



Determinants of Unemployment Rates in Upper Middle Income Asian Countries

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This study aims to determine the determinants of unemployment rates in upper-middle-income Asian countries from 2000 to 2023. This study uses the Autoregressive Distributed Lag (ARDL) method. The analysis results show that in the long run, economic growth, foreign direct investment, income openness, and government consumption expenditure have a significant negative effect on unemployment. Conversely, urban population growth has a significant positive effect on unemployment. Meanwhile, in the short run, only urban population growth can have a significant negative impact on unemployment. Meanwhile, the one-year lag coefficient of foreign investment is proven to be positive and significant on unemployment. These findings imply that unemployment reduction is mainly determined by long-term structural policies that encourage economic growth, foreign direct investment, trade openness, and the effectiveness of government spending. The impact of urbanization on increasing unemployment emphasizes the need for integrated urban planning with formal job creation. Meanwhile, the weak short-term effect reflects the delay in labor market adjustment that requires supportive policies during the transition phase.

INTRODUCTION

Throughout history, almost every country in the world has faced unemployment (Wang *et al.*, 2021). This persistent rise in unemployment has resulted in higher levels of poverty and inequality (Su *et al.*, 2022). According to the International Labour Organization (ILO), unemployment is widely recognized as a crucial indicator of a country's labor market performance and the economy's capacity to create good jobs for those seeking them (ILO, 2019). Unemployment as an economic term emerged in the 1930s, and the definition of this phenomenon refers to people who are unemployed but actively seeking work (Card, 2011).

To address unemployment, countries must respond to this development with appropriate

macroeconomic policy measures (Omay *et al.*, 2021). Policymakers and researchers must recognize that unemployment is a global problem that requires immediate attention (Mbunge *et al.*, 2021). Although the causes of unemployment are complex and diverse, implementing effective policies to address this issue is crucial. These policies are not only for individual well-being but also to encourage sustainable economic development. Therefore, unemployment is one of the main challenges facing both developing and developed countries in creating economic stability capable of optimally absorbing the workforce. In the context of the Asian region, unemployment rates remain a serious problem requiring immediate attention, as seen in the figure below.

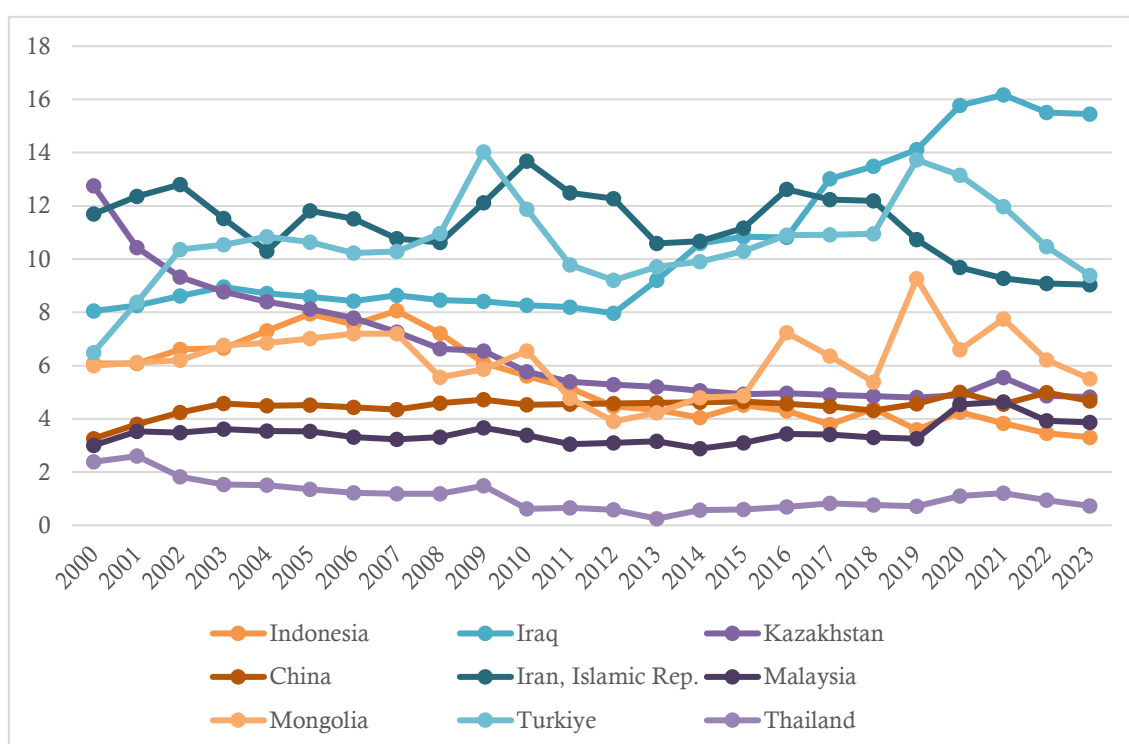


Figure 1. Unemployment Rate, total 2000-2023

Source: Word Bank, 2025 (Processed)

The figure above shows that unemployment trends vary significantly between countries from year to year. Furthermore, some countries experience relatively high unemployment rates. The highest unemployment rate was in Iraq, at 16.17% in 2021. The lowest was in Thailand, at 0.24% in 2013. This

demonstrates that unemployment is a crucial economic challenge for upper-middle-income Asian countries. Being an upper-middle-income economy does not always guarantee adequate and stable employment opportunities. Most countries in the region experience growth without adequate employment, labor market

inefficiencies, and skills gaps. What underlies these varying labor market conditions across countries? Answering this question requires a more accurate understanding of how unemployment behaves in the region and the factors that influence it.

Numerous empirical studies link unemployment to various macroeconomic variables. One such variable is economic growth, widely considered a key driver of employment, following Okun's Law. According to Okun (1963) there is an inverse relationship between unemployment and economic growth. Furthermore, Okun's Law generally states that every one percent increase in the unemployment rate is associated with a decrease of approximately two percent in economic growth, as measured by gross domestic product (GDP) (Cuaresma, 2003). Furthermore, Okun's statement is corroborated by Louail dan Benarous (2021) who argue that understanding the phenomenon of unemployment is crucial to understand how economic growth and the unemployment rate interact.

Previous research has examined the relationship between unemployment and economic growth in the economic literature. Mehry et al. (2021) study of 35 developing countries provides clear evidence of Okun's law, suggesting that economic growth can reduce unemployment. Similarly, studies by Chen (2022) and Ang (2022) observed negative signs for both the long-run and short-run coefficients between unemployment and GDP growth in both developed and developing Asian countries. Although many studies confirm Okun's law, others contradict it. Research in Indonesia and India shows that proportional employment growth does not always follow GDP growth, implying a certain level of unemployment growth (Aggarwal, 2021). This is due to low job creation and high unemployment rates caused by low economic growth with inefficient and unproductive labor markets (Arestis et al., 2023).

Another important factor in reducing unemployment is foreign direct investment (FDI). This investment is crucial because it can increase domestic savings, increase production

capacity, and create employment (Khan et al., 2023). Pro-FDI groups consider FDI to be quite effective in increasing efficiency in the productive sector, stimulating change for faster economic growth, creating jobs, boosting growth, and improving income distribution by raising wages in the host country and creating more jobs, thus reducing unemployment (Karimov et al., 2020). FDI is believed to bring more jobs, which can reduce unemployment rates in host countries (Alkofahi, 2020; V. B. Nguyen, 2022). While this assertion is supported by various research papers, others challenge it. In Asian countries, FDI actually increases unemployment (Tran et al., 2023; Komarlina et al., 2025). This suggests that FDI does not always reduce unemployment in host countries (Warsame & Mohamed, 2023).

Trade openness is also seen as a strategic factor influencing unemployment dynamics. The basic paradigm describing the relationship between openness and unemployment can be traced back to the Heckscher-Ohlin theory of comparative advantage (Heckscher 1919; Ohlin 1933). According to the Heckscher-Ohlin theory of comparative advantage, trade openness lowers unemployment if the economy has abundant labor and increases unemployment if the country relies on capital-abundant technology (Dutt et al., 2009). Both developed and developing countries have utilized foreign policy to increase productivity and job creation (Spohr & Silva, 2017). Consequently, increased trade openness can be a prerequisite for creating more jobs (Bhat & Beg, 2023).

Studies in India and Malaysia provide evidence that trade openness can contribute to reducing unemployment (Amin et al., 2023; Wen et al., 2022). Thus, trade openness can be considered a mechanism that encourages employment and reduces unemployment. Despite these benefits, trade openness can also destroy employment opportunities in low- and middle-income countries (Pal & Villanthenkodath, 2024). Studies in ASEAN countries show increased unemployment due to competition from domestic and foreign companies (Prasetyo, 2022). This suggests that the benefits a country derives from trade

openness depend heavily on its overall economic conditions and its ability to scale incomes.

The government seeks to reduce unemployment and mitigate its impact through fiscal policy. The question of whether fiscal policy is effective in reducing unemployment remains unanswered. The theoretical and empirical literature shows an inconclusive relationship between government spending and unemployment. This is primarily due to differences in economic conditions across countries and the fact that different types of government spending can have conflicting effects on employment levels. The Keynesian approach argues that public sector activity influences the market in ways that demand and create full employment, and emphasizes the need for the state to play an active role in preventing unemployment through financial instruments (public spending) (Kanca & Bayrak, 2015).

Several studies have examined the relationship between government spending and unemployment in the literature. Studies in Indonesia and Nigeria found that government spending had a significant and negative effect on unemployment (Bahri, 2019; Onodugo et al., 2017). This finding consistently corroborates these findings (Holden & Sparrman, 2018). However, Abrams (1999) revealed a positive relationship between government spending and unemployment. This result was then expressed as the Abrams Curve. This argument is confirmed by Abouelfarag dan Qutb (2021), who found clear evidence that government spending increases the unemployment rate. Therefore, the effectiveness of government spending in reducing unemployment depends heavily on the quality of spending and the readiness of the workforce.

In addition to the factors mentioned above, population growth in urban areas also has the potential to influence unemployment rates. Labor market studies in developing countries began with the Dual-Sector Model of labor markets proposed by Lewis (1954) which argued that the movement of labor from the traditional (rural) sector to the modern (urban) sector was considered productive because the modern sector was able to absorb surplus labor from rural areas.

However, Todaro (1969) argued that Lewis's model did not fit the evidence. Todaro expanded Lewis's model by adding a third sector, the traditional urban sector, where migrants generally undergo a transitional phase in the urban informal sector before gaining access to higher-wage jobs in the modern sector.

Meanwhile, Harris and Todaro (1970) adapted Todaro's general model, stating that rural development leading to increased agricultural wages is key to eliminating urban unemployment. Urbanization that is not accompanied by job creation will increase pressure on the urban labor market. This argument aligns with that found by Maulidiyah et al. (2024), who showed that the decline in unemployment in Indonesia is related to the increasingly equitable distribution of job opportunities to rural areas, thus reducing population pressure in cities. Population growth in urban areas tends to reduce people's opportunities for engaging in precarious work (M. Chen et al., 2023).

Other studies refute Harris and Todaro's arguments. A study in Malaysia showed that urbanization has a significant negative relationship with youth unemployment (Wen et al., 2022). Consistently, studies in 47 Asian countries have shown that migration can reduce unemployment (Huynh & Vo, 2023). These results provide concrete evidence for Arthur Lewis's argument that migration flows, a key driver of urbanization, can contribute to lower unemployment rates, as population movement from rural to urban areas can meet labor needs in more productive urban areas. Meanwhile, studies in Indonesia and Pakistan show that urbanization rates have no impact on unemployment (Sakib, 2021; Puspajuita, 2018). These findings emphasize that not all urbanization dynamics automatically absorb labor, and therefore, its impact can vary across countries and time periods.

Although the literature on the determinants of unemployment has grown extensively, several gaps in previous research remain that require further attention. First, empirical evidence on the influence of

macroeconomic factors on unemployment still shows mixed results and has yet to reach a consensus. This inconsistency in findings suggests that the relationship between macroeconomic variables and unemployment is contextual and influenced by the varying economic characteristics of each country or region.

Second, most empirical evidence on the determinants of unemployment is still limited to the specifics of each country Amin *et al.* (2023); Wen *et al.* (2022); Bahri (2019) or using cross-country samples that include countries with diverse economic characteristics and income levels (Tran *et al.*, 2023; V. B. Nguyen, 2022; Mehry *et al.*, 2021). Although it provides a general picture of the determinants of unemployment, this approach has the potential to ignore the heterogeneity of economic and labor market characteristics across income groups, so that the relationship between macroeconomic factors and unemployment may differ across country groups.

Third, most previous studies have focused on partial analyses of the relationship between macroeconomic indicators and unemployment (M. Chen *et al.*, 2023; Ang, 2022; Chen, 2022; Abouelfarag dan Qutb, 2021). Therefore, empirical evidence examining the broad macroeconomic indicators of economic growth, foreign direct investment, trade openness, government consumption expenditure, and urban population growth on unemployment is still limited.

Fourth, in terms of methodology, most previous studies used static panel models Maulidiyah *et al.*, 2024; Wen *et al.*, 2022; Alkofahi, 2020). Generally they focus on estimating the average relationship between variables without explicitly distinguishing between short-term dynamics and long-term equilibrium relationships. This approach has limitations in explaining the adjustment process when economic shocks occur, so it is not able to

describe how changes in macroeconomic variables affect unemployment in the short term as well as how the system returns to long-term equilibrium. Therefore, it is necessary an econometric approach that is able to integrate these two dimensions in one comprehensive analytical framework.

Based on these research gaps, this study aims to analyze the effects of economic growth, foreign direct investment, trade openness, government consumption expenditure, and urban population growth on unemployment in upper-middle-income Asian countries during the period 2000–2023 using the Panel Autoregressive Distributed Lag (Panel ARDL) approach. Different from previous studies, this study integrates five key macroeconomic indicators in one analytical framework, focuses on a group of countries with relatively homogeneous economic characteristics, and explicitly distinguishes short-run effects from long-run equilibrium relationships. Thus, this study is expected to provide more comprehensive empirical evidence on the determinants of unemployment and enrich the literature on unemployment dynamics in upper-middle-income Asian countries.

RESEARCH METHODS

This study uses panel data and time-series data, consisting of annual data for the 24 years of analysis, from 2000 to 2023. Sample selection was carried out in three stages. First, all Asian countries categorized as upper-middle-income according to the World Bank classification were identified. Second, data availability was assessed for all study variables. Third, countries with incomplete data were excluded, resulting in a final sample of nine countries (Iraq, Indonesia, Kazakhstan, Turkey, Thailand, Malaysia, Mongolia, Iran, and China). Factors influencing unemployment rates are economic growth, foreign investment, trade openness, government consumption expenditure, and urban population growth. This review is summarized in Table 1.

Table 1. Definition and Source of Variables

Variable	Definition	Unit	Source
Total Unemployment Rate (TUR)	The proportion of the workforce that is unemployed but willing and looking for work.	%	WDI
Economic Growth (EG)	Gross Domestic Product (GDP) is the total income earned through the production of goods and services in an economic area during an accounting period.	%	WDI
Foreign Direct Investment (FDI)	Net investment inflows to acquire a continuing management interest (10 percent or more of the voting stock) in an enterprise operating in a country other than the investor's country.	%	WDI
Trade Openness (TO)	The proportion of GDP consisting of imported and exported goods and services.	%	WDI
Government Consumption Expenditure (GCE)	The expenditure of goods and services by resident institutional units to directly fulfill human needs or desires, both individual and collective.	%	WDI
Urban Population Growth (UPG)	Urban population growth is the exponential growth rate of the urban population from one year to the next.	%	WDI

Source: Data Processed, 2025

This study uses ARDL and error correction models (ECM) to capture the speed of adjustment under conditions of disequilibrium. The advantages of this method are that it simultaneously estimates short-term and long-term dynamics, accommodates various integration orders, namely, $I(0)$, $I(1)$, or a mixture of $I(0)$ and $I(1)$ variables as long as no variable is $I(2)$; and also accommodates different numbers of lags in each variable (Pesaran et al., 2001). Considering the data structure of this study with a time dimension ($T = 24$) that exceeds the country dimension ($N = 9$), the use of dynamic panel estimators such as the Generalized Method of Moments (GMM) is considered less appropriate. Instead, the ARDL approach is more appropriate, especially in the context of panel settings where $T > N$, because it allows for heterogeneity in both short-term dynamics and long-term equilibrium relationships across countries.

The empirical analysis was conducted through several sequential stages. First, descriptive statistics were employed to summarize the characteristics of the variables. Second, panel unit root tests were performed to determine the order of integration and ensure

that none of the variables was integrated of order $I(2)$, which is a prerequisite for the Panel ARDL approach. Third, the Kao cointegration test was conducted to verify the existence of a long-run equilibrium relationship among the variables. Fourth, the optimal lag structure was selected based on the Schwarz Information Criterion (SIC). Fifth, the Hausman specification test was performed to identify the appropriate estimator by comparing the Pooled Mean Group (PMG), Mean Group (MG), and Dynamic Fixed Effects (DFE) estimators. Finally, the selected PMG-ARDL model was estimated to examine the short-run dynamics and long-run equilibrium relationships, while the Error Correction Term (ECT) was used to assess the speed of adjustment toward the long-run equilibrium following short-run shocks. All empirical analyses were conducted using EViews 13.

The Panel ARDL model and its corresponding Error Correction Model (ECM) specification are presented in Equations (1) and (2), respectively.

$$TUR_{it} = \beta_0 + \beta_1 EG_{it} + \beta_2 FDI_{it} + \beta_3 TO_{it} + \beta_4 GCE_{it} + \beta_5 UPG_{it} + \varepsilon_{it} \dots\dots\dots (1)$$

Where, TUR_{it} denotes the total unemployment rate in country iii at time ttt , while EG , FDI , TO , GCE , and UPG represent economic growth, foreign direct investment, trade openness, government consumption expenditure, and urban population growth, respectively. Equation (1) captures the long-run relationship between the total unemployment rate and its determinants. The parameter β_0 denotes the intercept, β_1 - β_5 are the long-run coefficients, and ε_{it} is the stochastic error term.

$$\Delta TUR_{it} = \phi_i ECT_{i,t-1} + \sum_{j=1}^{p-1} \delta_{ij} \Delta TUR_{i,t-j} + \sum_{j=0}^{q-1} \beta_{1ij} \Delta EG_{i,t-j} + \sum_{j=0}^{q-1} \beta_{2ij} \Delta FDI_{i,t-j} + \sum_{j=0}^{q-1} \beta_{3ij} \Delta TO_{i,t-j} + \sum_{j=0}^{q-1} \beta_{4ij} \Delta GCE_{i,t-j} + \sum_{j=0}^{q-1} \beta_{5ij} \Delta UPG_{i,t-j} + \varepsilon_{it} \dots \dots \dots (2)$$

Where, Equation (2) represents the error correction form of the Panel ARDL model. The coefficient ϕ_i denotes the speed of adjustment parameter, which measures the rate at which short-run deviations from the long-run equilibrium are corrected. The term $ECT_{i,t-1}$ is the lagged error correction term that captures the long-run equilibrium relationship among the variables. The coefficient δ_{ij} represents the short-run persistence of the total unemployment rate, while β_{1ij} , β_{2ij} , β_{3ij} , β_{4ij} and β_{5ij} measure the short-run effects of changes in economic growth, foreign direct investment, trade openness, government consumption expenditure, and urban population growth, respectively. The parameter ε_{it} denotes the disturbance term. A negative and statistically significant value of ϕ_i confirms the existence of a long-run equilibrium relationship and indicates the speed at which the system returns to equilibrium following a short-run shock.

RESULTS AND DISCUSSION

Based on the descriptive statistics in Table 2, the average unemployment rate in the upper-middle-income region of Asia is 6.63%. This value indicates that although countries in this

region are upper-middle-income economies, employment challenges remain significant. Iraq recorded the highest unemployment rate at 16.17% in 2021, while Thailand recorded the lowest at 0.24% in 2013, indicating structural disparities in labor market efficiency. The average regional economic growth rate was 3.71%, with significant variation across countries. Iraq had the highest growth rate at 49.07% in 2004, while experiencing the deepest contraction of -38.53% in 2003. Meanwhile, foreign direct investment averaged 3.25%. The maximum value of 43.91% and the minimum of 37.17% occurred in Mongolia, indicating that the dynamics of foreign capital flows are sensitive to external conditions such as commodity prices and investment policies.

The region's trade openness averaged 84.44%, underscoring the region's reliance on international trade as a driver of growth. Malaysia recorded the highest openness at 220.40% in 2000, while Indonesia had the lowest at 32.97% in 2020, reflecting variations in global economic integration and countries' ability to leverage trade as a growth channel. The average government consumption expenditure in the region was recorded at 13.54% of GDP. The highest value was observed in Iraq in 2004, reaching 25.56%, reflecting the government's dominant fiscal role during that period. Conversely, Indonesia recorded the lowest value in 2000, at only 6.53%, reflecting the relatively low government spending capacity to support strategic economic functions during that period. In addition, urban population growth showed an average of 2.47%, with Iraq again being the country that recorded the most striking fluctuations, namely the highest value of 4.95% in 2013 and the lowest value of -0.71% in 2007. This pattern reflects the fluctuating dynamics of urbanization, which are likely influenced by changes in socio-economic conditions, population mobility, and structural adjustments in the country.

Table 2. Descriptive statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
TUR	216	6.6317	3.6803	0.24900	16.17300
EG	216	3.7106	5.9282	38.5382	49.0739
FDI	216	3.2563	5.9719	-37.1727	43.9121
TO	216	84.447	42.752	32.972	220.4068
GCE	216	13.541	3.0175	6.5320	25.5637
UPG	216	2.4782	0.9144	-0.7106	4.95605

Source: Data Processed, 2025

Table 3. Panel Unit Root Test

Variable	Diff.	Intercept/trend	LLC	Im, PS	ADF	PP	Decision
TUR	Level	Intercept	-5.4162***	-3.9531***	61.1225***	66.4723***	I(0)
		Interc. & trend	-3.9387***	-2.9429***	43.0543***	42.6309***	
EG	Level	Intercept	-8.9545***	-7.7145***	93.6091***	105.112***	I(0)
		Interc. & trend	-1.0036***	-7.7359***	83.2548***	97.7858***	
FDI	Level	Intercept	-3.6431***	-4.3950***	56.0459***	72.8962***	I(0)
		Interc. & trend	-4.8836***	-5.1597***	59.2618***	87.0791***	
GCE	Level	Intercept	-3.0517***	-4.2886***	55.8617***	56.5398***	I(0)
		Interc. & trend	-2.7511***	-3.4192***	52.9535***	47.6970***	
TO	Level	Intercept	-1.8115**	-0.4731	22.4436	21.5829	I(1)
		Interc. & trend	-3.0928***	-2.0428**	32.2911**	15.1013	
	1 st Diff	Intercept	-11.4205***	-11.3965***	134.393***	139.360***	
		Interc. & trend	-9.5123***	-10.0041***	108.314***	142.321***	
UPG	Level	Intercept	-1.2338	0.0105	28.0286*	23.4592	I(1)
		Interc. & trend	-4.9057***	-6.5941***	125.877***	73.1885***	
	1 st Diff	Intercept	-19.867***	-17.659***	293.393***	325.685***	
		Interc. & trend	-16.578***	-15.2176***	348.258***	369.895***	

Note: significance * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Source: Data Processed, 2025

Before using other econometric techniques, a unit root should be tested to check whether the variable is stationary or not. The first generation unit root tests used include the Levin, Lin, and Chu (LLC) test by Levin, Lin dan Chu (2002), the Im, Pesaran, and Shin (IPS) test by Im et al. (2003), the Fisher-augmented Dickey–Fuller (ADF) test by Maddala dan Wu (1999), and the Fisher-Phillips-Perron (PP) test (Phillips & Perron, 1988). These tests were applied to ensure the stationarity of the selected variables. The unit root test results in Table 3 show that the p-values of TUR, EG, FDI, and GCE are less than 0.05, indicating that the null hypothesis for non-stationarity is rejected at the 5 percent

significance level. Thus, it is concluded that these variables are integrated at the zero order or I(0). Since the TO and UPG variables are non-stationary at that level, these variables were first differentiated. The results show that the p-values of TO and UPG are less than 0.05, thus these variables are stationary at the first difference. Therefore, the panel unit root test results indicate that there is a mixture of I(0) and I(1), but no variable is I(2). This confirms the use of the panel ARDL model, which is appropriate for a mixture of I(0) and I(1) variables. These variables also form the basis for the next step in the cointegration test.

Table 4. KAO Cointegration Test

Model	t-statistic	Prob.
ADF	-5.1783	0.0000
Residual Variance	6.3209	
HAC Variance	6.8470	

Source: Data Processed, 2025

To determine whether there is a long-run relationship between the observed variables, we first test for cointegration. To this end, we describe the cointegration test from (Kao, 1999). The results of the KAO cointegration test in Table 4 indicate that the KAO test confirms the existence of cointegration with an ADF statistic

value of -5.1783 and is significant at the 1% level. This finding confirms the existence of a long-run equilibrium between unemployment rates, economic growth, foreign direct investment, trade openness, government consumption expenditure, and urban population growth in upper middle income Asian countries.

Tabel 5. Hausman Test

Test Summary	Chi-Stat	Prob.	Decision
PMG vs. MG	3.8796	0.5669	PMG
PMG vs. DFE	1.8528	0.8691	PMG

Source: Data Processed, 2025

Before determining the appropriate ARDL results, the Hausman test was conducted to select the appropriate model between PMG, MG, and DFE (Hausman, 1978). Based on the Hausman test results in Table 5, the comparison between the PMG and MG models produced a Chi-Stat value of 3.8796 with a probability of 0.5669, while the comparison between PMG and DFE produced a Chi-Stat value of 1.852834 with a probability of 0.8691. Both probability values are greater than the 5 percent significance level, meaning there is no statistically significant difference between the PMG estimator and the

MG or DFE. Thus, these results strengthen the decision to use the PMG model as the best approach in estimating the ARDL panel in this study. The PMG model provides a balance between efficiency and flexibility, by allowing for differences in short-term behavior between regions, while maintaining consistent long-term relationships. This choice is also in accordance with the arguments of Pesaran *et al.* (1999), who emphasized that the PMG model is superior when it is assumed that there is long-term equilibrium equality among cross-section units but heterogeneity in the short run.

Table 6. PMG-ARDL Results

Variable	Coefficient	Std. Error	t-Statistik	Prob.
EG	-0.1646	0.0093	-17.707	0.0000
FDI	-0.1946	0.0226	-8.6065	0.0000
TO	-0.0057	0.0016	-3.5396	0.0005
GCE	-0.2594	0.0237	-10.9269	0.0000
UPG	0.1697	0.0263	6.4463	0.0000
COINTEQ	-0.3382	0.1165	-2.9026	0.0042
D(TUR(-1))	0.0953	0.1181	0.8075	0.4204
D(EG)	-0.0129	0.0246	-0.5216	0.6025
D(EG(-1))	-0.0095	0.0131	-0.7234	0.4704
D(FDI)	0.0608	0.0498	1.2193	0.2243
D(FDI(-1))	0.1437	0.0688	2.0881	0.0382
D(TO)	0.0164	0.0101	1.6280	0.1052
D(TO(-1))	-0.0090	0.0078	-1.1587	0.2481
D(GCE)	0.1096	0.0344	3.1882	0.0017
D(GCE(-1))	0.0469	0.0758	0.6193	0.5365
D(UPG)	-0.0461	0.5460	-0.0845	0.9328
D(UPG(-1))	0.2230	0.1438	1.5510	0.1226
Constant	3.5802	1.0162	3.5230	0.0005

Source: Data Processed, 2025

Based on the estimation results in Table 6, the relationship between economic growth and unemployment in the long term shows a significant negative impact, while in the short term, economic growth cannot affect unemployment. These results strengthen the evidence of Okun's Law that there is an inverse relationship between economic growth and unemployment in the long run. These results also support previous research by Mehry *et al.* (2021); Singh and Lee (2023) which observed a significant negative relationship between economic growth and unemployment. The negative correlation between the unemployment rate and economic growth suggests that economic growth can be used as an important tool in reducing unemployment and achieving desired employment levels (Hjazeen *et al.*, 2021).

Thus, the upper-middle-income region of Asia demonstrates a strong relationship between economic growth and unemployment dynamics over the long term. This region demonstrates that consistent phases of economic expansion tend to be followed by a steady decline in unemployment rates, reflecting increased labor absorption along with expansion of production capacity and increased formal economic activity. This phenomenon confirms that sustained growth can strengthen the foundations of the labor market, resulting in a permanent and structurally significant decline in unemployment.

Meanwhile, short-term growth fluctuations have not shown a significant impact on changes in unemployment. This suggests that economic growth in the region does not immediately reduce unemployment because the labor market adjustment process is slow. Companies tend not to immediately expand hiring, while wage rigidity limits labor market flexibility. Furthermore, businesses generally prefer to retain their existing workforce rather than make major adjustments when faced with short-term changes in economic conditions. Therefore, the labor market's response to economic changes can be seen in the long term rather than short-term fluctuations in the region.

Research on the relationship between FDI and unemployment in Asia, a region with

middle- to upper-middle economies, shows that increased FDI has been shown to reduce unemployment in the long run. This finding aligns with the pro-FDI group, which believes FDI is quite effective in increasing efficiency in the productive sector, stimulating change for faster economic growth, and improving income distribution by raising wages in host countries and creating more jobs, thereby reducing unemployment (Karimov *et al.*, 2020).

Thus, long-term findings suggest that FDI inflows play a strategic role by expanding production capacity through new investment and technology transfer, thus driving increased industrial activity and strengthening labor demand, ultimately reducing unemployment in the region. These findings align with empirical evidence showing that developing countries in Asia tend to experience declining unemployment as the intensity of foreign direct investment increases (V. B. Nguyen, 2022). This negative relationship may also be due to the role of foreign direct investment through enhancing the financial stability of host countries, encouraging firm formation and expansion, and accelerating technology transfer and enhancing industrial competitiveness, which can ultimately expand employment opportunities and contribute to lower unemployment rates (Bhat & Beg, 2023).

Meanwhile, in the short term, FDI does not show a significant impact on unemployment. Meanwhile, FDI in the short term a year earlier actually showed an increase in unemployment. This condition is likely due to the adjustment of labor skills in recent decades. Foreign capital flows absorb more educated and highly skilled workers than low-skilled workers (A. T. Nguyen, 2022). As a result, workers unable to adapt to the demands of new technology or higher production standards become less competitive in accessing emerging job opportunities. This condition limits the absorption of unskilled labor and ultimately increases the unemployment rate. Therefore, these results can be interpreted as meaning that foreign investment in the previous year significantly determines the level of unemployment in the current period.

The long-term relationship between trade openness and unemployment shows a significant negative impact. The inverse relationship between trade openness and unemployment can be attributed to the availability of labor skills in host countries (Moridian *et al.*, 2025). This study's findings are consistent with the predictions of the Heckscher–Ohlin model, which asserts an inverse relationship between trade openness and unemployment. Therefore, increased trade openness in upper-middle-income Asia tends to encourage deeper economic integration, expansion of production capacity, and strengthening of export-oriented sectors. This process increases labor demand as domestic firms are able to tap into broader global markets and benefit from economies of scale. This study's findings support those of unemployment (Amin *et al.*, 2023; Wen *et al.*, 2022).

In the short term, trade openness does not show a direct impact on unemployment. This occurs because changes in international trade volume typically do not immediately alter the structure of labor demand. Companies need time to adjust production capacity, market strategies, and organizational structures when faced with changing trade conditions. Furthermore, workers' adaptation to the skills required by the global market is not instantaneous. Consequently, the effect of trade openness on employment tends to be delayed, resulting in no significant impact on the unemployment rate in the short term. Therefore, to reduce unemployment, greater attention is needed to ensure labor market participation, the provision of necessary skills, and assistance with placement in suitable jobs (Liu *et al.*, 2022).

Empirical findings show that government spending reduces the unemployment rate in the long run, indicating that the Keynesian approach is valid in the long run. The Keynesian approach argues that public sector activity influences the market in a way that demands and creates full employment, and emphasizes the need for the state to play an active role in preventing unemployment through financial instruments (public spending) (Kanca & Bayrak, 2015). These findings corroborate previous research ((Bahri,

2019; Onodugo *et al.*, 2017). Conversely, in the short run, government spending drives up the unemployment rate. These results demonstrate validation of the Abrams Curve Hypothesis in the short-term unemployment rate. These findings are generally consistent with those of Çelik and Erer (2021), who demonstrated an inverse relationship between government spending and unemployment in the long run, while in the short run, government spending actually increases unemployment.

Thus, these findings demonstrate different short- and long-term dynamics in the relationship between government consumption expenditure and unemployment in upper-middle-income Asia. In the long run, this reflects the success of countries in the region in utilizing fiscal instruments to expand production capacity, improve public infrastructure, and stimulate growth in labor-intensive technology-based and manufacturing sectors. However, in the short run, bureaucratic delays, early project phases that do not absorb labor, and budget reallocations are common in upper-middle-income Asian countries. Therefore, while government spending may reduce unemployment in the long run, its initial effects may actually increase unemployment before the benefits are realized.

The study's results indicate that, in the long term, urban population growth has a positive and significant impact on unemployment. These findings support research by (Hjazeen *et al.*, 2021). This phenomenon reflects that urbanization is occurring faster than the modern sector's ability to absorb new workers. This imbalance indicates limited job creation capacity in urban areas, resulting in accumulated labor pressures ultimately increasing unemployment. Harris-Todaro suggests that rural development, leading to increased agricultural wages, is key to eliminating urban unemployment. Urbanization that is not accompanied by job creation will increase pressure on the urban labor market. This positive impact may also be caused by the influx of low-skilled migrants who are difficult to absorb because the majority only meet the qualifications of laborers, while the labor needs in cities are

already met. This condition can increase unemployment (Suffina & Suharto, 2022; Hidayati, 2021).

Based on the results of the short-term relationship, urban population growth does not show a significant effect on the unemployment rate in this region. This study's results are consistent with the findings of (Sakib, 2021). This insignificant relationship indicates that the initial urban population expansion can generally be accommodated through various informal economic activities and low-cost service sectors that are relatively easily accessible to newcomers. As Todaro points out, migrants generally undergo a transitional phase in the urban informal sector before gaining access to higher-wage jobs in the modern sector. At this stage, urban economic activity tends to be flexible enough to absorb additional labor through temporary jobs, which do not require high qualifications. Therefore, despite long-term urban population increases, unemployment rates do not necessarily experience significant short-term changes in this region

CONCLUSION

This study aims to investigate the factors influencing unemployment rates in upper-middle-income Asian countries over the period 2000–2023. The study's empirical findings indicate that in the long run, economic growth, foreign direct investment, trade openness, and government consumption expenditure significantly reduce unemployment rates, while urban population growth significantly increases unemployment. Meanwhile, in the short run, economic growth, foreign direct investment, trade openness, and government consumption expenditure show no significant effects, while urban population growth makes a significant negative contribution to unemployment. Furthermore, estimates indicate that FDI in the previous year has a significant positive effect on unemployment.

These findings imply that the decline in unemployment in upper-middle-income Asian countries is primarily determined by long-term structural policies that promote economic

growth, foreign direct investment, trade openness, and effective government spending. Furthermore, the increase in unemployment due to urban population growth emphasizes the importance of integrated urbanization planning with formal job creation. Meanwhile, the short-term impact highlights the delay in labor market adjustment, which requires supportive policies to mitigate the transition impact, particularly during the initial phase of foreign investment.

This study has limitations related to the exclusion of the Maldives from the sample of upper-middle-income Asian countries due to limited data availability that did not meet the time-series completeness requirements. This situation potentially limits the representativeness of the findings for the entire group of countries. Therefore, further research is recommended to consider additional variables that could provide a more complete picture of the factors influencing unemployment rates in the regions.

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