

Impact of government expenditure on unemployment in Asian countries: does institutional quality matter?

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Abstract

Purpose – Asian countries have had persistent unemployment levels. The purpose of this paper is to investigate the impact of government spending on unemployment. Furthermore, this paper investigates the moderating role of institutional quality on the government spending–unemployment nexus.

Design/methodology/approach – Using data from 35 Asian countries from 2000 to 2022, the dynamic ordinary least squares and fully modified ordinary least squares technique is used to tackle with aforementioned issue. In addition, pooled mean group estimation is applied to verify the robustness of the findings.

Findings – The results show that an increase in government expenditure and better institutions reduce the unemployment rate. Interestingly, the negative impact of government expenditure on unemployment will enhance and intensify with better institutional quality. Furthermore, trade openness and foreign direct investment decrease unemployment in Asian countries. The results are robust to various specifications.

Practical implications – Findings from this study provide important implications for governments. Governments should use public expenditure efficiently and enhance and improve institutional quality to reduce unemployment.

Originality/value – To the best of the author's knowledge, this study pioneers the investigation of the moderating role of institutional quality in the relationship between government expenditure and unemployment in Asian countries.

Keywords Asian countries, Unemployment, Institutional quality, Government spending

Paper type Research paper

1. Introduction

Unemployment is a long-standing issue that affects all economies around the world, irrespective of income level. High and persistent unemployment rates threaten the economic and social stability of any country that, in turn, widens the inequality gap and impedes its human capital accumulation and economic development (Doppelt, 2019). Hence, understanding the drivers of unemployment is essential for formulating and implementing macro policy. The causes of unemployment are assumed to vary from country to country because of the heterogeneous structure of countries, including the difference in development level, sociological textures and political preferences.

The governments strive to reduce the unemployment rate and mitigate its effects by using fiscal policy that is necessary to achieve sustainable growth and decrease unemployment. Government expenditure is one of the overriding pillars of fiscal policy through which the government could influence the aggregate demand, which results in a change in economic growth rates and national income (Barro, 1990; Easterly and Rebelo, 1993). There is a vast of



empirical studies dealing with the impacts of government expenditure on economic growth, while few studies investigate the effects on unemployment. The debate on the use of government expenditure as a tool of macroeconomic stabilization is still open (Afonso and Sousa, 2012). In addition, the empirical studies exploring the effects of government spending on the unemployment level remain inconclusive (Abouelfarag and Qutb, 2021). This absence of consensus highlights the necessity for further studies to determine the relationship between these two variables, which may be attributable to the different econometric methods, data, time periods and countries included in these studies.

The institutional theory highlights that the institutional structure of a country serves a crucial role in determining the effectiveness of government expenditure and its net impact on economic outputs (Dzhumashev, 2014; Blanchard, 2003). Poor quality institutions, such as corruption, distort the efficacy of government spending primarily by modifying the budget's structure to create and extract rents (Blackburn *et al.*, 2011; Khan *et al.* (2020) claim that poor institution quality may amplify the negative effects of public expenditure on economic outcomes. Nevertheless, to the best of our knowledge, there are a few empirical studies to test the moderating role of institutional quality on the nexus between government expenditure and unemployment. This paper argues that both the nature and the intensity of government expenditure–unemployment nexus are determined by the institutional quality of the country.

This study focuses on Asian countries which are a fertile research context for exploring the impact of government expenditure, institutional quality and unemployment for these reasons. First, unemployment in these countries is pervasive and become one of the top concerns of the authorities. The average unemployment is around 5.7% of the total labor force during the past 20 years (Tran *et al.*, 2023). The COVID-19 pandemic sent shock waves through the world economy and provoked the largest global economic depression in more than a century (Dornean and Oanea, 2022). While the COVID-19 pandemic has been simply devastating, its impacts have been particularly severe on the labor market. The mobility restrictions, lockdowns and other public measures necessary to address the pandemic have taken an especially heavy humanitarian and economic toll on market participants (Narula, 2020). In addition, employees have insufficient financial resources for the lockdown period, increasing their chances of falling into poverty and being excluded from formal social support nets (Kansiime *et al.*, 2021). Second, to limit the economic damage of COVID-19, governments enacted a swift and encompassing policy response that used a combination of fiscal, monetary and financial sector policies. These countries prompted an unprecedented fiscal stimulus including greater access to credit for workers, jobs creation and enhancing social protection and inclusion policy (Dornean and Oanea, 2022). Third, except for some countries, institutional quality in many nations in Asia still lags behind the average international level and remains one of the key challenges for development (Quah, 2020).

Given the prominence of government expenditure and institutional quality in these nations, it is vital to investigate its linkage to unemployment to assist effective public policy. This study contributes to the existing literature on the following grounds. First, to the best of our knowledge, this is one of the first papers to investigate the impacts of government expenditure and institutional quality on unemployment in a multivariate panel framework from a long-run perspective. Second, most existing studies focus on the impact of labor market institutions ignoring the effects of other forms of institutions. Thus, responding to Kilishi *et al.*'s (2021) critique, this study looks beyond labor market institutions to get an adequate understanding of the causes of unemployment. In addition, this paper promotes a novel idea by investigating the moderating effect of institutional quality on the relationship between government expenditure and unemployment in Asian countries. The moderating

role of institutional quality in this context is still a research gap in the existing literature. Whether a better institutional quality amplifies or lessens the impact of government expenditure on unemployment remains indecipherable. Fourth, this study focuses on a long-term relationship between government spending, institutional quality and unemployment using the dynamic ordinary least square (DOLS) and fully modified ordinary least square (FMOLS) estimation methods. Moreover, pooled mean group (PMG) approach is also used to ensure the robustness of the results.

This paper is organized as follows. Following this introduction, Section 2 discusses and synthesizes relevant studies on government spending, institutional quality and unemployment. Section 3 presents the research methodology and data. Empirical findings and discussions are presented in Section 4. Finally, Section 5 provides the conclusions and policy implications.

2. Literature review

2.1 *Theoretical background*

The classical theory advocates the freedom of markets and assumes that markets behave by the idealized supply and demand model, characterized by perfect competition and spot transactions. The model portrays the economy as free-flowing, with prices and wages freely adjusting to the ups and downs of the economy over time. It idealizes the economy at full employment and all resources are being fully used to their capacity (Blanchard, 2003). Classical economists believed that the economy is self-adjusting. Thus, the intervention of government to stable the economy is not favored as they argue that this would have no impact on output or employment. In the context of the neoclassical theories (which are based on rational expectations, Ricardian equivalence and credibility or signal effect), fiscal contractions make room for an expansion of the private sector and thus have a stimulating effect on the economy.

In contrast, Keynesian theory views the economy as unstable because of the instability of aggregate demand. This in turn causes undesirable fluctuations in output and employment that will not adjust automatically in the short run. Hence, they demand government intervention in the form of fiscal and monetary policies to balance undesirable changes in aggregate demand. In times when demand is low, the government should boost its expenditure to stimulate aggregate demand and so increase output and employment through the simple multiplier effect. Government's spending intervention should take two dominant forms, namely, economic policies in favor of investment and income redistribution policies (Blanchard, 2003).

The next section provides a brief review of relevant empirical studies on the nexus between government expenditure, institutional quality and unemployment, as well as the moderating role of institutional quality. Each of these connections is discussed in turn below.

2.2 *Government expenditure and unemployment*

Government expenditure is one of the main pillars of fiscal policy and a critical factor in unemployment. We consider that government expenditure might be a key determinant of unemployment for the following reasons. First, the Keynesian theory argues the economy is unstable because of the instability of aggregate demand. It causes undesirable fluctuations in outputs and employment in the short run and will not adjust automatically. Hence, Keynesian economists call for government intervention through fiscal and monetary policies that aim to boost output and employment in times when demand is low (Grier and Tullock, 1989; Barro, 1990). Second, government expenditure can be used to stimulate incentives for active employment and enhance a favorable investment climate, which in turn

reduces unemployment (Arestis *et al.*, 2021; Arvin *et al.*, 2021). Third, government expenditure can be used as a tool to redistribute resources and income in conformity with the state's economic and social priorities, which in turn impacts unemployment (Butkiewicz and Yanikkaya, 2011; Çelikay, 2023).

Phelps (1994, 1999) argues that an increase in public spending will cause an increase in real prices of goods and capital markets. Hence, the demand for labor, which is the substitute for capital, will rise, resulting in a lower unemployment rate. Holden and Sparrman (2018) investigate the impact of fiscal policy on unemployment in a panel of 20 OECD countries. The findings show that unemployment falls in response to increasing government spending. In the same vein, Abouelfarag and Qutb (2021) find an increase in government spending leads to a decrease in the unemployment rate in the long run in Egypt during the period from 1980 to 2017. Therefore, in line with the above arguments, the first hypothesis is postulated:

H1. Increased government expenditure leads to a decrease in unemployment.

2.3 Institutional quality and unemployment

Institutional quality is another determinant of unemployment which is mainly discussed in previous studies. Institutions influence the factors of production and boost productivity by adjusting the allocation of skilled workers, thus lowering unemployment (Samargandi *et al.*, 2021). Marelli *et al.* (2013) argue that labor market institutions have a significant and robust impact on unemployment, particularly youth unemployment. Similarly, institutional quality is responsible for the significant decline in youth unemployment in OECD nations (Dietrich and Möller, 2016). According to Blanchard and Wolfers (2000), while shocks can explain the growth in unemployment in OECD countries, cross-country disparities in unemployment rates can only be explained by market institutions. Schneider and Enste (2000) argue that low institutional quality (corruption, red tape, complicated procedures) creates obstacles for market participation because of increasing labor costs. All of these stimulate people to work in informal sectors (Dietrich and Möller, 2016). Countries with a strong informal sector have a high unemployment rate. Meanwhile, Escudero (2018) states that effective market institutions enable unqualified individuals to find jobs.

The study of Ilyas and Khan (2019) states that democracy significantly reduces unemployment in Pakistan. Ndjie *et al.* (2019) explore the effects of governance indicators on the youth unemployment rate in several African countries from 2002 to 2016. The results show that political stability and the control of corruption have a negative impact on youth unemployment. Recently, Ali *et al.* (2022) found that institutional performance reduces negatively and significantly the level of unemployment in the Organization of Islamic Cooperation countries. On the basis of the discussion above, we propose the following hypothesis:

H2. Better institutional quality leads to a decrease in unemployment.

2.4 Moderating role of institutional quality in the relationship between government expenditure and unemployment

Previous studies (d'Agostino *et al.*, 2016; Hodge *et al.*, 2011) stress that it is necessary to understand the institutional context of why the impact of government expenditure on the outcomes may be different across regions and countries. Blanchard (2003) argues that the effect of an increase in government expenditure depends on institutional quality, as

institutional quality impacts the costs and benefits of government spending. In addition, better institutions provide impulses that improve the fiscal system's efficiency in allocating resources that promote employment creation. In contrast, weak institutions accommodate sharp practices and opportunistic behavior that culminate in corruption and political interferences that drive public spending to unproductive and wasteful public projects (Dzhumashev, 2014; Mauro, 1998; Del Monte and Papagni, 2001). Furthermore, the impacts of government expenditure on unemployment can also be explained through indirect channels such as economic growth, macroeconomic stability and distribution of resources (Christie, 2014). Khan *et al.* (2020) confirm that the positive impact of government expenditure on economic growth can be strengthened with the high quality of the institution, which in turn creates more employment in the economy.

Nevertheless, neither theoretically nor empirically, the moderating role of institutional quality in the relationship between government expenditure and unemployment is explored. Findings from previous studies indicate that government spending decreases the unemployment rate. Similarly, better institutional quality is associated with a decreased unemployment rate. Given this discussion, we hypothesize the following:

H3. Better institutional quality intensifies the negative impact of government expenditure on unemployment.

3. Methodology and data

3.1 Empirical model

Based on the theoretical foundation and previous studies of Abouelfarag and Qutb (2021), Ali *et al.* (2022), the econometric form of our model can be expressed as follows:

$$UE_{it} = \beta_0 + \beta_1 GE_{it} + \beta_2 IQ_{it} + \beta_3 GE_{it} * IQ_{it} + \beta_4 X_{it} + \varepsilon_{it} \quad (1)$$

where the subscripts denote the country i ; the year t ; β is the coefficient; ε is the error term.

The dependent variable is unemployment (UE) measured by the percent of total labor force. The regressors are government expenditure (GE) and institutional quality (IQ). While GE is measured by the percent of GDP, IQ represents the average of the six dimensions of institutional quality obtained from Worldwide Governance Indicators (WGI) of World Bank including voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption. Many studies in related literature also apply the same approach to obtain a single, broader index. Normally, each dimension takes the lowest value of -2.5 (weak) and the highest value of $+2.5$ (strong). However, we rescale this average institutional quality indicator over 2000 to 2022 from 0 (lowest value) to 5 (highest value) for convenience in estimation. $GE \times IQ$ represents the interaction term between government expenditure and institutional quality to measure the moderating role of institutional quality in the nexus between government expenditure and unemployment. This role can be calculated by using a partial derivative of equation (1) concerning government expenditure:

$$\frac{\partial(UE_t)}{\partial(GE_t)} = \beta_1 + \beta_3 IQ_t \quad (2)$$

The role of institutional quality in moderating the government expenditure and unemployment nexus is conditioned on the two parameters: β_1 and β_3 in equation (2). If both β_1 and $\beta_3 < 0$,

these results suggest that more government expenditure decreases unemployment and high institutional quality worsens this negative impact. If both β_1 and $\beta_3 > 0$, meaning that larger government spending will boost unemployment and institutional quality enhances and complements this positive effect. But if β_1 and β_3 carry different signs, the finding then implies a threshold effect, suggesting that the effect of government expenditure on unemployment differs depending on the levels of institutional quality.

Control variables (X) include trade openness, foreign direct investment and population growth. The selection of these variables is based on previous empirical analyses such as [Abouelfarag and Qutb \(2021\)](#), [Ali et al. \(2022\)](#). We collect these data from the World Development Indicators of the World Bank.

Our literature review indicates that several techniques can be used to examine the relationship between various variables in a dynamic panel. For example, the fixed and random effects models are also widely used in panel data analysis. However, these estimation techniques do not consider the integration and cointegration characteristics. These characteristics are significant issues that should be considered while the analysis focuses on the long-run effects in a dynamic panel ([Levine et al., 2000](#)). Another technique that is also widely used is a generalized method of moments approach. Nevertheless, this method does not consider integration and cointegration. The results may be spurious ([Christopoulos and Tsionas, 2004](#)).

Our study uses a dynamic panel of 35 Asian countries. Endogeneity and heterogeneity appear to be the major issues ([Beck et al., 2000](#)). These issues should be carefully considered. We consider that it is appropriate to use the panel data analysis techniques that address these two issues. This study used the fully modified ordinary least squares (FMOLS) and the dynamic least squares (DOLS) to estimate the long-run relationship between variables in a co-integrated panel. The FMOLS is a non-parametric approach that examines the serial correlation when variables are integrated into order one [I(1)] ([Phillips and Hansen, 1990](#)). This FMOLS technique produces reliable and robust estimates with a small sample size and ensures the validity of long-run estimates. The DOLS is a parametric approach in which lags and leads are used to investigate the problem of correlations among variables irrespective of the integration orders of variables, I(0) or I(1) and cointegration ([Stock and Watson, 1996](#)). The DOLS technique addresses endogeneity problems and provides unbiased co-integrating estimated coefficients because of its dynamic nature ([Inagaki, 2010](#)).

3.2 Data description

This study examined a panel data set of 35 Asian countries from 2000 to 2022. [Table 1](#) illustrates the definitions, the measurement and the data sources of the variables used in this study.

4. Empirical results and discussions

4.1 Cross-sectional dependence test

In panel data estimation, ignoring the cross-sectional dependence may mislead the results. This study uses the [Pesaran \(2003\)](#) CD test to detect the evidence of cross-sectional dependence. Empirical results from [Table 2](#) reject the null hypothesis. The presence of cross-sectional dependency in this study implies that second-generation econometric techniques should be used to produce robust and consistent results.

4.2 Slope homogeneity test

Owing to cross-sectional dependence, each country may be impacted by the economic conditions of other countries. When there is heterogeneity in panel data, assuming slope

Table 1.
Description of
variables and
measurement

Variable	Definitions	Calculations	Source	Obs.	Mean	Min	Max	SD
UE	Unemployment	Unemployment, total (% of total labor force) (modeled ILO estimate)	WDIs	805	5.749	0.14	19.32	3.820
GE	Government expenditure	General government final consumption expenditure (per cent of GDP)	WDIs	805	13.789	2.360	30.003	5.226
INS	Institutional quality	Institutional quality index. The average of six institutional indicators	WGLs	805	2.204	0.6	4.468	0.612
TO	Trade openness	Trade (% of GDP)	WDIs	805	91.642	19.559	437.326	1.847
FDI	Foreign direct investment	Foreign direct investment, net inflows (% of GDP)	WDIs	805	4.183	-37.172	55.07	6.110
PG	Population growth	Population growth (annual %)	WDIs	805	1.678	-4.170	18.127	1.847
Source: Author's own creation								

homogeneity leads to unreliable results (Breitung, 2001). Thus, the slope homogeneity test of Pesaran and Yamagata (2008) is used. The results in Table 2 reject the null hypothesis of slope homogeneity, confirming the presence of slope heterogeneity in our data set.

4.3 The panel unit root test

The next step of the empirical investigation is to examine all variables' integration order and stationarity level. Our empirical analysis examines the order of integration of each variable using the CIPS test and CADF test (Pesaran, 2007), which gives more authentic and robust outcomes. The results from Table 3 indicate that our concerned variables are stationary at level I(1).

4.4 The panel cointegration test

The cointegration is tested among the variables using three different cointegration techniques for the robustness of the results: Pedroni's (1999, 2004), Kao's (1999) and Westerlund's (2005) residual cointegration tests. Table 4 presents the results of the panel cointegration test which confirm a long-run association among the variables.

4.5 Empirical findings on the relationship between government expenditure, institutional quality and unemployment

This study uses the panel DOLS estimator and the panel FMOLS estimator to investigate the impacts of government expenditure, institutional quality on unemployment. Table 5

Variables	UE	GE	INS	TO	FDI	PG	GE × INS
<i>Cross-section dependence test</i>							
CD test	11.242	18.624	15.625	15.471	10.783	14.352	28.266
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Slope homogeneity test

$$\text{Equation (1)} \quad \Delta \quad \Delta_{adj}$$

$$4.017*** (0.000) \quad 9.073*** (0.000)$$

Notes: ***significant at 1% level; UE = unemployment; GE = government expenditure; INS = Institutional quality; TO = trade openness; FDI = foreign direct investment; PG = population growth

Source: Author's own creation

Table 2.
Cross-section
dependence and
slope homogeneity
test results

Variables	CIPS		Level	CADF		Order of integration
	Level	First difference		Level	First difference	
IE	-0.978	-2.275***	3.456	-2.564***		I(1)
GE	-1.282	-2.819***	3.173	-1.945***		I(1)
INS	-1.742	-3.253***	3.163	-7.667***		I(1)
TO	-1.701	-3.881***	1.456	-2.226***		I(1)
FDI	-2.052	-4.433***	1.243	-1.437***		I(1)
PG	-1.980	-3.914***	2.034	-3.982***		I(1)
GE × INS	-1.224	-3.513***	3.245	-2.989***		I(1)

Notes: *** significant at 1% level; UE = unemployment; GE = government expenditure; INS = Institutional quality; TO = trade openness; FDI = foreign direct investment; PG = population growth

Source: Author's own creation

Table 3.
Panel unit root test
results

IJDI 24,2		Statistics
	<i>Pedroni</i>	
	Modified Phillips–Perron <i>t</i>	5.835***
	Phillips–Perron <i>t</i>	–6.942**
	Augmented Dickey–Fuller <i>t</i>	–7.813**
178	<i>Kao</i>	
	Modified Dickey–Fuller <i>t</i>	–28.951***
	Dickey–Fuller <i>t</i>	–21.643***
	Augmented Dickey–Fuller <i>t</i>	–15.747***
	Unadjusted modified Dickey–Fuller <i>t</i>	–31.903***
	Unadjusted Dickey–Fuller <i>t</i>	–23.953***
	<i>Westerlund</i>	
	Variance ratio	12.894***
Table 4.	Note: ***Significant at 1% level	
Results of the	Source: Author’s own creation	
cointegration test		

	DOLS	FMOLS
GE	–1.826**	–1.696***
INS	–7.813***	–7.542***
TO	–0.007***	–0.018**
FDI	–0.034**	–0.016***
PG	0.282***	0.368***
GE × INS	–0.915***	–0.962***
<i>Marginal effects</i>		
Marginal effects at zero institutional quality	–1.826	–1.696
Marginal effects at the minimum level of institutional quality	–2.375	–2.273
Marginal effects at the mean level of institutional quality	–3.843	–3.816
Marginal effects at the maximum level of institutional quality	–5.914	–5.994
Unconditional impact	–1.826	–1.696
Conditional impact	–0.915	–0.962
Notes: *, **, *** significant at 10, 5 and 1% levels, respectively; UE = unemployment; GE = government expenditure; INS = institutional quality; TO = trade openness; FDI = foreign direct investment; PG = population growth		
Source: Authors’ own creation		

shows the empirical findings. *First*, an increase in government expenditure results in a decrease in unemployment. This finding supports the Keynesian economic theory that government expenditure can be used to create more employment in the formal sector and stimulate economic growth. By investing in development projects, jobs for the lower segment of society can be created. In addition, by providing subsidies to investors in the form of cash grants or loans, investment that likely creates employment is increased (Liu *et al.*, 2022). Subsequently, their income level increases and they willingly invest in new projects for which they hire new workers, which raises the employment level. This result is consistent with findings from Holden and Sparrman (2018) and Ali *et al.* (2022). *Second*, similarly, our finding indicates that institutional quality impacts unemployment negatively and significantly, which indicates that better institutional quality declines the level of

unemployment. Better institutional quality creates a supportive environment for market participation due to reducing labor costs. Institutional success is also connected with industrial growth, technological investment and outstanding firm performance, all of which reduce unemployment by increasing the demand for labor (Commander and Svejnar, 2011, Ilyas and Khan, 2019). This result is also in line with Ebaidalla (2016) and Ali *et al.* (2022) studies.

Third, the estimated coefficients of government expenditure and the interaction between government expenditure and institutional quality ($GE \times IQ$) carry the same signs. These findings imply that the negative impact of government spending on unemployment aggerates with better institutional quality. This finding has not been recorded in the existing literature or empirical studies. In addition, as presented in equation (2), the total effect of government expenditure on unemployment with the presence of institutions is the sum of the estimated coefficients β_1 and $(\beta_3 * IQ)$. Table 5 also shows the marginal effects of government expenditure on unemployment. Next, we calculate the marginal effects of government expenditure at the minimum, mean and maximum levels of institutional quality.

Under the DOLS estimation technique, at the minimum, mean and maximum values of institutional quality, the marginal effects of government expenditure are -2.375 , -3.843 and -5.914 , respectively. Meanwhile, when the FMOLS estimation technique is used, at the minimum, mean and maximum values of institutional quality, the marginal effects of government expenditure are now -2.273 , -3.816 and -5.994 , respectively.

Moreover, our empirical results indicate that trade openness has a significantly negative impact on unemployment. Trade liberalization in the form of lower trade barriers and more foreign economic transactions may boost productivity and create more jobs in the official sector. This result is also in line with the results of Felbermayr *et al.* (2011), Anjum and Perviz (2016) studies. In the same vein, foreign direct investment negatively affects unemployment. Foreign direct investment (FDI) is often presented as an indispensable external source for economic activities in developing countries by creating more employment (Dang *et al.*, 2023). Our results seem to be consistent with those of Choudhry *et al.* (2012) and Atilaw Woldetensaye *et al.* (2022).

4.6 Robustness check

To ensure the robustness of our findings, the PMG estimation method is used to explore both the short-term and the long-term effects (Chudik and Pesaran, 2015). The empirical findings are presented in Table 6. The results are consistent with those shown in Table 5 using the DOLS, FMOLS techniques. An increase in government expenditure and institutional quality leads to a decline in unemployment in the short run and the long run.

5. Concluding remarks and policy recommendations

Unemployment exists in all countries to varying degrees. The governments struggle to reduce unemployment rates and alleviate its impacts by means of fiscal policy. The impact of government expenditure on unemployment has been under debate in the literature, especially when this impact depends on the level of institutional quality. The aims of this study are how government expenditure impacts unemployment and the extent to which institutional quality moderates the government expenditure and unemployment relationship across 35 Asian countries over the period 2000–2022. The DOLS, FMOLS estimation techniques are applied to explore to long-term nexus between variables. Approaching the proposed topic seems timely, especially because fiscal policy is expected to play a critical role in COVID-19 economic recovery.

Table 6.
Empirical findings
on the relationship
between government
expenditure,
institutional quality
and unemployment
using the PMG
estimation method

Variables	Coefficient	Prob.
<i>Long-run coefficients</i>		
GE	-0.623	0.000***
INS	-2.836	0.000***
TO	-0.001	0.002***
FDI	-0.174	0.000***
PG	0.372	0.003***
GE × INS	-0.241	0.004***
Error correction coefficients	-0.095	0.000***
<i>Short-run coefficients</i>		
D(GE)	-1.177	0.000***
D(INS)	-4.937	0.081**
D(TO)	-0.006	0.002
D(FDI)	-0.012	0.004***
D(PG)	0.014	0.970
D(GE × INS)	-0.643	0.008***
C	-2.299	0.001***

Notes: *, **, *** significance at 10, 5 and 1% levels, respectively, UE = unemployment; GE = government expenditure; INS = Institutional quality; TO = trade openness; FDI = foreign direct investment; PG = population growth
Source: Author's own creation

The empirical results indicate that an increase in government expenditure and institutional quality results in the decline of unemployment with different estimation methods. Furthermore, this study also investigates how institutional quality moderates the impacts of government expenditure on unemployment. Interestingly, the result indicates that larger government spending decreases the level of unemployment and better institutional quality intensifies this negative effect. Furthermore, our findings also show that trade openness, FDI play an important role in reducing the level of unemployment for Asian countries.

This study makes several theoretical contributions to the literature. First, this is one of the first papers to investigate the impacts of government expenditure and institutional quality on unemployment in a multivariate panel framework from a long-run perspective. Second, previous studies have focused on the impact of labor market institutions ignoring the effects of other forms of institutions. Hence, this study looks beyond labor market institutions to get an adequate understanding of the causes of unemployment. Third, another significant contribution of this study is to explore the underlying moderation mechanism of institutional quality in the relationship between government expenditure and unemployment. The moderating role of institutional quality in this context is still a research gap in the existing literature. The finding indicates that government expenditure decreases unemployment and in the better institutional quality context, this negative impact is enhanced.

The empirical findings of this study provide various policy implications for controlling the level of unemployment in Asian countries. First, to reduce unemployment, the government should boost government expenditure to create more jobs in the official sector. Public expenditure should be allocated and used in such a manner that they can offer efficient public services because efficient use of public expenditure contributes to economic growth and reduces unemployment. Stiffer constraints are advised for the mismanagement of government funds to limit corruption. In addition, institutional quality is one of the most significant factors to develop and implement economic policy. Institutional quality must be

enhanced and promoted not only to decrease the level of unemployment but also to determine the effectiveness of government spending. To develop a cohesive and harmonious society, the Asian Governments should give more emphasis on maintaining political stability and government effectiveness as well as reducing corruption. Improving the capacity of bureaucracy, controlling corruption, keeping political stability and government effectiveness, implementing the laws, restructuring the process of public service and merit in recruitment are necessary for increasing the employment level.

Moreover, the key drivers leading to the reduction of unemployment are trade liberalization and FDI. Policies promoting economic cooperation and cross-border trade should also be focused on. In addition, Asian countries' labor market reforms are required for economic integration and enhanced regional cooperation. To reduce youth unemployment, greater emphasis should be placed on young people by encouraging their labor market participation, providing the necessary skills and assisting them in finding suitable employment. To create more employment opportunities for young people, trade sectors must make substantial efforts to increase export capacity and competitiveness. Moreover, government and private investment in initiatives that provide opportunities for young people must be increased. Foreign investors should be offered attractive incentives to increase production capacity and employment opportunities.

Several limitations of this study should be addressed in future research. First, this analysis is undertaken using a relatively small sample of 35 countries in Asia. Extending a sample of countries across different continents with different economic and social characteristics should be interesting for international comparison. Second, data limitation of institutional quality is worth noting. Studies in the future may benefit from using an extended period for the estimation of institutional quality. Future research should explore the impacts of each type of government expenditure, such as government expenditure on education, defense and health, on the level of unemployment.

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