Impact of Financial Inclusion on Economic Growth and Unemployment: Evidence from Southeast Asian Countries

Dradjad H Wibowo (a)*, Yulia Estri Mardani (a), Muhammad Iqbal (a)

(a) Faculty of Economics and Business, Perbanas Institute, Indonesia.

ARTICLE INFO

Article history:
Received 17 July 2023
Received in rev. form 15 August 2023
Accepted 16 August 2023

Keywords:
Financial Inclusion, GDP per capita, Unemployment, Southeast Asian countries

JEL Classification:
G29, R11, E24, N25

ABSTRACT

In the past decade, Southeast Asia has seen the development of financial inclusion, as evidenced by the growth of the penetration, availability, and usage dimensions of financial inclusion. This study analyses the impact financial inclusion has on economic growth, represented by GDP per capita growth, and unemployment using data from Indonesia, Malaysia, Thailand, the Philippines, and Cambodia. The authors employed panel data regression with fixed effect and random effect models to analyse the data. The results show that the number of commercial bank branches and outstanding loans statistically significantly affect GDP per capita growth, while the number of saving/deposit accounts does not. All three variables are shown to have a statistically significant impact on unemployment.

Introduction

The 2008 global financial crisis severely affected the economic well-being of people “at the bottom of the social pyramid” which include low-income households, individuals with disabilities, people living in remote areas, workers with no or inadequate legal documents, and other marginalized communities. The 2009 G20 Pittsburgh Summit agreed to advance financial inclusion to increase access to finance for those disadvantaged groups, with guidelines for the development of financial inclusion agreed at the 2010 G20 Toronto Summit (Bank Indonesia, 2022).

Gaining prominence in the 2000s, the term “financial inclusion” refers to a condition in which individuals and businesses have access to financial products and services that are affordable and can meet needs, both in terms of transactions, payments, savings, credit/loans, and insurance that is acceptable on a sustainable and responsible level (World Bank, 2022a, 2022b).

With the rapid development of digital technologies and infrastructure, digital banking and financial services have grown significantly. This gives rise to digital financial inclusion where those disadvantaged groups have an easier and affordable access to formal financial services through the use of digital technologies and infrastructures such as the internet and mobile phones, with minimal use of cash and conventional bank/financial service branches (Lauer & Lyman, 2015; Manyika et al., 2016).

Financial inclusion pertains to a state wherein individuals and enterprises have the ability to access cost-effective financial products and services that cater to their requirements, encompassing transactions, payments, savings, credit/loans, and insurance, all in a sustainable and accountable manner (World Bank, 2022b). Financial inclusion can be assessed from multiple dimensions through an Index of Financial Inclusion (IFI), applied across various timeframes and levels of economic aggregation (Sarma, 2015). This approach encompasses three primary measurement facets: penetration, availability, and usage. The penetration aspect characterizes an inclusive financial system aiming for widespread usage and accessibility. Relevant indicators for penetration encompass metrics like the count of bank deposit accounts per 1000 adults and the quantity of e-money accounts per 1000 adults. The availability dimension pertains to the convenience of accessing banking and financial services for all users. Indicators for availability involve factors such as the presence of banking outlets (main offices, branch locations, ATMs, etc.), the density of mobile agent outlets per

* Corresponding author.

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https://doi.org/10.20525/ijfbs.v12i2.2770
100,000 adults, and the prevalence of point-of-sale terminals per 100,000 adults. Lastly, the usage dimension represents the engagement with an inclusive banking system, encompassing activities like credit utilization, deposits, payments, remittances, transfers, and others. This dimension encompasses all service/product utilization forms, indicated by metrics including total credit volume, deposits, loans, and mobile money transactions as a percentage of the GDP.

Financial inclusion can potentially result in a more effective and efficient circulation of money, creating higher economic growth. Financial inclusion also encourages more equitable wealth distribution (Lauer & Lyman, 2015). It promotes financial system stability, reduces poverty and inter-individual, inter-societal and inter-regional inequalities, and promotes inclusive development (Global Partnership for Financial Inclusion, 2016). Financial inclusion is an important factor of enhancing financial access to increase people’s income (Amajaya, 2020). Increasing financial access and building financial inclusion systems are crucial for developing countries’ efforts to include the lowest-income populations in financial flows (Nguyen, 2020).

Amid the COVID-19 pandemic, financial inclusion was considered an important component of global efforts to cushion countries from the devastating effects the pandemic has on growth, unemployment, and poverty, as well as aiding in global economic recovery. Financial inclusion also helped countries control the effects of the pandemic and to exacerbate both public health and economic problems facing the country’s poor (Alshyab et al., 2021).

Empirical evidence regarding the favorable consequences of financial inclusion is somewhat diverse. Various studies have presented differing outcomes: some illustrate that financial inclusion bolsters economic growth (Lestari & Anggraeni, 2020) and that both loans and the proliferation of bank branches contribute positively to economic expansion (Ratnawati, 2020; Iramayasari & Adry, 2020). Similarly, the existence of bank branches, ATMs, and credit have been associated with increased levels of economic development (Van & Linh, 2019). Mehry et al. (2021) identified a connection between financial inclusion and reduced unemployment rates in developing nations, while Alshyb et al. (2021) determined that enhanced financial inclusion and real output growth can mitigate unemployment rates. Nevertheless, conflicting findings also surface. For instance, some studies suggest that financial inclusion, as indicated by the quantity of deposits, doesn’t exhibit a statistically significant influence on growth (Ratnawati, 2020), and the number of ATMs in ASEAN countries is inversely correlated with economic growth (Iramayasari & Adry, 2020).

Despite the “somehow mixed” evidence, the potential benefits of financial inclusion have led to over 60 countries working to implement national financial inclusion strategies (Cavoli & Shrestha, 2020). The usage dimension is usually given more emphasis in financial inclusion development, with the proportion of credit extended to GDP as the key indicator (Jannah & Wahyudi, 2017). In order to attain a more balanced and fairer pattern of growth, it is imperative to enhance the influence of the penetration and availability dimensions. This entails ensuring that all segments of the population can effortlessly access financial services. For instance, the presence of financial service branches in close proximity and the affordability of bank and other service fees play a vital role in this regard (Allen et al., 2016).

Southeast Asian countries, being resource rich countries enjoying a sizeable demographic bonus, with Singapore as one of the main global financial hubs, ten Southeast Asian countries who are members of ASEAN (the Association of Southeast Asian Nations) have shown a remarkable economic growth over the past decade. During the period of 2011-2020 ASEAN countries recorded an average growth of 4.4 percent. Because of the COVID-19 pandemic, these countries experienced a contraction of -3.0 percent to -10.8 percent, with an average of -3.3 percent in 2020. (ASEAN Stats, 2022).

In terms of population, ASEAN ranks third after India and China. During the 1980-2020 period, ASEAN populations rose from 335.1 million to 661.8 million or around 8.5 percent of the total world population. The working age cohort (15 – 64 years of age) accounted for over 50 percent of ASEAN’s total population (ASEAN Secretariat, 2021), with an average unemployment rate of 2.7 percent in the 2011-2020 period, hence the demographic bonus. The COVID-19 pandemic increased ASEAN’s unemployment rate to its highest of 3.08 percent (World Bank, 2023), mostly caused by lay-offs in those sectors employing informal workers. Because these workers usually have a low income with little or no saving capabilities (Khanna et al., 2021), the lay offs led to increased poverty during the pandemic. In 2021, as many as 4.7 million people in Southeast Asia were reported to be in extreme poverty and 9.3 million jobs were lost (Asian Development Bank, 2022).

In the context of ASEAN countries, the significance of financial inclusion and its associated consequences has been underscored as pivotal components within the ASEAN Economic Community Blueprint 2025 and the ASEAN Socio-Cultural Community Blueprint 2025. While Singapore has already established itself as a prominent global financial centre, other nations like Indonesia, Malaysia, Thailand, and the Philippines have taken the lead in crafting national strategies aimed at fostering financial inclusion (OECD, 2018). The primary objective of this research is to examine how financial inclusion impacts the growth of GDP per capita and the unemployment rate in nations within Southeast Asia. The authors assess the influence of each aspect of financial inclusion. To ensure data accessibility and comprehensiveness, the researchers have selected five countries from the ASEAN region: Indonesia, Malaysia, Thailand, Philippines, and Cambodia, to serve as the study’s representative samples.

**Research Methods**

The approach used in this research is hypothetical-deductive which can be explained step by step, logically, and organized in proving a hypothesis to find a solution to a problem (Sekaran & Bougie, 2016). The use of deductive reasoning aims to test existing theories through fixed and predetermined research designs through objective measures. According to Sekaran & Bougie (2016), deductive reasoning which aims to examine causal relationships through manipulation and observation processes can also be categorized as
positivist research. The causal relationship tested in this study is represented by the independent variable financial inclusion and the dependent variable economic growth and the unemployment rate.

This study uses three indicators of financial inclusion as the independent variables, namely the number of commercial bank deposit/savings accounts per 1,000 adults to represent the penetration dimension, the number of commercial bank branches per 100,000 adults to represent the availability dimension, and the percentage of outstanding loans from banks commercial to total GDP to represent the usage dimension. The variable representing economic expansion, which is the dependent factor, is quantified through the increase in GDP per capita. Additionally, the unemployment rate is gauged by determining the proportion of individuals within the workforce who are currently not employed. The operational details of the research variables are presented in Table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth of GDP per capita (GDP)</td>
<td>The percentage of output produced by a country divided by the mid-year population</td>
<td>((Total GDP)/Population \times 100)</td>
</tr>
<tr>
<td>Unemployment Rate (UR)</td>
<td>The share of the labor force that does not have a job but is looking for work</td>
<td>((Number of unemployed persons )/ (Number of labor force ) \times 100)</td>
</tr>
<tr>
<td>Number of commercial bank deposit/savings accounts per 1,000 adults (DSA)</td>
<td>The number of commercial bank savings/deposit accounts held per 1,000 adult population</td>
<td>Number of commercial bank deposit accounts per 1,000 adults</td>
</tr>
<tr>
<td>Number of commercial bank branches per 100,000 adults (BRC)</td>
<td>The number of commercial bank savings/deposit accounts held per 1,000 adult population</td>
<td>Number of commercial bank branches per 100,000 adults</td>
</tr>
<tr>
<td>Percentage of outstanding loans from banks commercial to total GDP (LOAN)</td>
<td>The number of loans outstanding or provided by commercial banks to users and legally obliged to be repaid</td>
<td>((Outstanding loans commercial banks) / (Total GDP) \times 100)</td>
</tr>
</tbody>
</table>

The research population is countries in the Southeast Asia region, the majority of which are developing countries. The approach employed for sampling is purposive sampling, chosen to deliver targeted information. This method is adopted when a particular entity possesses the necessary qualifications or meets the defined criteria sought by the study (Sekaran & Bougie, 2016). Several things were taken into consideration in determining the sample in this study, including 1. Countries that are members of the ASEAN regional organization (Association of Southeast Asian Nations); 2. Countries that have launched a national strategy or master plan/blueprint related to financial inclusion; And 3. Countries that have economic openness. Taking into account the above sampling and taking into account the availability of data, five countries were selected from ten countries in the Southeast Asia region, namely: Indonesia, Malaysia, Thailand, Philippines, and Cambodia as samples. These five countries are developing nations and have been equally affected by the COVID-19 pandemic.

Data collection uses a documentary method with secondary data types obtained from the World Bank, International Monetary Fund (IMF), and other relevant sources. Data sources related to per capita GDP growth and unemployment rates were obtained from the World Development Indicators - World Bank, while data on financial inclusion indicators were obtained from the Financial Access Survey (FAS) - IMF. The data period used is from 2011 to 2020.

The data at hand adopts a panel data structure, comprising a fusion of time series and cross-sectional data. This attribute substantiates the preference for employing panel data regression as the chosen analytical approach, surpassing other methodologies. Additionally, panel data regression offers the advantageous provision of alternative models capable of accommodating the inherent traits of the dataset. Three principal alternative models are available for panel data regression: the common effects model (CEM), fixed effects model (FEM), and random effects model (REM). The incorporation of these alternative models is aimed at ensuring the selection of the most suitable model, one that precisely encapsulates the influence of financial inclusion on both economic growth and unemployment rates. The panel data regression model utilized in this study is outlined as follows:

\[
GD_{P} = \alpha_0 + \alpha_1DSA_{it} + \alpha_2BRC_{it} + \alpha_3LOAN_{it} + \epsilon_{it}
\]

\[
UR = \beta_0 + \beta_1DSA_{it} + \beta_2BRC_{it} + \beta_3LOAN_{it} + \nu_{it}
\]

Notes:
- GDP = growth of GDP per capita
- UR = unemployment rate
- DSA = number of commercial bank deposit/savings accounts per 1,000 adults
- BRC = number of commercial bank branches per 100,000 adults

57
LOAN = percentage of outstanding loans from banks commercial to total GDP

Results and Discussion

Prior to the onset of the COVID-19 pandemic in 2020, the economic landscape in Southeast Asian countries depicted a predominantly favorable trajectory in terms of both economic growth and unemployment rates. Nevertheless, the per capita GDP growth, serving as an indicator of economic expansion, exhibited a significant contraction for the five Southeast Asian countries chosen as the study's sample in the year 2020. This downturn in economic growth was primarily attributed to the global impact of the Covid-19 pandemic, which commenced its widespread effects worldwide during the same year. Economic activity in countries affected by the pandemic world, including countries in Southeast Asia, has changed, such as with the implementation of restrictions on mobility, face-to-face transactions, and other lifestyle changes to prevent the spread of the virus. Based on data from the World Bank (2022c) from the five countries in Southeast Asia, the Philippines experienced the deepest contraction while Indonesia experienced the smallest contraction, as can be seen in Figure 1. GDP per capita growth in the Philippines was recorded at minus 10.78 percent in 2020. This was mainly due to natural disasters and the Covid-19 pandemic which disrupted manufacturing, agriculture, tourism, construction, and trade activities.

![Figure 1: Graph of GDP Per Capita Growth for Five Countries in the Southeast Asia Region (in Percent)](image)

Source: World Bank (2022c)

Meanwhile, other economic indicators, namely the unemployment rate of the five Southeast Asian countries in 2011-2020 can be shown in Figure 2. From the image, Malaysia is the country with the highest unemployment rate, while Cambodia is the country with the lowest unemployment rate. Malaysia's unemployment rate in 2020 was recorded at 4.5 percent, followed by Indonesia's at 4.28 percent. Uncertain labor market conditions were influenced by the health and economic crises. Concerning the workforce, Indonesia has the largest population in ASEAN, reaching 273.52 million people, so it has the opportunity to obtain a sizeable workforce. With such a large population, Indonesia can achieve a demographic bonus with a large population of productive age which has the potential to support the country's development. Meanwhile, Cambodia is a country that has the smallest population of the five countries in Southeast Asia.

The COVID-19 pandemic which began to hit various countries in the world in 2020, including countries in the Southeast Asia region, limited face-to-face social interaction and activities so that digital financial services and payments increased to meet people’s needs. The existence of this digitization is a solution to encouraging financial inclusion during a pandemic. The perceived constraint is uneven financial inclusion, for example, micro, small, and medium enterprises (MSMEs), which are important drivers of Southeast Asian economies, have minimal formal credit history due to complicated requirements to access capital. The ease of credit can develop the businesses of business actors affected by the pandemic. According to a study conducted by Tan in 2022, the findings revealed that over 60 percent of the surveyed Micro, Small, and Medium Enterprises (MSMEs) faced difficulties in securing loans when they required financial assistance. Concurrently, informal workers, constituting an estimated majority of the Southeast Asian labor force at more than 70 percent, also encounter limitations in accessing financial services. A substantial proportion of them remain unbanked, burdened with significant debts, and predominantly engaged in cash transactions. This situation hinders the establishment of a credit history that could facilitate access to formal financial resources (Lim, 2022). Hence, the promotion of enhanced financial inclusion holds the promise of catering to the financial needs of individuals who are currently excluded from banking services (unbanked) or have limited access (underbanked) without utilizing the available offerings. Drawing from the 2021 Global Findex survey, it is evident that 76 percent of adults worldwide possess accounts with banks or other financial institutions, marking an increase from the previous 68 percent recorded in 2017 (World Bank, 2022a).
Depicted in the Figure 3 provided, an observable pattern is evident in a specific financial inclusion metric: the quantity of savings or deposit accounts within the context of the five Southeast Asian nations over the duration spanning from 2011 to 2020. Notably, this metric exhibited an upward trend during this period. Within this group of five countries, Malaysia stands out as the nation recording the highest number of savings or deposit accounts. As reported by the World Bank (2022d), Malaysia holds a leading position among ASEAN member states, the Organization of Islamic Cooperation (OIC), and other middle-income nations in fostering the development of the Islamic finance sector, which concurrently promotes inclusive finance. Additionally, Malaysia's remarkable strides in the Islamic finance industry are noteworthy. Moreover, the advancement of financial inclusion is being propelled through Fintech initiatives such as mobile phones and internet accessibility, which serve as global catalysts for enhancing financial services accessibility. The presence of Fintech platforms facilitates increased availability of information and enhances the transparency of Sharia-compliant social services like zakat, waqf, and alms.

Illustrated in the aforementioned Figure 4, a discernible trend is observed in one of the financial inclusion indicators: the number of commercial bank branches across the five Southeast Asian countries throughout the span of 2011 to 2020. Notably, this particular indicator showcased a downward trajectory. Among the five countries under scrutiny, Indonesia emerged as the nation boasting the highest number of commercial bank branches. The prominence of Indonesia can be attributed to its designation as the Southeast Asian country encompassing the largest land area as well as the most densely populated region. Consequently, a larger number of commercial bank branches are established in Indonesia to accommodate its extensive populace.
As depicted in the aforementioned Figure 5, a distinct trend emerges in a key financial inclusion metric: the measure of outstanding loans provided by commercial banks (expressed as a percentage of GDP) within the context of the five Southeast Asian nations over the span of 2011 to 2020. Evidently, this metric displays an upward trajectory during this timeframe. Notably, among these five countries, Malaysia stands out as the nation recording the highest percentage of outstanding loans. It's worth acknowledging that banks, serving as formal financial institutions, hold a pivotal role in extending credit to both individuals and businesses seeking capital for various purposes.

Table 2: Summary of Descriptive Statistics

<table>
<thead>
<tr>
<th>Numerical Statistic</th>
<th>GDP</th>
<th>UR</th>
<th>DSA</th>
<th>BRC</th>
<th>LOAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.0846</td>
<td>2.3336</td>
<td>1181.899</td>
<td>10.8542</td>
<td>62.0800</td>
</tr>
<tr>
<td>Median</td>
<td>3.9150</td>
<td>2.7900</td>
<td>987.890</td>
<td>10.6400</td>
<td>63.5100</td>
</tr>
<tr>
<td>Maximum</td>
<td>6.7400</td>
<td>5.1500</td>
<td>2490.840</td>
<td>17.8300</td>
<td>120.7800</td>
</tr>
<tr>
<td>Minimum</td>
<td>-10.7800</td>
<td>0.1400</td>
<td>129.830</td>
<td>4.2800</td>
<td>18.9800</td>
</tr>
<tr>
<td>Std Dev.</td>
<td>3.5079</td>
<td>1.5888</td>
<td>753.073</td>
<td>3.5476</td>
<td>32.5386</td>
</tr>
</tbody>
</table>

Source: Processed data (2023)

Table 2 presents a summary of the descriptive statistics pertaining to the financial inclusion variable, approximated through the number of savings/deposit accounts per 1000 adults, the count of commercial bank branches per 100,000 adults, and the proportion of outstanding loans from commercial banks in relation to GDP. Additionally, the table also encompasses variables such as per capita GDP growth and the unemployment rate throughout the observation period. This comprehensive summary offers insight into the various statistical attributes of these crucial variables.
The selection of the appropriate panel data regression model to elucidate the impact of financial inclusion on GDP per capita growth and the unemployment rate involves the utilization of the Chow test and the Hausman test. The outcomes of these tests for the two anticipated panel data regression models are detailed in Table 3. Notably, the table provides insight into the results of both the Chow test and the Hausman test. Specifically, when focusing on the first model with per capita GDP growth as the dependent variable, the results of both the Chow test and the Hausman test concur that the fixed effect model is more suited for explaining the influence of the three dimensions of financial inclusion on economic growth. However, when examining the second model wherein the unemployment rate is considered the dependent variable, the Chow test indicates that the fixed effect model is more suitable for explaining the effect of financial inclusion on the unemployment rate. Furthermore, the Hausman test diverges in its recommendation, suggesting that the random effect model might be more appropriate to employ than the fixed effect model.

**Table 3: Model Selection in Panel Data Regression**

<table>
<thead>
<tr>
<th>Model</th>
<th>Chow Test Results</th>
<th>Hausman Test Results</th>
<th>Selected models</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Effects Test</td>
<td>Prob.</td>
<td>Test Summary</td>
</tr>
<tr>
<td>Model I (growth of GDP per capita)</td>
<td>Cross-section Chi-square 0.0014</td>
<td>Cross-section random 0.0001</td>
<td>Fixed Effect Model</td>
</tr>
<tr>
<td>Model II (unemployment rate)</td>
<td>Cross-section Chi-square 0.0000</td>
<td>Cross-section random 0.1432</td>
<td>Random Effect Model</td>
</tr>
</tbody>
</table>

Source: Processed data (2023)

The outcomes of estimating the fixed effect model for per capita GDP growth are presented in Table 4, while the results of estimating the random effect model for the unemployment rate are displayed in Table 5. Upon analyzing the information furnished by both tables, it becomes evident that both models exhibit F-statistic probability values lower than 0.05. This suggests that both models are indeed suitable for explaining the impact of financial inclusion on both per capita GDP growth and the unemployment rate. The statistical significance of the F-statistic probability values reinforces the appropriateness of these models in delineating the relationship between financial inclusion and the variables of interest.

**Table 4: Fixed Effect Model with Growth of GDP per Capita as the Dependent Variable**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>Prob.</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.437504</td>
<td>-0.083180</td>
<td>0.9341</td>
<td>Not significant</td>
</tr>
<tr>
<td>DSA</td>
<td>-0.000692</td>
<td>-0.307795</td>
<td>0.7598</td>
<td>Significant</td>
</tr>
<tr>
<td>BRC</td>
<td>1.911701</td>
<td>2.981099</td>
<td>0.0048</td>
<td>Significant</td>
</tr>
<tr>
<td>LOAN</td>
<td>-0.264337</td>
<td>-4.011442</td>
<td>0.0002</td>
<td>Significant</td>
</tr>
</tbody>
</table>

R-Squared = 0.388231
F-Statistic = 3.807619
Prob (F-statistic) = 0.002754

Source: Processed data (2023)

According to the information presented in Table 4, when utilizing the Fixed Effect model approach, the coefficient of determination (R-Squared) records a substantial increase of 38.82 percent compared to the Common Effect model. Concerning the financial inclusion indicator denoted as the number of savings/deposit accounts, the t-statistic probability value tallies at 0.7598, surpassing the threshold of 0.05. Consequently, it can be inferred that this particular indicator does not exhibit a statistically significant effect. Conversely, the other two financial inclusion indicators—namely, the count of bank branches and outstanding loans—demonstrate significant effects. This is substantiated by the t-statistic probability values for both indicators, both of which fall below the 0.05 threshold, indicating their statistical significance in relation to the dependent variable.

The effect of the number of commercial bank savings/deposit accounts per 1,000 adults on the growth of GDP per capita

The analysis of the number of commercial bank savings/deposit accounts per 1,000 adults within the period of 2011 to 2020 in the Southeast Asian countries (Indonesia, Malaysia, Thailand, Philippines, and Cambodia) has revealed that it lacks a significant impact on the growth of GDP per capita. This metric reflects the count of accounts in which customers place their funds with a bank, encompassing various forms such as savings, time deposits, and demand deposits. These savings practices serve as avenues to educate individuals on sound financial management. Meanwhile, banks employ these deposited funds to support their operations, including extending credit and issuing debt securities.

In alignment with the results of Ratna wati's research (2020), which contends that the number of savings/deposit accounts doesn't exert an influence on economic growth, this study's findings similarly confirm this trend. This absence of a direct impact on economic growth could potentially explain this outcome. On a contrary note, research by Nasrudin & Soesilo (2004) suggests a negative relationship between funds gathered from external sources and economic growth. This might imply that the accumulated funds do not necessarily translate into physical capital accumulation or significant investment within the economy. However, these findings diverge from Amijaya's study (2020), which asserts that the number of accounts, particularly mobile money accounts, contributes significantly to economic growth. This disparity in findings might stem from variations in methodologies, contexts, or sample populations across these studies.
The effect of the number of commercial bank branches per 100,000 adults on the growth of GDP per capita

The examination of the number of commercial bank branches per 100,000 adults within the period of 2011 to 2020 in the Southeast Asian countries (Indonesia, Malaysia, Thailand, Philippines, and Cambodia) has yielded significant findings. The coefficient value of 1.9117 affirms that this metric bears a significant positive impact on the growth of GDP per capita. In practical terms, it can be concluded that a higher count of commercial bank branches per 100,000 adults correlates with a notable rise in per capita GDP growth within this region.

The number of bank branches stands as a representative measure of the accessibility of formal financial institutions within society. The widespread presence of bank branches enables the general public to engage with a range of banking services and products that cater to their financial requirements. As the availability of bank branches increases, public transactions including savings, deposits, loans, and more become more convenient and accessible.

The outcomes of this study highlight that an augmented number of bank branches across Southeast Asia contributes to the augmentation of GDP per capita growth. This phenomenon holds particular importance for individuals who are presently excluded from the financial mainstream or lack access to financial inclusion. These findings are in harmony with research conducted by Amijaya (2020), Iramayasari & Adry (2020), and Van & Linh (2019), all of which assert the significant positive influence of bank branches on economic growth. However, these findings diverge from Ratnawati's research (2020), which suggests that the number of bank branches does not influence economic growth.

Effect of outstanding loans from commercial banks (percentage of GDP) on the growth of GDP per capita

The examination of outstanding loans from commercial banks (expressed as a percentage of GDP) within the period of 2011 to 2020 across the Southeast Asian countries (Indonesia, Malaysia, Thailand, Philippines, and Cambodia) has produced insightful results. A significant and noteworthy discovery is that this metric demonstrates a significant negative influence on GDP per capita growth. The coefficient value for the independent variable stands at -0.2643, indicating that when the proportion of outstanding loans increases by 1 percent, the resulting effect on GDP per capita growth is a reduction of 26.43 percent.

The findings of this analysis underscore a counterproductive relationship between outstanding loans and economic growth, symbolized by GDP per capita growth. Loans play a pivotal role in the realm of financing, aiding individuals and businesses in accessing capital for employment opportunities or business ventures. Borrowed funds are typically utilized for productive or investment purposes, thereby potentially generating profits. The micro, small, and medium enterprise (MSME) sector, which constitutes a significant portion of Indonesia's business landscape, benefits from such loans. Despite these potential benefits, the analysis conducted by the authors discerned a significant negative correlation between outstanding loans and GDP per capita growth. This suggests that decreased outstanding loans could potentially lead to an increase in per capita GDP growth, and vice versa.

Interestingly, these results are not in alignment with the findings of Ratnawati in 2020 and Van & Linh (2019), both of which suggest a positive correlation between loans and economic growth. However, the study draws from Kumhof & Jakab's argument (2016) that loans from banks entail credit risk, potentially leading to financial instability. If banks miscalculate a borrower's repayment capacity, this could contribute to cycles of economic expansion and contraction or even trigger financial crises, as highlighted in research by Schularick & Taylor (2012).

Fahriyansah's research (2018) proposes that excessive credit growth can adversely impact economic growth due to an imbalance between credit and output growth. This suggests that credit expansion needs to be in alignment with the economic capacity to generate growth. Furthermore, Leon's study (2016) delves into the nuanced effects of household and business credit on economic growth across various income groups and suggests that overall credit is not consistently linked to growth. Another perspective is presented by Ho & Saadaoui's research (2022), which examines the relationship between bank credit and economic growth in ASEAN countries. Their findings suggest that while bank credit expansion does stimulate economic growth beyond a certain threshold, the positive impact of this expansion is not significant.

These varying results highlight the complexity of the relationship between loans, credit growth, and economic growth, emphasizing the need for context-specific analyses that consider the intricacies of each economic environment.

According to the information presented in Table 5, the utilization of the Random Effect model approach yielded a coefficient of determination (R-Squared) amounting to 36.59 percent. This measure offers insight into the proportion of the variance in the dependent variable that can be accounted for by the independent variables. When examining the three financial inclusion indicators as independent variables and their impact on the unemployment rate variable, significant results are discerned. All three independent variables exhibit probability values below the threshold of 0.05. This suggests that the relationship between these financial inclusion indicators and the unemployment rate is statistically significant. The findings underscore that these financial inclusion indicators bear an important influence on the unemployment rate variable within the Southeast Asian context.
The effect of the number of commercial bank savings/deposit accounts per 1,000 adults on the unemployment rate

The analysis of the number of commercial bank savings/deposit accounts per 1,000 adults within the timeframe of 2011 to 2020 across the Southeast Asian countries (Indonesia, Malaysia, Thailand, the Philippines, and Cambodia) has uncovered significant insights. Notably, this metric demonstrates a significant negative impact on the unemployment rate, which is expressed as a percentage of the total labor force. The regression coefficient value is recorded at -0.000894, indicating that a 1 percent increase in the number of commercial bank savings/deposit accounts is linked to a decrease of 0.0894 percent in the unemployment rate.

This significant negative relationship between the number of bank savings/deposit accounts and the unemployment rate suggests that higher access to banking services and accounts is associated with a decrease in unemployment rates. This could imply that individuals with greater access to formal financial services are better equipped to manage their finances, potentially making them more attractive candidates for employment or entrepreneurship. Additionally, increased access to bank savings accounts might provide a safety net that alleviates financial stress during periods of unemployment. These findings emphasize the potential role of banking services in tackling unemployment and fostering financial resilience. However, it is essential to consider the nuances and various influencing factors within each country’s economic and social context when interpreting these results.

The count of savings/deposit accounts held at banks reflects the volume of customer funds deposited within these institutions, which the banks can then utilize for their operational activities. Individuals and businesses accessing credit from banks can channel these funds as capital for initiating and managing their respective ventures. The outcomes of this study align with a pattern wherein a higher count of savings/deposit accounts at banks corresponds to a lower unemployment rate, and vice versa.

These findings resonate with the research conducted by Alshyab et al. (2021) and Mehry et al. (2021), both of which underscore the significant negative impact of financial inclusion on the unemployment rate. However, they contrast with the conclusions drawn from Haloho's research in 2019, which suggests no discernible relationship between the financial inclusion variable and the unemployment rate variable. Such inconsistencies highlight the multifaceted nature of these relationships and emphasize the need to consider specific contextual factors, methodologies, and analytical nuances inherent to each study.

Effect of the number of commercial bank branches per 100,000 adults on the unemployment rate

The analysis of the number of commercial bank branches per 100,000 adults within the timeframe of 2011 to 2020 across the Southeast Asian countries (Indonesia, Malaysia, Thailand, the Philippines, and Cambodia) has brought to light significant findings. Notably, this metric demonstrates a significant negative impact on the unemployment rate, which is expressed as a percentage of the total labor force. The regression coefficient value stands at -0.255084, indicating that a 1 percent increase in the number of commercial bank branches is associated with a substantial decrease of 0.0894 percent in the unemployment rate.

This significant negative correlation between the number of commercial bank branches and the unemployment rate underscores an intriguing relationship. The greater presence of bank branches appears to correlate with a decreased unemployment rate, suggesting that improved accessibility to formal financial services might lead to increased employment opportunities. It's important to recognize that this relationship could be influenced by a variety of factors, such as the role of banks in facilitating access to credit for businesses and entrepreneurs, potentially spurring economic activities and job creation. These results suggest that the expansion of commercial bank branches could contribute to reducing unemployment rates within the Southeast Asian context. However, it's important to consider other influencing factors that might also play a role in the unemployment dynamics of these countries.

Indeed, the correlation between the number of commercial bank branches and the unemployment rate appears to be inversely proportional: as the number of bank branches increases, the unemployment rate tends to decrease, and vice versa. The number of bank branches serves as an indicator reflecting the availability of banking services and products within the realm of financial inclusion. The expansion of bank branches across various regions indicates enhanced public convenience in accessing banking services and products.

The analysis conducted here reinforces the idea that the number of bank branches exerts a significant influence on the unemployment rate, and the proliferation of bank branches can potentially lead to a reduction in unemployment rates. The accessibility of banks to a broader population enhances individuals' capacity to secure capital for business ventures or employment endeavours. These findings

| Table 5: Random Effect Model with Unemployment Rate as the Dependent Variable |
|-------------------------|-----------|---------|-----------|
| Variable    | Coefficient | t-Statistic | Prob. | Information |
| C          | 5.028020     | 4.316217    | 0.0001 |            |
| DSA        | -0.000894     | -3.917780    | 0.0003 | Significant |
| BRC        | -0.255084     | -4.021759    | 0.0002 | Significant |
| LOAN       | 0.018218     | 2.786183    | 0.0077 | Significant |

R-Squared = 0.365938
F-Statistic = 8.849351
Prob (F-statistic) = 0.000097

Source: Processed data (2023)
are in alignment with the research conducted by Alshyab et al. (2021) and Mehry et al. (2021), both of which assert a significant negative relationship between financial inclusion and the unemployment rate. However, the outcomes of this study diverge from the findings of Haloho (2019), which suggest no significant relationship between the financial inclusion variable and the unemployment rate variable. These discrepancies underscore the complexities of the relationships among these variables, which can be influenced by a multitude of factors unique to each study’s context and methodology.

Effect of outstanding loans from commercial banks (percentage of GDP) on the unemployment rate

Indeed, the analysis of outstanding loans from commercial banks, expressed as a percentage of GDP, reveals a significant and positive correlation with the unemployment rate within the Southeast Asian countries (Indonesia, Malaysia, Thailand, the Philippines, and Cambodia) during the period from 2011 to 2020. The regression coefficient value of 0.018218 substantiates this relationship. This signifies that a 1 percent increase in outstanding loans corresponds to an estimated 1.8218 percent increase in the unemployment rate. These results imply that a higher proportion of outstanding loans in relation to the GDP might contribute to an elevated unemployment rate. This intricate relationship could be influenced by several factors. For instance, an excessive reliance on loans might signal economic challenges, leading to job losses or reduced employment opportunities. Additionally, an elevated unemployment rate could in turn impact the ability of borrowers to repay their loans, possibly exacerbating financial strain for both individuals and businesses. These findings prompt a nuanced consideration of the dynamics between loans, economic health, and unemployment, highlighting the interconnected nature of these variables within the Southeast Asian economic landscape.

The findings of this study bring to light a counterproductive relationship between outstanding loans from commercial banks and the unemployment rate. Loans provided by banks serve as an alternative source of capital that individuals and businesses can tap into for the purpose of seeking employment or conducting their entrepreneurial activities. Individuals with a track record of sound financial practices can leverage credit and financing services to their advantage. The implications of this counterproductive relationship warrant careful consideration. While loans can theoretically provide avenues for economic growth and job creation by enabling businesses and individuals to invest in ventures and activities, the findings suggest that in certain contexts, an excessive reliance on loans might contribute to higher unemployment rates. This could potentially arise due to various factors, including overleveraging, economic uncertainty, or challenges in repaying loans during periods of financial strain. Overall, these results underscore the intricate interplay between financial mechanisms, economic dynamics, and employment trends. As such, policy decisions and economic strategies should take into account these multifaceted relationships to promote sustainable growth and address unemployment challenges.

The outcomes of the author’s research demonstrate a unique perspective: a reduction in outstanding loans corresponds to a decrease in the unemployment rate, and vice versa. This observation diverges from the findings of Alshyab et al. (2021), Mehry et al. (2021), and Juniarto & Muchlisoh (2021), all of whom posit a significant negative impact of financial inclusion on the unemployment rate. In a similar vein, the findings contrast with Haloho’s research (2019), which suggests no association between financial inclusion and the unemployment rate. On the other hand, the alignment of these results with Kim et al.’s findings (2019) suggests a potential link between financial developments and concentration within the banking sector and changes in unemployment rates. Specifically, this relationship might be mediated by factors such as capital-intensive technologies that could replace labor or the investment in labor-intensive methods. The study’s findings might resonate with Borsi’s conclusions (2018), which indicate that excessive credit surges could lead to increased unemployment, especially in the context of a rigid labor market. These divergent results highlight the complexity of economic relationships and the potential for multifaceted outcomes when exploring the connections between financial variables and labor market dynamics. The intricacies of each study’s methodology and contextual factors contribute to these variations and underscore the need for comprehensive analysis when interpreting such results.

Indeed, the study by Bandyopadhyay et al. (2016) provides further insights into the relationship between credit supply, economic conditions, and unemployment. Their findings suggest that a tighter credit supply can lead to several significant consequences within an economy. In the context of a recession, when firms experience a decline in output, the cost of hiring labor becomes relatively higher. This change prompts a shift towards capital-intensive techniques, where businesses opt to invest more in machinery and automation rather than labor. Consequently, the proportion of capital in the production process increases, which can potentially have a corresponding impact on unemployment rates. This scenario arises due to the preference for capital-intensive methods over labor-intensive ones, ultimately affecting the job market. These findings underscore the intricate dynamics that exist between credit availability, economic conditions, and employment trends. During periods of economic downturn or tight credit conditions, businesses may choose to rely more on capital investments, leading to potential repercussions for labor demand and ultimately influencing unemployment rates. This insight provides a valuable perspective on how economic factors interplay to shape labor market dynamics.

Conclusions and Recommendations

Financial inclusion, represented by the measure of the number of commercial bank savings/deposit accounts per 1,000 adults, does not exert a significant impact on GDP per capita growth. In contrast, financial inclusion indicated by the number of commercial bank branches per 100,000 adults displays a substantial positive influence on GDP per capita growth. A higher count of bank branches corresponds to increased economic growth as indicated by GDP per capita. The accessibility of bank branches facilitates transactions and enhances fund circulation, contributing to meeting the populace’s financial needs.
Additionally, financial inclusion, captured by the indicator of outstanding loans from commercial banks as a percentage of GDP, demonstrates a noteworthy adverse effect on GDP per capita growth. The proliferation of loans negatively affects GDP per capita growth due to the lower quality of loans and their predominantly consumptive utilization.

Concerning unemployment, financial inclusion proxied by the number of commercial bank savings/deposit accounts per 1,000 adults is found to have a significant negative impact. This suggests that a higher number of such accounts corresponds to a lower unemployment rate, and vice versa. Similarly, financial inclusion represented by the number of commercial bank branches per 100,000 adults has a significant negative effect on unemployment. A greater number of bank branches correlates with a reduced unemployment rate, and conversely, fewer branches result in higher unemployment.

Interestingly, financial inclusion, measured by the indicator of outstanding loans from commercial banks as a percentage of GDP, demonstrates a significant positive impact on unemployment. The elevated prevalence of loans contributes to increased unemployment due to the consumption-oriented nature of these loans rather than fostering productive endeavours.

For Southeast Asian countries, particularly those within the ASEAN organization, it is crucial to prioritize equitable financial inclusion through diverse financial products and services. This approach can foster economic growth and alleviate unemployment rates. Implementing financial inclusion strategies necessitates consistent monitoring and evaluation, especially in areas like lending. Given the findings indicating the potential negative impact of outstanding loans on economic growth and unemployment rates, further research remains imperative.

Acknowledgement: Acknowledgments are extended to the Perbanas Institute for their invaluable support throughout the research and composition of this article. The provision of facilities, training, and financial assistance proved instrumental in successfully completing the funding aspect of this research paper.

Author Contributions: Conceptualization, D.H.W., Y.E.M., M.I.; Methodology, Y.E.M., M.I.; Data Collection, Y.E.M.; Formal Analysis, Y.E.M., M.I.; Writing—Original Draft Preparation, Y.E.M., M.I.; Writing—Review and Editing, D.H.W, M.I.; All authors have read and agreed to the published the final version of the manuscript.

Institutional Review Board Statement: Ethical review and approval were waived for this study, due to that the research does not deal with vulnerable groups or sensitive issues.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

Conflicts of Interest: The authors declare no conflict of interest.

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