INFLUENCE OF KEY MACROECONOMIC VARIABLES ON FOREIGN WORKERS LABOUR FORCE IN MALAYSIA: AN ARDL APPROACH

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2025

DECLARATION

I am Siti Nur Adlena binti Ahmad Amran (D20211097994), a final year student from Faculty of Management and Economics at Universiti Pendidikan Sultan Idris. I hereby declare that this Final Year Project (FYP) entitled "Influence of Key Macroeconomic Variables on Foreign Workers Labour Force in Malaysia: An ARDL Approach" is a result of my research and original work. I conclude on that note this project has been written by myself and this work has not been submitted for any other degree or professional qualification. I confirm that the work submitted is my own, except where work which has formed part of jointly authored publications has been included. This also relates to giving due credit to any expression, thought, references to research findings, and/or bibliography mentioned or cited in the study. Hence, I declare that the content of this study is based on my own effort and prepared under the guidance of my supervisor.

(SITI NUR ADLENA BINTI AHMAD AMRAN) (DR. NORMALA BINTI ZULKIFLI)

ACKNOWLEDGEMENT

First and foremost, I express my deepest gratitude to Allah SWT for His countless blessings and guidance throughout my academic journey, especially during the completion of this final year project.

I would like to extend my heartfelt thanks to my supervisor, Dr. Normala binti Zulkifli, whose expertise, dedication, and patience have been a cornerstone in the development of this research. Your insightful guidance and constructive feedback have been instrumental in helping me navigate the complexities of this study. Your commitment to excellence and unwavering support have inspired me to strive for the highest standards in my work. I am truly grateful for the time and effort you devoted to mentoring me, whether it was through detailed reviews of my drafts, challenging my assumptions, or providing encouragement when I faced obstacles. Beyond your academic guidance, your professionalism and passion for research have been a source of motivation, shaping not only this project but also my personal and professional growth. It has been an honor to learn from someone of your caliber, and I deeply appreciate the invaluable role you played in making this project a reality.

To my family, I am eternally grateful for your unwavering love, sacrifices, and encouragement. Your prayers and moral support have been my source of strength during the most challenging moments.

To my friends (especially Zafira, Hanis, Tasya, Ain) and peers, thank you for the countless hours of discussions, mutual support, and motivation. Your companionship made this journey more meaningful and enjoyable.

Finally, to everyone who has played a part, directly or indirectly, in the completion of this project, I am deeply thankful. This project is a testament to the collective support and encouragement I have received throughout my academic journey.

ABSTRACT

This study explores the impact of key macroeconomic factors—GDP, unemployment rate, and exchange rate—on the foreign labour force in Malaysia over the period from 1995 to 2023. The research investigates both short-term and long-term relationships between these variables by using the ARDL approach. Data from the Department of Statistics Malaysia and the World Bank were utilized, with variables transformed into natural logarithms for better interpretation. The findings highlight that GDP growth positively influences the demand for foreign labour, particularly in labour-intensive sectors like construction and manufacturing. A higher unemployment rate tends to reduce foreign labour inflows as local workers fill available positions, while a weaker Malaysian Ringgit enhances the attractiveness of working in Malaysia due to increased remittance value. Long-term trends show that economic growth continues to drive foreign labour demand, while exchange rate fluctuations exert a more limited but consistent influence. The results offer valuable insights for policymakers, emphasizing the need for a balanced approach to economic growth, unemployment management, and exchange rate stability to optimize foreign labour utilization without undermining local employment.

Keywords: foreign labour force, GDP, unemployment rate, exchange rate, ARDL approach, Malaysia.

ABSTRAK

Kajian ini mengkaji kesan faktor makroekonomi utama iaitu KDNK, kadar pengangguran, dan kadar pertukaran ke atas tenaga buruh asing di Malaysia bagi tempoh 1995 hingga 2023. Penyelidikan ini mengkaji hubungan jangka pendek dan jangka panjang antara pemboleh ubah tersebut dengan menggunakan pendekatan ARDL. Data diambil daripada Jabatan Perangkaan Malaysia dan Bank Dunia, dengan pemboleh ubah ditukar kepada logaritma semula jadi untuk tafsiran yang lebih baik. Dapatan kajian menunjukkan bahawa pertumbuhan KDNK memberi kesan positif terhadap permintaan tenaga buruh asing, terutamanya dalam sektor intensif buruh seperti pembinaan dan pembuatan. Kadar pengangguran yang lebih tinggi cenderung mengurangkan kemasukan tenaga buruh asing apabila pekerja tempatan mengisi jawatan yang tersedia, manakala nilai Ringgit Malaysia yang lemah meningkatkan daya tarikan bekerja di Malaysia kerana nilai kiriman wang yang lebih tinggi. Trend jangka panjang menunjukkan bahawa pertumbuhan ekonomi terus mendorong permintaan tenaga buruh asing, manakala turun naik kadar pertukaran memberikan pengaruh yang lebih terhad tetapi konsisten. Hasil kajian ini memberikan pandangan bernilai kepada pembuat dasar, menekankan keperluan pendekatan seimbang dalam pertumbuhan ekonomi, pengurusan pengangguran, dan kestabilan kadar pertukaran bagi mengoptimumkan penggunaan tenaga buruh asing tanpa menjejaskan pekerjaan tempatan.

Kata kunci: tenaga buruh asing, KDNK, kadar pengangguran, kadar pertukaran, pendekatan ARDL, Malaysia.

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FL	: Foreign Labour
GDP	: Gross Domestic Product
UNMP	: Unemployment Rate
EXCH	: Exchange Rate
ARDL	: Autoregressive Distributed Lag
ECM	: Error Correction Model
ARCH	: Auto-regression Conditional Heteroskedasticity
CUSUM	: Cumulative Sum
DOSM	: Department of Statistics Malaysia

CHAPTER 1

INTRODUCTION

1.0 Introduction

Malaysia as a country with a rapidly developing economy has become a popular destination for foreign workers from various countries. Macroeconomic factors play an important role in determining the demand for foreign workers, as well as their employment and living conditions in Malaysia. Until 15 March 2024, based on the records of the Malaysian Immigration Department (JIM), the number of foreign workers working in the country is 2.2 million people. Their presence not only makes a significant contribution to the country's economy but also plays an important role in various industrial sectors. However, the influence of macroeconomic factors on the existence and impact of foreign workers is not yet fully understood.

The purpose of this study is to examine the relationship between macroeconomic with selected variables and the foreign labour force in Malaysia during the period of 1995 to 2023. Through an in-depth analysis, we will explore how macroeconomic variables such as exchange rate (EXCH), unemployment rate (UNMP) and gross domestic product (GDP) affect the number and distribution of foreign workers in the country by using the ARDL approach. By understanding this relationship, it is hoped that this thesis can provide better insight for policy makers, employers and other stakeholders in managing foreign workers effectively and optimizing their contribution to Malaysia's economic growth. Following the introduction, this chapter will explain about the foreign labour and the selected macroeconomic variables in Malaysia including research background of Malaysia and brings the problem statement which is the focal point of this research, research questions, objectives, and hypothesis to be tested. In addition, the conceptual framework will be present in this chapter referring to the information from the previous literature and the scope as well. The significance of study and limitation also will be discussed. Finally, the conclusion will be concise in this chapter.

1.1 Research Background

Foreign workers are a major source of work force in the development of the economy, whether it is for the country that imports or exports foreign workers (Ajish et al., 2014). Malaysia has been a popular destination for foreign labour due to its labour-intensive industries and strong economic growth. Since the colonial era, a significant number of foreign workers have been employed in Malaysia to support the mining and plantation industries. But as Malaysia became industrialized and urbanized in the 1970s and 1980s, the modern inflow became truly started. The Malaysian government has relied on foreign workers since the 1980s, but there is not a comprehensive policy regarding recruitment and placement of foreign workers (Abdul-Rahman et al., 2012). The nation's economic policies, which aimed to make it a high-income country, made a huge work force necessary, which could not be met by domestic supply alone.

According to World Bank (2020), the majority of foreign labourers employed in Malaysia are from neighbouring countries such as Indonesia, Bangladesh, Nepal and the Philippines. There may be an equal number of undocumented foreign workers in Malaysia as there are over 2 million authorized workers, according to current estimates. They work in many different industries, including as manufacturing, services, construction, and agriculture, with a significant concentration in low- and semi-skilled positions. Other than that, Jordaan (2018) claims that immigrant labour has a favourable productivity impact in Malaysia, particularly in the industrial sector that employs unskilled and semi-skilled labour. This is due to the fact that foreign labourers are essential to Malaysia's economy because they fill labour shortages, particularly in industries where local workers are turned off by low pay and unfavourable working conditions. Additionally, foreign workers' remittances to their home countries constitute an essential economic link between Malaysia and these nations. According to Hamzah et al., (2020), Malaysia has seen an increase in the number of foreign workers each year. This is due to factors such as wage differentiation, poverty, unemployment, long-standing social networks and demand from the Malaysia government itself (Anthony & Menju, 2015).

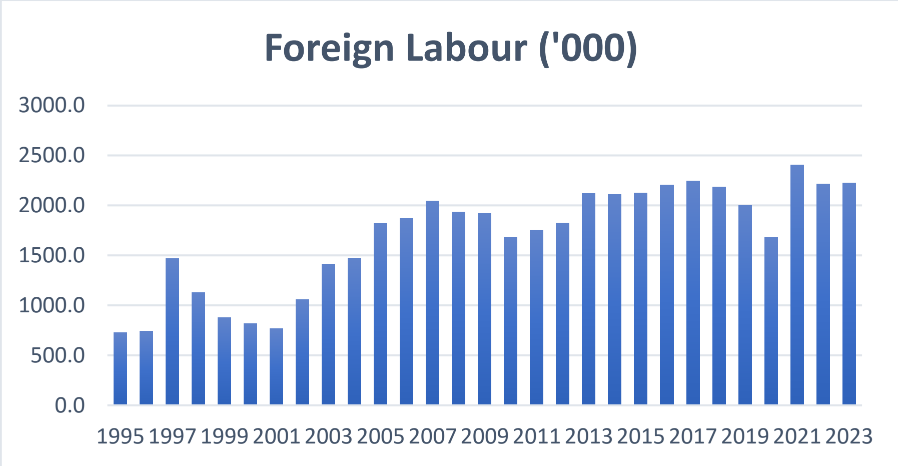

Figure 1.1: Foreign Labour

The data on foreign labour from 1995 to 2023 shows several distinct trends influenced by economic, political, and global events. From 1995 to 2000, there was a steady increase in the number of foreign workers, peaking in 1997 at 1,471.6 thousand people, before experiencing a decline towards the end of the decades. This early fluctuation might reflect the economic transitions of the late 1990s. the period from 2001 to 2008 saw a gradual increase, with a significant peak in 2007 at 2,044.8 thousand people, suggesting robust economic conditions and possibly favourable immigration policies. However, the global financial crisis of 2008 led to decline, which continued into 2010.

The subsequent period from 2011 to 2019 marks a recovery and growth phase, with the number of foreign workers increasing steadily, peaking at 2,244.0 thousand people in 2017. This growth can be attributed to economic recovery and increased demand for labour. However, in 2020 saw a sharp decline to 1,678.9 thousand people due to the COVID-19 pandemic, which disrupted global labour markets and movement. Following this, 2021 witnessed a significant rebound to 2,407.9 thousand people, the highest in the recorded period, indicating a rapid recovery and possibly an increased need for foreign labour post-pandemic. The years 2022 and 2023 show stabilization at slightly lower levels than the 2021 peak, with the numbers hovering around 2,223 thousand of foreign workers. Overall, the data reflects a cyclical pattern of growth and decline influenced by broader economic and global health events.

Over the past few decades, Malaysia, a country in Southeast Asia that is developing quickly, has seen substantial economic expansion. The flood of foreign labour has been a major contributor to this prosperity and has been crucial in many areas of the Malaysian economy, such as manufacturing, construction, and agriculture. The relationship between Malaysia's

Gross Domestic Product (GDP) and the attraction of foreign labour is one of this study to understand how economic performance influences labour migration patterns.

The GDP of a country is a critical indicator of its economic health and prosperity. Rasiah et al. (2015) said that due to industrialization and economic base diversification, Malaysia's GDP has grown, and with it, so has the need for workers. Economic growth frequently results in the rise of important companies that need more labour, especially in low- and semi-skilled job categories that are frequently occupied by foreign workers. Not only that, a higher GDP typically correlates with increased investment in infrastructure and industrial projects, leading to greater employment opportunities. Malaysia has seen substantial investments in its construction sector, creating a surge in demand for labour. Furthermore, as the GDP grows, wages and living standards tent to improve, making the country more attractive to foreign workers seeking better employment prospects and living conditions compared to their home countries.

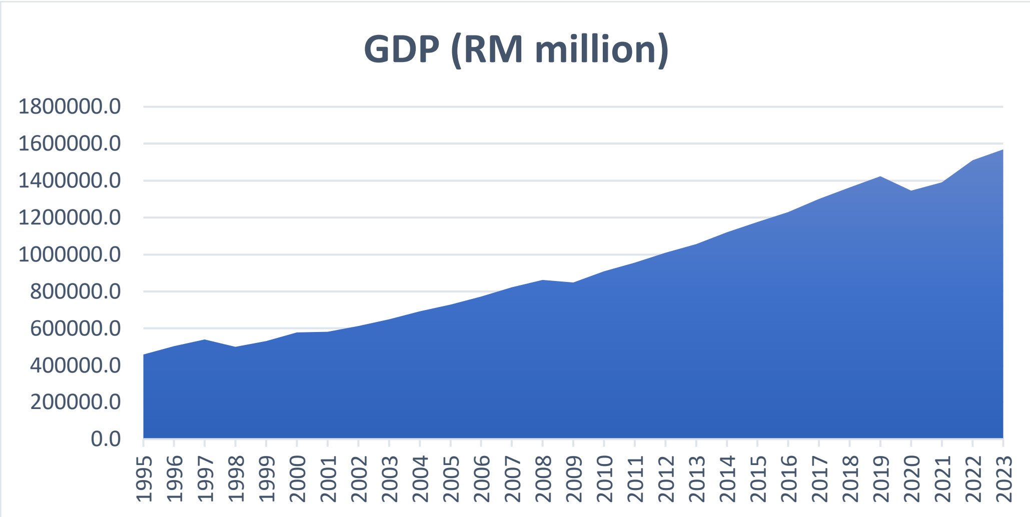

Figure 1.2: The Gross Domestic Product

The Gross Domestic Product (GDP) data for Malaysia from 1995 to 2023 exhibits a general trend of consistent economic growth, punctuated by periods of slowdown and recovery. During the late 1990s, Malaysia's GDP grew from RM 457,987.8 million in 1995 to RM 540,690.9 million in 1997, before experiencing a decline in 1998 due to the Asian financial crisis, which reduced GDP to RM 500,899.2 million. Recovery followed with steady growth through the early 2000s, reflecting stabilization and economic reforms, reaching RM 861,746.9 million in 2008.

However, the global financial crisis of 2008-2009 impacted Malaysia's economy, resulting in a slight GDP decline in 2009 to RM 847,648.7 million. The economy rebounded robustly, with GDP rising to RM 1,009,097.2 million by 2012 and continuing to grow steadily through the mid-2010s. This period of growth can be attributed to increased domestic consumption, industrial expansion, and favourable global economic conditions.

By 2019, Malaysia's GDP had reached RM 1,423,952.0 million, but the COVID-19 pandemic in 2020 caused a significant economic contraction, reducing GDP to RM 1,346,249.0 million. This downturn was due to widespread disruptions in trade, tourism, and domestic economic activities. The subsequent recovery was evident in 2021, with GDP rising to RM 1,390,644 million, as the economy adapted to pandemic conditions and reopened.

According to the data for 2022 and 2023, there has been a strong recovery, with GDP reaching RM 1,510,933.0 million in 2022 and RM 1,569,247.0 million in 2023. This growth was driven by growing demand throughout the world, government stimulus programs, and the restart of economic activity. In general, Malaysia's GDP development shows adaptability and tenacity in the face of international economic difficulties.

Empirical data shows a strong correlation between Malaysia's GDP growth and the increase in foreign labour. For example, during periods of robust economic growth, such as the early 2000s and mid-2010s, Malaysia witnessed a corresponding rise in the number of foreign workers. Statistical analysis reveals that sectors with the highest GDP contributions, such as manufacturing and construction, are also the largest employers of foreign labour.

Apart from the GDP factor, the unemployment rate can also influence foreign workers whether to work or not in the country. High unemployment rates within Malaysia can lead to policy shifts aimed at protecting local employment. The government may impose stricter regulations on foreign labour to prioritize job opportunities for Malaysian citizens. Conversely, low unemployment rates typically indicate labour shortages, prompting the government to loosen immigration policies and encourage foreign labour inflows to sustain economic activities. In addition, different sectors experience varying impacts based on unemployment rates. For instance, industries like construction and agriculture that have ongoing labour shortages could persist in substantially depending on foreign labour even if the unemployment rate is low overall.

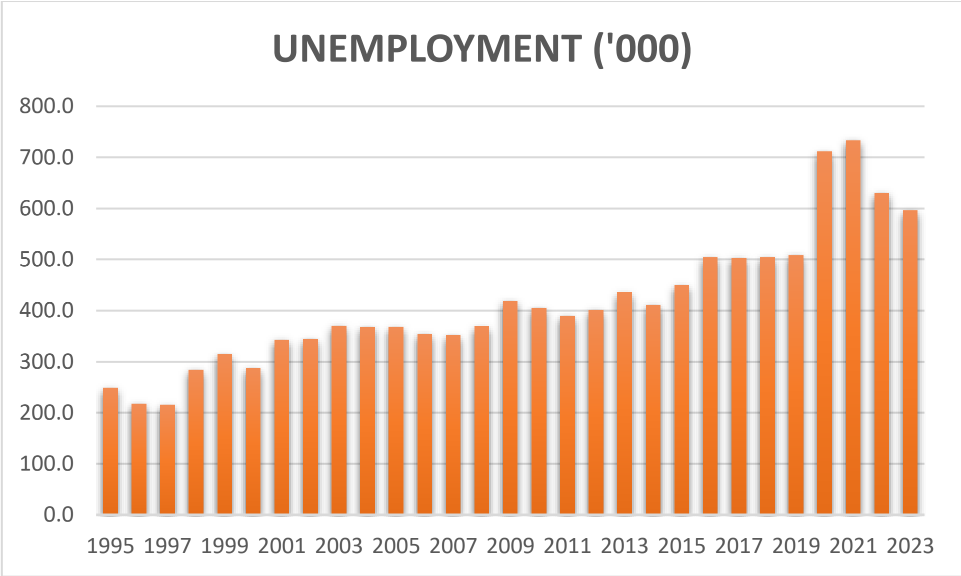

Figure 1.3: Unemployment

Malaysia's unemployment data from 1995 to 2023 shows a complex trend driven by both internal and external economic factors. In the mid-1990s, unemployment declined from 248.1 thousand people in 1995 to 214.9 thousand in 1997, reflecting a period of economic growth and job creation. However, the Asian financial crisis of 1997-1998 caused a sharp increase in unemployment, peaking at 313.7 thousand people in 1999 as economic contraction led to widespread job losses. The early 2000s saw efforts to stabilize and grow the economy, with unemployment fluctuating between 286.9 thousand people in 2000 and 369.8 thousand in 2003. Despite some improvements, the global financial crisis of 2008-2009 again disrupted the labour market, driving unemployment to a high of 418.0 thousand people in 2009.

The next ten years showed a mixed trend. Initial recovery efforts brought unemployment down to 404.4 thousand people in 2010, but figures began to rise again, reaching 450.3 thousand people by 2015, likely due to structural changes in the economy and technological advancements that eliminated jobs in specific industries. From 2016 to 2019, unemployment numbers stabilized slightly above 500 thousand people, indicating persistent challenges in the labour market.

The COVID-19 pandemic had a dramatic impact, with unemployment soaring to 711.0 thousand in 2020 and further to 733.0 thousand people in 2021 as lockdowns, travel restrictions, and interruptions to the economy led to significant job losses across multiple sectors, particularly in tourism and hospitality. The gradual recovery post-pandemic saw unemployment decrease to 630.4 thousand people in 2022 and 596.1 thousand in 2023, driven by the resumption of economic activities and government stimulus measures. However, the unemployment levels in 2023 remained higher than pre-pandemic levels, highlighting ongoing challenges in achieving a full economic recovery and adapting to long-term shifts in the labour market.

Research has indicated a connection between labour migration trends and unemployment rates. For example, during periods of economic downturn and rising unemployment in Malaysia, there have been noticeable declines in the intake of foreign workers. On the other hand, hiring of foreign workers has surged during economic expansions marked by low unemployment.

The exchange rate, which determines how much of one currency can be exchanged for another, directly affects the real value of earnings that foreign workers remit to their home countries. A stronger Malaysian Ringgit (MYR) means that foreign workers can convert their earnings into a higher amount of their home currency, thereby enhancing their effective income. In contrast, a weaker ringgit reduces the number of remittances in the home currency, potentially making Malaysia a less attractive destination for work.

Foreign workers are highly sensitive to changes in exchange rates when it comes to remittances. This is because when the ringgit appreciates, the remittances sent home by foreign workers increase in value, making Malaysia a more appealing destination. Conversely, a depreciating ringgit can discourage potential migrants or lead existing workers to seek employment in other countries with more favourable exchange rates. For example, based on observations, Malaysians are really interested in working in Singapore than in their own country due to the value of Singapore's currency.

Empirical studies indicate that foreign workers are highly sensitive to changes in exchange rates when it comes to remittances. When the ringgit appreciates, the remittances sent home by foreign workers increase in value, making Malaysia a more appealing destination. Conversely, a depreciating ringgit can discourage potential migrants or lead existing workers to seek employment in other countries with more favourable exchange rates.

Theories of labour economics suggest that wage differentials are a primary driver for labour migration. Exchange rate fluctuations can significantly alter these differentials. For example, if the ringgit depreciates, the real wages (in terms of the home country currency) of foreign workers decrease, reducing the supply of willing labour. On the other hand, an appreciating ringgit enhances real wages and can increase the supply of foreign labour.

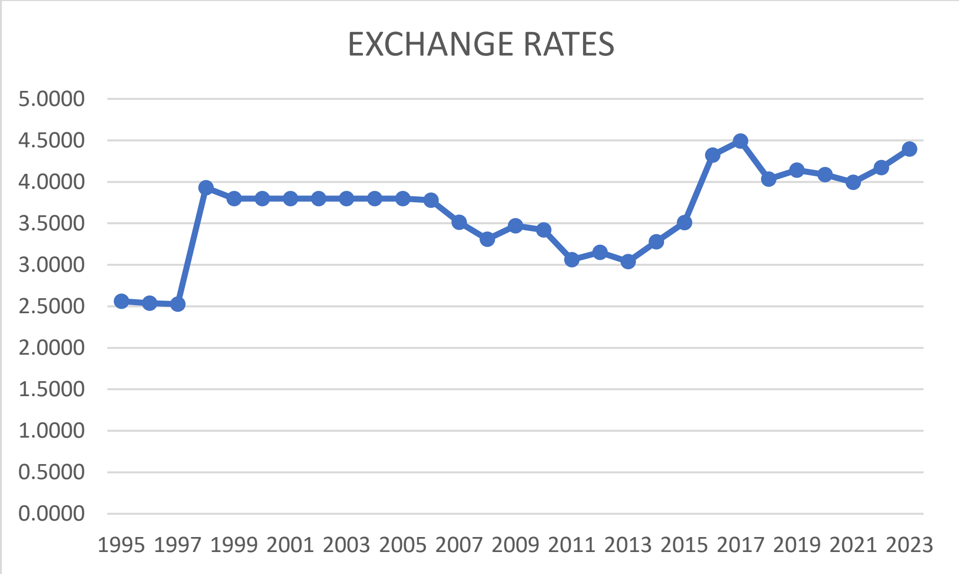

Figure 1.4: Exchange Rate

The exchange rate data for Malaysia from 1995 to 2023 shows a significant fluctuation influenced by both domestic and international economic conditions. In the mid-1990s, the Malaysian Ringgit (RM) maintained relative stability against the US dollar, with rates around RM 2.5610 in 1995, slightly decreasing to RM 2.5265 by 1997. The Asian financial crisis in 1997-1998 led to a sharp devaluation of the Ringgit, with the exchange rate spiking to RM 3.9300 in 1998. In response, the government fixed the Ringgit at RM 3.8000 to the US dollar from 1999 to 2005, bringing stability and assisting in regaining investor confidence.

After the peg was lifted in 2005, the Ringgit began to appreciate, reaching RM 3.5130 in 2007, driven by strong economic fundamentals and increased foreign investment. The 2008 global financial crisis saw a temporary depreciation to 3.4715 in 2009, reflecting global economic uncertainty. However, the Ringgit strengthened again in the early 2010s, reaching RM 3.0640 in 2011, supported by strong economic growth and commodity exports.

From 2014 onwards, the exchange rate began to show volatility due to various factors, including fluctuating oil prices, political instability, and global economic shifts. The Ringgit depreciated significantly in 2015, reaching RM 3.5100, and further to 4.3235 in 2016, reflecting concerns over low commodity prices and domestic economic challenges. Although there was some recovery in 2017 and 2018, with rates at RM 4.0325, ongoing global trade tensions and domestic issues kept the Ringgit above RM4.0000.

The COVID-19 pandemic in 2020 brought about further economic uncertainty, but the Ringgit showed some resilience, with the rate at RM4.0865 in 2020 and slightly improving to

RM3.9965 in 2021 due to global economic support measures. However, post-pandemic recovery pressures and rising global inflation led to depreciation again, with the exchange rate reaching RM 4.1710 in 2022 and further to RM 4.3955 in 2023. In general, the patterns of exchange rates show how Malaysia's economy is able to adjust to changes in the international market, the actions of the government, and shifting external economic forces.

One of the pressing issues revolves around the vulnerability of foreign workers to economic fluctuations, especially during times of economic uncertainty or downturns. For instance, during economic contractions, unemployment rates typically rise, which may lead to shifts in the demand for foreign labour. Meanwhile, economic expansion, reflected in rising GDP, often leads to an increased demand for labour, attracting more foreign workers to fill gaps that cannot be met by the local workforce alone. Additionally, exchange rate fluctuations play a crucial role in determining the financial attractiveness of Malaysia for foreign workers, as these rates impact the real value of their remittances. Understanding how these macroeconomic factors influence foreign labour trends is therefore critical to forming labour policies that safeguard both the economy and the well-being of foreign workers.

Despite a substantial body of research examining the impact of macroeconomic variables on labour markets, a notable gap exists in the specific context of foreign labour in Malaysia. Most studies tend to focus on the overall labour market or local workforce dynamics, with limited attention paid to the unique macroeconomic sensitivities associated with foreign workers. This gap underscores the need for a targeted analysis to provide insights into how GDP, unemployment rates, and exchange rates interact to influence Malaysia's foreign labour force. By addressing this gap, the present study aims to contribute to a deeper understanding of foreign worker dynamics in Malaysia's evolving economic landscape, providing a foundation for policies that are both economically sound and socially responsible.

In context of these issues, this study is crucial because it not only examines the financial aspects of Malaysia's reliance on foreign labour but also aims to provide guidance for policy decisions that will facilitate the efficient management of foreign labour flows. Since Malaysia's labour market and macroeconomic environment are closely related, this study is essential for determining the major factors influencing foreign workers. This will provide insightful information to economists and policymakers who are concerned with sustaining economic growth while maintaining a balanced labour force.

1.2 Problem Statement

Foreign workers are a necessary human resource for fill the vacancies that exist in various job sectors in Malaysia. The number of foreign workers in Malaysia is increasing significantly each year. Among the main factors in the increase in the number of foreign workers in Malaysia are economic, cultural, social and political stability factors, said Ismail et al. (2017). As a result, Malaysia has the fourth highest proportion of foreign workers to the total population in East Asia, behind Hong Kong, Singapore, Macao, Brunei, Australia, and New Zealand, according to data from the World Bank (2015). It also has the fourth highest number of foreign workers overall, behind Thailand, Australia and Hong Kong. As a growing nation, Malaysia greatly depends on foreign labour to meet labour market demands, particularly in the industrial, construction, and agricultural sectors. This is because employers choose to hire foreign workers, who are less expensive during labour shortages, rather than increasing wages and improving working conditions to attract local workers. With the restriction on hiring new foreign workers and the increase in the foreign worker levy that was put into effect at the beginning of 2016, the topic of foreign labour has become one of the most talked-about topics in Malaysia.

Although the Malaysian government has chosen to stop accepting more foreign workers, this decision could have some unintended consequences. For example, the nation is now critically short on labour in a few key industries. Inefficient productivity could result from this, making it difficult for businesses to satisfy customer needs in the impacted industries. If locals are willing to accept job offers, this could help local workers in that there will be more job opportunities for them and the labour shortage issue can be resolved. However, if locals are unwilling to accept job offers and the vacant '3D' (dirty, dangerous and difficult) job positions remain unfilled, it could also be negative to the Malaysian economy (Ismail et al., 2017). Aside from that, employers are extremely concerned about the increase in the foreign worker levy because it occurred during a period of high business expenditures and the approaching increase in the minimum wage. Due to the greater pay, this may cause firms to become less likely to hire local workers and instead search for undocumented immigrant labour, which could have an impact on social security in the nation. Moving forward, Malaysia needs to fulfil a number of requirements in order to draw in international labour. In order for the government to customize policies to help boost the Malaysian labour market, it is necessary that different factors impacting the inflow and outflow of foreign labour in Malaysia be identified. Besides from that, the COVID-19 pandemic has also caused in lack of employment and the returning of foreign workers to their nation of origin. Between May and July 2020, the number of COVID-19 cases among migrant workers increased significantly (Wahab, 2020).

According to the UN's International Organization for Migration, about 2.2 million migrant workers in Malaysia comprise 15% of the country's 15 million workers, which is already the maximum amount allowed by the government under the country's 12th Malaysia Plan. However, unofficial estimates claim that there are millions more unauthorized migrant workers in the nation. An addition, there were 2.1 million documented foreign workers in the country as of June 2022, accounting for approximately 14% of the total workforce, according to the Department of Statistics Malaysia (2022). Prior to hiring foreign workers, Indonesia accounted for the majority of labour migration. Nonetheless, hiring of foreign labour has increased in other Asian countries like Thailand, Philippines and the Bangladesh. Each sector's workforce is comparatively divided based on the nations from which its workers originate. Due to Ministry of Home Affairs Malaysia (MOHA), Bangladeshi workers are mostly employed manufacturing, Indonesians are mostly employed in agriculture and maid services, while Vietnamese workers are primarily employed in the construction industry. However, the influence of foreign workers on labour productivity in Malaysia remains a topic of debate (Tajuddin et al., 2023).

There are various factors that cause the influx of foreign workers in Malaysia. Ibrahim et al. (2023) said that strategic geographic factors, religious and cultural similarities as well as the high unemployment rate in the country of origin and more open job opportunities in Malaysia influence their migration to this country. The economic landscape of Malaysia is significantly influenced by its Gross Domestic Product (GDP), which serves as comprehensive measure of national economic performance. In this context, the foreign labour force is a critical component, supporting various sectors such as manufacturing, construction, and services. Based on Al Masud et al. (2020), due to the creation of jobs and the accumulation of capital, some research indicates a favourable association between migrant workers and economic growth; nevertheless, many other studies contend that the arrival of unskilled immigrants has a negative impact on economic progress. Despite the acknowledged importance of foreign workers in sustaining Malaysia's economic growth, there is limited understanding of how fluctuations in GDP specifically impact this segment of the labour market.

The unemployment rate is a vital indicator of labour market health and economic stability, reflecting the availability of jobs and the ability of the economy to absorb its workforce. In Malaysia, the presence of a substantial foreign labour force plays a pivotal role in various industries, contributing significantly to the country's economic activities. However, there is a lack of comprehensive research on how fluctuations in the unemployment rate affect the foreign labour market specifically.

Narayanan and Lai (2005) claim that even in cases when the jobs being done are equivalent, foreign workers are more likely than locals to accept lower pay and worse working conditions. One of the things that is thought to draw in foreign workers is a stronger exchange rate compared to their own currency. The home country's real price level is consistently lower than the destination country's, and foreign workers maximize their cross-border spending mix by sending money to their families who remain behind (World Bank, 2016). In fact, the decision to migrate is actually influenced by the real rate of currency in a number of ways.

Overall, the labour force of foreign workers plays a critical role in Malaysia's economic development, contributing significantly to various sectors such as construction, manufacturing, and services. However, the dynamics of this labour force are influenced by a wide range of macroeconomic variables. This study seeks to explore the influence of key macroeconomic indicators—Gross Domestic Product (GDP), unemployment rate, and exchange rate—on the labour force of foreign workers in Malaysia. Despite extensive research on general labour market trends, there is a paucity of studies specifically addressing how these macroeconomic variables affect the foreign labour segment in Malaysia. Understanding these relationships is crucial for policymakers to formulate strategies that optimize labour market efficiency and economic stability. The problem statement thus focuses on investigating how fluctuations in GDP, variations in the unemployment rate, and changes in the exchange rate impact the demand, supply, and overall stability of foreign workers in Malaysia. This research aims to fill the existing knowledge gap by providing empirical evidence and insights into the macroeconomic determinants that shape the foreign labour market in Malaysia.

Hence, in this related problem, the question will be addressed are: 1) Does Gross Domestic Product (GDP) influence the inflow or outflow of foreign labour in short-run and long-run? 2) Does unemployment rate influence the inflow or outflow of foreign labour in short-run and long-run? 3) Does exchange rates influence the inflow or outflow of foreign labour in short-run and long-run? The motivation for this study is to examine the nexus between foreign labour force, gross domestic product, unemployment rate, exchange rate in the context of Malaysia. To achieve the objectives, the methods to be adopted for this study are by performing cointegration tests for the integrated variables and ARDL framework.

1.3 Conceptual Framework

The focal point of this research is the yearly data of foreign labour force, gross domestic product, unemployment rate, and exchange rate of Malaysia. The conceptual framework including the causality linkage between variables namely, foreign labour (FL), Gross Domestic Product (GDP), unemployment rate (UNMP), and exchange rates (EXCH), and the framework of methodology for this research.

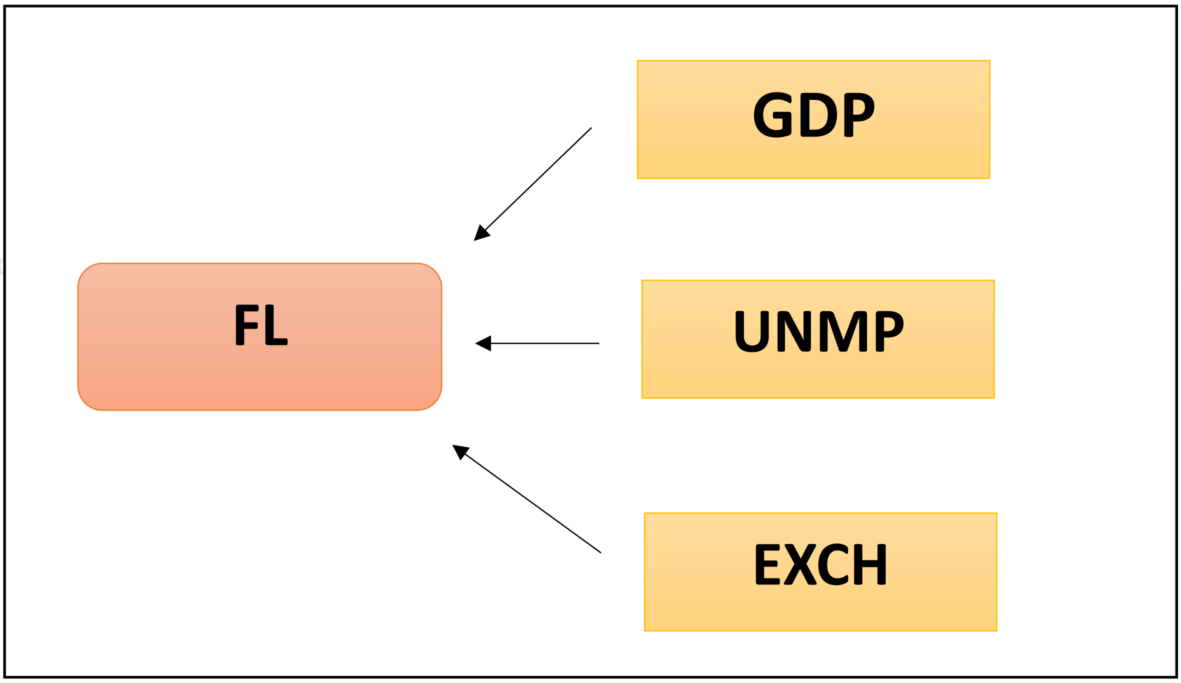

Figure 1.5: Nexus relationship between dependent variable (FL) and independent variables

The Figure 1.1 shows the FL is represented as the dependent variable, and GDP, UNMP, and EXCH are independent variables. Based on the research background and the discussion problem statement between the dependent variable, Foreign Labour and each of the independent variables which are GDP, Unemployment Rate, and Exchange Rate, the above theoretical framework can be developed.

According to Massey at al. (1993), although there is elasticity in the labour supply, workers will typically migrate to a country with higher wages if they are paid less. In contrast, countries with a higher GDP tend to have higher standards of living, greater levels of well-being, and higher income levels relative to those with a lower GDP, according to Brooks (2014), who also noted that GDP measures the entire income of everyone in the economy. Besides, the majority of studies investigating the factors influencing international migration agreed that GDP has a favourable impact on the labour force of foreigners.

Next, the International Organization of Migration (IOM, 2010) states that one of the primary motivators behind international migration is unemployment. Abd Rahim et al. (2017) explained that it is therefore anticipated that there will be a positive correlation between immigration and unemployment. Conversely, neoclassical theories suggest that an increase in a nation's unemployment rate corresponds with a decrease in the inflow of foreign workers.

Furthermore, the exchange rate is also one of the important variables. Based on Quibria (1986), the number of foreign workers is positively correlated with a country's exchange rate, meaning that a higher exchange rate corresponds to a larger number of foreign workers. However, is there have negative relationship between exchange rate and foreign labour force? If there are significant migration expenses, international workers may not have sufficient funds to work in a nation with a strong currency rate. When compared to higher income nations like the US and Australia, Malaysia's migration costs are quite modest and reasonable. As a result, this analysis anticipates a positive correlation between the real exchange rate and the labour force of foreign nationals.

Referring to the framework of Figure 1.1, the results of this research can be varied with three categories: unilateral relationship, feedback relationship, and no relationship between focused variables. In order to identify the relationship among variables in the analysis, autoregressive distributed lag (ARDL) is selected to do the analysis for this research. As Figure 1.2 exhibit, prior to conduct ARDL, each data is compulsory to run the unit root test to assure the data were non-stationary at level form. As the data is non-stationary, the data shall be stationary at the first difference to succeed the following analysis such as ARDL Bound Test, Coefficient Estimation, construct error correction model (ECM), and stability of the models (CUSUM & CUSUMQ) to make sure that the robustness of the specified models both in the long-run and short-run have stability coefficients in this study.

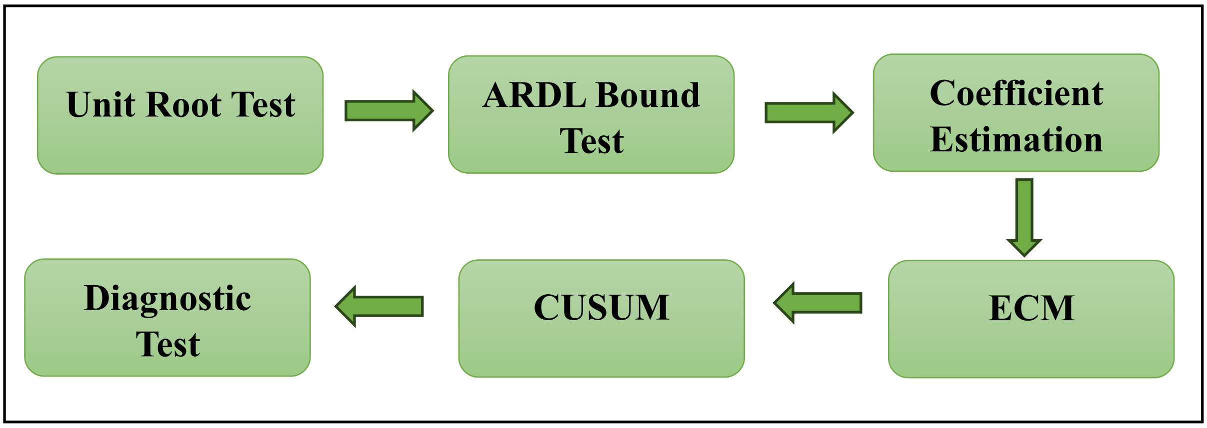

Figure 1.6: Methodology framework

1.4 Research Questions

There are several research questions to meet the objectives of this study. The research questions that will be carried out as follow;

1. There is exist short-term relationship between foreign labour with Gross Domestic Product (GDP), unemployment rate, and exchange rate in Malaysia using the ARDL approach?
2. There is exist long-term relationship between foreign labour with Gross Domestic Product (GDP), unemployment rate, and exchange rate in Malaysia using the ARDL approach?

1.5 Research Objectives

The general objective of this study is to find how foreign labour is influenced by the independent variables by using the ARDL model to identify both short-term and long-term effects.

1. To estimate the short run relationship between foreign labour with Gross Domestic Product (GDP), unemployment rate, and exchange rate in Malaysia.
2. To estimate the long run relationship between foreign labour with Gross Domestic Product (GDP), unemployment rate, and exchange rate in Malaysia.

1.6 Research Hypothesis

Based on the research questions revealed, the hypothesis of whether the GDP, unemployment rate and exchange rate influence the foreign labour will be tested. The hypothesis is developed as below:

1) H_0: There is no short run relationship between foreign labour with Gross Domestic Product (GDP), unemployment rate, and exchange rate in Malaysia.
   H_1: There is short run relationship between foreign labour with Gross Domestic Product (GDP), unemployment rate, and exchange rate in Malaysia.
2) H_0: There is no long run relationship between foreign labour with Gross Domestic Product (GDP), unemployment rate, and exchange rate in Malaysia.
   H_1: There is long run relationship between foreign labour with Gross Domestic Product (GDP), unemployment rate, and exchange rate in Malaysia.

1.7 Scope of Study

The scope of this research encompasses an in-depth analysis of the influence of macroeconomic variables, specifically Gross Domestic Product (GDP), unemployment rate, and exchange rate on the labour force of foreign workers in Malaysia from 1995 to 2023. Utilizing the Autoregressive Distributed Lag (ARDL) approach, the study aims to explore both the short-term and long-term relationships between these macroeconomics indicators and the employment dynamics of foreign workers.

The period of study, spanning nearly three decades, allows for a comprehensive examination of various economic cycles and policy changes that have impacted the Malaysian labour market. By focusing on GDP growth, the research will assess how economic expansion or contraction affects the demand for foreign labour. The examination of unemployment rates will provide insights into how domestic labour market conditions influence the employment opportunities for foreign workers. Additionally, the study will analyse the effects of exchange rate fluctuations on the financial well-being of foreign workers, particularly in terms of their remittance behaviours. This holistic approach aims to provide a detailed understanding of the interplay between macroeconomic variables and the foreign labour force, offering valuable insights for policymakers and stakeholders involved in labour market and economic planning.

1.8 Definition Operational

1.8.1 Foreign Labour

Foreign workers or non-citizen workers are people who leave their usual place of residence to work and serve in another country either as an employee or an employer in that country. Foreign labour or migrant workers are mainly engaged in labour-intensive jobs such as agriculture, manufacturing, construction, and domestic care, which benefit both countries of origin and migrant countries and contribute to economic growth (Cho et al., 2024).

1.8.2 Gross Domestic Product

GDP is a measure of the total value of production of all resident producing units of a country in a specified period, before deducting allowances for consumption of fixed capital (Department of Statistics Malaysia, 2024). Indubitably, Gross Domestic Product (GDP) is one of the most crucial aggregate variables to assess the size and performance of the economy (Sekine, 2022). A producing unit is considered as resident in a country if it retains its central economic interest in the economic territory of that country. The economic territory of a country consists of the geographic territory administered by a government within which persons, goods and capital circulate freely. GDP can be measured by using three approaches namely production approach (the sum of value added), expenditure approach (the sum of final expenditure) and income approach (the sum of incomes distributed by resident producer unit).

1.8.3 Unemployment Rate

There are several issues related to this definition of unemployment. The most important one is the person who is currently without a job, who potentially could be available for work but nevertheless in currently not actively seeking a job – this person is not considered to be among the unemployed because he/she is also not part of the workforce (Institute of Labour Market Information and Analysis, 2024). High unemployment rates indicate that there is a critical inefficiency in locating human resources (Ramli et al., 2018).

1.8.4 Exchange Rate

The exchange rate defined as the rate at which the one currency trades against another on the foreign exchange market, for example, Malaysia ringgit (RM) against the US dollar (USD). It may be expressed as the average for a period of time or as the rate at the end of the period. To determine the real value of money of a country. Rodrik (2008) tested the management of real exchange rate is fundamental for macroeconomic factor which currency undervaluation (a high real exchange rate) stimulates economic growth for developing countries. At the same time, when the exchange rate changes become unpredictable, it may harm the open economy because of facing the uncertainty regarding the agreement with other countries (Morina et al., 2020) which accordance with the reviews of Lubis and Abdul Karim (2021), there are two views on the determination of exchange rate when the exchange rate appreciates or depreciates for economic growth.

1.9 Limitation of Study

One limitation of this study on the influence of macroeconomic variables which are GDP, unemployment rate, and exchange rate on the labour force of foreign workers in Malaysia using the ARDL approach from 1995 to 2023 is the potential for data inconsistency and availability issues over such an extended period. Given the span of nearly three decades, there may be gaps in data, changes in data collection methodologies, and varying degrees of data accuracy, particularly in the early years of the study period.

Additionally, the ARDL approach, while robust for identifying short-term and long-term relationships, may not fully account for structural breaks or significant policy shifts that could have occurred over the study period. These structural changes in the Malaysian economy or labour market policies could introduce biases or inconsistencies in the results. Moreover, the study may face limitations in isolating the specific effects of each macroeconomic variable on the foreign labour force due to the interconnected nature of economic indicators and external global economic influences, which might also impact the Malaysian labour market but are beyond the scope of this study.

1.10 Significance of Study

The significance of studying the influence of the selected macroeconomic variables on the labour force of foreign workers in Malaysia from 1995 to 2023 by using an ARDL approach lies in its multifaceted contributions to economic theory, policy-making, and socio-economic development. This research addresses a critical area of labour economics by exploring how key macroeconomic indicators impact the labour force participation of foreign workers in Malaysia, a country that relies heavily on foreign labour to sustain its economic growth. Understanding these dynamics is crucial for designing informed and effective labour and immigration policies that balance economic needs with social and political considerations.

Firstly, this study contributes to the existing literature by providing empirical evidence on the relationship between macroeconomic variables and the foreign labour force using the Autoregressive Distributed Lag (ARDL) model. This methodological approach allows for robust analysis of both short-term and long-term effects, offering a comprehensive understanding of the dynamic interactions between GDP, unemployment rates, exchange rates, and foreign labour force participation. The period from 1995 to 2023 encompasses significant economic events, including the Asian financial crisis, the global financial crisis, and the COVID-19 pandemic, making the findings relevant for understanding the resilience and adaptability of Malaysia's labour market to macroeconomic shocks.

Secondly, the study's findings have significant policy implications. Policymakers can leverage the insights gained to craft strategies that optimize the benefits of foreign labour while mitigating potential negative impacts on domestic employment. For instance, understanding how GDP growth or economic downturns influence foreign labour demand can help in forecasting labour needs and adjusting immigration policies accordingly. Additionally, insights into the effects of exchange rate fluctuations can inform strategies to stabilize the labour market and ensure that foreign workers remain a viable component of Malaysia's economic framework without exacerbating unemployment rates among local workers.

Moreover, this research highlights the socio-economic dimension of labour force participation, addressing how foreign workers contribute to and are affected by Malaysia's economic landscape. By examining long-term trends and immediate responses to economic changes, the study provides a nuanced perspective on the integration of foreign workers into the Malaysian economy. This is particularly pertinent given the global trends in labour mobility and the increasing interdependence of national economies.

Lastly, the study's temporal scope from 1995 to 2023 provides a rich dataset that captures various phases of economic development and policy changes in Malaysia. This longitudinal analysis allows for a deeper understanding of how consistent or variable the influence of macroeconomic factors has been over nearly three decades. The ARDL approach further enhances the robustness of the study by addressing potential issues of non-stationarity in the data, ensuring that the findings are both reliable and applicable in real-world policy contexts.

1.11 Summary

This study investigates the influencing of gross domestic product, unemployment rate, and exchange rate on foreign labour in Malaysia. This research not only fills a gap in the academic literature by providing empirical analysis of macroeconomic impacts on foreign labour force participation in Malaysia but also offers practical insights for policymakers aiming to balance economic growth with labour market stability. The outcomes of this study are poised to inform both national strategies and broader discussions on the role of foreign labour in emerging economies.