

ANALYSING THE DETERMINANTS FOR ECONOMIC GROWTH OVER ECONOMIC CRISIS IN ASEAN COUNTRIES

ELAINE TEE EE LIN

SULTAN IDRIS EDUCATION UNIVERSITY

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ABSTRACT

The main objective of this study is to examine the relationship between economic growth and its potential determinants during normal and crisis periods for selected ASEAN-5 countries (Indonesia, Malaysia, Singapore, Thailand, and the Philippines) under diverse economic conditions from 1994 to 2020. The analysis utilizes Toda-Yamamoto Granger causality to examine the causal relationships among the variables. Autoregressive distributed lag is employed to analyze the long-run and short-run relationships among the variables. The empirical analysis indicates that there is either unidirectional or bidirectional causality between inflation, interest rates, and exchange rates, which granger cause economic growth, or vice versa, in Indonesia, Malaysia, Singapore, and the Philippines. Meanwhile, the empirical analysis shows that inflation, interest rate, and exchange rate have a negative long-run relationship towards economic growth, while inflation, unemployment, and exchange rate have a negative short-run relationship towards economic growth in ASEAN-5. In conclusion, this study detected a unidirectional causality between economic growth and inflation and between economic growth and unemployment, or vice versa. The causality between economic growth and interest rate is weak. Economic growth and exchange rate have a bidirectional relationship. Economic growth benefits from reducing inflation, interest rates, and exchange rates, underscoring their positive impact on development.

ANALISIS PENENTU-PENENTU PERTUMBUHAN EKONOMI SEMASA KRISIS EKONOMI DI NEGARA ASEAN

ABSTRAK

Objektif utama kajian ini adalah untuk mengkaji hubungan antara pertumbuhan ekonomi dan penentu potensinya semasa tempoh normal dan krisis bagi negara-negara ASEAN-5 terpilih (Indonesia, Malaysia, Singapura, Thailand, dan Filipina) di bawah pelbagai keadaan ekonomi dari tahun 1994 hingga 2020. Analisis ini menggunakan kaedah *Toda-Yamamoto Granger* untuk mengkaji hubungan sebab-akibat antara pembolehubah. Kaedah *Autoregressive Distributed Lag* digunakan untuk menganalisis hubungan jangka panjang dan jangka pendek antara pembolehubah. Analisis empirikal menunjukkan bahawa terdapat hubungan sebab-akibat sehala atau dua hala antara inflasi, kadar faedah, dan kadar pertukaran, yang menyebabkan pertumbuhan ekonomi, atau sebaliknya, di Indonesia, Malaysia, Singapura, dan Filipina. Sementara itu, analisis empirikal menunjukkan bahawa inflasi, kadar faedah, dan kadar pertukaran asing mempunyai hubungan negatif jangka panjang terhadap pertumbuhan ekonomi, manakala inflasi, pengangguran, dan kadar pertukaran mempunyai hubungan negatif jangka pendek terhadap pertumbuhan ekonomi di ASEAN-5. Kesimpulannya, kajian ini mengesan hubungan sebab-akibat sehala antara pertumbuhan ekonomi dan inflasi serta antara pertumbuhan ekonomi dan pengangguran, atau sebaliknya. Hubungan sebab-akibat antara pertumbuhan ekonomi dan kadar faedah adalah lemah. Pertumbuhan ekonomi dan kadar pertukaran mempunyai hubungan dua hala. Pertumbuhan ekonomi mendapat manfaat daripada pengurangan inflasi, kadar faedah, dan kadar pertukaran asing, yang menekankan kesan positif mereka terhadap pembangunan.

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LIST OF ABBREVIATIONS

AD	Aggregate demand
ADF	Augmented Dickey-Fuller
AS	Aggregate supply
ARCH	Autoregressive Conditional Heteroscedasticity
ARDL	Autoregressive Distributed Lag
ASEAN	Association of Southeast Asian Nations
ATIGA	Trade in Goods Agreement
ADF	Augmented Dickey-Fuller
BNM	Bank Negara Malaysia
CEE	Central and Eastern Europe
COVID-19	Coronavirus Disease 2019
CPF	Central Provident Fund
CPI	Consumer Price Index
CUSUM	Cumulative of the Recursive Residuals
CUSUMSQ	Cumulative Sum of Squared Recursive Residuals
DOLS	Dynamic Ordinary Least Square
ECM	Error Correction Model
FDI	Foreign Direct Investment
FMOLS	Fully Modified Ordinary Least Square
FOMC	Federal Open Market Committee
G-7	Canada, France, Germany, Italy, Japan, the U.K. and the U.S

GARCH	Generalized Autoregressive Conditional Heteroscedasticity
GDP	Gross Domestic Production
GMM	Generalized Method of Moments
GST	Good and Service Tax
ICT	Information Communication and Technology
ILO	International Labour Organization
LTS	Least Trimmed Squares
MAS	Monetary Authority of Singapore
OECD	The Organization for Economic Co-operation and Development
OPR	Overnight Policy Rate
PMG	Pooled Mean Group
PP	Phillips-Perron test
PSTR	Panel Smooth Transition Regression
SARS	Severe Acute Respiratory Syndrome
SGMM	System generalised method of moments
SUR	Seemingly Unrelated Regression
SME	Small and medium-sized companies
TAR	Threshold Autoregressive
TSLs	Two Stage Least Square
UK	United Kingdom
US	United States
VAT	Value-Added Tax
VAR	Vector Auto Regressive
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Square Regression



VAR	Vector Auto Regressive
VECM	Vector Error Correction Model
VIF	Variance Inflation Factor



CHAPTER 1

INTRODUCTION

This chapter discusses the study's background and is followed by matters of study. Problem statements are discussed in section 1.4. Then, section 1.5 explains the objective of the study. Research questions and hypotheses are highlighted in section 1.6 and section 1.7, respectively. Subsequently, the significance of the study is provided in section 1.8. The research also discusses the limitations of the study in section 1.9. The conceptual framework of the research is presented in section 1.10, whereas the operational definition of the variables is explained in section 1.11.¹

¹ Part of the thesis has been accepted and published in Vol. 14, No.2 in 2024 in Asian Economic and Financial Review. Please see appendix A.



1.2 Background of Study

Economic growth is an increase in output, economic goods provision, and the existence of advanced technology in a country (Quy, 2016). Economic activities such as human capital, technological progress, foreign direct investment, domestic investment, poverty, exports, savings, a country's geographical position, and so on contribute to economic growth (Behera & Mishra, 2017; Yolanda, 2017; Hussain, 2011; Kasidi, 2010). Improvement of goods and services boosts national income or output in an economy (Pal, 2018). The well-being of the nation is expected to improve by increasing economic potential through high economic growth (Halim, 2020). Hence, policymakers will adopt a proper monetary policy to achieve sustainable economic growth, as it is the primary goal of macroeconomic policies. The decision-making impacts key macroeconomic indicators, such as inflation and unemployment. They are a bone of contention regarding whether they are beneficial or harmful to economic growth. Hence, it is essential to study inflation and unemployment as these reflect a country's economic performance.

The relationship between inflation and unemployment are complicated. Many economists try to figure out the relationship between the variables and expected both have association in long run and short run (Phillips, 1958). In 1958, Phillips analyzed the annual wage inflation and unemployment in the United Kingdom from 1860 to 1957. He found a negative relationship between inflation and unemployment (Ştefan & Bratu, 2016). Both are the main economic factors that affect economic growth. Decreasing both is the most critical priority to achieve a high economic growth rate. Both have an important relationship with economic growth, especially in developing countries, as





these variables create problems in the functioning of the economy that are likely to affect economic growth. Laidler (1997) provides a valuable view to neo-monetarists that the credibility of the commitment of monetary policy can influence the trade-off between the change in inflation and unemployment to its inflation goal. Nevertheless, tackling the problems of inflation and unemployment is not an easy task. Acceleration of economic growth may induce high inflation, whereas deceleration of economic growth may increase unemployment. Inflation can affect all aspects of a country by influencing economic growth. It is always a main concern whether it will impact economic growth, or inflation uncertainty that discourage or accelerate investment, subsequently affect economic growth (Friedman, 1977). When inflation is high, the price level of goods and services and the living cost increase, ultimately decelerating economic growth. Attempting to decrease inflation to a low level (or zero) will likely affect economic growth negatively. It is challenging to keep the price level consistent with economic growth. The economy needs inflation to grow, but a growth rate that is too fast may accelerate the inflation rate and take it downhill. (Bruno & Easterly, 1998). For policymakers, maintaining low inflation is a primary objective in an economy. European System of Central Banks states, “The primary objective... shall be to maintain price stability”. It adopts an effective monetary policy to stabilise prices (Kortela, 2019).

Trying to reduce the inflation rate could put negative pressure on unemployment. When the unemployment rate drops below the natural unemployment rate, it will accelerate inflation until the unemployment rate returns to its natural rate. Most economists found that unemployment and inflation have an inverse relationship (Anghelache & Manole, 2015). Lower inflation leads to an increase in the



unemployment rate and increases productivity as well as living standards. Conversely, high unemployment has induced social and economic problems (Tang & Lean, 2007). However, Friedman (1976) argued that inflation and unemployment rates have a positive or direct relationship. Increasing the inflation rate will cause a rise in the unemployment rate. This phenomenon is called stagflation, which happens due to other factors. Research by Mohseni and Jouzaryan (2016) revealed that inflation and unemployment negatively affect economic growth. Nevertheless, Ademola and Badiru (2016) found that unemployment and inflation positively affect economic growth. Strong economic growth generates more revenue for businesses and the government. When the stock price increases, companies have more capital to invest and employ more workers. High job opportunities reduce the unemployment rate. Nations have a salary to make purchases, which has driven economic growth. It allows people to attain a higher material standard of living and increase per capita Gross Domestic Production (GDP). Economic growth generates job destruction (Aghion & Howitt, 1993). Hence, all countries want positive economic growth.

Interest rate is an important transmission channel for monetary policy to enhance economic growth in response to inflation. Investments, consumption, and savings are impacted by the manipulation of the interest rate. When the central bank raises interest rates, consumers tend to reduce spending and investment since higher borrowing costs and savings are better alternatives (Egilsson, 2020). High savings lower aggregate demand and further reduce the money supply in the market to dampen inflation. Consequently, economic activity will slow down and harm economic growth in the long run (Njie & Badjie, 2021). Conversely, when inflation is falling, and economic growth is slowing, central banks may lower interest rates to stimulate

economic activity. Interest rate reduction encourages aggregate demand in the short run, which is consistent with Keynesian theory. Low interest rate encourages consumer spending and investment. It lowers capital flow and reduces FDI. However, currency depreciation makes the export cheaper and encourages export. Consequently, a low interest rate promotes economic growth.

The relationship between exchange rates and economic growth is a complex one. It is determined independently of the economic growth rate. A strong exchange rate is often considered a sign of economic strength. It can become a symbol of national pride. Politicians may view a strong exchange rate as a reflection of economic success. Appreciation of exchange rate tends to occur in countries with low inflation, improved competitiveness, and robust economic performance in the long run. However, the exchange rate can influence economic growth and vice versa. As pointed out by Seraj and Conskuner (2021), appreciation of the exchange rate can harm economic growth. Appreciation of the exchange rate can depress economic growth because exports become more expensive, leading to reduced demand for exports, whereas imports become cheaper, resulting in increased demand for imported goods (and less demand for domestically produced goods). Conversely, the depreciation of the exchange rate increases economic growth (Rapetti, 2020; Habib, Mileva & Stracca, 2017).

In 2020, the Association of Southeast Asian Nations (ASEAN-5) registered a low inflation rate of 1.4 per cent (International Monetary Fund, 2021) and a low unemployment rate of 3.7 per cent (The Global Economy, 2021) compared to other regions. ASEAN-5 is a regional grouping promoting economic growth and cooperation among its ten Southeast Asian countries: Indonesia, Malaysia, Singapore, Thailand, and

the Philippines. These countries were recognized as the founding fathers during the establishment of the ASEAN community on August 8, 1967 (ASEAN Secretariat, 2015). The group plays a vital role in Asian economic integration and spearheads negotiations with the most outstanding trading potential. Economic and social integration have been essential issues in recent years (Thanh, 2015). These five emerging market economies have similarities in the financial and real sectors. Besides, these countries have gone through substantial industrial development and substantial financial development, although at different times and to differing degrees over the last four decades. Also, all five countries have had low to moderate inflation rate compared to other emerging market economies. Based on the information provided by the World Bank, Indonesia, Thailand, and the Philippines are categorised into lower-middle-income countries, while Malaysia is in middle-higher income. High economic growth makes Singapore the only ASEAN country with a high-income status (World Bank, 2017).

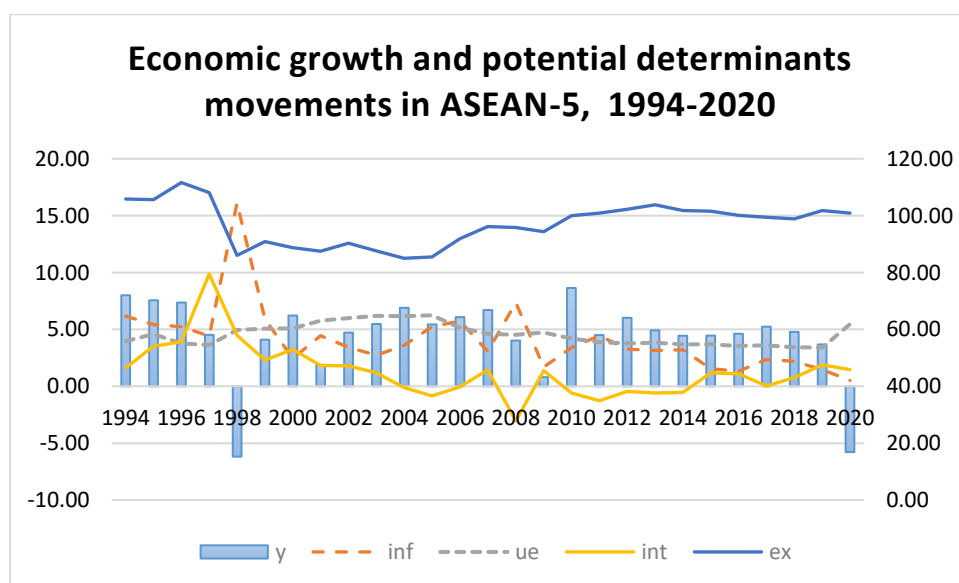


Figure 1.1. Economic growth and potential determinants movements in ASEAN-5, 1994-2020. (Source: own computation; data are collected from IMF 2020)



Figure 1 shows the trend of economic growth and its potential determinants movements in ASEAN-5 from 1994 to 2020. Economic growth is always higher than the potential determinants except for 1998, 2001, 2008, and 2020 due to ASEAN-5 experiencing various crises that threatened economic growth. The consequences of economic crises have always been connected with macroeconomic indicators, especially economic growth. Looking at Figure 1, the interrelation between economic growth and inflation seems problematic. They broadly moved together throughout the period but moved in the opposite direction in 1998. Then, they moved together again in 2009. Both decrease at various speeds, but economic growth falls faster than inflation. Unemployment fluctuates less than the changes in both economic growth and inflation. The relationship between economic growth and unemployment is more easily detected over the sample period. Unemployment increases as a reaction to the economic recession. As for interest rate, it has opposite direction economic growth. When economic growth is plummeted, the interest rate is increased. The exchange rate is less fluctuated compared to other determinants. It moved opposite direction with economic growth except for certain periods. After a drop in 1998, it gradually increased and stabilized. The exchange rate depreciated when the ASEAN-5 was confronted with crises in 1998, 2001, 2009, and 2020.

Barro (2001) claimed that an Asian Financial Crisis has a long-term effect on economic growth. Although the economic growth rate has rebounded, the path to reattain pre-crisis levels must be clarified. Some empirical research predicts the outcomes for post-crisis, such as slow economic growth (GDP), weaker investment, tight credit, deflation, inflation, high unemployment, and so on (Hughes & Seneca, 2009; Riepe, 2009; Zuckerman, 2010). Reinhart and Rogoff (2009) agree that past





financial crises negatively impact economic growth in the long term. Barro (2001) found a sharp deceleration in economic growth during the Asian Financial crisis. He detects that high inflation harms economic growth during the crisis. Similarly, some studies suggested that a sharp rise in inflation decelerated the economy during the crisis in 2008. (Asteriou & Spanos, 2018; Yap, Cuenca & Reyes, 2009). The economic growth plummeted from recent peaks with double-digit inflation. High inflation and slow economic growth portray a severe dilemma for monetary policy formulation (James et al., 2008). On the other hand, economic growth typically impacts unemployment. Reinhart and Rogoff (2009) stated that international crises and banking crises have more significant impacts on production and employment. The crises proved that decreases in economic growth would increase unemployment, as stated in the current macroeconomic models (Hall, 2010). Reducing labour demand caused by the fall in production will increase unemployment. As a matter of fact, the relationship between economic growth and unemployment is negative, particularly during crisis periods (Dayioglu & Aydin, 2021).

Analysing economic growth during normal and crisis periods helps understand resilience. It helps understand how economies withstand and recover from shocks, such as financial crises or pandemics. This understanding can guide policies to build stronger, more resilient economies. In essence, analyzing economic growth during different periods is key to preparing for and mitigating the effects of economic downturns, while also capitalizing on periods of stability to foster sustainable growth. Thus, this calls for a deeper investigation of the relationships between economic growth among the variables, namely inflation, unemployment, interest rate and exchange rate.



1.3 Matters of Study

The matters considered in this study included economic growth, inflation, unemployment, interest rate and exchange rate. These variables are important indicators for economic growth measurements in various economic conditions.

1.3.1 Economic Growth Matter

Economic growth refers to an increase in real national income from which the economy can produce additional goods and services. GDP is the most well-known method to measure countries' economic welfare and growth. It can be measured using three approaches: the production approach, the expenditure approach, and the income approach. The higher the country's GDP indicates, the more excellent the citizens' standard of living and welfare. Motley (2016) stated that the economic growth rate against GDP is essential to measure the value of all final goods and services produced by labour and property in a well-defined geographical area that can portray the changes in economic activity. Politicians, economists, and world leaders have widely argued about the ideal growth rate and how to achieve it. Studying economic growth is a matter of studying because it increases living standards, improves tax revenues, and helps to create more jobs. Economic growth is essential for developing countries to improve life expectancy and facilitate higher living standards. Consumers with higher salaries would consume more goods and services to enjoy better living standards. Besides, it eliminates the poverty level when more jobs are created. Firms tend to employ more workers in production to fulfil the demand and increase life expectancy. Increasing production



contributes tax revenue to the government. The government receives income, corporation, and expenditure taxes and then spends on public services. The revenues are also used to develop the economy to become more competitive. Besides, higher economic growth helps to reduce the government debt-to-government ratio.

Economic growth is associated with inflation and unemployment, as these variables significantly impact numerous economic activities. The rise in inflation is bilaterally related to unemployment. The effort of the government to reduce unemployment by increasing the money supply in the economy has induced inflationary pressure. It reflects that money supply growth should correspond to or surpass output growth (Hemin, 2016). When the unemployment rate decreases, there is a higher demand for goods and services, and increasing prices of goods and services will push the inflation rate in the short run. A high inflation rate can lower investment and decelerate economic growth (Tenzin, 2019). Traditionally, most economists do not consider inflation an important factor in the growth equation (Dorrance, 1963; Johanson, 1967). High and chronic inflation present in most of the countries has had a negative impact on output growth. Muritala (2011) and de Gregorio (1992, 1994) suggested that inflation negatively impacts output growth. However, some of the studies found that a certain level of inflation has a favourable impact on economic growth. It hampers economic growth only if the inflation exceeds some critical level (Choi, Smith & Boyd, 1996; Azariadas & Smith, 1996; Ghosh & Phillips, 1998). Generally, economic growth and unemployment are negatively related. High economic growth means more workers are employed to produce goods and reduce unemployment (Evans, 1989; Semmler & Zhang, 2005; Virén, 2001). Similarly, during an economic recession, a decline in economic growth will increase unemployment (Haq, Khan & Parveen, 2014). However,



some studies found that economic growth has a total lack of impact on employment (Onaran, 2007; Herman, 2012).

On the other hand, the study would like to know the economic growth in various economic conditions. The financial crises in 1997 and 2008 weakened supply and demand, deteriorating the economic conditions. They have diminished investment and credit capacity, which induced panic risk growth in the country—consequently, a rapid decline in demand for goods and services due to falling consumption. Past empirical studies have found that the financial crisis adversely impacts economic growth (Ksantini & Boujelbene, 2014; Gros & Alcidi, 2010; Hutchison & Barro, 2001). The financial crisis impacts economic growth through exports, investment, remittances, and capital inflows (Moriyama, 2010). During the crisis, massive capital input was most impacted, which will slow down the economy. Besides, the crisis led to a sharp depreciation of the currency, increased the debt burden, and subsequently threatened the stability of the economy. (Gupta, Mishra & Sahay, 2007). Similarly, the World Bank (2009) report shows that the financial crisis triggered a reduction in economic growth. However, the overall impacts vary in different countries based on their economic fundamentals². To conclude, past financial crises show that they have negatively affected the economy and society in the form of high unemployment, low production, and deterioration of purchasing power (Kouki, Belhadj & Chikhaoui, 2017).

² See also Paul and Ichinois (2014).



1.3.2 Inflation Matter

Inflation is defined as a rise in the general level of prices for goods and services resulting in a fall in the purchasing power of a currency (Ramlan & Suhaimi, 2017; Islam, Ghani, Mahyudin, & Manickam, 2017). There are many inflation indicators, but the most closely watched is the Consumer Price Index (CPI). It is used as an economic indicator to examine the weighted average of prices paid by consumers for a bundle of consumer goods and services, which included food and beverages, medical care, recreation, transportation, housing, education, electricity, and others (Shaban, Al-Attar, Al-hawatmah, & Ali, 2019). Changes in the CPI are frequently used to identify the country's inflation level associated with living costs (Petkovska & Jovanovic, 2015). The accuracy of the CPI as a measure of inflation has drawn increasing criticism. It disregards that as prices increase, consumer preferences may change and assumes that the consumer's quantity of products is similar. Further, the US Advisory Commission headed by Boskin (1998) claimed that CPI overstates increases in the cost of living by roughly one percentage point per year. It is the best measurement to gauge price movements, but not a living cost index since it suffers from practical and various conceptual problems. To conclude, CPI is hard to measure and define precisely. It is only accurate at the conceptual level that the present investigation is situated after measuring aggregate prices, which brought up an initial survey of the technical issues (Deaton, 1998).

High inflation can be caused by various factors, such as an increase in money supply, a rise in government expenditure, exports, scarcity of vital commodities, interest rate volatility, exchange rate, tax evasion, and financing a budget deficit





(Preethi, 2021). Inflation has a significant impact on people's daily lives and economy. The main causes of inflation are demand pull inflation, cost push inflation, and administered price. Table 1.1 summarises the subdivisions of the main causes of inflation. Demand pull inflation describes the imbalance of aggregate demand and aggregate supply. It occurs when the price level increases, driven by excess aggregate demand, and the aggregate supply remains. When the cost of materials and wages rises, the firms tend to pass the price to consumers by raising prices and creating cost push inflation. Likewise, near full employment with labour supply shortages, the firms have to pay higher wages to workers. On the other hand, administered prices are determined by the government or centralised authority, such as changes in prices of regulation, changes in indirect subsidies and taxes, and changes in environmental taxes (Riley, 2016).



Table 1.1

Causes of Inflation

No.	Main Causes		Sub Causes
1.	Demand pull inflation	i.	Excess aggregate demand
		ii.	Increasing the money supply
		iii.	Economy closes to full capacity
2.	Cost push inflation	i.	Increasing wage costs in the labour market
		ii.	Higher raw material prices from domestic and overseas suppliers
		iii.	Increasing import prices due to depreciation of the exchange rate
3.	Administered Price	i.	Changes in prices of regulation
		ii.	Changes in indirect subsidies and taxes
		iii.	Changes in environmental taxes





Hyperinflation is detrimental to financial activity and turns to plummeting an economy; ultimately, slow economic growth raises zero prices. Nonetheless, in different circumstances, the lack of key commodities and services would accelerate the price level, subsequently dwindling purchasing power (Adaramola, 2020; Abdallah, 2020). Maintaining inflation at a low level is one of the objectives of macroeconomics. It is likely one of the most familiar words in economics we often hear. Most countries would combat high inflation as a priority target. In 1974, President Gerald Ford declared inflation Public Enemy No. 1 in the United States (Oner, 2010). Why is it so important to study? Inflation is an economic term defined as “a rise in the level of prices” in an economy over some time. Generally, people refer to inflation as the rising cost of living. It means a loss of actual value in the medium of exchange and unit of account within the economy. What a dollar you bought today is not what a dollar you bought ten years ago. If a salary remains the same, the prices of goods and services increase because of inflation, which will reduce purchasing power. As a result, purchasing power shrinks when inflation occurs in an economy. It can be seen that inflation is harmful to economic growth when it is above the threshold level. Fluctuations in inflation stimulate economists to study since it influences economic behaviour. The policymakers believe ideal inflation is low and stable. It reduces the uncertainty about future price changes. If the inflation uncertainty is high, it can cause the real value of future payments to be uncertain. For instance, economic actors would request insurance against the future risk of currency depreciation.

Fisher suggested that policymakers typically believed that the problem of inflation was more severe than unemployment. Monitoring inflation is the main task of economists in every country to achieve economic growth through appropriate



infrastructure development (Mohseni, 2016). Unstable inflation restricts firms and investors from investing. So, they will shift their money to a low inflation market, leading to very low economic activity. Lastly, an economy with stable inflation also simplifies the process of separating changes in the relative process of certain goods from rising inflation in the overall economy. It makes price signalling more reliable and effective (Buchheim & Kedert, 2016). Nevertheless, a certain level of inflation could assist in holding on to sustainable growth when it is below 3.89 per cent. Thriwall (2014) has studied the magnitude of inflation expected to vary with the level of development. The magnitude of inflation against economic growth might be predicted to show a rise and a fall. A rising inflation level can distort the economy and result in unnecessary costs for individuals and businesses. To control inflation, implement taxes to decrease aggregate demand through contractionary monetary policy (Mitchell, Wray, & Watts

1.3.3 Unemployment Matter

Unemployment is one of the most hotly contested issues being debated, especially during the economic recession. Based on the definition of International Labour Organization (ILO), unemployment defines as an unemployed person is a person aged 15 or over who simultaneously meets the following three criteria: (i) not working; (ii) ready to start a job within the next two weeks; and (iii) actively searching for a job during the last four weeks (ILO, 2019). However, when an economy is experiencing structural adjustments to improve long-term economic sustainability, short-term unemployment could be considered normal in some situations. It caused the loss of jobs



in failing industries and their replacement, hopefully with better jobs in new growth areas.

The economy always experiences different degrees of unemployment. A person reluctant to work or failing to get a job after leaving a job and calling themselves unemployed is not considered unemployed. A job loss can cause a person to suffer financial hardship, which could impact families, relationships, and communities. There are four reasons why the economy struggles with unemployment. First, workers spend time trying to find a job that matches their qualifications and skills. Second, enforcing the minimum wage. When the wage of unskilled and inexperienced workers increases above the equilibrium level, it raises the supply of labour quantity and decreases the quantity demand. Excess labour supply is considered unemployment. Third, the market power of unions. When unions increase the wages over the equilibrium level, the quantity of labour demand will decrease and resulting in unemployment. Fourth, efficiency wages theory. Based on the theory, if the wage of the worker is above the equilibrium level, the high-skill workers would not leave their jobs and reduce worker turnover. It improves worker effort, health, and productivity (Mankiw, 2015). There is a distinction between demand-side unemployment and supply-side unemployment. Demand-side unemployment has resulted from low aggregate demand in an economy. Supply-side unemployment describes imbalances of microeconomics in labour markets, including frictional, structural, real wage, geographical, voluntary, and seasonal. Nonetheless, only the main type of unemployment will be discussed in the following. The main type of unemployment is illustrated in Table 1.2.



Table 1.2

The Main Type of Unemployment

No.	Types of unemployment	Causes of unemployment
1	Frictional unemployment	Occurs when workers leave their old jobs but haven't found new ones
2	Structural unemployment	- Arises when technology changes in an economy change the skills needed - Mismatch between the available jobs and the skilled workers
3	Seasonal unemployment	Changes in season
4	Cyclical unemployment	Contraction phase of an economic cycle

Frictional unemployment occurs when a person leaves the job voluntarily in order to look for a better new job. They have to go through a period without work until they find the just right job. It also exists when a youth who graduates from any institution is looking for a suitable job to fit the qualifications and skills. Nevertheless, frictional unemployment is short-term during the transition of the economy took place. A number of frictional unemployment will be created, but this is common in a well-functioning and dynamic market economy. Long recession often creates structural unemployment. Structural unemployment is long-term unemployment, and unemployment is neither voluntary nor short-term. Advancements in technology replacing the workforce tend to exacerbate structural unemployment. It arises when the available jobs do not match the skills worker. The worker leaves the job but is unable to get employment. More broadly, lack of education and poor training of a worker is no longer needed. Unemployment for a longer time will cause them to become outdated. Hence, these workers need more training or develop new skills to find a new job. Seasonal unemployment is a situation where a person does not have a job at a particular time of the year when the demand is low. The person performs work in a certain period,

season, or specific time of the year. Since it is only taking a short period, the workers might experience unemployment when a job's season ends. For instance, tourism in the winter, agricultural work during harvest time, and so on. Despite this, it is a temporary stage in the labour market. The government does not take any measures to solve this type of unemployment since it is normal in a healthy economy. Cyclical unemployment is resulting from an economic downturn or contraction of economic growth. During the recession, falling demand for goods and services reduces production. Fall of business activity only needs a few workers as would lay off workers to cut costs. The people who lose jobs do not have wages to buy goods and services, which will lower demand. Typically, the government will carry out various policy tools to reduce cyclical unemployment and promote economic growth during a recession.

³ Dullien, Kotte, Marques and Priewe (2010) found that financial crisis increase unemployment and impact poverty.



criminal cases are reported to be high as well. A person who is unemployed or not seeking a job tends to commit robbery or burglary. The study also pointed out that unemployed people looking for jobs are neither more nor less likely to rob or burglary than fully employed people. Although the study showed that underemployed individuals hardly commit burglary, they are as likely to commit robbery as individuals in the general population (Gleeson, 2019). The unemployment rate is used as a measurement to compare the unemployment rate of a specific period. It is also used as a gauge of joblessness and the economy's growth rate. The natural unemployment rate is the rate that would happen in a growing and healthy economy. It is a combination of frictional, structural, and non-cyclical unemployment.

The workers are changing jobs or can afford a more extended period for the desired job. Until they find that new job, this jobless status is the natural unemployment rate. The economy is at full employment when the natural unemployment rate is close to 3 per cent or below. Both fiscal and monetary policymakers use that rate as the goal of full employment. Fiscal and monetary policymakers estimate the natural rate of unemployment to be 4 per cent. Experts target the inflation rate as 2 per cent and the ideal GDP rate at around 2 per cent. These three goals should be considered when setting tax rates or spending levels. The natural rate of unemployment is connected to full employment and potential economic growth. When the economy is full employment, the actual unemployment rate is equivalent to the natural rate. The government is dedicated to promoting employment; if the GDP growth rate is lower than the natural rate, inflationary pressure will occur due to the rise in total income.





On the contrary, policymakers will not create new jobs to reach a sustainable growth rate that will not lead to inflation. Previous work by Mohd Noor, Mohamed Nor, and Abdul Ghani (2007) showed that unemployment and output growth are inversely related. A decline in the unemployment rate will cause the economy to expand. At the same time, increasing economic activities will increase employment and, hence, decrease the unemployment rate. The classical theory states that unemployment is short-term. The free-market force will automatically restore maximum occupation in the economy. (Banda, Nigrande, & Hogwe, 2016). In contrast, in the theory of Keynesian (Keynes, 1936), a deficiency in aggregate demand leads to involuntary unemployment, where workers are willing to work at the market wage or just below but do not find employment, a situation of unemployment emerges. According to Quy (2016), the impact of unemployment on economic growth has long been a pertinent question in most countries.



1.3.4 Interest Rate Matter

Interest can be defined as a payment for rental credit in the financial market. It can be referred to as the cost of money and rate of return (Greenlaw & Shapiro, 2018). Borrowers pay interest to lenders for credit usage. Policymakers and banks use the interest rate as a monetary policy tool to control inflation and achieve growth. A level of interest rate provides insight into future economic and financial market activity. In 2020, the COVID-19 pandemic changed many aspects of life and severely affected the global economy. It has induced the countries to lower their interest rate as a measure to contain the pandemic. According to the Federal Reserve Issues FOMC Statement





(2020), the US Federal Reserve (Fed) cut the interest rate in line with COVID-19, which forced business activities to come to a grinding halt. The interest rate is expected to remain low until 2022 when the economy recovers from the pandemic. Europe, Russia, Indonesia, Thailand, and England have followed the same measures to stimulate economic recovery.

The daily news consistently reports interest rate movements because they directly affect our everyday lives and significantly affect the economy's health. Consumer spending habits are influenced by changes in interest rate depending on current rate levels, expected future rate changes, consumer confidence, and the economy's overall health. Households can decide whether to consume or save, buy a house, purchase bonds, or put funds into a savings account. The interest rate affects the consumption level, which finances can lend to one another. A lower interest rate increases consumption levels (Christensen, 2012). Most economists affirm that consumption is primarily impacted by a cut down in interest rates (Di Maggio, Kermani, & Ramcharan, 2014). A growing money supply accelerates inflation. The central bank would adjust the interest rate to slow inflation and moderate economic growth. A higher interest rate induces higher costs and reduces aggregate demand through investment spending and weaker consumption. Consumers tend to cut spending and increase savings when the interest rate increases. Thus, the inflation rate will ease to a low level and lead to a sluggish economy (Bhunia, 2016). The interest rate impacts the entire financial market and connects to the fundamental economic units. Banks make use of interest rates to carry out their operational tasks. A rise in the interest rate signifies that the cost of funds is getting higher. Thus, banks must pay a higher deposit interest rate to attract new customers (Yusof, Al Wosabi, & Majid, 2009).



Moreover, banks are unwilling to offer loans since the overall money supply has decreased. Thus, monetary policy could be implemented to manipulate interest rates, ultimately influencing aggregate demand and inflationary pressure through underlying transitions (Muric, 2010). Also, foreign investors seeking higher returns will increase their demand for the currency, leading to currency appreciation (Davcev, Hourvoulides, & Komic, 2017). On the contrary, lowering the interest rate encourages investment and spending to stimulate growth. According to Di Maggio, Kermani, and Ramcharan (2014), most economists affirm that changes in interest rate broadly impact household consumption. A lower interest rate stimulates economic growth through consumption and investment. It further increased the willingness of people to borrow to purchase assets like cars or houses. It makes borrowing costs cheaper and allows people to spend and invest more freely. Moreover, low borrowing costs benefit businesses when making large equipment purchases. Consequently, a low interest rate leads to higher aggregate demand and stabilises the economy to reach a sustainable level. The behaviour of interest rates affects economic growth. In line with this, research by Bader and Malawi (2010) has proved that real interest rate has a positive effect on both national income and economic growth. On the other hand, interest rate and exchange rate are positively correlated. A rise in interest rate offers lenders a higher return than other countries. Therefore, the exchange rate will rise, which is caused by the increasing interest rate.

Similarly, Drobyshevsky, Trunin, Bozhechkova, and Muryleva (2017) observe that the interest rate is partially efficient. They found some international examples of positive interest rate on economic growth, such as Brazil, Turkey, India, and Chile. In contrast to earlier findings, Bhunia's (2016) research reports a unidirectional causality



from economic growth to the interest rate. The study by Bosworth (2014) applied a panel data set covering G-7 and 22 OECD. He reported that the relationship between the real interest rate and the economic growth rate could be stronger.

1.3.5 Exchange Rate Matter

The exchange rate is the price of one country's currency in terms of another country's currency (Krugman, 2012). It plays a central role in adjusting a country's economic operation by executing the function of the price changeover in international trade and finance. The international trade level determines economic performance (Morina, Hysa, Ergün, Panait, & Voica, 2020). As a currency parameter, it could affect development and growth in the long term, especially destructive imports. What's more, internal trade and capital flow widely impact economic growth through numerous economic activities, for instance, consumption, investment, money supply, price, a reserve of foreign exchange, and employment (Han, 2020).

As a measurement of international competitiveness, the exchange rate determines the inflation level and currency effects and represents the relative cost or price expressed in a common currency (Azid, Jamil, & Kousar, 2005). People may not realise the changes in the exchange rate in their daily lives, but the depreciation of a country's currency can significantly impact the nation. It increases the input costs and reduces the exchange rate elasticity of trade (Karadam & Ozmen, 2016). Besides, it induces high external debt, which will regress the financial positions of the debtor sectors of an economy in developing countries. It also affects the quantity of aggregate





demand since it significantly impacts both exports and imports. A fall in domestic currency will lead to a rising inflation rate which causes the import costs to be relatively high compared to exports. Higher inflation also affects exports on increased input costs, such as materials and labour costs. A higher inflation rate will induce the central bank to raise the interest rate, support the currency, and prevent it from plunging sharply. A country with higher inflation generally sees a currency depreciation, usually accompanied by a higher interest rate. Svensson (1997) pointed out that monetary policy objectives are positioning the choice of exchange rate and inflation targeting. It controls inflation and the exchange rate in the long run, whereas it adversely affects inflation in the short run.

Nevertheless, manipulating the exchange rate and nominal exchange rate has no inherent significance for welfare or economic growth. To maintain the exchange rate, the government will apply monetary policies, either fixed or flexible exchange rates. The monetary policy effectively minimises the inflation target but cannot prevent the negative consequences of real exchange rate variability. Exchange rate adjustments based on actual economic conditions will be beneficial to economic growth (Ren, Yang, & Zhong, 2015). An upward movement indicates a gain in the value of a currency, whereas depreciation of the currency against foreign currency happens by a downward trend (Anyanwu, Ananwude, & Okoye, 2017). An exchange rate system stabilises a stable trade and foreign exchange market and supports trade to reach sustainable economic growth. Fluctuations in exchange rates lead to a depreciation of the home currency in the parlance of the exchange rate (Danladi & Uba, 2016). Trade and investment will be affected and disrupt financial in the country. Hence, the government's priority is managing the exchange rate to ensure the stability of the





exchange rate due to the feasibility of the external sector depending on the local currency's exchange rate against other countries' currencies. Bernanke, Olekalns, and Frank (2008) claimed that exchange rate depreciation signals economic failure. It is considered not to promote economic growth in the long term and vice versa. Based on a national perspective, however, it increases production in a country. In whatever conceptualisation, the exchange rate corresponds to the prices and indicates the competitiveness of the exchange rate in a country worldwide (Ismaila, 2016).

Investors and business people would desire a stable exchange rate in preference to a volatile one because it significantly impacts business and economic activities. Exchange rate volatility will affect structural shifts in production, changes in institutions in the economy, and the changing pattern of international trade. Every country needs to maintain the country's currency to ensure the country has a trade surplus that contributes to economic growth. The trade surplus or deficit is affected by the exchange rate. To achieve growth and development, the determination of the exchange rate mechanism should be well managed, which will bring about the efficient distribution of scarce resources (Udoeye, 2009). A series of empirical works motivated by the impact of exchange rate on economic growth have been published. Habib, Mileva, and Stracca (2017) found that an appreciation of a currency decelerates annual economic growth and pegs in developing countries. This statement is in line with Eichengreen (2008), who asserted that a more real exchange rate depreciation and weak exchange rate volatility are advantageous for economic growth.

Similarly, Berg and Miao (2010) found that an undervalued currency positively impacts economic growth, especially in developing countries. Research by Akinbobola





and Oyetato (2010) found that the appreciation of an exchange rate should be at most the equilibrium level. It will not disrupt exports at the advantage of numerous importations of goods and thus accelerate economic growth. Ribeiro, McCombie, and Lima (2019) and Karahan (2020) also found a negative causal relationship between exchange rate and economic growth, as claimed by structuralist economists. Liu (2019) mentioned that the exchange rate significantly impacts economic growth under different conditions. Hence, the relationship between economic growth and the exchange rate will be analysed since international trade has developed economic growth.

1.4 Problem Statements



Recently, most countries have been facing a number of turbulences: the financial condition have force the policymakers to tightene monetary policy by decades-high inflation, the war in Ukraine and the lingering COVID-19 pandemic (IMF, 2022). These unforeseen circumstances weigh heavily on the economy and decelerate global growth 3 years consecutively from 2022 to 2024 (World Bank, 2024). An occurrence of economic crisis will spread to the whole economy and eventually affect macroeconomics like economic growth, unemployment, and inflation. It significantly impacted economies worldwide, disrupting trade, production, and consumption. Some risks and uncertainties cannot be featured in easily despite their spillover effect on economic growth is tremendous. Hence, various economic disturbances are taken as the benchmark by covering the sample periods from the first quarter of 1998 to the fourth quarter of 2003, which comprises the Asian financial crisis, dot-com bubble, Severe



Acute Respiratory Syndrome (SARS) outbreak⁴ and the first quarter of 2008 to the fourth quarter of 2020 which comprises the global financial crisis, European Sovereign Debt Crisis and COVID-19 pandemic⁵; the subset period including various economic condition due to data availability limitation. A noteworthy feature of empirical studies is that a lack of studies discussing the impact of inflation, unemployment, interest rate and exchange rate on economic growth in various economic conditions despite numerous studies investigating these five variables (Zivkov, Manic, & Duraskovic, 2020; Khan & Khan, 2018; Panigrahi, Azizan, Sorooshian, & Thoudam, 2020; Taderera, Runganga, Mhaka, & Mishi, 2021; Idris, 2019). According to Gan (2014), a crisis would impact the economy of a country and, hence spill over to the global economy. In order to paint more accurate pictures of prevailing economic conditions, the study attempts to analyse movements of economic growth during normal period and subset period. Therefore, it has come to mind the following statement of the problem:

1.4.1 Does Economic Growth Respond to Inflation?

Generally, it is recognised that inflation hurts economic growth (Fischer, 1983; Valdovinos, 2003; Barro, 2013; Baharumshah, Slesman, & Wohar, 2016)⁶. Increasing the inflation rate shrinks the actual returns to savings, resulting in the worsening of

⁴ Asian Financial Crisis occurred from July 1997 to December 2008 (Carson & Clark, 2013); Dot-com bubble triggered from 1998 until March 2000 (Wollscheid, 2012); SARS outbreak in February 2003 (World Health Organization, 2003).

⁵ Global Financial Crisis happened from mid 2007 to early 2009 (Chen, Mrkaic & Nabar, 2019), European Debt Crisis started in late 2009 until 2012 (Li, Shi & Huang, 2013), COVID-19 pandemic (Shereen, Khan, Kazmi, Bashir & Siddique, 2020).

⁶ Different schools of economic thought have their perspective in discussing the impact of inflation and economic growth. Structuralists insisted that inflation is essential for economic growth. But the monetarists asserted that inflation is harmful to output growth (Idris & Bakar, 2017; Malik & Chowdhury, 2001).



frictions in financial markets. It leads to a reduction in credit rationing, restricting investment and lowering investment efficiency, and decelerating economic growth (Huybens & Smith, 1998). Price stability plays a vital role in ensuring the stability of economic, social and sustainable development (Aydin, Esen, & Bayrak, 2016). It can be achieved through monetary policy instruments to observe and maintain a low and stable inflation rate (Taderera, 2021). In contrast, some studies found that inflation positively impacted economic growth (Malik & Chowdhury, 2001; Benhabib & Spiegel, 2009; Marjan & Najeeb, 2013; Uddin & Rahman, 2022). Nevertheless, most empirical research reached a broad consensus that the relationship between inflation and economic growth is inconspicuous if the inflation rate is relatively low (Arawatari, Hori, & Mino, 2018).



economic growth and inflation as it significantly impacts economic activity and, hence, hampers sustainable economic growth (Baxa, Plasil, & Vasicek, 2017). Inflation not only increase the price level in a country but also induce financial issue regarding high prices of commodity and service and some other aspect (Rashid & Kernal, 1997). In a public speech, William (2010) remarked that the past severe recession proved that inflation is expected to decline by twice as much as it has. Past event studies prove that a deep economic contraction leads to disinflation during a financial crisis (Stock & Watson, 2010; Meier, 2010). It can be concluded that the economy has a significant impact on inflation and the relationship is stronger during the recession. Nevertheless, the relationship is unstable over time but depends on the business cycle (Bermingham, Coates, Larkin, Brien, & Reilly, 2012). The exact relationship between economic growth and inflation is still being determined despite numerous studies investigating





these two variables. The findings vary according to countries, time series, and methodologies (Akinsola & Odhiambo, 2017). Hence, it is significant to find out the relationship between economic growth and inflation.

1.4.2 Does Economic Growth Responds to Unemployment?

With respect to unemployment, a persistently high unemployment rate causes a loss of human resources and plummets economic growth in the country (Makaringe & Khobai, 2018). High economic growth is expected to reduce unemployment by increasing employment. As stated in Okun's law, one of the well-known empirical relationships between unemployment and output (economic growth) is in macroeconomic theory (Banda et al., 2016). According to empirical research, unemployment is negatively related to economic growth (Okun, 1963; Nikolli, 2014). A persistently high unemployment rate causes a loss of human resources and plummets the economic growth in the country (Obst, 2021; Seip & Zhang, 2022; Anghel, Anghelache, & Manole, 2017; Makaringe & Khobai, 2018). It impacts the economy and social aspects, such as mental health, higher crime rate, erosion of human capital, and morbidity (Kingdon & Knight, 2007). A high unemployment rate increases not only poverty rates but also inequality. Countries that experience high levels of poverty rates and inequality will encounter slow recovery and low economic growth. A weak economy affects the job market and society. It implies lower consumption, weaker real investment, and so forth (ILO, 2011). Consequently, poor labour market performance could be detrimental to long-run growth (Mares & Sirovatka, 2005). Hence, it is significant to increase economic growth to reduce the unemployment rate.





During the economic recession, unemployment increases sharply worldwide (Martin & Jaume, 2011). Workers' loss of income resulted in a fall in consumer spending, slowing the economic recovery (Junankar, 2011). According to the report by the Congressional Research Service, unemployment increased at an elevated level and is considered the worst since the Great Depression (between 1929 and 1933). Compared to the previous economic recession, the COVID-19 pandemic raised unemployment to the highest level, surpassing its previous peaks observed since 1948. The current recession severely affected employment in every sector, contributing to higher unemployment (Falk, Romero, Carter, Nicchitta, & Nyhof, 2021). Economic growth will help reduce unemployment and expand employment if the labour force's participation remains constant. Nevertheless, participation in the labour force is expected to increase when the economy is expanding and decrease when the economy is uncertain. Note that less labour is needed during rapid growth. It may not increase employment significantly (Junankar, 2011).

1.4.3 Does Economic Growth Respond to Interest Rate?

Interest rate is one of the most fascinating topics and has always been at the centre of literature in developing countries. It is used as a monetary policy tool to influence interest rates in short-term money market rates to stimulate investment, saving, or consumption. The economic condition of a country can be impacted by the interest rate level. An increase in economic growth tends to lead to higher interest rates in an economy. Conversely, during a recession, a decrease in economic growth, interest rates tend to decrease. Lower interest rates reduce the cost of borrowing, which encourages





investment and spending. As stated by Keynesian, low interest rate encourage aggregate demand in the short run and increase investment simultaneously. This contractionary measure improves the economy immediately but is not beneficial for savings. This, in turn, stimulates economic growth. Conversely, interest rates tend to rise when the economy grows, and higher interest rates can dampen spending and investment, potentially slowing down economic activity. Many scholars have found high interest rate plummets economic growth (Oroud, Almahadin, Alkhazakeh, & Shneikat, 2023; Mayo, Samour & Tursoy, 2021; Panigrahi et al., 2020; Idris, 2019; Shaukat, Zhu & Khan, 2019; Samuel & Nurina, 2015).

According to IMF (2019), most economies implemented exceptional policy measures to recover their economies after the 2008 financial crisis. During the crisis, the developed countries' central banks adopted monetary accommodation by swiftly lowering policy rates to their effective lower bounds (Bernanke 2017). The effects of quantitative easing (QE) by advanced economy central banks on interest rates and financial conditions exhibit varying estimates (Gagnon, 2016). Generally, it is considered that the actions on domestic output in developed countries and imports have a positive effect, which can offset the negative effect due to high capital inflows and currency appreciation pressure elsewhere (IMF 2014). Thus, it is necessary to resolve the issue between the interest rate and economic growth.





1.4.4 Does Economic Growth Respond to Exchange Rate?

The exchange rate has a significant impact on economic growth (Blinov, 2017; Purnomo, 2017; Susanti & Sholeh, 2020). The foreign exchange rate is one of the sources of economic growth that contributes to an economy. Foreign investments and international trade will increase the wealth of a country. A robust economy strengthens a nation's currency, while economic challenges can lead to depreciation. A strong exchange rate is often seen as a sign of economic strength and can symbolize national pride. Countries with low inflation and strong economic performance tend to have appreciating exchange rates. Higher economic growth tends to cause an appreciation in the currency because markets expect higher interest rates during rapid growth. Higher inflation makes exports less competitive and reduces demand for the currency, leading to depreciation.



Depreciation of the currency can stimulate economic growth, especially in developing countries. The countries will choose an exchange rate regime based on their own economic structure that can reduce vulnerability to the crisis. Exchange rate flexibility helped cushion the crisis's impact (Berkmen, Gelos, Rennhack & Walsh, 2009). The study also found, however, that countries with pegged and intermediate exchange rate regimes are more likely to experience currency and financial crises, although not growth crises (see Ghosh, Ostry, and Tsangarides, 2010). Jackson (2018) opined that volatility in the currency exchange rate was the main reason for the crisis. Another research by David and Guillermo (2005) found that real exchange rate and economic growth are correlated during the economic crisis. Some researchers argued that high exchange rate reduces economic growth (Mawutor, 2023; Habib, Mileva &





Stracca, 2017). On the other hand, the view that the depreciation of the exchange rate and economic growth have positive relation is observed by some research (Razmi, Rapetti & Skott, 2012; Wesseh & Lin, 2018). In relation to this issue, it is important to figure out the impact of the exchange rate on economic growth during normal and crisis periods.

1.5 Objectives of the Study

The main objective of this study is to examine the relationships between economic growth and its potential determinants, namely inflation, unemployment, interest rate and exchange rate during normal periods and crisis periods. Five ASEAN countries, namely Indonesia, Malaysia, Singapore, Thailand and the Philippines, are selected in this study. The specific objectives are as follows:

1. To examine the causal relationship between economic growth and its potential determinants, namely inflation, unemployment, interest rate and exchange rate during normal periods and subset periods.

[Thus, identifying the causal relationship of each variable (i.e., inflation, unemployment, interest rate, and exchange rate) on the response variable (i.e., economic growth) assists policymakers in influencing the variables in order to achieve sustainable economic growth.]



2. To examine the long-run and short-run relationship between economic growth and its potential determinants, namely inflation, unemployment, interest rate and exchange rate during normal periods and subset periods.

[Thus, identifying the long-run and short-run relationship of each variable (i.e., inflation, unemployment, interest rate and exchange rate) on the response variable (i.e., economic growth) helps policymaker to analyse economic condition by implementing strategy in order to achieve a short-term and long-term goal.]

1.6 Research Questions

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In line with the research objective of this study, the general research question is, what is the relationship between economic growth and its potential determinants, namely inflation, unemployment, interest rate, and exchange rate during normal periods and crisis periods? The specific research questions that will be answered are: -

1. Does economic growth have a causal relationship with its potential determinants (i.e., inflation, unemployment, interest rate, and exchange rate)?
2. Does economic growth have a long-run and short-run relationship with its potential determinants (i.e., inflation, unemployment, interest rate, and exchange rate)?



1.7 Research Hypotheses

More specific research hypotheses are introduced and investigated below:

Research Question 1:

Does economic growth have a causal relationship with its potential determinants (i.e., inflation, unemployment, interest rate, and exchange rate) during normal period and crisis period?

H_{1a}: There is a causal relationship between economic growth and inflation.

H_{2a}: There is a causal relationship between economic growth and unemployment.

H_{3a}: There is a causal relationship between economic growth and interest rate.

H_{4a}: There is a causal relationship between economic growth and exchange rate.

Research Question 2:

Does economic growth have a long-run and short-run relationship with its potential determinants (i.e., inflation, unemployment, interest rate, and exchange rate) during normal period and crisis period?

H_{1b}: There is a long-run and short-run relationship between economic growth and inflation.

H_{2b}: There is a long-run and short-run relationship between economic growth and unemployment.

H_{3b}: There is a long-run and short-run relationship between economic growth and interest rate.





H_{4b}: There is a long-run and short-run relationship between economic growth and exchange rate.

1.8 Significance of the Study

The findings could be remarkable and valuable to researchers to extend their knowledge about how these variables impact economic growth. Pursuing low inflation and low unemployment are the primary objectives in economics. The results of the study provide meaningful information that benefits the policymakers and economy in making decisions. Moreover, the study is more robust by analysing different time horizons to support the relationship between the variables. These results provide important implications for policymakers in economic policy formulation and decision-making.

Vary degrees of inflation and unemployment have a significant impact on economic growth. In that regard, policymakers can devise proper measures to alleviate the adverse effects of inflation and unemployment to achieve economic sustainability. Moreover, policymakers can design strategies that support recovery and enable economies to better weather future crises. Economic growth analysis over various periods aids in long-term planning and helps policymakers in predicting future trends and potential challenges. Besides, it provides insights into shifting business dynamics, the rise of digital technologies, international firm connectedness, and the impact of crises on different types of workers. It sheds light on the need for worker skills development and inclusiveness, ensuring that the benefits of growth are widely shared. The study also provide a broader view to future researchers who would like to explore those variables further.



1.9 Limitations

The study has several limitations that could not be avoided. The sample study only involved five countries (i.e., Indonesia, Malaysia, Singapore, Thailand and the Philippines) and five variables (i.e., economic growth, inflation, unemployment, interest rate and exchange rate). Researchers might include more countries and variables to expand the scope of research in future studies. Besides, some control variables (i.e. foreign direct investment, import, and so forth) were not included as well as supply-side variables (i.e. production cost, wages and so forth). A similar procedure can include more variables in future research. Apart from that, threshold inflation was not taken into account in the study since economic growth varies according to the threshold level. It can be explained by the absence of long-run relationships in Malaysia, where monetarist theory and structuralist theory assert that inflation has a significant impact on economic growth. A potential scope for future study is to adopt appropriate threshold techniques to determine the effect of inflation level on economic growth.

1.10 Conceptual Framework

A conceptual framework is an analytical tool to organise ideas and clarify the concepts of research. It is necessary to construct a conceptual framework before collecting data. It illustrates the interaction between the independent variables and dependent variables. The conceptual framework of the study is presented in Figure 1.2.

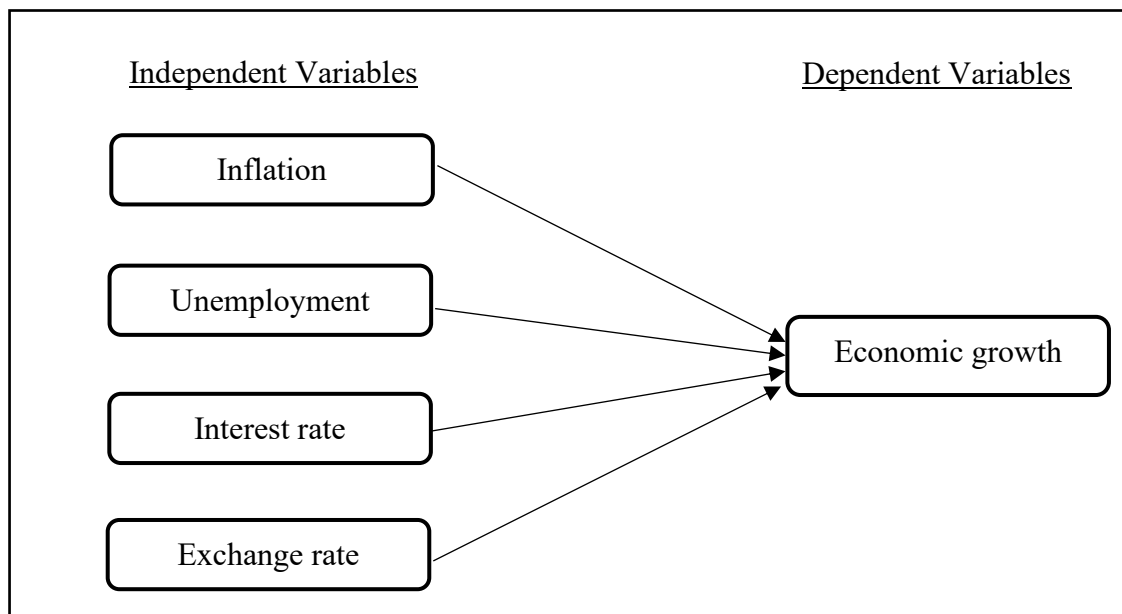


Figure 1.2. Conceptual Framework

1.11 Operational Definition

Definitions of the subject matter are stated below:

1.11.1 Economic Growth

Economic growth is an increase in output, economic goods provision, and the existence of advanced technology in a country (Quy, 2016). It determines the standard of living of a nation. Assume that if economic growth is faster than population, it can be concluded that the nations enjoy a high standard of living. High economic growth increases job creation and reduces unemployment and inflation. Real gross domestic product is the most common way to measure the growth of an economy.



1.11.2 Inflation

Inflation can be defined as the general price of a good and service increasing continuously. Increasing the money supply will lead to high inflation. The consumer price index (CPI) is an index to measure inflation over a certain period in a country. It measures the price changes of goods and services, reflecting the living cost of households.

1.11.3 Unemployment

Unemployment refers to a group of people in the age range of 16-54 who are actively searching for a job but are unemployed. It is not only about waste of human resources but also causes welfare loss and social problems.

1.11.4 Interest Rate

Interest rate is defined as a percentage of the amount due per period that will be charged from lending. It is one of the policy instruments to influence inflation to achieve economic growth. High interest rate discourage investment and reduce the money supply. It curbs consumer spending and decelerates business growth.



1.11.5 Exchange Rate

An exchange rate is a rate at which one's country's currency is relative to another country's currency. It determines the value of a good and service in a common currency. It plays a central role in adjusting a country's economic operation by executing the function of the price changeover in international trade and international finance.

1.12 Summary

In a nutshell, the relationship between economic growth and its potential determinants during normal periods and crisis periods in selected ASEAN countries has been explained, complying with the problem statement in the study. Implementation of different strategies to manipulate the potential determinants to enhance economic growth and stability. Furthermore, this study's general objective and specific objectives provide a clear direction to the policymakers. The findings may provide valuable insights to policymakers in formulating and stabilising a country's economy. Also, the findings capture the attention of future researchers who want to deepen their knowledge of economic growth and its determinants under different circumstances. The subsequent chapter will discuss the works of literature on the dependent and independent variables, along with the empirical findings.