appendix 2.

V. Conclusion

Despite excessive credit growth exposing them to the risk of insolvency, banks need credit growth to promote their market power and contribute to macroeconomic stability. Unlike earlier literature, which examined the determinants of domestic credit growth, this study investigated whether and how trust and institutional quality promoted domestic credit growth. Additionally, this paper examined the cyclicity of banks across 10 ASEAN member countries and found the following. First, the coefficient of trust was positive on credit growth, indicating that trust in the banking

system promoted credit growth. This result also suggested that trust in the banking system supported domestic credit growth, contributing to a smooth financial intermediation process and macroeconomic stability. Second, it was found that the impacts of the six QOG were positive on credit growth, indicating that they improved credit growth in the region. This finding suggested that QOG played a pivotal role in promoting credit growth. This outcome implied a complementary effect between trust and QOG. The findings indicated that trust in banks may strongly influence domestic credit creation and financial intermediation. The results further suggested that informal and formal mechanisms, such as trust and institutional quality, complement each other, leading to effective credit expansion in societies where people show trust by fulfilling their promises and financial contracts. Third, the results suggested that banks in ASEAN countries were pro-cyclical regarding credit growth cyclicity. This outcome indicated that higher economic growth led to increased bank loans.

Policy makers and regulators in ASEAN countries need to strengthen public trust in their respective banking systems to realize the positive role of credit growth in their economic systems. Authorities may adopt appropriate policies, such as small ASEAN member countries (e.g., Cambodia) initiating explicit deposit insurance policies to increase trust. The remaining member countries should increase their explicit deposit coverage to increase confidence in their banking systems. ASEAN countries should also adopt international bank regulation and supervision policies, such as the Basel III accords, which guide banks to maintain international standards concerning capital and liquidity requirements, on-site and off-site supervision, and market discipline. However, deposit insurance and capital requirements are necessary but not sufficient to increase efficiency, promote competitiveness, and protect against bank runs during volatile periods. This is because the availability of a safety net when banks and depositors are insured can exacerbate moral hazard. Therefore, trustworthiness and confidence are needed to reduce moral hazard and excessive risk-taking behavior. The active role of central banks, as regulators and lenders of last resort to distressed banks, can increase public trust and confidence in the banking system.

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Appendix 1

Table A1. **Definition of Variables, Expected Signs, and Data Sources**

Variable	Description	Expected Sign	Data Source
CG	Growth rate of gross loans over GDP deflator	(+)	BankFocus
SIZE	Natural logarithm of total assets as a proxy of the bank size	(+/-)	BankFocus
LIQ _{t-1}	Lagged liquidity defined as the ratio of liquid assets over total assets	(+/-)	BankFocus
DEP _{t-1}	Lagged Deposit computed as a ratio of total deposits over total liability	(+/-)	BankFocus
ΔEQ	Growth rate of equity over GDP deflator	(+/-)	BankFocus
SOL	Solvency ratio is calculated by dividing total liability over total assets	(+/-)	BankFocus
ΔGDPPC	Growth rate of the GDP per capita	(+/-)	World Bank
Trust	Change in trustworthiness and confidence index	(+)	DataStream
IS	Dummy variable equal 1 if the bank is Islamic and 0 otherwise	(+)	BankFocus
QOG	Quality of governance measured by the Worldwide Governance Indicators	(+/-)	World Bank
VA	Voice and accountability	(-)	World Bank
PS	Political stability and absence of violence	(+)	World Bank
GE	Government effectiveness	(-)	World Bank
RQ	Regulatory quality	(-)	World Bank
CC	Control of corruption	(-)	World Bank
RL	Rule of law	(-)	World Bank

GDP = gross domestic product.

Source: Authors' compilation.

Appendix 2

Table A2.1. Two-Step Generalized Method of Moments Estimation of the Interaction of Trust and Islamic Banks Results

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
CG_{t-1}	0.197*** (0.074)	0.199*** (0.074)	0.204*** (0.074)	0.209*** (0.074)	0.210*** (0.074)	0.203*** (0.073)	0.202*** (0.074)
SIZE	0.003 (0.003)	0.003 (0.003)	0.001 (0.004)	0.001 (0.004)	0.000 (0.004)	0.001 (0.004)	0.002 (0.004)
LIQ_{t-1}	0.130 (0.080)	0.130* (0.078)	0.135* (0.075)	0.136* (0.075)	0.137* (0.076)	0.141* (0.075)	0.139* (0.075)
DEP_{t-1}	-0.074 (0.050)	-0.081 (0.048)	-0.075 (0.049)	-0.071 (0.048)	-0.072 (0.048)	-0.078 (0.049)	-0.077 (0.049)
ΔEQ	0.262*** (0.068)	0.261*** (0.067)	0.263*** (0.069)	0.264*** (0.069)	0.264*** (0.070)	0.264*** (0.069)	0.263*** (0.069)
SOL	0.180* (0.105)	0.182* (0.104)	0.189* (0.104)	0.178* (0.102)	0.183* (0.102)	0.185* (0.102)	0.185* (0.102)
ΔGDP_{PPC}	0.023*** (0.008)	0.024*** (0.008)	0.031*** (0.007)	0.027*** (0.006)	0.029*** (0.006)	0.028*** (0.007)	0.028*** (0.007)
Trust	0.093** (0.037)	0.089** (0.036)	0.111*** (0.033)	0.108*** (0.034)	0.112*** (0.033)	0.100*** (0.034)	0.100*** (0.034)
IS*Trust	0.030 (0.063)	0.033 (0.063)	0.029 (0.063)	0.029 (0.063)	0.027 (0.062)	0.026 (0.062)	0.029 (0.063)
VA	-0.005 (0.013)						
PS		0.002 (0.014)					

Continued.

Table A2.1. *Continued.*

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
GE			0.031** (0.015)				
RQ			0.032** (0.014)				
CC					0.035** (0.015)		
RL						0.027** (0.013)	
QOG							0.031* (0.018)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,089	1,089	1,089	1,089	1,089	1,089	1,089
Number of banks	282	282	282	282	282	282	282
No. of instruments	25	25	25	25	25	25	25
Wald test (<i>p</i> -value)	48.11***	46.74***	48.45***	48.23***	47.57***	48.71***	47.51***
AR(1) (<i>p</i> -value)	0.001	0.001	0.001	0.001	0.001	0.001	0.001
AR(2) (<i>p</i> -value)	0.425	0.409	0.415	0.410	0.418	0.417	0.420
Hansen test (<i>p</i> -value)	0.123	0.114	0.107	0.140	0.139	0.134	0.128

AR = autoregressive.

Notes: The dependent variable is bank credit growth. For the bank-level data, CG is credit growth, CG_{t-1} is the lagged CG, SIZE is the natural log of total assets, LQ_{t-1} is lagged liquidity, DEP_{t-1} is lagged deposits, ΔEQ is the growth rate in equity, SOL is solvency ratio, Trust is the change in trustworthiness and confidence index, VA is voice and accountability, PS is political stability, GE is government effectiveness, RQ is regulatory quality, CC is control of corruption, RL is rule of law, QOG is the average of the six governance variables, and $\Delta GDPPC$ is the growth rate of gross domestic product per capita. Robust standard errors are shown in parentheses. *, **, and *** denote the significance at the 10%, 5%, and 1% levels, respectively.

Source: Authors' calculations.

Table A2.2. Dynamic Generalized Method of Moments Estimation with Linear and Nonlinear Moments Results

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
CG _{t-1}	0.625*** (0.144)	0.656*** (0.140)	0.620*** (0.142)	0.655*** (0.141)	0.635*** (0.143)	0.643*** (0.145)	0.635*** (0.143)
SIZE	0.007** (0.003)	0.003 (0.003)	0.005 (0.003)	0.004 (0.003)	0.005 (0.003)	0.005 (0.003)	0.005* (0.003)
LIQ _{t-1}	0.250*** (0.098)	0.245** (0.099)	0.224** (0.101)	0.246** (0.099)	0.252** (0.099)	0.245** (0.099)	0.249** (0.099)
DEP _{t-1}	0.042 (0.047)	0.044 (0.044)	0.048 (0.046)	0.041 (0.045)	0.038 (0.045)	0.039 (0.045)	0.040 (0.045)
ΔEQ	0.281*** (0.070)	0.286*** (0.068)	0.287*** (0.069)	0.285*** (0.069)	0.281*** (0.069)	0.283*** (0.070)	0.281*** (0.069)
SOL	0.100 (0.085)	0.087 (0.082)	0.093 (0.090)	0.094 (0.082)	0.099 (0.083)	0.105 (0.083)	0.100 (0.084)
ΔGDPPC	0.010 (0.008)	0.014* (0.008)	0.008 (0.008)	0.017** (0.007)	0.014* (0.008)	0.016** (0.008)	0.013* (0.008)
Trust	0.138*** (0.053)	0.166*** (0.053)	0.145*** (0.051)	0.167*** (0.054)	0.147*** (0.051)	0.156*** (0.054)	0.145*** (0.052)
Dummy (1 = Islamic)	0.0188 (0.0217)	0.0210 (0.0214)	0.0062 (0.0203)	0.0086 (0.0202)	0.0114 (0.0203)	0.0091 (0.0201)	0.0087 (0.0210)
VA	0.000 (0.010)						
PS		0.041*** (0.013)					
GE			0.028* (0.017)				

Continued.

Table A2.2. *Continued.*

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
RQ				0.039*** (0.013)			
CC					0.024** (0.011)		
RL						0.029** (0.011)	
QOG							0.024* (0.013)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,089	1,089	1,089	1,089	1,089	1,089	1,089
Number of banks	282	282	282	282	282	282	282
Number of instruments	26	26	26	26	26	26	26
Wald test (<i>p</i> -value)	58.59***	54.64***	58.79***	59.93***	56.61***	57.21***	57.09***
AR(1) (<i>p</i> -value)	0.0494	0.0449	0.0506	0.0457	0.0486	0.0481	0.0485
AR(2) (<i>p</i> -value)	0.5002	0.4643	0.5019	0.4689	0.4903	0.4831	0.4904
Hansen test (<i>p</i> -value)	0.2342	0.243	0.2294	0.2429	0.2349	0.2274	0.2352

AR = autoregressive.

Notes: The dependent variable is bank credit growth. For the bank-level data, CG is credit growth, CG_{t-1} is the lagged CG, SIZE is the natural log of total assets, LIQ_{t-1} is lagged liquidity, DEP_{t-1} is lagged deposits, ΔEQ is the growth rate in equity, SOL is solvency ratio, Trust is the change in trustworthiness and confidence index, VA is voice and accountability, PS is political stability, GE is government effectiveness, RQ is regulatory quality, CC is control of corruption, RL is rule of law, QOG is the average of the six governance variables, and $\Delta GDPPC$ is the growth rate of the gross domestic product per capita. Robust standard errors are shown in parentheses. *, **, and *** denote the significance at the 10%, 5%, and 1% levels, respectively.

Source: Authors' calculations.

Table A2.3. Dynamic Fixed Effects Estimation Results

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
CG _{t-1}	0.391*** (0.114)	0.392*** (0.122)	0.384*** (0.121)	0.375*** (0.114)	0.403*** (0.112)	0.436*** (0.119)	0.442*** (0.116)
SIZE	0.012** (0.005)	0.006* (0.004)	0.013** (0.006)	0.012** (0.005)	0.009** (0.004)	0.006* (0.004)	0.006** (0.003)
LIQ _{t-1}	0.209*** (0.081)	0.173*** (0.066)	0.224** (0.088)	0.240*** (0.080)	0.194*** (0.069)	0.171** (0.072)	0.146** (0.069)
DEP _{t-1}	-0.059 (0.053)	-0.058 (0.051)	-0.036 (0.042)	-0.058 (0.048)	-0.048 (0.049)	-0.051 (0.054)	-0.010 (0.038)
ΔEQ	0.180*** (0.061)	0.191*** (0.062)	0.185*** (0.062)	0.184*** (0.061)	0.189*** (0.061)	0.193*** (0.064)	0.198*** (0.062)
SOL	0.149* (0.081)	0.156** (0.071)	0.187*** (0.070)	0.169** (0.073)	0.133* (0.076)	0.224*** (0.074)	0.194*** (0.071)
ΔGDPPC	0.021** (0.008)	0.025*** (0.009)	0.015** (0.007)	0.021*** (0.008)	0.021*** (0.008)	0.024** (0.010)	0.014* (0.008)
Trust	0.483** (0.215)	0.444** (0.200)	0.353* (0.212)	0.482** (0.201)	0.466** (0.199)	0.420** (0.205)	0.104*** (0.035)
Dummy (1 = Islamic)	0.0188 (0.0217)	0.0210 (0.0214)	0.0062 (0.0203)	0.0086 (0.0202)	0.0114 (0.0203)	0.0091 (0.0201)	0.0087 (0.0210)
VA	0.066** (0.031)						
PS		0.071** (0.029)					
GE			0.010 (0.013)				

Continued.

Table A2.3. *Continued.*

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
RQ				0.045** (0.020)			
CC					0.072*** (0.027)		
RL						0.068** (0.033)	
QOG							-0.008 (0.009)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,089	1,089	1,089	1,089	1,089	1,089	1,089
Number of banks	282	282	282	282	282	282	282
No. of instruments	26	26	26	26	26	26	26
AR(1) (<i>p</i> -value)	0.000	0.004	0.004	0.003	0.003	0.002	0.002
AR(2) (<i>p</i> -value)	0.155	0.172	0.175	0.165	0.157	0.148	0.175
Hansen test (<i>p</i> -value)	0.108	0.11	0.1	0.15	0.13	0.1	0.11

AR = autoregressive.

Notes: The dependent variable is bank credit growth. For the bank-level data, CG is credit growth, CG_{t-1} is the lagged CG, SIZE is the natural log of total assets, LIQ_{t-1} is lagged liquidity, DEP_{t-1} is lagged deposits, ΔEQ is the growth rate in equity, SOL is solvency ratio, Trust is the change in trustworthiness and confidence index, VA is voice and accountability, PS is political stability, GE is government effectiveness, RQ is regulatory quality, CC is control of corruption, RL is rule of law, QOG is the average of the six governance variables, and ΔGDP is the growth rate of the gross domestic product per capita. Robust standard errors are shown in parentheses. *, **, and *** denote the significance at the 10%, 5%, and 1% levels, respectively.

Source: Authors' calculations.