



## **The Impact of Foreign Direct Investment, Capital Formation, Inflation, Money Supply and Trade Openness on Economic growth of Asian Countries**

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### **ABSTRACT**

Economic growth is currently the essential phenomena for emerging countries worldwide and has gained the researchers' intentions. Thus, the current study aims to examine the role of foreign direct investment (FDI), capital formation, inflation, money supply, and trade openness on the economic growth of Asian countries. The data has been extracted from the twenty emerging Asian countries from 2007 to 2018 using the most popular database named World Development Indicators (WDI). The fixed-effect model, along with the robust standard error, has been used for checking the impact of predictors on the economic growth of Asian countries. The results revealed that the predictors such as FDI, capital formation, money supply, and trade openness have a positive association with economic growth, while inflation has a negative association with the economic growth of Asian countries. These findings are suitable for the new arrivals who want to examine this area in the future and for the regular traders who want to develop policies related to their economic growth.



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## **1. Introduction**

The country's current economic conditions decide the country's future (Nawaz, Azam, & Bhatti, 2019). Any country's economy gets support from several factors for its survival and growth like FDI, inflation, trade, import, export, tax revenue, etc. The combination of these factors decides whether the economy is in the right direction or not. In the recent decades, the South East Asia and South Asia regions have encountered international private capital

flows, in general, they have become less appealing trade FDI, as a consequence of institutional bottlenecks, following a greater degree of penetration in trade the world economy: weak standard of infrastructure and inadequate domestic savings. In the other countries of these regions, macroeconomic turbulence was observed, apart from Malaysia, Pakistan, Indonesia, Bangladesh, Thailand, and India: uneven economic development, elevated inflation, and elevated fiscal deficits (Crowley & Lee, 2003).

FDI is the positive indicators trade contribute trade economic growth. FDI is the investment inflow from one country trade any of the other countries of the world. Several reasons stand behind the investment of one country in another country, i.e., cost of production, quality products, reduce the lead time. As internationalization theory states proposed, one of the prime reasons behind the FDI of any country is the economy of scale, which results in a reduction of production cost (Siddique, Ansar, Naeem, & Yaqoob, 2017). Another influential factors towards the country's economic growth (economic growth) is the tax revenue. Tax is the obligatory charge imposed by the government on the people. The tax is levied on the people's income, properties, and other related factors (Ojong, Anthony, & Arikpo, 2016). The study also proposed that payment of tax is not primarily the goods or services exchanged. Still, it's the transfer of resources from the country private trade the public sector trade support its economy.

The studies proposed that there is an association between money supply (MS) and Inflation. On the other, both money and Inflation collectively affect the country's economic growth (Van, 2019). An increase in money continually results in Inflation but the long run. Whereas on the other hand, the continuous increase in money does not affect Inflation in the short run. This concludes that money and Inflation are directly associated with each other. money affects the economic growth of the country.

Several factors impact the country's economy, especially Asian countries, i.e., Inflation, FDI, MS, etc. Capital formation is also one of the core factors which impacts the economic growth of the country. The study proposed an association between any country's capital formation and its economic growth (Shahbaz, Tang, & Shabbir, 2011). This relation's nature stated as positive (Saidi & Hammami, 2015) (Noor & Siddiqi, 2010). On the other hand, a study conducted in china proposes that there is no association between capital formation and country economic growth (Shahbaz & Lean, 2012).

Trade openness (TRADE) means open border trade. The question arises here whether the countries believe in trade openness results in rapid growth in the country's economy? There is vast literature available on the relationship between trade and the economic growth of the country. Their studies proposed that the economic growth of the country, having believed in trade, is better than those against this belief (Awokuse, 2008; Yanikkaya, 2003). A positive association reported in a vast literature regarding the relationship between trade and the growth of the country (Menyah, Nazlioglu, & Wolde-Rufael, 2014; Soukhakian, 2007; Ulaşan, 2015).

In recent decades, the association between inflation and economic growth has been one of the most significant economic scandals among analysts, policymakers, and financial institutions (Nawaz, Hussain, Riaz, & Ahmad, 2019). The focus point is, in particular, that if inflation necessarily leads to trade or hurts economic growth (Khan & Nawaz, 2010). While the link between inflation and development has been extensively explored and analyzed through the years, the economic literature link is being addressed. Empirical and theoretical data essentially offers three forms of ties, robust, negative, and zero, between Inflation and economic development. Inflation was not seen as an issue at the beginning of the twentieth century, where Keynesian politics predominated, and it had a positive impact on economic development. Simultaneously, the Phillips Curve trade further focuses, forecasting that high Inflation would positively affect economic activity by having a low unemployment rate. Subsequently, several experiments did not reveal definitive scientific proof that inflation and economic development were either optimistic or pessimistic. Thus, the present study investigates FDI, capital formation, inflation, trade, and money supply of the emerging Asian countries.

The literature identified the mixed impact of mentioned variables on Economic growth (Ojong et al., 2016; Saidi & Hammami, 2015; Shahbaz & Lean, 2012; Siddique et al., 2017; Soukhakian, 2007; Van, 2019). Moreover, every country has different circumstances that influence particular variables on countries' economic growth. The present study aims to check whether the country's economic growth accepts the impact of FDI, capital formation, money supply, trade, and inflation in Asian countries. This paper will address the following questions: Either all the mentioned variables (FDI, capital formation, money supply, trade, and inflation) have a significant impact on economic growth? Which variable has a comparatively significant impact on economic growth?

## **2. Literature Review**

Developing economies are attracting FDIs. In order to explain this trend, there are three critical instances. Firstly, most FDI outflows come from developed countries, but their share of overall FDI outflows has declined over time. Although FDI's outflows in developing and emerging economies grew gradually in 2003, FDI's share of industrialized countries declined to seventy-five percent in 2011. Secondly, most businesses spend in their countries with similar development levels. Approximately seventy percent of FDI is coming from established and emerging countries, while the remaining thirty percent goes to other developing and emerging countries.

In contrast, additional money is being invested in other developing nations. Thirdly, developed countries can change their operations than evolving and emerging economies. Around forty-five percent of FDI flows to non-developed developing and emerging countries. Furthermore, developed countries are the primary source of FDI for developing and emerging countries. (Muhammad & Khan, 2019).

The linkage between FDI and economic growth can be established by tracing the theories of modernization and dependency. Theories of modernization indicate that FDI stimulates economic growth (Adams, 2009). The role of technology transfer through FDI is

underlined in the modern growth theories. However, by a lack of infrastructure, education, the liberalized capital markets, socio-economic and political stability in developed countries (Calvo & Sanchez-Robles, 2002). The relationship between FDI and the economic growth from 1980 trade 2008 was tested by Iqbal, Shaikh, and Shar (2010) in Pakistan.

The study was conducted in the services sector of the country. The results of the study proposed that there is a significant association between FDI and the economic growth of Pakistan. The results of the study also support panel cointegration analysis. Another study whistled the relationship between CO2 emission, foreign direct, renewable waste, investment, and the economic growth from 1980 trade 2014 in Pakistan's context, Bakhsh, Rose, Ali, Ahmad, and Shahbaz (2017). There was an equation testing model employed in the study. Trade test the relationship between variables. The data collection source of the study was the Economic Survey of Pakistan. The results of the study proposed that there is a significant association between FDI and economic growth in Pakistan. The study results further proposed that the increase in the economic growth of Pakistan throws a positive impact on pollution emission. Capital formation has a positive, and pollution harms economic growth

The relationship between FDI, energy consumption, capital formation, and economic growth was tested by Muhammad and Khan (2019). The data selected for the study ranged from 2001 trade 2012 of the Asian 34 countries. The recent GMM method was employed in the study. The study results proposed that all the selected variables, i.e., FDI, energy consumption, and capital formation, have played a vital role in the country's economic growth. The study also proposed some suggestions trade use advanced technology better and attract foreign invest readers in Asia. This will result in the betterment of the Asian country's economies.

The linkage between TRADE and economic development is not new trade literature. However, for this interaction in research has been carried out, the findings are still inconclusive. Studies found a favorable association between TRADE and economic development; however, studies have struggled trade find a nexus between these variables (Duong & Hultberg, 2018; Lu, 2018). Trade openness plays a vital role in the economic growth of the country. TRADE is the open trade policy of the country. There are mixed results reported in the literature regarding trade and economic growth of the country. The nexus between TRADE, economic growth, and degradation in the Asian Developed countries were tested by Muhammad and Khan (2019). The study used the data panel from 1986 trade 2013. The data set belongs to trade the Asian Developing Countries. The results of the study proposed that trade and economic growth impact carbon emission. The study plea the existence of EKZ, which in results concluded that EKZ does not validate.

The economic theory assumes that a central bank's freedom from political authority implies a break between political and monetary control. This separation is inevitable if market inflation is managed without affecting other macroeconomic factors, such as development or unemployment. The central bank theory that began in the '70s and still gains traction assumes the central banks' position as a sin-qua-non arrangement that ties government hands and thereby decreases or even removes inflationary prejudices. Furthermore, because of its

intrinsic unbelief, such a discussion is mainly applicable to trade monetary policy. The investigation's prime aim was to assess the relevance of an anti-inflationary strategy to tackle inflation in freeing the central bank of political control. To this end, the samples from the industrialized (20) and emerging (37) countries observed in both the 1997-2006 and 2007-2016 study periods were reviewed. We found that both inflation and variability have skewed our findings in high inflation countries and atypical countries. And after several political and economic factors are added, this result remains true (Higgins, Zha, & Zhong, 2016; Lopes da Veiga, Ferreira-Lopes, & Sequeira, 2016).

The linkage between GDP and Inflation in four countries of South Asia (Bangladesh, India, Pakistan, and Sri Lanka) was tested by Mallik and Chowdhury (2001). The cointegration and error correction model explore the degree of inflation-related economic growth, and vice versa was employed in the study. The IMF International Financial Statistics CD-ROM has used the annual database obtained. The empirical data indicates that a long-term association occurs in all four countries between growth and inflation rates. Finally, the analysis assesses that Inflation and economic development are linked positively, and the inflation response to growth rate adjustments are more significant than that of inflation rate adjustments.

In a study, the cross-country relation between Inflation and development. The research analyzed cross-cutting analyses in 170 emerging and industrialized countries. The research used the annual frequency data series 1960-1992. It evaluates the relation between Inflation and growth. The analysis used simple regression techniques. Empirical results indicate the economically, statistically, and statistically relevant and robust cross-country correlation between Inflation and development (Behera, 2016). The study in non-structural, low-frequency word trade analyzes the economic growth and inflation trend was conducted by Valdovinos (2003). The research used yearly data from 1970-2000 for the eight Latin American countries. The thesis investigated spectral inflation rate by utilizing spectral analysis. The study's empirical findings stressed that the average long-term inflation rate in a country is adversely related to trade long-term development.

### **3. Data and Methodology**

The present study investigates the impact of FDI, capital formation, inflation, money supply, and trade openness on the growth of Asian countries. The data is extracted from the twenty emerging Asian countries named Malaysia, Indonesia, Oman, Pakistan, Bangladesh, India, Saudi Arabia, United Arab Emirates (UAE), Iran, Qatar, Turkey, Kuwait, Nepal, Japan, Thailand, Singapore, Yemen, Bahrain, Maldives, and China from 2007 to 2018 by using (WDI, 2019). Economic growth (economic growth) is a dependent variable measured as GDP growth (annual percentage). In contrast, the predictors such as FDI has been measured as the "foreign direct investment, net inflow (GDP percentage)," capital formation (CAPF) is measured as the gross capital formation (percentage of GDP), inflation (INF) is measured as the consumer prices (annual percentage), money supply (money) is measured as the broad money (percentage of GDP) and trade openness (TRADE) is measured as the merchandise trade (percentage of GDP). Table 1 indicates the measurement of variables used for the recent analysis.

**Table 1**  
**Measurement of variables**

Variable	Measurement	Source
Economic growth	GDP growth (annual percentage)	(WDI)
Foreign Direct Investment	FDI, net inflow (GDP percentage)	(WDI)
Capital Formation	Gross capital formation (percentage of GDP)	(WDI)
Inflation	Consumer prices (annual percentage)	(WDI)
Money Supply	Broad money (percentage of GDP)	(WDI)
Trade Openness	Merchandise trade (percentage of GDP)	(WDI)

The variables of the study are presented in the form equation given below:

$$EG_{it} = \alpha_0 + \beta_1 FDI_{it} + \beta_2 CAPF_{it} + \beta_3 INF_{it} + \beta_4 MS_{it} + \beta_5 TO_{it} + e_{it} \quad (1)$$

Where,  $i$  = Country,  $t$  = Time Period, EG = Economic growth, FDI = Foreign Direct Investment, CAPF = Capital Formation, INF = Inflation, MS = Money Supply, TRADE = Trade Openness.

The fixed-effect model is used for the current analysis that takes each cross-section unit's "individuality" intrade account. "The slope of the coefficients was assumed trade be constant across the firms even though it allowed the intercept trade vary with each firm in this model." The equation of the fixed model is shown below:

$$Y_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + u_{it} \quad (2)$$

Also, a robust standard error has been used for checking the impact of predictors on the economic growth of Asian countries because of cross-sectional dependence (countries are more than the years), and data have not full fill the assumption of homoscedasticity and auto-correlation (Hoechle, 2007).

#### 4. Results

The study results first deal with the regression's multicollinearity assumption. The figures exposed that no issue of multicollinearity because the values of VIF are less than five that is the indication of variables are not positively correlated with each other. These values have been shown in Table 2.

**Table 2**  
**Variance Inflation Factors**

	VIF	1/VIF
TRADE	3.159	.317
CAPF	2.986	.335
MS	1.929	.518
INF	1.588	.63
FDI	1.235	.81
Mean VIF	2.179	.

Table 3 indicates the correlation matrix that shows the relationship between the variables and the figures exposed that all the predictors except inflation have a positive

association with growth. This correlation matrix also shows the nexus among other variables used for the current analysis.

**Table 3**  
**Correlation Matrix**

Variables	EG	FDI	INF	CAPF	MS	TRADE
EG	1.000					
FDI	0.264	1.000				
INF	-0.316	-0.264	1.000			
CAPF	0.420	0.070	-0.144	1.000		
MS	0.145	-0.312	0.537	0.236	1.000	
TRADE	0.540	0.185	-0.021	0.752	0.344	1.000

The findings also show the Hausman test necessary trade check the appropriate model between random and fixed model, and the figures highlighted that the fixed effect is appropriate because the probability value is less than 0.05. These values are highlighted in Table 4.

**Table 4**  
**Hausman Test**

	Coef.
Chi-square test value	25.695
P-value	0.000

The fixed-effect model results reveal that the predictors such as FDI, capital formation, money supply, and TRADE positively associate with economic growth. At the same time, inflation negatively associates with the growth of Asian countries because the t-statistics are higher than 1.64 while probability values are also less than 0.05. These values are shown in Table 5.

**Table 5**  
**Fixed Effect Model**

Variables	Beta	S.D.	t-value	p-value	L.L.	U.L.	Sig
FDI	1.119	.181	6.20	.000	.763	1.475	***
INF	-.695	.088	-7.86	.000	-.869	-.521	***
CAPF	.047	.025	1.83	.068	.003	.097	*
MS	.223	.117	1.90	.058	.008	.454	*
TRADE	.008	.003	3.09	.002	.003	.013	***
Constant	4.99	.642	7.78	.000	3.725	6.255	***
R-squared		0.584	Number of obs			236.000	
F-test		59.167	Prob > F			0.000	

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

The robust standard error results match the fixed-effect model and reveal that the predictors such as FDI, capital formation, money supply, and TRADE positively associate with economic growth. In contrast, inflation has a negative association with the economic growth of Asian countries. These are highlighted in Table 6.

**Table 6**  
**Robust Standard Error**

<b>Variables</b>	<b>Beta</b>	<b>S.D.</b>	<b>t-statistics</b>	<b>p-values</b>	<b>L.L.</b>	<b>U.L.</b>
FDI	1.119	0.169	6.620	0.000	0.765	1.473
INF	-0.695	0.100	-6.960	0.000	-0.904	-0.486
CAPF	0.047	0.009	5.110	0.000	0.028	0.066
MS	0.223	0.059	3.779	0.009	0.318	0.765
TRADE	0.008	0.002	3.920	0.001	0.004	0.012
cons	4.990	0.862	5.790	0.000	3.186	6.793

## 5. Discussion and Implication

The results indicate that there is a positive relationship between FDI and economic growth. This result is in line with the past studies of Hanif, Raza, Gago-de-Santrades, and Abbas (2019), as a high rate of FDI increases the country's economic growth. The results reveal that capital formation has a positive association with economic growth. This finding matches with the previous studies of Pelinescu (2015), which showed that capital formation has critical importance in achieving better economic growth. Moreover, the inflation rate found trade be a negative relationship with economic growth. The result of inflation agrees with the previous studies by Bittencourt, Van Eyden, and Seleteng (2015), which also reveals that the inflation rate has unfavorable effects on the country's economic growth rate. Estimated results of money supply indicate a positive association with the rate of economic growth of the country. Findings agree with the past studies Denbel, Ayen, and Regasa (2016). Similarly, TRADE is positively associated with economic growth, as found in the previous study by Ulaşan (2015).

This article has both theoretical and empirical implications. From a theoretical point of view, the study adds trade the literature on the economy as the study's primary concern is the role of different factors like FDI, capital formation, inflation, money supply, and TRADE in achieving the improvement in the economic growth. The paper has empirical implications, trade, as it gives a guideline trade the economy regular traders of how trade bring improvement in the rate of economic growth with adequate foreign investment, capital formation, inflation situation, money supply, and Trade.

### 5.1. Conclusion and Limitation

In the conclusion of the study, it is found that the rate of FDI has a positive relationship with the economic growth of the country. The paper found that capital formation is positively linked with the economic growth of the country. Moreover, the inflation period proves trade to be unfavorable trade economic growth as inflation decreases the country's productivity, investment, and employment rate. Additionally, the study proves that with more money supply in the economic sectors, economic growth rises. It also proved that the extent trade which the country makes trade relations across the globe has a positive association with economic growth's country's rate.

This study has analyzed 20 Asian economies by incorporating related financial variables and trading the existing literature. Only five factors like FDI, capital formation, inflation, money supply, and TRADE have discussed in the current study trade capture the Economic growth of Asian economies, while many other factors directly impact the growth, which are not part of a recent discussion study. Future studies should incorporate other social, political, and environmental factors with mentioned financial factors trade understand the

exact impact on economic growth. Moreover, a country-specific analysis may depict the exact picture as different countries have different circumstances.

### **Conflict of Interests/Disclosures**

The authors declared no potential conflicts of interest w.r.t the research, authorship and/or publication of this article.

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