IMPACT OF DEFENSE SPENDING ON UNEMPLOYMENT IN FIVE COUNTRIES FROM ASIA

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Abstract

The objective of this study is to examine empirically the impact of defense spending on unemployment along with a number of control variables for a set of five selected countries from Asia which include Cambodia, China, Malaysia, Pakistan, and the Philippines. For empirical investigation annual data over the period of 1992 to 2013 are used. While, prior to regression analysis, the data were sensibly checked using sundry of relevant tests. The empirical results reveal that defense spending is not a better option to overcome unemployment problem in most of the sample countries. Thus, the findings suggest that lower defense budget allocation will provide more resources for other sectors which are relatively more productive and can help to improve economic and social welfare of these selected countries from Asia. Besides decreased military expenditures, encouraging domestic investment and discouraging population growth can help reduce unemployment. Remittance appears to have a positive relation with unemployment, the implications of which need to be addressed by policymakers.

Keywords: Defense Spending, Unemployment, Cross Country Data, Asian Countries

***JEL Codes*:** C31; H56; J64; O53

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1 Introduction

The role of the government is to achieve a desirable level of output, increase real per capita income as well as ensure full employment in order to stimulate the desired level of economic growth and development. Unemployment is a stage in which qualified and skill individuals are mentally prepared to do work and actively search jobs and intend to work at whatever wage rate prevailing in the competitive market but unable to find any suitable job. In this context, Classical and Keynesian schools of thoughts have different views on the accomplishment of full employment. The classical theorists' considers achieving full employment through its own internal mechanism through a policy of laissez-faire, or no government interference. While, the market forces play a dominant role to take care of the all-inclusive economy in the laissez-faire system, whereas the role of the government is only limited to sustain law and order of the country. Alternatively, Keynesian claims that scare resources cause unemployment, though; full employment is feasible only when total expenditures are enough. For that reason, Keynesian criticizes the classical claim that market economies unavoidably have a tendency towards full employment, whereas, Keynesian indicates that improved level of demand or total expenditure as the authoritative factor of an economy's health, where role of the government cannot be overlooked [190].

There are many factors that caused unemployment, however, this study focuses only on the effect of defense spending along with some other control variables on unemployment in a set of five selected countries from Asia namely Cambodia, China, Malaysia, Pakistan, and the Philippine. Mixed evidences are provided by the prior studies on the impact of defense spending on unemployment condition. Some studies have found that defense spending is likely to have an inverse impact on employment (Boulding, 1970; Szymanski, 1973; DeGrasse,

[190] Hoover (1995)

1983). Some other studies documented that extreme decrease in defense spending certainly leads to enlarged unemployment. Richards (1991) expounds that large cuts in military spending inevitably decrease employment in manufacturing industries, even globally around 9 percent of jobs are supported by military expenditure. Thus, the overall impacts on employment would have to be positive, and likely to be benefit the developing countries. While, unemployment during the period of 1980s truly worsened as a consequence of upsurge in defense outlay in the United States (U.S.) Abell, 1990). In another study, Abell (1992) also mentions that the economics of military expenses as a subject got relatively small thoughtfulness among academic economists, though Pentagon's budget during the period of 1980s rose. The study empirically observes that when military expenditure increases, unemployment also increases, while, non-military expenditure decreases unemployment during the period under the study in the U.S.

The study of Cuaresma and Reitschuler (2004) reveals that high levels of defense expenses relatively make sluggish the growth rate of the economy, while it is a better option to utilize these resources for consumption and investment purposes. Presumably, low levels of defense expenditure can be good for the economy; however, the level of defense spending is presently high. According to Baker (2009) "defense spending means that the government is pulling away resources from the usage determined by the market and instead use them to buy weapons and supplies and to pay for soldiers and other military personnel. In standard economic models, defense spending is a direct drain on the economy, reducing efficiency, slowing growth and costing jobs." In a similar vein, Robertson (2014) notes that high Myanmar's defense budget affects the health, education and other social welfare sectors and makes Myanmar the least developing country and second poorest country in ASEAN region. Azam and Feng (2015) expounds that for developing nations caught in security dilemma, where military spending often necessitates an increase in external debt, which may hurt economic development destructively. On the other hand, Borch and Wallace (2010) while using longitudinal data observe that states with relatively high levels of defense expenditure are better armed to avoid the destructive influence of economic recession than are states with lower levels of defense expenses.

International capital inflows in the form of migrant remittances play an important role in the socio-economic development of the remittance's recipient countries (Nsiah &Fayissa, 2013; Azam, 2015). Similarly, on the impact of FDI, it not only provides finance but also managerial skill, jobs opportunities, and increases government revenues. There are also some other benefits of FDI inflows in the shape of entrepreneurial skills that encourage employment opportunities in the recipient countries (Alfaro, 2003; Makki & Somwaru, 2004; Kok & Ersoy, 2009; Azam & Gavrila, 2015; Azam & Ather, 2015)

The Stockholm International Peace Research Institute SIPRI (2014) reports that world defense spending is estimated to be USD1.75 trillion in 2013, which is comparatively less to the defense spending during 2012. The SIPRI report maintains that in general, a global decline in the defense spending comes from Western countries, led by the U.S., nevertheless, it surges in all other regions. Defense spending in Asia and Oceania increased by 3.6 percent in 2013 reaching to USD 407 billion which is contributed by a 7.4 percent rise by China, whose defense spending reached to USD188 billion. Though, the largest rise in defense spending in the region in 2013 was contributed by Afghanistan by 77 percent. Robertson (2014) said that Myanmar defence budget for 2014-15 has reached 23.2 percent of the overall expenditures, though; it was 29.1 percent in 2013-14 budgets, which is still the highest defense budget in the ASEAN region. The allocation of military spending in other countries of the region: Cambodia consumes 14 percent of its budget on defense, Malaysia, the Philippines and Thailand ranked third with 13 percent each. In case of Indonesia it is recorded that defense spending is 4 percent, while Lao's military budget is estimated to be the lowest at 2 percent in the ASEAN. Pakistan's defence allocation is almost USD 5.7 billion which is the lowermost as compared to increasing defence budget of neighbors: India, China and Turkey amounting to USD 37.256 billion, USD115 billion, and USD19.1 billion respectively (Haider, 2014).

The main issue of the present study is that, apparently on one hand the levels of unemployment increase, while on the other hand those of defense spending are also increasing gradually. Though, the existing literature provides incompatible results on the relationship between defense spending and unemployment. Alongside, it has been observed that high defense spending nurtures several socio-economic problems including unemployment in the economy. Presumably, there may be several factors determining unemployment, where one of these may be high defense spending. Therefore, this study aims to verify the impact of defense spending along with some other control variables on unemployment for a set of five countries from Asia (i.e. Cambodia (low income), China (upper middle income), Malaysia (upper middle income), Pakistan (lower middle income), and the Philippine (lower middle income) classified by the World Bank. Thus, these countries have a varying level of income which is also one of the features of the study. For empirical investigation purposes annual time

series data ranging over the period 1992 to 2013 are used. To the best of the researcher's knowledge, no such empirical study on the topic under the study in the context of these Asian countries has been carried out. The outcomes are expected to guide the management authorities when devising policy regarding defense spending to achieve full employment. Therefore, this study will contribute to the literature on the relationship between defense spending and unemployment. Other than that, this study, by looking at the connections between unemployment and inward FDI, inflation, workers remittances, domestic investment and population respectively also contributes to the literature in this regard.

The present study is divided into five parts. Part 2 deals with the literature review. Part 3 discusses data description and empirical methodology used in the study. Part 4 interprets the empirical findings. Part 5 concludes the study.

2 Literature review

A plethora of studies have been dedicated amid growing attention to investigate the relationship between defense spending and unemployment in both less developed and developed countries. Existing studies on the topic are evidently scarce on the countries under this study. Similarly, a variety of findings on military spending and unemployment was provided by the prior studies. For example, in a study, Szymanski (1973) examines the relationship between military spending and economic growth for a set of 18 countries over the periods of 1950-1968 and 1960-1968. The study finds for the six biggest out of 18 countries, the association between military expenditure and growth rates is contradictory to what the study had predicted. Though, for the 12 smaller countries, the association between military expenditure and economic growth is in the direction expected but statistically not very significant. Thus, the empirical findings reveal that the six leading capitalist countries namely, France, Great Britain, Italy, Japan, the United States, and West Germany, those with the huge military spending is very considerably hampered in their growth rate due to their military spending. However, the results suggest that the level of unemployment is found to be connected with the level of military expenditure as expected.

Dunne and Smith (1990) made a study of the employment impacts of military spending. The results indicate that the contribution of military spending has no significant effect on the unemployment rate in nine out of 11 OECD countries. Ward and Davis (1992) analyze empirically the link between military spending and economic growth in the U. S. over the period 1948-1990. The finding reveals that military expenditure is a substantial drain on the U.S. economy. Though, the study of Payne and Ross (1992) reveal that there is no causal linkage in either direction between military expenditure and economic performance over the period of 1960:1 to 1988:1. Paul (1996) examines the economic hypotheses about the linkage between unemployment rate and defence and non-defence expenditures for a set of 18 OECD countries during the period 1962-1988. The empirical findings of the study on the impact of defence and non-defence expenditures on unemployment rate are not similar across countries. The results show that military expenditure has an encouraging effect on unemployment in Germany and Australia; however, in case of Denmark it discourages the employment situation. Similarly, in cases of Australia, Belgium, and Germany non-defence expenses and the unemployment rates are causally impartial. Defence expenditure seems to act as a balance tool in response to variations in the unemployment rate in the UK. However, no substantial causal linkage between unemployment rate and defence and non-defence expenditures is discovered for Austria, Canada, Japan, Italy , New Zealand, Spain, Sweden, the Netherlands, and the US.

A study by Yildirim and Sezgin (2003) observes that the impact of military spending is significantly negative on employment in Turkey during the period 1950-1997. Kalim (2003) find that high population growth rate increases unemployment, while a high GDP growth rate can bring about a decrease in unemployment rate in Pakistan during 1986-1999. Eita and Ashipala (2010) evaluate the causes of unemployment in Namibia during 1971-2007. The study finds that the relationship between unemployment and inflation is negative and statistically significant in Namibia. The study of Mpanju (2012) finds that Foreign Direct Investment (FDI) has a significantly positive impact on the pattern of employment opportunities in Tanzania during 1990-2008. George and Oseni's (2012) study proved that the main cause of high level of unemployment in Nigeria over the period 1970- 2005 is the power supply to the industrial sector. Ahmad (2013) finds that oil prices have significant impact on unemployment but there is no significant relationship between real interest rate and unemployment in Pakistan using monthly data during 1991:01 to 2010:12. Brincikova and Darmo (2014) study fail to find any statistically significant influence of incoming FDI on employment for the Visegrad Group (V4) which consists of four central European countries namely the Slovak Republic, the Czech Republic, Hungary and Poland during 1993-2012. Usually, inflation is considered unfavorable to economic growth and development when it outstrips some permissible limits (Azam & Rashid, 2014).The empirical findings of Chowdhury and Hossain's (2014)

study suggest that inflation rate increases unemployment positively while, both GDP growth rate and exchange rate have negative effects on unemployment rate in Bangladesh during the period 2000-2011.
A study by Malizard (2014) examines the effect of military spending on the unemployment rate in France during the period 1975-2008. The empirical results disclose that both defense and non-defense expenditures exhibit negative effects on the unemployment rate, even that the defense expenditure has a higher negative effect on unemployment rate in France. Haseeb et al. (2014) observe that defense expenditure and economic growth has significantly negative relationship in case of Pakistan during 1980-2013. The study of Azam et al. (2015) investigates the nexus between military spending and unemployment from four South Asian Countries includes Pakistan, India, Nepal, and Sri Lanka during the period from 1990 -2013. The study uses panel data estimation techniques encompass DOLS and Panel VECM causality tests. The empirical findings reveal that military expenditure and unemployment has a significantly negative association.

On the other hand, the study of Wing (1991) through Input-output planning models examines the employment consequences of Indonesian military expenditures during the period of 1978-1980. The study suggests that military expenditure is more labor intensive as compared to civilian public expenditure; therefore, switchover from defense to civilian expenditure would have enlarged Indonesian unemployment in the short term. Pivetti (1992) observes that higher defense spending contributes to lower unemployment in case of U.S. during the period 1948-1988. The findings of Huang and Kaos's (2005) study reveals that military expenditure is able to support the employment situation in Taiwan during 1966-2002 in the long run, however, it hurts employment situation in the short run. Dimitraki and Liu (2011) examine the impact of defense spending on economic growth in China during the period 1950-2011. The results reveal that defense spending has overall net positive effect on economic growth during the period under the study. Table I shows some of the existing studies on the investigation of the effect of various factors on unemployment.

Table 1. Selected previous studies on the causes of unemployment

Author (s)	Time periods, Country	Methodology	Response variable	Regressors	Results
Payne and Ross (1992)	1960:1 to 1988:1 U.S.	Unrestricted vector auto regression	Unemployment	Defence spending rate, price level, and interest rate	Find no causal link in either direction between defence expenses and unemployment
Yildirim and Sezgin (2003)	1950-1997 Turkey	ARDL Approach	Labour force	real wage (WP) and real military expenditure	military expenditure negatively effects employment
Valadkhani (2003)	1968-2000 Iran	OLS and 2SLS	Unemployment	Inflation, economic growth, investment growth, broad money	Unemployment responds negatively to the higher growth rates of real investment and inflation
Huang and Kao (2005)	1966-2002 Taiwan	ARDL approach	Private employment	Defence spending, GDP	Defence spending benefit the employment in the long run but hurts in the short run
Tang et al. (2009)	1988-2004 46 countries (OECD=23 & non-OECD=23)	Panel Granger Causality Tests	Unemployment	Military Expenditure	Causality running from defense spending to unemployment
Maqbool, et al. (2013)	1976-2012 Pakistan	ARDL Approach	Unemployment	population, FDI, GDP, inflation, and external debt	All included regressors found are the main determinants except external debt
Chowdhury et al. (2014)	2000-2011 Bangladesh	OLS	Unemployment	GDP growth rate, exchange rate, inflation rate.	Inflation has positive, while GDP and exchange rate have negative effects on unemployment
Zeb e al. (2014)	1995-2011 Pakistan	OLS	Unemployment	FDI, Corruption, Population size and Inflation	FDI, Inflation, Population are the main determinants
Kamran et al. (2014)	1981-2010 Pakistan	OLS	Unemployment	Population growth, Interest rate, FDI, GDP and literacy rate	Population growth fuels unemployment positively and whereas literacy rate and FDI has negative impact on unemployment

Source: Authors compilation

3 Data description and methodology

3.1 Data sources

Annual time series data ranging from 1992 to 2013 are used for empirical investigation. All the data were in US dollar and the data were converted into real term by taking 1999 as the base year. The data were obtained from the World Development Indicator (2014), the World Bank database (http://data.worldbank.org/news/release-of-world-development-indicators-2014).

3.2 Model Specification

We adopt a multivariate framework methodology where unemployment is the response variable. Semi log linear multiple regression model is used in order to analyze the impacts of various determinants of unemployment namely FDI, remittance, inflation rate, government expenditures, domestic investment, GDP, population and defense spending. The proposed model of unemployment for five Asian countries namely Cambodia, China, Pakistan, Malaysia, and the Philippine is given in the following semi log linear form:

$$lnUE = \alpha_0 + \alpha_1 lnFDI_{it} + \alpha_2 lnRem_{it} + \alpha_3 inf_{it} + \alpha_4 lnDI_{it} + \alpha_5 lnGE_{it} + \alpha_6 lnGDP_{it} + \alpha_7 lnPOP_{it} + \alpha_8 lnME_{it} + \alpha_9 lnME_{it}^2 + \varepsilon_{it} \quad (1)$$

Where, UE is Unemployment, FDI is Foreign Direct Investment inflows, Rem is Remittances, Inf is inflation, DI is domestic investment, GE is government expenditures, GDP is Gross Domestic Product that represents economic growth, Pop is population and ME is defense spending. α_0 is the intercept, α_1, α_2, α_3, α_4, α_5, α_6, α_7, α_8, and α_9 are the long run elasticity of the respective variables. Equation 1 hypothesizes that the coefficients signs of population and external debt are predicted to be positive, while the coefficients of FDI, domestic investment, economic growth, inflation and foreign remittances are expected to be negative. While, the coefficient of defense spending and its squares signs would be determined in the study.

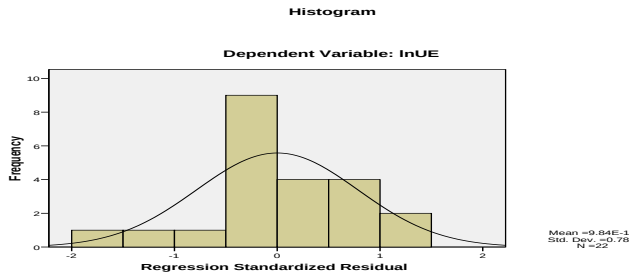
4 Empirical results

4.1 Normality of the Data

Prior to putting the data in linear model for its coefficient determination, it is an important and necessary process to check the data for its normality. Histograms and normal probability plot of regression standardized residuals were obtained and are used here to check the normality. It is a very simple and easy approach to visually check the normality of the data. The results are given in Figure 1 to Figure 5 of the histogram and normal of P-P plot.

Figure 1. Pakistan

(a) Histogram of Residual



(b) Normal of NPP

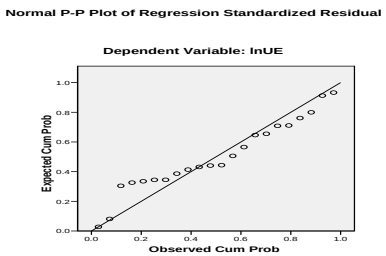
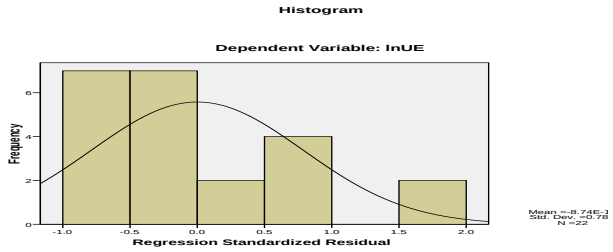


Figure 2. China

(a) Histogram of Residual



(b) Normal of NPP

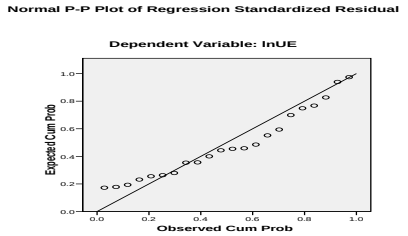
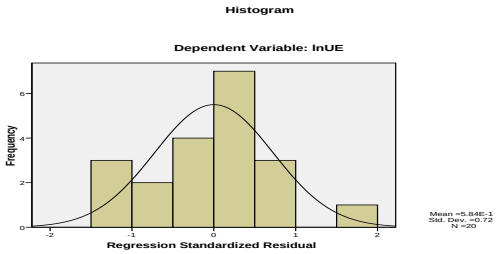


Figure 3. Malaysia

(a) Histogram of Residual



(b) Normal of NPP

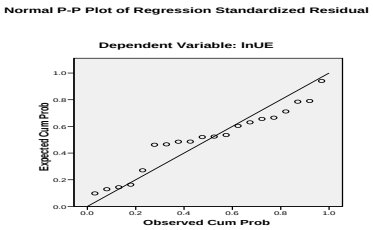
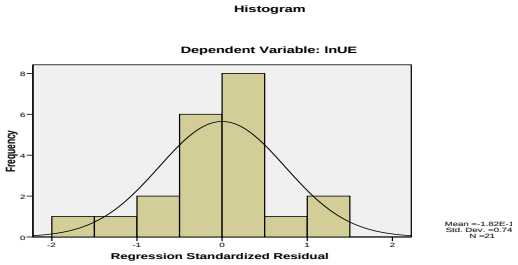


Figure 4. Philippine

(a) Histogram of Residual



(b) Normal of NPP

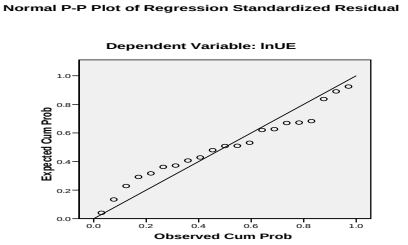
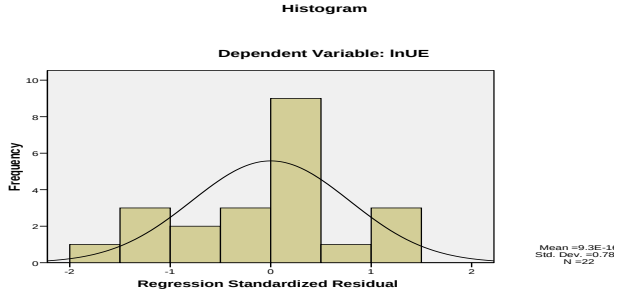
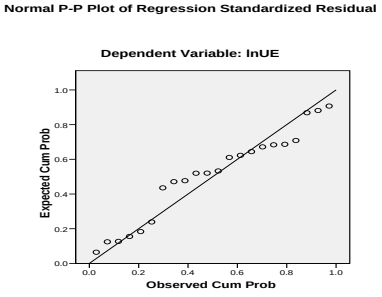


Figure 5. Cambodia

(a) Histogram of Residual



(b) Normal of NPP



A visual study of the histogram (Graph 1(a) to 5(a)) reveals that most of the residuals lie within the normal curve, very few numbers of residual lie outside, both on the left and right side, showing minor positive and negative Skewness, some residual lies outside on top peak, causing a little Kurtosis for all the five Asian countries namely Pakistan, China, Malaysia, the Philippine and Cambodia. As a whole the data is normally distributed as mostly the residuals lie inside the normal curve. From the normal of NPP (Graph 1(b) to 5(b)) reveal that the residual is normally distributed if NPP is drawn in a straight line. In the above case, the most part of the NPP seems to be approximately in a straight line, with the exception of a small part which does not coincide exactly with the straight line for all the five Asian countries.

4.2 Park Test

Park test is used here for detection of heteroscedasticity. The log-linear model is run and we save the residuals, then take the square of the saved residual and regress all the independent variables on the square of the residuals. The results of Park test are given in Table 2.

Table 2. Park test coefficients

Variables	Pakistan		China		Malaysia		Philippines		Cambodia	
	coeff	t-stat	coeff	t-stat	coeff	t-stat	coeff	t-stat	coeff	t-stat
constant	.221	.987	-.019	-.342	-.005	-.050	.069	.481	.011	.062
FDI	.012	1.982	-.003	-.434	.004	.552	.005	1.388	-.002	-.196
Rem	-.006	-.692	-.002	-1.041	-.001	-.127	.010	.659	.009	1.887
Inf	-.012	-1.091	.000	.719	-.011	-.185	.038	.967	.005	.949
DI	-.058	-1.253	.008	.854	.004	.227	.006	.305	.007	.561
GE	.040	1.176	-.010	-.461	-.015	-.394	-.040	-.774	-.037	-1.271
GDP	.002	.395	.005	.718	-.001	-.240	.000	.050	.004	.610
Pop	.006	.076	.003	.246	-.008	-.202	.101	1.489	-.020	-.267
ME^2	-.002	-.164	.001	.075	-.001	-.128	-.020	-1.390	.021	1.692

Dependent Variable is residual square lne2

It is evident from Table II that the coefficients values of all the independent variables are statistically insignificant as the calculated t-statistic in absolute term is smaller than the tabulated values for all the five Asian countries, showing no heteroscedasticity in the model.

4.3 Descriptive Analysis and Correlation

The results of descriptive statistics are presented in Table 3, which explain the actual value deviation from mean value of 10 variables for five Asian countries namely Pakistan, China, Malaysia, the Philippine and Cambodia. The data statistics indicate that unemployment deviates from the mean value by 0.68, 1.17, 0.58, 0.47 and 1.04 standard deviation for Pakistan, China, Malaysia, the Philippine and Cambodia respectively. Where, FDI deviates from the mean value by 0.66, 1.04, 0.77, 0.73 and 0.84 standard deviation respectively for five Asian countries. Table 2 also demonstrates that remittances deviate from the mean value by 0.57, 0.59, 0.91, 0.67 and 1.30 standard deviation respectively for the selected five countries. Second and last column of Table III show that deviation of variables from the mean value for China and Cambodia is greater than 1 for all variables, while the deviation of variables is less than 1 for Pakistan, Malaysia and Philippine. Defense spending deviates from the mean value by 0.59, 1.17, 0.55,0.34 and 1.16 standard deviation respectively for the five selected Asian countries.

Table 3. Descriptive Statistics Analysis

Variables	Pakistan		China		Malaysia		Philippines		Cambodia	
	Mean	Std.Dev	Mean	Std.Dev	Mean	Std.Dev	Mean	Std.Dev	Mean	Std.Dev
UE	1.0816	.68155	.8079	1.17046	1.3275	.58850	2.3112	.47113	.7986	1.04021
FDI	-.6479	.66326	.7380	1.04382	1.2999	.76699	.4081	.72838	1.8140	.84450
Rem	.5706	.56557	-1.638	1.58621	-.8289	.90530	2.3682	.66053	.5517	1.30061
Inf	2.1853	1.02273	3.3373	4.53163	-.1354	.56044	-.1642	.41502	1.2068	1.44574
DI	3.1803	.45749	4.1424	1.27544	5.0080	.59950	4.1063	.50979	2.4667	1.08962
GE	1.6640	.46764	2.0007	1.17808	2.6190	.59718	2.5149	.40994	1.8974	1.04555
GDP	.6083	.84302	1.6415	1.04376	1.8886	.63607	1.5469	.94510	2.0763	1.18410
Pop	.0739	.55467	-1.009	1.09149	.8648	.50485	.8451	.36833	.9432	1.12993
ME	.8404	.59587	.0234	1.18620	.8708	.55485	.6051	.34156	.8608	1.15986

4.4 Model Stability Test

We use the same model for all five Asian countries namely Pakistan, China, Malaysia, the Philippines, and Cambodia included in our study. It is essential to test model stability as country shift might affect it. For this purpose Cumulative Sum of Recursive Residuals (CSUSM) and their squares (SUCSUSM) are used for model stability as proposed by Brown et al. (1975).

Both cumulative sum of recursive residuals (CSUSM) and their square (SUCUSM) for all the five countries (Pakistan, China, Malaysia, the Philippine and Cambodia) show that the residuals of the model lie in the critical region indicating the model is stable throughout the period for all the five countries.

Figure 6. Plot of Cumulative Sum of Recursive Residuals (CSUSM)

Pakistan

China

Malaysia

Philippine

Cambodia

4.5 Stationarity of the Time Series

Table 4 presents the result of the unit root test for Pakistan, China, Malaysia, the Philippine and Cambodia respectively. All the variables for all the five countries are non-stationary when both intercept and trend are included, for all the five countries the variables become stationary after taking first difference.

Table 4. ADF Test for Stationarity (Cambodia, China, Malaysia, Pakistan, and the Philippines)

Variables	Include Intercept Only		Include Intercept and Trend		Result
	Test statistics[1]	Critical Value	Test statistics[1]	Critical Value	
$UE_{Pakistan}$	-1.4386[0]	-3.7856	-1.4447[0]	-4.4691	I(1)*
	-3.8558[0][2]	-3.8067	-3.8284[0]	-3.6591	I(1)**
UE_{China}	-2.0050[1]	-3.8067	-3.1291[0]	-4.4691	I(1)*
	-3.8719[1]	-3.8304	-7.2799[0]	-4.5000	I(1)**
$UE_{Malaysia}$	-2.8681[1]	-3.8067	-3.1922[1]	-4.5000	I(1)*
	-4.7485[1]	-3.8304	-4.6440[1]	-4.5348	I(1)**
$UE_{Philippine}$	-2.3465[1]	-3.8067	-2.5121[0]	-4.4691	I(1)*
	-4.3046[1]	-3.8304	-4.8301[0]	-4.5000	I(1)**
$UE_{Cambodia}$	-3.0314[1]	-3.8067	-4.0016[0]	-4.4691	I(1)*
	-4.3543[1]	-3.8304	-6.4613[0]	-4.5000	I(1)**
$FDI_{Pakistan}$	-2.5559[1]	-3.8067	-2.3659[1]	-4.5000	I(1)*
	-4.7105[1]	-3.8304	-4.9402[1]	-4.5348	I(1)**
FDI_{China}	-2.0178[1]	-3.8067	-3.2286[0]	-4.4691	I(1)*
	-3.9690[1]	-3.8304	-7.5784[0]	-4.5000	I(1)**
$FDI_{Malaysia}$	-2.9595[2]	-3.8304	-2.8035[2]	-4.5348	I(1)*
	-4.8360[2]	-3.8572	-4.7847[2]	-4.5743	I(1)**
$FDI_{Philippine}$	-3.5153[1]	-3.8067	-3.4082[1]	-4.5000	I(1)*
	-4.7900[1]	-3.8304	-4.6023[1]	-4.5348	I(1)**
$FDI_{Cambodia}$	-3.5680[1]	-3.8067	-4.3363[0]	-4.4691	I(1)*
	-4.6593[1]	-3.8304	-6.4187[0]	-4.5000	I(1)**
$ReM_{Pakistan}$	-2.7882[1]	-3.8067	-2.8391[1]	-4.5000	I(1)*
	-4.2564[1]	-3.8304	-4.1194[1]	-3.6746	I(1)**
Rem_{China}	-1.8187[1]	-3.8067	-2.7574[0]	-4.4691	I(1)*
	-3.9858[1]	-3.8304	-7.2208[0]	-4.5000	I(1)**
$Rem_{Malaysia}$	-2.2007[1]	-3.8067	-2.6807[1]	-4.5000	I(1)*
	-5.1393[1]	-3.8304	-5.1386[1]	-4.5348	I(1)**
$Rem_{Philippine}$	-1.9763[1]	-3.8067	-2.9110[0]	-4.4691	I(1)*
	-4.4164[1]	-3.8304	-5.4975[0]	-4.5000	I(1)**
$Rem_{Cambodia}$	-2.3092[1]	-3.8067	-2.6644[0]	-4.4691	I(1)*
	-3.9104[1]	-3.8304	-5.3763[0]	-4.5000	I(1)**
$Inf_{Pakistan}$	-2.0989[0]	-3.7856	-2.0989[0]	-3.7856	I(1)*
	-5.5064[0]	-3.8067	-5.5064[0]	-3.8067	I(1)**
Inf_{China}	-2.8785[1]	-3.8067	-2.7818[1]	-4.5000	I(1)*
	-5.3712[1]	-3.8304	-6.4891[1]	-4.5348	I(1)**
$Inf_{Malaysia}$	-2.5324[1]	-3.8067	-2.7319[1]	-4.5000	I(1)*
	-5.3621[1]	-3.8304	-5.2290[1]	-4.5348	I(1)**
$Inf_{Philippine}$	-1.8421[1]	-3.8067	-2.7735[1]	-4.5000	I(1)*
	-5.5419[1]	-3.8304	-5.3807[1]	-4.5348	I(1)**
$Inf_{Cambodia}$	-2.9194[1]	-3.8067	-3.9911[0]	-4.4691	I(1)*
	-4.4613[1]	-3.8304	-6.8165[0]	-4.5000	I(1)**
$DI_{Pakistan}$	-1.7593[0]	-3.7856	-1.7982[0]	-4.4691	I(1)*
	-4.9353[0]	-3.8067	-4.8077[0]	-4.5000	I(1)**
DI_{China}	-2.0733[1]	-3.8067	-3.2046[0]	-4.4691	I(1)*
	-4.0931[1]	-3.8304	-7.3591[0]	-4.5000	I(1)**
$DI_{Malaysia}$	-2.9991[1]	-3.8067	-3.2032[1]	-4.5000	I(1)*
	-4.8988[1]	-3.8304	-4.8177[1]	-4.5348	I(1)**
$DI_{Philippine}$	-2.6338[1]	-3.8067	-2.8663[1]	-4.5000	I(1)*
	-4.9492[1]	-3.8304	-4.8169[1]	-4.5348	I(1)**
$DI_{Cambodia}$	-2.7194[1]	-3.8067	-3.5952[1]	-4.5000	I(1)*
	-5.3209[1]	-3.8304	-5.1890[1]	-4.5348	I(1)**
$ME_{Pakistan}$	-1.6034[0]	-3.7856	-1.8095[0]	-4.4691	I(1)*
	-4.7511[0]	-3.8067	-4.6335[0]	-4.5000	I(1)**
ME_{China}	-2.0487[1]	-3.8067	-3.0968[0]	-4.4691	I(1)*
	-3.9515[1]	-3.8304	-7.1308[0]	-4.5000	I(1)**
$ME_{Malaysia}$	-2.9373[1]	-3.8067	-4.2733[0]	-4.4691	I(1)*
	-4.5220[1]	-3.8304	-7.0619[0]	-4.5000	I(1)**
$ME_{Philippine}$	-3.3541[1]	-3.8067	-3.2670[1]	-4.5000	I(1)*
	-5.0520[1]	-3.8304	-4.8877[1]	-4.5348	I(1)**
$ME_{Cambodia}$	-3.1339[1]	-3.8067	-4.4241[0]	-4.4691	I(1)*
	-4.4445[1]	-3.8304	-6.5043[0]	-4.5000	I(1)**
$GE_{Pakistan}$	-1.9678[0]	-3.7856	-2.0048[0]	-4.4691	I(1)*
	-4.5982[0]	-3.8067	-4.4676[0]	-4.5000	I(1)**
GE_{China}	-3.1646[0]	-3.7856	-3.0845[0]	-4.4691	I(1)*
	-7.2838[0]	-3.8067	-7.1654[0]	-4.5000	I(1)**
$GE_{Malaysia}$	-2.8628[1]	-3.8067	-3.3715[1]	-4.5000	I(1)*
					I(1)**

Table 4. ADF Test for Stationarity (Cambodia, China, Malaysia, Pakistan, and the Philippines) - Continued

	-4.8772[1]	-3.8304	-4.7551[1]	-4.5348	
$GE_{Philippine}$	-2.4220[1]	-3.8067	-2.7914[1]	-4.5000	I(1)*
	-4.9204[1]	-3.8304	-4.7558[1]	-4.5348	I(1)**
$GE_{Cambodia}$	-3.1818[1]	-3.8067	-4.2084[0]	-4.4691	I(1)*
	-4.2924[1]	-3.8304	-6.6053[0]	-4.5000	I(1)**
$GDP_{Pakistan}$	-2.1051[1]	-3.8067	-2.1395[0]	-4.4691	I(1)*
	-4.0075[1]	-3.8304	-4.6973[0]	-4.5000	I(1)**
GDP_{China}	-2.0073[1]	-3.8067	-3.2334[0]	-4.4691	I(1)*
	-4.2469[1]	-3.8304	-7.6556[0]	-4.5000	I(1)**
$GDP_{Malaysia}$	-2.3256[1]	-3.8304	-3.9487[1]	-4.5000	I(1)*
	-4.1676[1]	-3.8572	-6.1538[1]	-4.5348	I(1)**
$GDP_{Philippine}$	-2.3639[1]	-3.8067	-3.9795[1]	-4.5000	I(1)*
	-6.5157[1]	-3.8304	-6.2965[1]	-4.5348	I(1)**
$GDP_{Cambodia}$	-3.0652[0]	-3.7856	-3.2803[0]	-4.4691	I(1)*
	-6.2843[0]	-3.8067	-6.1110[0]	-4.5000	I(1)**
$PoP_{Pakistan}$	-1.4672[0]	-3.7856	-1.6465[0]	-4.4691	I(1)*
	-4.4799[0]	-3.8067	-4.4059[0]	-3.6591	I(1)**
PoP_{China}	-3.1094[0]	-3.7856	-3.0893[0]	-4.4691	I(1)*
	-7.6375[0]	-3.8067	-7.5201[0]	-4.5000	I(1)**
$PoP_{Malaysia}$	-3.1997[1]	-3.8067	-3.1618[1]	-4.5000	I(1)*
	-4.9349[1]	-3.8304	-4.8668[1]	-4.5348	I(1)**
$PoP_{Philippine}$	-2.6221[1]	-3.8067	-2.7355[1]	-4.5000	I(1)*
	-4.7953[1]	-3.8304	-4.6455[1]	-4.5348	I(1)**
$PoP_{Cambodia}$	-2.6580[1]	-3.8067	-4.4007[0]	-4.4691	I(1)*
	-3.9244[1]	-3.8304	-7.4869[0]	-4.5000	I(1)**

[1]Figures in square brackets besides each statistic represent optimum lags selected using the minimum AIC value.
[2]Figures in second row of each variables are first difference of variables, * Show result when the intercept is only included, ** Show results when intercept and trend is included.

4.6 Regression Results

The result of the linear regression model is presented in Table 5. Generally, the results are logical because the explanatory power of R^2 is fairly high and there is no serious autocorrelation problem as shown Durban Watson Statistics for all the five Asian countries namely Pakistan, China, Malaysia, the Philippines and Cambodia.

Table 5. Regression results

Variables	Pakistan		China		Malaysia		Philippines		Cambodia	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
Constant	2.14	0.93	0.03	0.35	-1.43	0.86	-6.99	0.72	0.74	0.81
FDI	0.17	0.88	0.14	0.78	0.01	0.07	-0.08	0.27	-0.18	1.41
Inf	-0.34	0.93	-0.03	0.39	0.51	0.75	2.42	0.62	-0.10	0.50
Rem	0.88*	5.47	-0.43	0.92	0.88**	2.17	0.05	0.33	0.74*	3.17
GE	-1.01*	4.29	-0.01	0.18	0.21*	4.24	-1.08*	3.51	-0.41***	1.75
ME	1.06**	2.10	0.88**	2.25	0.24	0.64	-4.27	1.05	0.65***	1.70
ME^2	0.13***	1.54	0.01	0.86	0.02	0.57	-0.17	0.20	0.01	0.23
POP	7.17*	6.49	2.21*	5.91	0.83**	2.46	13.61*	5.91	0.89	2.72
GDP	0.25**	2.41	-0.09	1.37	-0.02	0.57	-0.13	1.29	-0.14**	2.00
DI	-0.06	0.85	0.01*	2.73	-0.01	1.10	0.08**	2.01	0.07**	2.02
R^2	0.99		0.99		0.99		.98		.97	
adj.R^2	0.98		0.99		0.99		.96		.95	
DW	2.73		1.78		1.62		2.12		2.17	
F-stat	150.19		3926.09		264.91		69.57		49.58	

Note: Asterisks *,** and *** indicate statistical significance at 1% , 5% and 10% level of significance respectively.

Overall the results are logical and extensively satisfactory. The adj. R^2 values found are 0.98, 0.99, 0.99, 0.96 and 0.95 respectively for Pakistan, China, Malaysia, the Philippines and Cambodia. The result of adj. R^2 indicate that about almost more than 97 percent variation in unemployment is due to foreign direct investment, remittances, inflation, domestic investment, government expenditure, military expenditure, gross domestic investment, and population, while remaining 3 percent variation in unemployment is due to other variables which are not included in the model for all five Asian countries. Durban Watson values 2.73, 1.78, 1.62, 2.12 and 2.17 for Pakistan, China, Malaysia, the Philippines and Cambodia respectively are lying between Durban upper limit and 4 minus upper limits; indicate that the values are lying in no autocorrelation zone. F-statistics

values are reasonably high for all the five countries indicating that all the independent variables have joint significance effect on dependent variable.

The estimates of linear regression reveal that unemployment is positively related to FDI in Pakistan, China and Malaysia while negatively related in the Philippines and Cambodia. The coefficient of foreign direct investment is statistically insignificant for the all the countries. Inflation has statistically insignificant negative relationship with unemployment for all five countries except in the Philippine where the relationship is positive and statistically insignificant. Remittances have statistically significant positive relationship with unemployment in Pakistan, Malaysia and Cambodia, while in China and in Philippine the relationship is statistically insignificant. Defense spending has statistically significant positive relationship with unemployment in Pakistan and Cambodia, while in China, Malaysia and in the Philippine the relationship is statistically insignificant. This finding is in line with that of Paul (1996) that found the relationship between defence spending and unemployment is not similar across countries. However, specifically for Pakistan and Cambodia, the present study's finding supports that of Yildirim and Sezgin (2003) which found a positive relation between military spending and unemployment. The result further indicates that domestic investment has negative relationship with unemployment in Pakistan and in Malaysia. An increase in population has statistically significant positive relationship with unemployment in all the five selected countries from Asia. The results further indicate that 1 percent increase in population growth rate lead to increases in unemployment by 7.17, 2.21, 0.83, 13.61 and .89 percent respectively for Pakistan, China, Malaysia, the Philippine and Cambodia. The data have been checked using ADF test for stationarity purposes. Further, least squares estimate reveals that the impacts of population growth, remittances and economic growth have positive impact on unemployment while inflation, government expenditure and defense spending have negative impact on unemployment.

The empirical results of this study are theoretically, technically and statistically acceptable and plausible for onward policy implication. The findings of the study tend to suggest that decreases in defense spending to overcome unemployment problem are worthwhile. Therefore, the policy of allocating minimum defense budget will divert the resources to other relatively more productive sectors including health and education. Decreased military spending is a feasible remedy for improving the Asian economic and social wellbeing of the region. Besides that, there are some other factors that need to be considered by policymakers in reducing unemployment. In the case of the Philippines, inflation appears to have positive relation with unemployment; therefore, to reduce unemployment the relevant authority should reduce inflation. As for remittances, they tend to have positive relationship with unemployment which means to reduce unemployment policymakers should devise policies so that among others, the beneficiaries should not depend too much on remittances so as to discourage them to get a job. In the case of domestic investment, it tends to have negative connection with unemployment; therefore policies that encourage investment will lead to reduction in unemployment. As for population, it has significant effect on unemployment, which requires policymakers to limit population growth in order to reduce unemployment.

5 Conclusion

This study has examined empirically the impact of defense spending on unemployment together with a set of control variables for five selected Asian countries from Asia: Cambodia, China, Malaysia, Pakistan, and the Philippines for the period of 1992 to 2013. The empirical findings show that higher defense spending tends to cause more unemployment in most of the sample countries. This means lower allocation of military spending would be effective in overcoming unemployment problem by releasing the funds into more productive sources of growth such as education and health which will help increase the welfare of people in the long-term. However, the findings of the study also reveal that a number of factors need to be taken into account when devising policies to reduce unemployment to strengthen the economy. Domestic investment needs to be encouraged while population growth checked. Besides that, inflation and remittances may affect the stimulus to find work. Therefore, policymakers need to find ways how to make more employment opportunities in line with all these constraints.

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