CHAPTER - II
REVIEW OF LITERATURE

2.1 Introduction:

This chapter addresses some of the studies that analyze the determinant of economic growth using the internal and external growth models. These studies focused on role of labor and physical capital, human and technical progress in the process of economic growth. These Previous studies differ in terms of the model used for the analyses of economic growth.

2.2. The study by Afaf & Majeed (2015) entitled, “Impact of Exports and Imports on Economic Growth: Evidence from Tunisia” investigated the impact of exports and imports on the economic growth of Tunisia over the period 1977-2012. The study used Granger Causality and Johansen Cointegration approach for long run relationship using Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) stationarity test, the variable proved to be integrated of the order one (1) at first difference. Johansen and Juselius Cointegration test was used to determine the presence or otherwise of a cointegrating vector in the variables by using following equation:

\[ GDP_t = \alpha + \beta \text{export}_t + \beta_1 \text{import}_t + \epsilon_t \]

Where:

GDP: Log GDP is economic growth as a proxy for gross domestic product
lexport: log export of goods and services
limport: log import of goods and services
\( \alpha \): is constant term
The study found finding is clarified that export, import and GDP are found of order one (t) stationary at the first differences. Therefore, the variables were found to be integrated of order one. The cointegration test confirmed that GDP, export and import are cointegrated, indicating an existence of long run equilibrium relationship between all the variables.

2.3. The study by Hamdan (2015) entitled, “Determinants of Economic Growth in Palestine” focused to Determinants on the economic growth in Palestine, during period 1996-2012. The study used counteraction approach, by using following equation:

\[ Y = \log GDP = \log L + \log I + \log FDI + \log AID + \log OP + \epsilon \]

Where:

Log GDP: Is the Gross Domestic Product at Constant Prices
Log L: Is the Number of Workers Full Employment
Log I: Is the Gross Fixed Capital Formation
Log FDI: Is the Foreign Direct Investment
Log AID: Is the Foreign Aid Inflow
Log OP: Is the Degree of Trade Openness
\( \epsilon \): Random error

The study found out that The Gross Fixed Capital Formation (I), The Foreign Direct Investment (FDI), foreign aid (AID), and The Degree of Trade Openness (OP), had a positive effect on growth in real GDP. As a result, increase in these variables leads to improvement in real GDP growth. The study recommends the emphasis on investment in Physical capital, and employees for its important and prominent role in increasing economic growth, also Policies should be put in place to increase Gross Fixed Capital Formation, and foreign aid.
2.4. The study by Nistor (2014) entitled “FDI and Economic Growth, the Case of Romania” focused on importance and the effects of FDI attracted in Romania on its GDP, during the period 1990 to 2011, using in the following equation:

\[ GDP = \alpha_0 + \alpha_1 FDI + \alpha_2 GE + \alpha_3 GFCF + \varepsilon \]

Where:

GDP: Gross domestic product

FDI: Foreign direct investment

GE: Government expenditure

GFCF: Gross fixed capital formation

\( \varepsilon \): Random error

\( \alpha_0 \): Constant number of equation

The study found that FDI inflows have a positive impact on the gross domestic product, and also the gross fixed capital formation had a positive impact on gross domestic product. The study found the negative impact of public expenditure on gross domestic product. The study recommended that FDI can be considered an active factor in the development and adaptation to the market economy and competitiveness, in the case of Romania.

2.5. The study by Biswas & Saha (2014) entitled, "Macroeconomic Determinants of Economic Growth in India: A Time series Analysis" estimated the short-run as well as long-run macroeconomic determinants of country’s economic growth by applying time series analysis. The study analyzed the annual data from 1980-81 to 2010-11 by using vector error correction (VEC) model, by using following equation:
\[ GDP_t = \beta_0 + \beta_1 \log GDCF_t + \beta_2 \log EM_t + \beta_3 \log EX_t + \beta_4 \log FDI_t + \beta_5 \log MS_t + \beta_6 \log WPI_t + \beta_7 \log FD_t + \epsilon_t \]

Where:
GDP: Gross Domestic Product
GDCF: Gross domestic capital formation
EM: labor force
FDI: Foreign direct investment inflow
MS: Money supply
WPI: A measure of inflation
FD: Gross fiscal deficit
\( \beta_0 \) = constant or intercept term.
\( t \) = deterministic trend.
\( \epsilon_t \) = the stochastic error term.

The \( \beta_0 \) are the coefficients to be estimated. The expected signs for \( \beta_1 \), \( \beta_2 \), \( \beta_3 \), \( \beta_4 \), \( \beta_5 \) are positive, that of \( \beta_6 \) and \( \beta_7 \) are negative.

The study found that gross domestic capital formation, employment, export, foreign direct investment and money supply have positive effect on India’s GDP growth, whereas inflation and fiscal deficit have negative effect. The outcomes showed that GDP is elastic to GFCF, EM, EX, MS, WPI and FD as elasticity’s of these variables have magnitudes greater than one, implying India’s GDP does respond strongly to the changes in these variables. But on the other hand GDP was comparatively less elastic to FDI during the study period.

2.6. The study by Pala& Teker (2014) entitled, "Determinants of Economic Growth for the EU-27 Countries and Turkey: An Implementation with Static Panel Model" analyzed determinants of
Economic Growth for the EU-27 Countries and Turkey, during period 2000-2011. The study used Static panel regression model, by using following equation:

\[ \text{GDP} = c + \beta_1 \text{DP} + \beta_2 \text{DCP} + \beta_3 \text{FT} + \beta_4 \text{NS} + \beta_5 \text{CT} + \epsilon \]

Where:

- \( \text{GDP} \): Gross domestic product
- \( c \): Constant
- \( \text{DP} \): Domestic Credit Provided by Banking Sector to GDP (%)
- \( \text{DCP} \): Private Sector Credit to GDP (%)
- \( \text{FT} \): Foreign Trade to GDP (%)
- \( \text{NS} \): Net Savings to GNI (%)
- \( \text{CT} \): Consumer Inflation, Yearly (%)
- \( \epsilon \): Random error.

The study found that the 1 percent increase in population increased GDP growth by 0.49 percent, the 1 percent increase in private sector credit providing banking sector to GDP ratio increase GDP growth by 0.86 percent, the 1 percent increase in net savings to GNI rate increase GDP growth by 0.59 percent, the 1 percent increase in consumer inflation decrease GDP growth by 0.04 percent. Foreign trade to GDP ratio was observed to be a statistically insignificant. There was a positive and significant relation between human capital and economic growth.

2.7. The Study by Phimphanthavong (2014) entitled, "Determinants of Economic Growth in Laos" focused on determinants of economic growth in Laos. The study used annual time series data from 1980 to 2010, using the equation form as below:
\[ d\ln GDPP_t = \alpha_0 + \alpha_1 d\ln OPEN_t + \alpha_2 d\ln AID_t + \alpha_3 d\ln FDI_t + \alpha_4 d\ln GoEx_t + \alpha_5 d\ln DI_t + \alpha_6 \ln LBF_t + \alpha_7 1997 + E_t \]

Where:

- \( \text{GDPP} \): denotes the GDP per capita at time \((t=1980, 1981, 1982\ldots)\)
- \( \text{OPEN} \): The degree of trade openness
- \( \text{AID} \): The foreign aid inflow
- \( \text{FDI} \): The foreign direct investment
- \( \text{GoEx} \): The government expenditure
- \( \text{DI} \): The domestic investment
- \( \text{LBF} \): The number of labor force
- \( \text{D} \): The dummy variable
- \( \text{E} \): This represents the error term.

The study found a positive relation between economic growth and foreign aid. Trade openness is one of the factors encouraging the economic growth of Laos, whereas population growth had negative effect on economic growth. It may be due to incapacity of the Government to provide social services to the large people efficiently. Also the results confirm that FDI has a positive impact on Laos’s economic growth. The study recommends the trade openness which shows a very strong correlation with economic growth the Government of Laos, and it should exaggerate the efforts to diversify the country’s export base, which depend on the exports of natural resources and raw products.
2.8. The study by Ahmed et.al. (2013) entitled, *Effects of Export and Import on GDP of Bangladesh an Empirical Analysis* analyzed the effects of export and import on GDP of Bangladesh using annual data from 1972 to 2006, using the following equation:

\[ \log GDP = \beta_1 + \beta_2 \text{Ex} + \beta_3 \text{Im} + u \]

Where:
- GDP: Gross domestic product
- Ex: Export
- Im: Import

The study found that when exports increase by one dollar, GDP increases by 4.47 dollar. It also showed that import had negative effect on GDP. If import increases by 1 GDP decreases by 0.04 dollar, the study recommended acceleration in production and expansion of trade which results in growth of national wealth. Increased production in export sectors may become the prime mover in the development as this will generate employment opportunities which in turn will generate savings and investment on consequent flow of capital. The prime national objective of poverty alleviation will thus be materialized. As a first step towards reaching this goal Bangladesh need to look at the country's production infrastructure.

2.9. The Study by Sohaimi (2013) entitled, "The Determinants of Economic Growth in South Eastern Asia" focused on determinants of economic growth in South East Asia, during the period 1972 to 2010. The south East Asian countries which were included in study were Brunei, Cambodia, East Timor, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and lastly Vietnam. The study used multiple linear regressions with time series data, using the equation form as given below:
\[ Y = \alpha + \beta_1\text{OPN} + \beta_2\text{FAID} + \beta_3\text{DIV} + \beta_4\text{EXD} + \beta_5\text{GSP} + \epsilon \]

Where:

Y: Dependent variable, which represent Gross Domestic Product

OPN: Independent Variable which represents trade openness measured in US Dollars at current prices

FAID: Independent Variable which represents foreign aid measured in US Dollars at current prices

DIV: Independent Variable which represents domestic investment measured in US Dollars at current prices

EXD: Independent Variable which represents long-term external debt measured in US Dollars at current prices

GSP: Independent Variable which represents government spending measured in US Dollars at current price

\( \epsilon \): Error, \( \alpha \): constant number of equation, \( \beta \): Coefficient beta value.

The study found coefficient value of trade openness 9.885532, of domestic investments 5.965090, external debt - 4.496026, and Coefficient value of government expenditure is -12.99721 for the period 1972 to 2010. The coefficient value of foreign aid was -2.472181. These results showed that for one percent increase in trade openness and domestic investment, gross domestic product increased by 9.89, 5.96 percent respectively. For one percent increase in external debt, government expenditure and foreign aid in gross domestic product will decrease by 12.99, 2.47 percent respectively.

2.10. The Study by Havi & et al (2013) entitled, “Macroeconomic Determinants of economic growth in Ghana: Counteraction Approach” focused on macroeconomic determinants of economic growth in Ghana. The study used configuration approach between the
periods 1970 to 2011, by applying the Johansen method of co-
integration, using the equation form as below:

\[
RPC GDPG_t = B_0 + B_1 K_t + B_2 L_t + B_3 FDI_t + B_4 Aid_t + B_5 INF_t + B_6 GE_t + B_7 D + \epsilon_t
\]

Where:

\[RPC GDPG_t\]: represents the log of real GDP per capita at time \(t\) real GDP per capita growth

\(K_t\): represents physical capital at time \(t\), measured as gross Fixed capital formation as a percentage of GDP

\(L_t\): represents Labor force at time \(t\), measured as the percent of total population aged 15-64

\(FDI_t\): Represents foreign direct investment at time \(t\), measured as foreign direct Investment as percentage of GDP

\(Aid_t\): Represents foreign aid at time \(t\), measured as foreign aid as a percentage of GDP

\(CPI_t\): represents the consumer price index at time \(t\)

\(GE_t\): represents government expenditure at time \(t\), measured as Government Expenditure as percentage of GDP.

\(D\): represents dummy variable where \(D = 1\) represents periods of military rule and \(D = 0\) stands for periods of democratic rule.

\(T\): time, \(\epsilon\) is the error term assumed to be normally and independently distributed with zero mean and constant variance which captures all other explanatory variable which influence economic growth but not captured in this model.
B1, B2, B3, B4, B5, B7 are the partial elasticity's of real GPD per capita growth with respect to K, L, FDI, AID, INF, GE, and D respectively.

The study found positive relation between growth in real GDP and per capita physical capital, foreign direct investment in the long-run. The study also found that military rule had negative effect on growth in real GDP per capita. The study recommended polices should to increase physical capital and foreign aid in Ghana since these have positive effects on growth in real GDP per capita.

2.11. The Study by Hossain & Mitra (2013) entitled, "The Determinants of Economic Growth in Africa: A Dynamic Causality and Panel Counteraction Analysis" examined the dynamic causal relationships between trade openness, foreign aid, domestic investment, long-term external debt, government spending and economic growth for a panel of 33 highly aid-dependent African countries, during period 1974 to 2009. The economic growth for the panel of 33 African countries is examined by using the equation form as below:

\[
\ln P GDP_{it} = \alpha_0 + \alpha_1 \ln OPN_{it} + \alpha_2 \ln FAID_{it} + \alpha_3 \ln DIV_{it} \\
+ \alpha_4 \ln EXD_{it} + \alpha_5 \ln GSP_{it} + \varepsilon_{it}
\]

Where:

P GDP: Per-capita real Gross domestic Product is measured in constant 2005 prices.

OPN: Trade openness

FAID: Foreign aid

DIV: Domestic investment

EXD: External debt

GSP: Government spending
ε: Error
α0 = lnA0, and The parameters α1, α2, α3, α4 and α5 represent the long-run elasticity's of PGDP with respect to OPN, FAID, DIV, EXD and GSP.

The study found positive elasticity of economic growth with respect to foreign aid and domestic investment in short-run. Elasticity of coefficients of trade openness, domestic investment and government spending was observed significantly positive while that of foreign aid was significantly negative in long-run. The study also found positive effect of external debt in short period but insignificant in long run. The study recommended the implementation of a policy framework aimed at increasing domestic savings that might help reduce dependency on foreign aid. The incremental savings can be utilized for humanitarian development and expansion of production capacity in the manufacturing sector.

2.12. The Study by Hamdan (2012) entitled, "Analysis of Growth Sources in Palestinian Economy (1995 – 2010)" analyzed the sources of economic growth in Palestine during the period 1995 to 2010. The researcher used Solow model which is based upon Cobb Douglas production function, in order to determine the contribution of production factors in economic growth. The study used ordinary least square by using the equation:

\[
LNGDP = \alpha LNK + \beta LN L + D_1 + \epsilon
\]

Where:

GDP: Gross Domestic Product at constant prices
K: Physical capital.
L: The number of workers at full employment.
D1: Dummy Variable Reflects the political situation, this variable takes the value (1) for the years 2000 to 2002 as well as in 2006, and characterized these years the situation of political instability.

\( \varepsilon \): Residual., \( \alpha \): Elasticity at number of workers at full employment

\( \beta \): Elasticity at Physical capital

The study found that all the regression coefficients were statistically significant at the 5% level, According to the value of the coefficient of determination adjusted model, amounted to flexibility of capital (0.63), and flexibility to work (0.53). The study recommends adaptation to the needs of the Palestinian labor market to become beginners contribution and more efficient, and focus on vocational education through professional training sessions.

2.13. The Study by Nbabiri (2012) Entitled, "Determinant of Economic Growth in Sub-Saharan Africa: A Panel Data Approach" aimed to find determinant of Economic Growth in Sub-Saharan Africa. Through the use of a panel data, 19 Sub-Saharan countries studied were Benin, Botswana, Burundi and Cameroon, central African, republic, Ghana, Kenya, Lesotho, Malawi, Mali, Mozambique, Nigeria, Rwanda, Senegal, South Africa, Swaziland, Togo, Zambia and Zimbabwe during period 1982 to 2000. The study used generalized method of moments (GMM) and used the equation form as below:

\[ Y_{it} = \phi_0 + \phi_1 y_{log_{it}} + \phi_2 pkf_{it} + \phi_3 gge_{it} + \phi_4 x_{it} + \phi_5 ndr_{it} \\
+ \phi_6 Ir_{it} + \phi_7 aid_{it} + U_{it} \]

Where:

\( Y \): The difference of the log of GDP per capita \((lny_{it} - lny_{it-1})\).
\textit{ylog}: The log of GDP per capita lagged by 1 to represent initial level income.

\textit{pkf}: The log of ratio gross physical formation to GDP.

\textit{gge}: The log of ratio of final consumption expenditure of general government to GDP.

\textit{x}: The log of ratio of export of goods and services to GDP.

\textit{ndr}: The log of nominal discount rate.

\textit{lr}: The log of literacy rate.

\textit{aid}: The log of foreign aid as a ratio to GDP.

\textit{U}: Error.

The study found physical capital formation as an important positive determinant of economic growth. One unit change in the level of physical capital was likely to increase economic growth in GDP by 3.3 percent. Human capital development also had a positive effect on GDP growth in the sense that one unit rise in literacy rate was likely to improve GDP performance by 35.9 percent. The export sector also had effect on growth as every one unit increase in the export had probability of increasing GDP growth by 2.5 percent. One unit increase in the size of government expenditure was likely to increase GDP growth the sub-Saharan countries by 8.8 percent. The study recommended that Government should give priority to the GDP growth and promote the exports. The policy makers in the region should allow the market forces to fix the rates of return on invested capital as this was likely to help the rates of discount work in of GDP growth

\textbf{2.14. The Study by AL-Raimony (2011) entitled, "The Determinants of Economic Growth in Jordan" estimated the role of exports, imports, labor and capital Variables in real GDP growth in}
Jordan. To examine the empirical relationship between these explanatory variables and real GDP growth, the paper used a standard linearized Cobb-Douglas production function. The study was done for the period between 1980-2008 by applying Ordinary Least Square (OLS) and Second Order Auto Correlation Techniques, using the equation form below:

\[
\text{Log } y_t = \text{log } \alpha_0 + a_1 \text{Log } L_t + a_2 \text{Log } K_t + a_3 \text{Log } X_t \\
+ a_4 \text{Log } M_t + a_5 \text{Log } \text{Dum}_t + u_t
\]

Where:

\( logY_t \): Gross Domestic Product

\( logL_t \): Labor size growth rate

\( logK_t \): Real capital stock growth rate

\( logX_t \): Real Export Growth rate

\( logM_t \): Real import growth rate

\( \text{Dum}_t \): Dummy Variable, the dummy variable used for (1) in during the political instability for period 1970-1973 and 1987-1991, and (0) is otherwise.

\( u_t \): The standard error

The study found that labor growth has a negative impact on the growth of real output. Increase in the growth rate of labor size led to decrease in the growth of real output. The relationship between real capital stock growth and real output growth was observed to be positive, the increase in real capital stock by 1% led to an increase in real output growth by 55%. The study also observed a positive relationship between real export growth rate and real output growth rate. A 1% increase in real export growth rate led to an increase of in real output growth rate by 51%.
2.15. The study by Asheghian (2011) entitled, "Economic Growth Determinants and Foreign Direct Investment Causality in Canada" found determinants of economic growth in Canada over time. It also finds out if there is any time-series support for FDI-led growth hypothesis in Canada, during the period 1976 to 2008, by using following equation:

\[
G_y = G_{TFP} + [\beta + \eta(1 - \beta)]G_{DI} + [\lambda \eta(1 - \beta)]G_{FDI}
\]

Where:

\(G_y\): represents the growth rate of GDP.

\(G_{TFP}\): stands for the growth rate of TFP.

\(G_{DI}\): is the growth rate of DI.

\(G_{FDI}\): represents the growth rate of FDI.

The study found that foreign direct investment growth has no significant impact on Canada’s economic growth. Additionally, foreign direct investment has no significant impact on economy upon during the entire period. The major determinants of economic growth in Canada economy was the factor productivity and domestic investment growth. It found no causal relationship between foreign direct investment growth and economic growth and between foreign direct investment growth and total factor productivity growth in either direction.

2.16. The Study by Balcha (2011) entitled, "Sources of Economic Growth in Ethiopia: A Time Series Empirical Analysis 1981-2009" tried to find out the GDP growth in Ethiopia using the aggregate Cobb-Douglas production function. It uses Ordinary Least Square OLS method with time series analysis during the period 1981 to 2009, as given in the following equation:
\[ \ln(Y/L)_t = \alpha + \lambda_t + \alpha \ln\left( \frac{k}{l} \right)_t + DRT + U_t \]

Where:

\( y \): The Gross Domestic Product.

\( k \): The Gross fixed capital formation.

\( l \): The Total labor force.

\( U \): a random error terms with zero mean and a constant variance

\( DRT \): Drought dummy.

The study found the important source of growth in Ethiopia was capital accumulation. Contribution of capital was 56 percent in economic growth at Ethiopia during 1981 to 2009. The contribution of labor of growth was about 42 percent and technology progress contributed only about 2 percent to the growth for the period 1981 to 2009. However the contribution of capital was negative during 1981 to 1991. Growth performance was low due to inappropriate policies and institutions those were inherent to socialist governments as well as country specific conditions, such as high dependence on fragile agricultural sector and internal instability. Market forces and property rights as the fundamental incentive creating institutions were manipulated to serve the interest of the regime than promoting the participation of the private economic agents in the economy, internal insecurity low foreign trade and inappropriate investment policies and subjection of the agricultural sector, the additional to the impediments to the capital formation in Ethiopia during 1981-1991 resulted in poor growth performance.
2.17. The study by Tran (2011) entitled, "Determinants of Economic Growth and Genuine Progress in South Korea" analyzed determinants of economic growth in South Korea. It used annual data from 1970 to 2005, as given in the following equation:

$$\Delta \text{gdp}_t = \beta_0 + \Delta \beta_1 X_t + \Delta \beta_2 RD_t + \Delta \beta_3 K_t + \Delta \beta_4 INF_t + \text{DUM}98 + \varepsilon_i$$

Where:
- $\Delta \text{gdp}_t$: The change in value of South Korea’s GDP per capita at time $t$ or change in value of South Korea’s GPI per capita at time $t$, as applicable.
- $\Delta X_t$: The change in value of South Korea’s exports per capita at time $t$
- $\Delta RD_t$: The change in value of South Korea’s research and development per capita at time $t$.
- $\Delta K_t$: The change in value of South Korea’s investment in physical capita at time $t$.
- $\Delta INF_t$: South Korea’s annual inflation rate at time $t$.

The study found that the variables that drive growth in GDP per capita in South Korea are different to the variables that drive growth in GPI per capita. While physical capital, research and development, exports, and inflation are all important in determining South Korea’s GDP per capita. Physical capital is found to have a significant positive effect on genuine progress, the difference in the drivers of GDP per capita and GPI per capita.

calculated the coefficient of total productivity (TFP) through the use of Cobb – Douglas model, which included variables of capital, labor and technology, as given in the following equation:

\[ Y_t = A_t \cdot F(K_t, L_t) \]

Where:

Yt: Total output.
Kt: Stocks of capital used in production.
Lt: The size of the workforce involved in the production process.
At: Technical level (or total productivity of the factors of production).

The study found the contributions of capital was highest 143% in GDP growth, while the contribution of work was 24%. The contribution of technology and efficiency during the period 1970-2007 was 66%. If the entire period is separated in two phases 1988-1970 and 1989-2007, and estimated the contribution of factor productivity factors, it showed the contribution of technology and efficiency which was negative in the first period, was positive in the second period. It was due to importing of large amounts of capital and machinery. The study recommends increase in the efficient use of production factors and qualitative development in structures in the economy. The study also recommended adopting a long-term policy that will provide a possible oil wealth and convert savings into financial assets.

2.19. The study by Al Jabr Allah (2010) entitled, "Structural Changes in the Sudanese Exports and Economic Growth 1985-2010" analyzed the structural changes in Sudan economy during the period 1985-2010. The study used error correction model from:

\[ loggd = \beta_0 + \beta_1logex + \beta_2logec \]
Where:

\( gdp \) : The Gross domestic product

\( ex \) : The exports.

\( ec \) : The relative composition of exports.

The study found twice the size of the contribution of the Sudanese exports in the global market and the regional market. The impact of structural transformation in the Sudan exports was positive in the short-term and a negative in the long term. The study recommends develop an integrated program for the development of export sector to become the main engine of economic growth.

2.20. The Study by Rahman & Salahuddin (2010) entitled, “The Determinants of Economic Growth in Pakistan: Does Stock Market Development Play a Major Role?” analyzed relationship between economic growth and its determinants, with special focus on stock market development in Pakistan. The study used fully modified ordinary least square (FMOLS), during the period 1971 to 2006, using the equation as below:

\[
LGNP\text{PC} = \alpha_0 + \beta_1 MC + \beta_2 LFD + \beta_3 LNFD + \beta_4 INFR + \beta_5 LFDI + \beta_6 LLTR + \beta_7 LSTL + \phi_i
\]

Where:

LGNPPC: Log of real GNP per capita.

MC: Market capitalization.

LFD: Log of financial development.

LFNFD: Log of financial instability.

LNFR: Inflation rate.

LFDI: Log of foreign direct investment.
LLTR: Log of literacy rate.
LSTL: Log of stock market liquidity.

The study found that there exist a significant positive relationship between stock market development and economic growth and Stock market liquidity had a positive effect on economic growth of Pakistan. Human capital and physical capital also influenced economic growth positively. The study recommended suitable financial reforms to improve economic growth in Pakistan.

2.21. The Study by Kogid (2010) entitled, "Determinant Factors of Economic Growth in Malaysia: Multivariate Counteraction and Causality Analysis" investigated the factors that stimulate and maintain Malaysia’s economic growth. The determinant factors studied were consumption expenditure, government expenditure, export, exchange rate and foreign direct investment in Malaysia during the period 1970 to 2007, using the equation as below:

\[ y_t = f(x_{it}) \ldots [1] \]

Or in a linear form:

\[ y_t = \alpha_0 + \beta_i x_{it} + \epsilon \ldots [2] \]

Where:

\( y_t = LGDP \) at time t, \( x_{it} = LCE, LGE, LX, LER \) and \( LFDI \) at time t, \( i = 1, 2, 3 \ldots n \), and \( \epsilon \) error term, where \( \alpha_0 \) a, and \( \beta_0 \) are unknown parameters of the model. The purely mathematical model of the economic growth function given in equation (2) is of limited interest to the most researchers, as it assumes that there is an exact or deterministic relationship between \( CE, GE, X, ER, FDI \), and GDP. But relationships between economic variables are generally inexact because, in addition to \( CE, GE, X, ER \) and \( FDI \) other variables may affect economic growth.
The study found that all variable trends tend to increase over time from the year 1970 to 2007, except for the exchange rate and foreign direct investment. The study also found government expenditure; exchange rate and foreign direct investment which were not the determinant factors to the economic growth in Malaysia. Nevertheless, this does not mean that the importance of these factors in spurring continuous economic growth should be ignored rather, these variables may be viewed as a catalyst and complement factors of economic growth.

2.22. The Study by Al-Khatib (2009) entitled, "Determinants of the non-Oil Sector Saudi Economic Growth" analyzed the determinants of the economic growth in Saudi non-petroleum economy. The study was done during the period 1970-2006. The study used OLS method using the equation form as below:

\[ Y = F(K_G, K_P, L_G, L_P, B, G, M) \]

Where:

\( Y \) : Gross Domestic Product of the non-oil sector

\( K_G \): Total fixed capital formation by the government.

\( K_P \): Total fixed capital formation private.

\( L_G \): The labor force in the public sector

\( L_P \): The labor force in the private sector

\( B \): Government soft loans to the private sector

\( G \): Government spending except for the soft government loans

\( M \): Mass scale expanded money M3.

The study found that every increase in government loans by 1 percent led to increase in the rate of GDP growth of non-oil economy
rate by 0.07 percent, the study also found Coefficient ratio of investment in the private sector as 0.697 percent and 0.535 percent in the government sector. Because of increase in GDP growth, it had positive impact on employment in government sector while it had negative impact on private sector employment. The results indicated negative impact between the dummy variable and growth rate of real GDP.

2.23. The Study by Dahman & Bashir (2008) entitled, "Measuring the Impact of Technological Development on Economic Growth - the Case of the Algerian economy" tried to measure the impact of technological development on economic growth in Algeria. The study used a standard linearized Cobb-Douglas production function, for the period 1970 to 2005, using the equation form as below:

$$ln\ PIBr_t = LNA + \alpha \cdot ln(ABBFr)_t + \beta \cdot ln(EMP)_t + \varepsilon_t$$

Where:

$PIBr$ : Crude Gross domestic product

$ABBFr$ : Crude accumulation of fixed assets

$EMP$ : Number of Workers

$A$ : Technological development

$\varepsilon$ : The standard error

The results showed that the annual growth of technological development in the Mediterranean was weak. As a result it led to deterioration of growth by 0.63%. The study also concluded that the accumulation of raw fixed assets had the largest share of in growth, with Contribution of 2.73%, per annum during the period from 1985 to 2005. The labor has also significantly contributed to economic growth in Algeria in recent years.
2.24. The Study by Asep (2007) entitled, "Yemen's Experience in Economic Reforms and their Impact on Economic Growth" analyzed the contribution of economic reforms and international aid to the increasing rate of economic growth by improving the means of production and human development. The study used Cobb – Douglas production function to assess the contribution of each component of the economic growth of capital, manpower, and total factor productivity (TFP) in the economic growth, during the time period (1990-2004). The study used equation form as below:

\[ y = AK^\alpha L^{1-\alpha} \]

Where:
- \( Y \): Total output.
- \( K \): Stock of capital used in production.
- \( L \): The size of the labor force involved in the production process.
- \( A \): Technical level (or the overall productivity of the factors of production).
- \( \alpha \): The share capital of the value of production.
- \( 1-\alpha \): The share of the value of production work.

The study found that the contribution of capital to economic growth was 2.26 percent during the period 1990-2004. The share of the total work element was 1.29 percent. The study also found contribution of the total factor productivity as -0.158 percent during the study period.

2.25. The Study by Dritsakis & et.al. (2006) entitled, "The Main Determinants of Economic Growth: An Empirical Investigation with Granger Causality Analysis for Greece" examined empirically the causal relationship among exports, gross capital formation, foreign direct investments and economic growth during the period 1960 to
2002. The study used a multivariate autoregressive VAR model, as given in the following equation:

\[ \text{GDPN} = f(\text{EXPG, INVG, FDIG}) \]

Where:

\[ \text{GDPN} = \frac{\text{GDP}}{N} \text{ Per capita GDP} \]

\[ \text{EXPG} = \frac{\text{EXP}}{N} \text{ the ratio of exports to GDP} \]

\[ \text{INVG} = \frac{\text{INV}}{N} \text{ the ratio of gross capital formation to GDP} \]

\[ \text{FDIG} = \frac{\text{FDI}}{N} \text{ the ratio of foreign direct investments to GDP} \]

\( N = \text{population} \).

The study found with Granger causality test that there is a unidirectional causal relationship between the ratio of foreign direct investments to GDP and the per capita GDP. It also found a unidirectional relation between the ratio of exports to GDP and the ratio of gross fixed capital formation to GDP and between the ratio of exports to GDP and the ratio of foreign direct investments to GDP. The study found no causal relationship between the per capita GDP and the ratio of exports to GDP, between the ratio of gross fixed capital formation to GDP and the per capita GDP and between the ratio of gross fixed capital formation to GDP and the ratio of foreign direct investments to GDP.

2.26. Study by Nasr (2005) entitled, "Vision of Sustainable Economic Growth in Syria" analyzed the economic growth in Syria at the aggregate level identified the important sources of economic growth in addition to knowledge affecting growth. The study was done for the time period 1990 to 2002. The study used equation form as below:
\[ \Delta A = g - \alpha k - Be = TFP \]

Where:

- \( g \): The rate of growth in GDP
- \( k \): The change in the capital stock
- \( e = \Delta L / L \): The relative change in the number of employment or hours of work per year
- \( TFP = \Delta A / A \): The growth of the total factor productivity
- \( \alpha \): Production flexibility for capital
- \( B \): Production flexibility for work

The study found contribution of factors of production -2.3 percent. This reflects decline in the contribution of technology to economic growth, which is considered as one of the basics of sustainable growth, it means the low level of research and development in the national economy, dropped marginal productivity of capital. Due to weak macro-economic policies and weak investment climate, the study recommends building a strategy that focuses on the human as a source of growth and sustainable development, taking advantage of the intellectual energy. This requires government intervention to focus on investing effectively in human capital investment in health, education, research and development.

2.27. The Study by Sekkat (2004) entitled, "Sources of Growth in Morocco Empirical Analysis in A Regional Perspective" analyzed the growth experience of Morocco and compare it with the rest of the Middle East and North Africa countries. The study was done for the period 1960 to 1998, and used equation:

\[ \Delta \log \frac{y_{it}}{L_{it}} = \eta_t + \alpha_i \Delta \log \frac{k_{it}}{L_{it}} + \varepsilon_t \]
Where:

\( Y \): represents the real output.

\( \alpha_i \): representing the share capital in output.

\( k \): Capital used in the production process.

\( L \): Labor force participation in the production process.

The study found contribution of capital 4.45 percent in output growth during the period 1960-1980, the contribution of work 1.25 percent, while the overall growth of the factors of production was (0.17) percent for the same period. The amount of capital contribution (2.23%) during the period 1960-1997 and the contribution of work (1.61), and the growth rate of total factor productivity was - 0.60% during the same period in Algeria, and The contribution of capital was 2.7% during the period 1960-1997 and the contribution of work was 1.32%, and total growth of the overall factors of production was 0.86% during the same period in Tunisia. The study recommended further development of non-agricultural activities (industry and services) and increased investment in human capital, and management and direction of such capital towards productive activities in order to avoid the adverse effect that have been identified for the rest of the Middle East.

2.28. Study by Imran (2002) entitled," Performance and the Sources of Economic Growth: An Empirical Study of the Egyptian Economy" examined the development of the Egyptian economy, after structural reform programs adopted by the Egyptian government since the mid-eighties. The study examined the determinants of economic growth, during the period 1960 to 2000. The study used equation form as below:

\[ y = AK^{\alpha}L^{1-\alpha} \]
Where:

Y : Total output.
K : Stock of capital used in production.
L : The size of the labor force involved in the production process.
A : Technical level (or the overall productivity of the factors of production).
α : The share capital of the value of production.
1 − α : The share of the value of production work.

The study found average growth of total factor productivity was 0.03% based on the time series analyses during the period 1960-2000, and total capital contribution to economic growth was 4.528%. The total contribution of labor in economic growth was 0.903% based on the analysis of time series for the same period. These variables in the equation of the determinants of economic growth have a significant effect on the growth of total factor productivity.

2.29. The Study by Mallick (2002) entitled, "Determinants of long-term Growth in India: a Keynesian Approach" focused on determinant long-term growth which integrates two standard models the neoclassical model with the endogenous growth and export-led model of growth. A vector autoregressive (VAR) model was used for India from 1950 to 1995 using Johansen’s multivariate counteraction approach to derive latent equilibrium relationships. The study used the equation form as below:

\[
\ln Y_t = \frac{\psi}{\theta} \ln PVTCFt + \frac{\theta}{\psi} \ln PUBCFt + \eta \delta \ln Et + \delta \ln Xt + \lambda \ln RIRt + \omega \ln RDCPt
\]

Where:

Y: Economic growth.
PVTCF: The private investment
PUBCF: The public investment
E: The measure of education level
X: Exports
RIR: The real interest rate
RDCP: The real domestic credit to the private sector

\( y, \theta, \eta, \varphi, \lambda \) and \( \omega \) are elasticity parameters of private and public capital stocks, human capital, real exports, real interest rate and real domestic credit to the private sector, respectively.

The study found that India’s economic growth in the short-term is influenced to a large extent by private investment in physical capital and public investment on infrastructure. The study also found a complementarity relation between human capital and private capital formation and economic growth. An explanation of the inability on the part of exports to increase economic growth may be that, in the case of the Indian economy, the percentage change in imports owing to 1% change in income is quite high. The study also found coefficient being negative for the private investment, it can be interpreted as a Keynesian investment function where investment is negatively related to the real interest rate. This also corroborates the structuralism approach to investment.

2.30. The study by Kowalski (2000) entitled, "Determinants of Economic Growth in East Asia: A Linear Regression Model" analyzed the determinants of economic growth in East Asia countries which are Indonesia, Korea, Malaysia, Mongolia, Philippines, Singapore, and Thailand, during the period 1983 to 1997. The study used linear regression model, of the form:
\[
GROWTH = a + b_1 \text{EXP} + b_2 \text{FDI} + b_3 \text{SPEND} + b_4 \text{INVEST} + b_5 \text{INFL} + b_6 \text{DEBT} + b_7 \text{COUNTRY DUMMY} + e
\]

Where:

\(a\): The constant term

GROWTH: GDP growth (annual %)

EXP: Exports of goods and services (% of GDP)

FDI: Foreign Direct Investment, net inflows (% of GDP)

SPEND: Expenditure, total (% of GDP)

INVEST: Gross domestic investment (% of GDP)

INFL: Inflation, GDP deflator (annual %)

DEBT: Central government debt, total (% of GDP)

e: Random error.

The study found that an empirical model which includes a wide variety of economic variables is highly successful in explaining the variance in GDP growth in East Asia. Variables explaining outward orientation, government indicators and macroeconomic indicators are all highly significant as determinants of growth. The market friendly theory of policy integration is supported by this model and comes closest to explaining the relationship between governments and private markets in East Asia. The study also shows that the increased levels of exports and investment including FDI and domestic investment increased economic growth in East Asia. The study recommended continued interaction of all available economic tools along with the flexibility to reevaluate growth strategies which has led to the above success of East Asian economies.
2.31. The study by Barro (1998) entitled, “Determinants of Economic Growth: A Cross-Country Empirical Study” applied regression framework to a panel of data covering roughly a hundred countries like (Hungary, Poland, south Korea, Chile, Mali, Cameroon, Sudan) over the years 1968-1990 in an effort to determine what factors are important in explaining long-run growth. The study found that the growth rate of real per capita GDP is enhanced by better maintenance of the rule of law, smaller government consumption, and longer life expectancy, more male secondary and higher levels of schooling, lower fertility rates, and improvements in the terms of trade. The data also support the notion of conditional convergence; that is, for given values of these variables, countries with a lower initial level of real per capita GDP grow faster, also the study looked at the role of political freedom in determining growth rates. The positive relation between democracy and prior measures of prosperity is well established as an empirical regularity. The study found the adverse effects of inflation on long-run economic performance from the Experiences of high inflation countries.

2.32. Conclusion:

The review of previous studies shows that there are many variable things affecting the economic growth such as inflation, economic openness, foreign direct investment, domestic investment, government spending. The studies have used statistical models from simple regression analysis to log function and panel data analysis to find out sources of economic growth.
<table>
<thead>
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<th>Sig (+/ -)</th>
<th>Significance (yes/no)</th>
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It can be observed from the review of previous studies that there is a dearth of studies on the determinants of economic growth of Arab countries. There are some studies which have analyzed economic growth in some of the Arab countries and not considered entire Arab countries world using the panel data analysis. So the present study is an attempt to find out country wise economic growth and its source using panel data analysis during the period 1995-2013.
References:


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