

THE IMPACT OF POLITICAL REGIMES ON ECONOMIC GROWTH IN DEVELOPED AND DEVELOPING COUNTRIES



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16U00019

A Thesis submitted to the Faculty of the Lahore School of Economics in Partial Fulfilment of the Requirements for a Bachelor of Science Degree in Economics and Marketing

Session 2016 – 2020

Supervised by: Shafaq Junaid

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Acknowledgements

To my mentors and my ultimate support systems, my parents Naeem Ehsan and Bushra Akhtar. Thank you for providing me the support and reassurance I needed through all of this and for being the source of motivation and encouragement and for always being there for me at all times.

A very special thanks to Ms. Shafaq Junaid, without whom this paper would only have been a figment of my imagination. Thank you for guiding me through each and every step and for ensuring that we all were giving a motivating and comfortable environment to work in.

At the end of the day, my major source of inspiration for this paper was from my home country, Pakistan, which has faced numerous problem because of unsuitable political structure since the day of independence.

Impact of Political Regimes on Economic Growth in Developed and Developing countries

Abstract

The paper aims to contribute towards the ongoing debate regarding the link between Political regimes and economic growth for both developing and developed countries through a comprehensive model which is empirical in nature. The data for 32 developing and 32 developed countries has been collected over the period of 17 years (2002-2018) to analyze the theorized relationship. Panel data has been run using two different estimation models; FE and RE model. The Political regime index was constructed using the Polity IV data set. Moreover, in order to provide a detailed model to analyze the hypothesized relationship various control variables have been included such as, Education, Investment, Population growth, Trade openness and Inflation. The results from series of regression analysis infer that a negative causality exists between Political Regimes and economic growth for both developing and developed economies, while the negative impact is more significant in case of developed nations. Additionally, the other variable which significantly and positively influence the growth of an economy consist of Education, Investment and Inflation. This paper further gives policy recommendations and suggestions on how the mechanism of Political Regimes can be improved and its adverse effects can be mitigated through effective implementation of various polices and reforms.

Keywords: Political Regimes, Economic Growth, Panel Data, Fixed & Random Effects.

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Abbreviations

GDP: Gross Domestic Product

POL: Political Regimes Index

EDU: Education

INV: Investment

TRADE: Trade Openness

POP: Population Growth

INF: Inflation

WDI: World Development Indicators

FE: Fixed Effects

RE: Random Effects

Part I: Introduction

This study discusses the impact of Political regimes on Economic growth. The research question is that whether there is a cause and effect relationship between Political regimes and a country's economic growth. If yes, then what is the nature of this relationship? Whether this relationship is positive or negative? In addition to it, this paper will also examine how effect of political regimes on economic growth differs in developing and developed countries.

The term Political regimes comprises of both democratic and dictatorship regimes. Democracy is defined as an institutional arrangement in which people who govern a country, acquire power through competitive elections. According to Scott Mainwaring (2001), Democracy is a regime that “allows free and fair competitive elections for the legislature and executive; that allows for inclusive adult citizenship; that protects civil liberties and political rights; and in which the elected governments really govern and military is under civilian control”. On the other hand, the term dictatorship is derived from dictation and is a synonym for a system with indefinite ruling by an individual or power being concentrated in few hands. Additionally dictatorship can also be defined as “A dictatorship is characterized in general terms to be established on the basis of force and violence, both elements which serve to subdue the opposing positions” (EDITORS, 2013).

Political regimes have changed overtime. During the 19th century majority of the countries had an autocratic regime or they lived in a colonial empire. Conversely, the birth of democratic regimes started after World War I and after World War II the democracies started to grow more. It was only after the fall of ‘Iron Curtain circa’ in 1989 that the democracies started growing more rapidly. In the 20th century, many of the colonies gained freedom which led to increase in the number of countries becoming democracies and today almost more than half of the countries in the world are following the democratic political regimes with an exception of few countries like, China, Kazakhstan and some of the Middle Eastern countries (Roser, 2015)

A common perception regarding the developing economies is that dictatorship regimes are more effective compared to democratic regimes. However, studies have found that growth of the economy is clearly linked with political stability and suggested that political stability is more imperative for growth in the economy than political freedom (M. Younis, 2008). In case of

developed economies, there are advocates of democracy-growth relationship who argue that democracy enables efficient allocation of resources and encourages investment in the country by providing a healthy environment of freedom and security. Whereas, the opponents of this relationship argue that fewer tools to stimulate growth in the economy are used by democracies and they are more exposed to pressures from the people regarding utilization of resources, grants, and other particularistic beliefs that it negatively effects their ability to achieve sustainable economic growth in the country (Polterovich, 2007)

In case of Pakistan, there are still a lot of contradicting views on this topic. On one hand, a positive link among democracy on GDP is observed through development in the political and social sector and reduction of insecurities amongst the investors (Khalid Mahmood, 2010). On the other hand, dictatorship regime results are considered to provide a better economic performance as compared to the democratic regime as a dictatorial government is able to successfully drive up the growth rates.

The rest of the paper is divided into 4 sections; Section 2 provides a glimpse of related literature to clarify the topic and set discuss the important findings in the previous researches. Section 3 explains the theoretical framework, involves construction of variables and formation of the hypothesis and an econometric model which is to be tested. Section 4 provides empirical outcomes of the paper and lastly, Section 5 provides the conclusion of the paper.

1.1 Political regimes today

Today majority of the countries follow democratic regime with the exception of few countries. Many countries in the European and North American region are now following the democratic regime. Some part of South and West Africa have also been democratized. Also, many countries in the Asia have also been democratized, India being the largest democratic country in Asian region. Figure 1 show the top 5 countries which the highest score in democracy index and 5 countries which are considered to have a weak democratic system or follow a dictatorial regime.

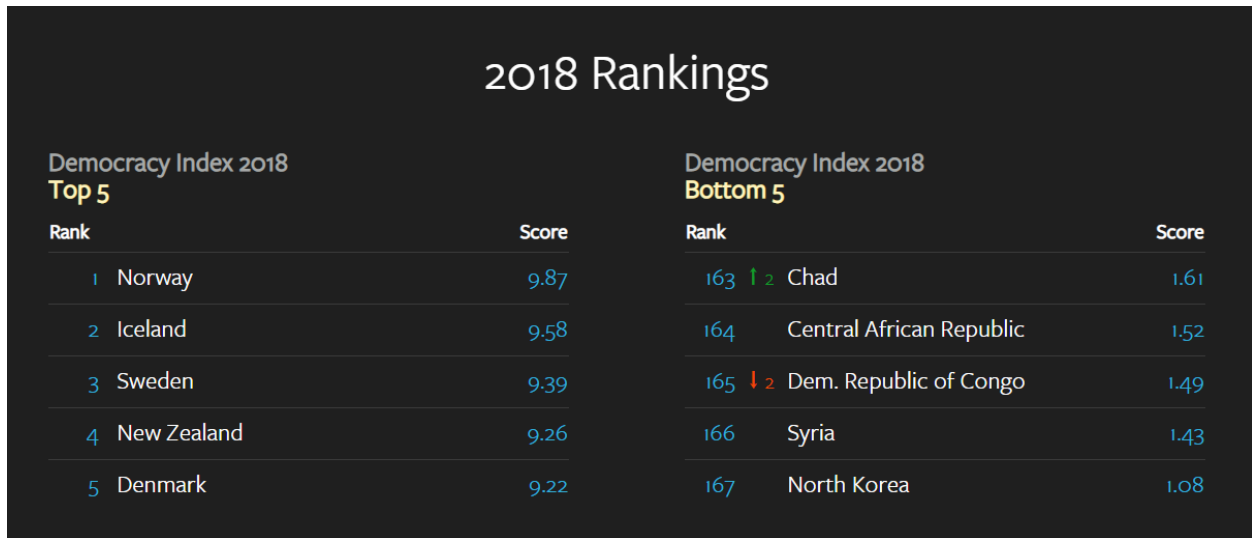


Fig 1

The image below show the polity IV scores of country wise and globally.

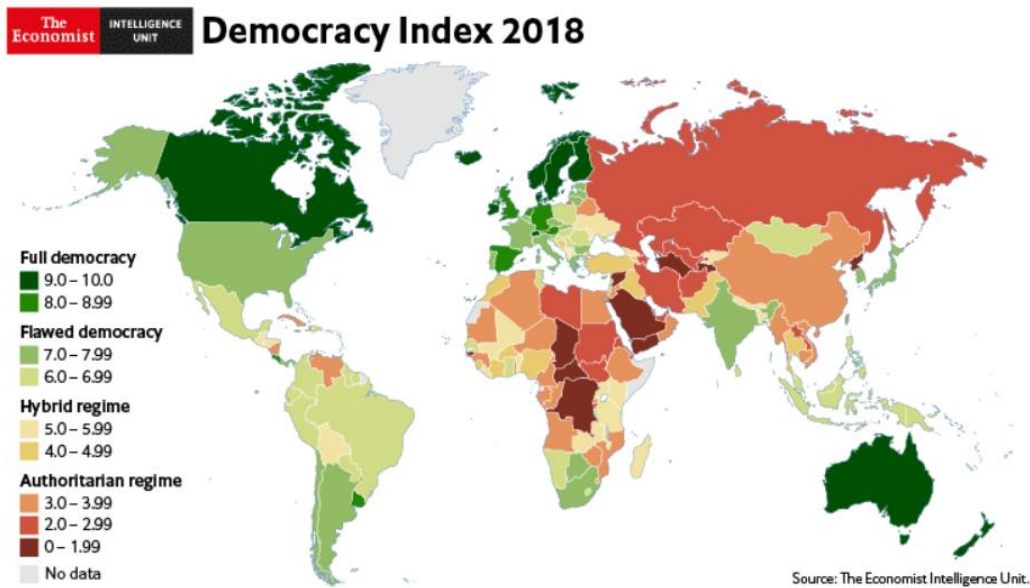


Fig 2

Part II: Literature Review

2.1 Historical Background

The concept of political regimes has evolved overtime and is not new in the literature. Throughout the history, the political system has expanded from a basic political system of self-governance to

monarchies and then towards more complex democratic and dictatorial regimes which exist in today's world. The majority of the history of human society was governed under the non-democratic regime, to be exact, monarchial rule. Although there are a few exceptions at different point in time, the most prominent modern era political regimes are; Democracies, Dictatorships and Totalitarianism.

In ancient times, civilizations did not have a proper political system and societies were mainly run by egalitarianism or by tribal chiefs. The Greek empire was the first ones to create an actual political system by separating themselves from monarchial rule and constructing a democratic structure amid of non-democracies. During the classical times, the Romans also separated themselves from the monarchial rule and became a republic society with some characteristics of democracy in it. Their political structure had a strong influence on western views and it was copied by many countries, like US political structure is based on the 'Roman model' (Torlo, 2017)

During the middle age, different dynasties came into being where the countries or regions were ruled by a major family which is also a form of a monarchy. The most influential dynasties during the middle age included, the Sui dynasty, the Mughal Empire and the Ottoman Empire. Western Europe was united under the rule of Charlemagne and the countries included under his rule were England, Scotland, Norway and Iceland.

During the renaissance era, many countries emerged as the mercantile republics like, the Republic of Venice, the Republic of Genoa and United provinces. Although this political system provided some freedom to the people, but it had a short life. During World War I many European monarchies were abolished like, Albanian, the German and Russian Empire, and many countries adopted a democratic regime. (Torlo, 2017).

After World War II, the world tried to maintain peace in the region. However, due to terrible economic conditions and rejection of defeated powers, democracy was abandoned again in many countries. Countries like Germany and Italy adopted a dictatorial or Communist political system again. The Soviet Union was created which was the first largest communist state consisting of fifteen soviet regions, namely "Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan". (Torlo, 2017)

After the fall of the Soviet Union in 1991 that many countries reverted back to the democratic political regime. Today in the 21th century majority of the countries are following the democratic regime with some exception of countries like North Korea, China and some Middle Eastern countries.

The political history of Pakistan is very interesting as well. Before independence, India was under the colonial rule of the British Empire. After independence, Pakistan's democracy remained for a very short period of time, until 1956 Iskandar Mirza imposed martial law in the country. During his rule, the growth rate was the lowest at 3.0%. The dictatorial regime continued for over a decade until Ayub Khan's dictatorship rule in 1971, although his rule was considered as a decade for development as Pakistan was able to achieve a growth rate of 5.79 % which was the highest compared to growth rates under any other political ruler. The Democratic regime was reintroduced after the general elections in 1977, however, in a matter of few months, martial law was re-imposed by Zia-ul-Haq. During his rule, country experienced a growth rate of 6.49 %. A democratic government was elected again in 1988 with Benazir Bhutto getting elected as the prime minister until 1999 when Pakistan had its 5th dictator, Pervez Musharraf, whose dictatorship rule ended in 2007. The growth rate during his tenure was 5.5%. After 2007, and till now Pakistan is successfully able to complete the process of handing over the power from one Democratic Party to another (Nazir, 2007).

2.2 Theoretical Literature

Various economic theories have tried to answer the most crucial question about which political regime - democracy or dictatorship leads to a faster economic growth. Some of the modern political economy theories are the development theory, skeptical theory, incompatibility theory and polity theory. The topic regarding political institutions and economic performance have been a subject of study since times of Adam Smith, David Ricardo and Karl Marx. However, it is now that studies have shown a very complex and confusing relationship between political regimes and economic growth (M.Imtiaz Subhani, 2014).

The classical theories of economic growth were developed by prominent economists like Adam Smith, David Ricardo and Say. These theories put the foundation of 'self-regulating democracies' and 'capitalistic market development' to enhance economic growth in the economy. These theories highlighted the fact that the democratic political economy is important for the market to correct

itself and determine the demand and supply. Before classical theories, the economies were run by a monarchical political system (MEYER, 1999).

As time passed people started comprehending the importance of a political structure to achieve economic growth in the economy. They soon realized that if the economy has to flourish and increase its economic growth, a transition from the monarchy to a democratic regime is required.

The Neoclassical growth theories developed by Solow and Swan emerged after that. They also emphasized on the importance of a proper political structure in the economy to achieve economic growth. According to the neoclassical theories technological change greatly influenced the economy and was vital to have economic development.

The endogenous growth theories were developed during the 1980s and according to these theories, the major driver of economic growth are external factors. Investment in human capital and innovation will positively affect economic growth. These theories emphasized that in a democratic regime there is more trade openness which will enable the positive spillover effect, thus the positive spillover will in turn leads to economic growth in a country.

In the 19th century Karl Marx published his book which was critique on the emerging capitalistic political economy. Marx argued that capitalists exploit the labor and the lower class thus he suggested that communism should be introduced where equal rights should be given to all the people in the economy. His theory influenced different countries to change their political system and consider themselves communist states like China, the USSR and Cuba (KENTON, 2019).

The ‘development’ theories of the political economy discuss the positive link between democracy and economic growth, and support Lipset’s development-democracy hypothesis. According to this theory, a democratic government is redistributive in nature, thus the tax revenues are used to lessen the imperfections in the market and subsidize education and health care. A democratic regime is often known to have a positive relationship with growth through its association with human capital and low political instability. Additionally, democracies are better able to reduce the transaction cost and transmit information as supported by Siourounis (2008), “the institutional structure most favorable to approximate such conditions (efficient markets of the neoclassical model) is a modern democratic society with universal suffrage”

Olson (1982) advocates that the political system in a country has a strong link with economic development. Democracy is considered to be more beneficial for the growth in an economy even when there is a powerful and able dictator who makes exceptional economic policies. *“Though experience shows that relatively poor countries can grow extraordinarily rapidly when they have a strong dictator who happens to have unusually good economic policies, such growth lasts only for the ruling span of one or two dictators. It is no accident that the countries that have reached the highest level of economic development and have enjoyed good performance across generations are all stable democracies”*.

Furthermore, a strong democracy leads to economic growth by protecting the property rights and to achieve an optimal level of economic growth the conditions are similar to the circumstances needed for a long-standing democracy (Olson, 1982). *“An economy will be able to reap all potential gains from investment and from long-term transactions only if it has a government that is believed to be both strong enough to last and inhibited from violating individual rights to property and rights to contract enforcement....Interestingly, the conditions that are needed to have the individual rights needed for maximum economic development are exactly the same conditions that are needed to have a lasting democracy”*. Hence, constitutional freedom leads to improvement in the property right and makes the market more competitive which magnifies growth in the economy.

Sirowy and Inkele (1990) support the view that freedom to exercise civil liberties and political rights is provided in democratic regimes, which creates conditions that offers a conducive environment for sustainable economic development. Property rights give incentives to individual to produce and exchange good and services which in turn enhances economic growth as property rights are protected the most under democratic regimes than authoritarian regime (Leblang, 1996).

Recent studies by Leblang (1996) and Feng (1997) have further supported the development theory regarding association between political regimes and growth. As democracy not only promotes economic growth, but it also helps in maintaining the order and competitiveness in the economy which encourages individuals to behave freely as if economic freedom will last for a long time (Tan, 2001).

Additionally, due to political freedom in democratic establishments keep a check on the government, thus curtailing corruption in the economy and preventing government from making

irresponsible and ineffective policies. Lack of democracy can also encourage dictators to misuse the resources instead of using them for the betterment of the economy.

Democracy is considered similar to competitive markets in terms of efficiency. Referring to Wittman (1989), the existence of a democratic political system reduces deadweight losses by minimizing the difference between private and social cost. In addition to it, rent seeking will reduce and rents will be transferred efficiently with low a social cost associated with it.

Another major theory in the political economy is the 'Polity theory/study' which is developed by Ted Robert Gurr and is used to measure the extent of political independence in a country. Over the years this version has improved and the current version is called the 'Polity IV' which has data of countries from 1800-2018. 'Polity IV' index is very popular amongst the researchers and is widely used in studies related to political science. However, the major drawback of this index is that due to its narrow criteria it can be difficult to rank the countries according to their political freedom.

One of the major theories that accentuate the negative relationship between democracy and economic growth are the 'Sceptical Theories'. These theories highlight the inefficiencies caused by democratic institutions such as, a democratic party can cause inefficiency in the economy by supporting different group to stand against each other to gain political power. According to Rodrik (1994), a high level of income inequality can increase the need for a redistributive policy, and it might lead to higher taxes, low investment and subsequently low growth if the redistribution and fiscal policy is decided through voting. Moreover, economic development of an economy is also harmed under a democratic regime due to low investment and high government expenditures.

However, according to Andreski (1966), democracy is harmonious with growth only in case of countries with an abundance of resources to make huge investments as no case in history is available where a democratic government was able to easily break through the vicious cycle of misery and despair. There are some studies that highlight the incompatible relationship between democracy and growth like, Bhagwat (1945) asserts that a dictatorial regime is required for accelerated growth in the economy as he states "*the political economy of development poses a cruel choice between rapid (self-sustained) expansion and democratic process.*"

Several arguments which are in favor of the 'incompatibility theory' regarding the relationship between authoritarian regimes and economic growth. Developing countries have weak and

vulnerable political institutions and the presence of democratic system further burdens the government. Due to immense power of the pressure groups in democratic regimes, politicians have to comply even with their unnecessary demands to remain in power thus, further enhancing political instability in the economy (Huntington, 1968).

Autocratic regimes are better able to stifle opposition and conflicts and are considered to be useful in formulating effective policies to curtail the political instability Bank (1991). Democratic governments are unable to endure the level of restriction required on wage and consumption increases to achieve necessary economic growth, hence authoritarian regime are more successful in executing policies which contribute towards rapid economic growth like, polices concerning with capital accumulation. Theories opposing democracy also emphasize that damage the cycle of economic growth by causing irregular wage movements and might be unable to achieve quick and persistent economic growth.

However, Limongi and Przeworski (1993) illumined that not only democratic, but autocrats might also be forced to implement callous and aggressive policies to remain in power. While there are many examples of countries where autocratic rule has led to economic development such as, Taiwan and South Korea, but at the same time, inefficient and incompetent authoritarian regimes have been the reason for slow growth in some countries.

2.3 Empirical Literature

In order to fully study the impact of political regimes on economic growth, it is important to quantify this phenomena and understand this relationship through empirical evidence. There has been a boost in empirical research relating to this topic over the last few decades.

The most common characteristic of studies about the impact of political regimes on economic growth is that neither of them entirely favor the democratic regimes nor they prove that dictatorial regimes are better than democratic regimes for economic development. As identified by Inkeles (1990), “Overall, these studies present a very mixed and confusing picture with regard to the effect of democracy on economic growth. The inconclusive results presented by these studies are further compounded by the fact that these studies are quite heterogeneous with respect to characteristics of measurement, coverage research design, and method of analysis”.

Przeworski, Alvarez, Cheibub and Limongi have contributed enormously on the exploration of the effects of political regimes in economic growth through their book 'Democracy and Development'. It studies that the association between political regimes and economic growth on 141 nation from 1951-1990. The major findings of this study were that annual growth rates for dictatorial regimes were higher during the period of 1951-90 than democratic regimes. However, there was high level of life expectancy in the democratic regimes as men lived 15.4 years longer in the democracies than under dictatorship and women lived 54.2 years under dictatorship and 71.5 years under democracy. The book concluded that "Whenever regimes do make a difference, lives under dictatorships are miserable. The Churchillian view may be not enough, but it is accurate. Democracies are far from perfect but they are better than all the alternatives" (Adam Przeworski, 2000)

The proponents of the democracy-growth hypothesis argue that democracy enables efficient allocation of resources and promotes eagerness amongst individuals to invest and work by providing a healthy environment of freedom and security. Leblang (1996) conducted an empirical study to assess the connection between democracy and economic growth using time series data from 1960-1990. Apart from the major variables of political regimes and economic growth other variables like property rights and trade were also considered to assess the effectiveness of different political regimes. The article concluded that democracy indirectly results in economic development as it provides better property rights than military regimes. A high level of property rights leads to greater production and exchange of goods and services which enhances economic growth.

In addition to it, the prevailing literature implies that dictatorship negatively impacts the economic, social and political parts of life in an economy. In case of political aspect, dictatorship boosts up the culture of nepotism and enhances rent seeking and corruption in an economy. In terms of economic development, dictatorial institutions discourage investment in research and development thus, hampering the chances of economic success. (Acemoglu, 2012)

In case of the social aspect, dictatorship is inversely related with social benefits and provisions as dictators require lesser support from the public compared to the Democrats. According to the United Nations Development Program report ((UNDP), 1994), the poor countries of the world spend less on the welfare of the people and spend most of their scare resources on unnecessary

purchases of weapons and military. Also, the imposition of dictatorship leads to decline in the public services as proven by the empirical example of Nigeria, where the school enrollment fell by 9% and child vaccination coverage rate fell by more than half during a military coup of 1983.

Work by Tabellini (2006) conducted a research on 150 countries from the period of 1960-1990. The findings of this research showed that a strong link between democracy and economic liberations is observed, which results in an increase in economic growth, especially during the phase when a political regime transitioned to a democratic regime.

Papaioannou (2008) inquired the effects of democracy on the growth levels inside a country by conducting a cross-sectional study from 1960-2003 period. According to the results of this study, there is an increase in the growth due to democratization and initially during the transition from dictatorship to democracy growth rates might decline, but they gradually become stable. However, opposite transition, i.e. from democracy to dictatorship will have an adverse impact on the growth.

A. Cooper Drury (2006) investigated the consequence of corruption on growth in both autonomous and non-democratic regimes on 100 countries from 1982-1997 so, an additional variable of corruption was taken to assess the impact of different political regimes on growth of the economy. The results of the study indicated a low level of corruption in democratic regimes as compared to military regimes. Thus, the negative impact of corruption on economic growth is lower in case of democracy.

Helliwell (1994) used the statistics of 125 countries from the period of 1960-1985 including variables like, political regimes, investment, education and GDP. The study found that the direct impact of a democratic regime on economic growth is negative and insignificant. On the other hand, the indirect impact of a democratic regime on growth through education and investment is positive suggesting a weak positive connection between democracy and growth in the economy in general.

Khan, Batool & Shah (2016) assessed the relationship between political institutions and economic growth. Political institutions were divided into democratic and dictatorial institutions and economic growth and economic growth was measured through human development index (HDI). The results of a cross sectional analysis over 92 countries concluded that dictatorial regimes are

negatively related with economic growth and HDI will increase by 17% in case of a transition from dictatorship to democracy.

According to a study conducted on 31 countries from the period of 1820-1950, The degree of trade openness will have a positive impact on the GDP of a country. As when imports and exports increase, it increases the productivity thus, increasing the GDP of the country. It is less important in the case of heavily populated countries because they have their own vast local markets (Antic, 2004). According to another study conducted on 96 countries from 1960-1980, trade openness is considered to be an engine of growth as when a country specializes in a particular industry, it gains competitive advantage and is able to expand its export base which helps a country to achieve high levels of economic growth (Feng, 1997). A panel data on 105 countries from 1960-1989 was used by Durham (1999), advocates that a higher degree of trade openness will lead to an increase in economic growth as it creates greater prosperity in the region through circulation of new creative ideas from one country to another. Moreover, a study conducted on 12 MENA countries over the of period 1998–2011 suggests that more trade openness encourages the transfer of skills and technology from developed countries to developing countries, therefore it positively impacts economic growth (Boujelbene, 2016). A study conducted on OECD countries from 1941-1990 found that trade openness is positively linked with growth as it helps in reducing the poverty, child labour and increases the human capital of the country. However, the downside of trade liberalization is that it can damage the environment due to over-consumption of resources (JOHN GERRING, 2011).

Population growth will negatively impact the growth rate in short run, so the more populated a country is the lower will be its GDP as more resources have to be shared amongst people, especially during the process of democratisation. However, another point of view is that as the individuals who were once an economic burden join the workforce they help in increasing the productivity thus, encouraging growth in the country as emphasized by Antić (2004) who conducted a research on 31 countries from 1820-1950. Conversely, according to Weed (1983) who conducted a cross-national and cross-sectional analysis from the 1960s and 1970, found that population growth positively impacts GDP of the country as it helps in increasing the aggregate demand of the people which in return increases the GDP of the economy. In another article which conducted a cross-sectional study on 92 countries, growth in the population had a positive

significant effect on Human development index which was a proxy for economic growth in a country especially in the case of democracy as there are less chances that a dictator will be interested in providing social benefits to the general public (Karim Khan, 2016). However, according to a study on 105 countries from 1960-1989, population growth adversely affects economic growth as it is likely to lower the savings per person and impede physical capital growth, hence it reduces growth rates (Durham, 1999). According to a study conducted by Gerring on OECD countries from 1941-1990 in (2011), Economic growth in the long run is positively impacted by population growth because in the short run it can lead to poverty and a high level of unemployment, however, in longrun it will contribute toward technological advancement which enhances economic growth in the country

Antic (2004) directed a study on 31 countries from the time period of 1820-1950, proposes that Investment in the country has a positive relationship with economic growth as it helps in increasing productivity and improves the operational efficiency of a country thus, stimulating high economic growth in the country. According to Feng (1997) who conducted a study on 96 countries from 1960-1980, investment is the main instrument to stimulate economic growth in an economy so, there is a positive link between investment and GDP of a country. Referring to a study conducted by M. Ishtiaq (2016) on a large sample of countries from 1974 to 2013, growth is positively and significantly impacted by investment, as an increase in investment means an increase in capital spending which results in an increase the GDP of the economy and investment augments economic growth more in a democratic regime as compared to a dictatorship regime. Panel data on 105 countries from 1960-1989 was used by Durham (1999), suggests that a democratic regime provides more conducive environment like secure property rights which encourages investment, thus increasing the GDP of the country. A study conducted on 12 MENA countries over the period 1998–2011 advocates that policies to encourage investment such as, giving tax reduction benefits and political stability are more likely to be implemented by democratic regimes, thus, this helps in enhancing economic growth (Boujelbene, 2016).

According to Antić (2004) who directed a research on 31 countries from the time period of 1820-1950, Education does not significantly impacts GDP of a country. On the other hand, according to another study conducted on 96 countries from 1960-1980, economic growth is positively effected by education as it improves the competence and efficiency of the labour which increases the

productivity, therefore increasing the GDP of the country (Feng, 1997). Moreover, as per Leblang (1996) who directed a research on 114 countries from 1970-1989, nations with a high level of education accomplishment provide higher growth rates because the country is able to obtain developmental advantage in the international marketplace on the basis of its skilled labour. Additionally, according to a study doing a cross-national and cross-sectional analysis from the 1960s and 1970 education has a positive significant impact on GDP of a country because it helps in reducing the number of birth rates in the country which then leads to higher income per household and increases people's demand for goods and services resulting in a higher GDP in the economy (Weed, 1983). Furthermore, panel data on 105 countries from 1960-1989 used by Durham (1999), supports that economic growth in the economy is stimulated by investment in the human capital as it would raise creativity and productivity amongst people and can also result in technological advancement in the region (Durham, 1999). Also, studies suggest that democracy is a necessary condition to have a positive impact on income levels and education in a country (Daron Acemoglu, 2008).

Growth rate of a country is negatively impacted by Inflation. As per study conducted on 96 countries from 1960-1980, according to the Fischer equation and Tobin- Mundell model an increase in inflation will reduce the real interest rates in the economy, consequently, reducing the level of investment and foreign direct investment in the economy, thus the GDP of the country falls. Moreover, inflation is often caused by political instability, therefore it has adverse effects on the economic activity in the country (Feng, 1997). As per another study conducted on a large sample of countries from 1974 to 2013, an increase in inflation reduces the growth of an economy because an increase in the price level decreases the aggregate demand thus, negatively affecting the GDP (M. Ishtiaq, 2016). To stay in the power, a democratic government is more likely to reduce the budget deficit and increase the level of wage rate of workers and in order to do so they will increase inflation in the economy, thus negatively affecting economic growth as suggested by a study on 12 MENA countries over the period 1998–2011 (Boujelbene, 2016). Similarly, Gasiorowski (2000) backs the previous point of view, as a cross-sectional study of underdeveloped countries from 1968-1991, found that inflation is lower in a nondemocratic regime as compared to a democratic regime because the government don't have to worry about the budget deficit or wage rates, thus lower inflation rate increases economic growth in the economy. A study conducted on OECD countries from 1941-1990 found that economic growth is negatively linked with Inflation

as inflation creates uncertainty and inconsistency in the economy which discourages investment thus, causing a fall in the growth of the economy (JOHN GERRING, 2011).

In case of developing countries, a study examined the association between political stability and economic growth in 10 Asian countries over the period of 1990-2005. The major findings were that there economic growth is positively linked with political stability and suggested that political stability is more imperative for growth in the economy than political freedom (M. Younis, 2008). Further according to another study conducted on 97 underdeveloped countries from the period of 1946-1994, economic growth is negatively associated with democracy for developing countries as, democratization in developing countries occur at an expense of macroeconomic performance and the more democratic a government is the higher will be the inflation thus it will negatively affect the growth rate. Moreover, high demand placed by the public on government officials usually is the main reason for their poor performance (GASIOROWSKI, 2000).

Some studies have opposing views regarding democracy and consider dictatorship to be more favorable for economic growth in an economy compared to democracy, especially in case of less-developed countries. Democratic governments are less efficient in implementing the reforms compared to a non-democratic government. In addition to it, democratic governments can harm the pace of economic growth in different ways such as, by creating irregular wage movements across the country which can sometimes hinder` the persistent and rapid economic growth of a country. Democracies use fewer tools to stimulate growth in the economy and are more vulnerable to pressures from the people regarding utilization of resources, grants, and other particularistic beliefs that it negatively effects their ability to achieve sustainable economic growth in the country (Polterovich, 2007).

Durham (1999) reviewed the association between political regimes and economic growth by conducting an analysis on 105 countries using panel data. Variables included were political regimes measured by Polity IV index, GDP and investment .The major outcome of the study was that as freedom of choice increases the growth levels decrease and single party dictatorial regimes are likely to experience higher investment ratios.

In case of Pakistan, it has been always assumed that dictatorship government does better than democracy, but there are still some contradicting views on this topic. Government was under a dictatorship rule for more than three decades after independence, thus the main goal was to have a

democratic political system since 1947. A study investigated the effect of democracy on economic growth in Pakistan using an autoregressive distributive lagged model. Five different measures for democracy were taken into account which were, ‘Civilian Participation and Representations in Decision Making, More Presence of Rule of Law, Media Freedom, Unbiased and fair Election and Political Process, and Security of Property Rights’, in addition to it, GDP and national income variables were considered as well. The main conclusions of this research were that there is a noteworthy direct effect of democracy on GDP and through development in the political and social sector, the insecurities are reduced amongst the investors thus, indirectly enhancing economic growth of the economy. However, democracy’s impact on national income is uncertain in case of Pakistan (Khalid Mahmood, 2010).

However, according to another research related to Pakistan done over the period of 1980-2010, dictatorship regime results in better economic performance as compared to the democratic regime as a dictatorial government is better able to manage the forces driving growth rates. Although, in the long run good economic performance of the country depends on good governance, in that case it does not matter whether this governance is based on democratic or autocratic rule (M.Imtiaz Subhani, 2014).

The above discussion indicates that there are still contradicting views on which political regime- democracy or dictatorship is better for growth in the economy. This paper will investigate the association between political regimes and economic growth for both developing and developed countries to determine which political regime is most suitable for developing and developed countries.

Part III: Theoretical Framework & Research Design

3.1 Data

The key purpose of this paper is to conduct a casual research to examine the cause and effect association between Political regimes and Economic growth; which includes both democracy and dictatorship. Moreover, the extent of interference will be minimal for this research as secondary data is used, hence data for all variables that will explain the link between political regimes and economic growth will be collected from WDI and World Bank websites, as this is a quantitative research with macro level analysis.

In addition to it, the papers mentioned in this study have obtained their data from WDI and World Bank websites so; these are creditable sources that provide data, which can easily be analyzed through a statistical test. In addition, statistics required to construct the Political Regime Index will be taken from 'Polity IV index'. Therefore, surveys will be used to collect information for all the variables included in this research paper and the data will be selected randomly.

The study setting of this research will be non-contrived with minimal interference (natural) as we will not manipulate any variables to study the casual link between political regimes and economic elevation. This will help reduce the biasness in research and will be less time consuming. This study will be using Panel data to inspect the influence of Political regimes on growth of the economy for 64 countries in total, which comprises of 32 developed and 32 developing countries, over the period of 17 years (2002-2018). Including the data of range of different countries over a broad time period will provide a better opportunity to evaluate how the effect of Political regimes on Economic growth differs from developed to developing countries.

3.2 Hypothesis

This paper will assess the influence of Political regimes on Economic growth; which is our dependent variable, henceforth the hypothesis is:

Null hypothesis:

'Null hypothesis' is a statement that articulates that there is no relationship amid the dependent and independent variable. In this paper the 'null hypothesis' predicts that no relationship exists between political regimes and economic growth.

$$H_0: \beta_1 = 0$$

H_0 : There is no relationship between political regimes and economic growth

'Alternative hypothesis':

The alternative hypothesis is a statement that counters the 'null hypothesis'. In this paper the 'alternative hypothesis' is that a relationship exists between political regimes and economic growth in different countries.

$$H_A: \beta_1 \neq 0$$

H_A : There is a relationship between political regimes and economic growth

3.3 Elements of Research design

The aim of this study is to quantify and study political systems and its effect on growth of a country. The purpose of this paper is to conduct a casual research to examine the cause and effect association between Political regimes and growth of the economy. In this case the dependent variable is economic growth and the major explanatory variable is Political regimes; which consists of both democratic and dictatorship regimes. The minor independent variables include level of education, level of Investment, Trade openness, Population growth and Inflation level in a country.

This paper will use panel data of 64 countries, which comprises of 32 developed and 32 developing countries, over the period of 17 years (2002-2018) from the South Asian Economies.

Part IV: Data & Descriptive Statistics

4.1 Data Descriptives

For this research paper we are analyzing the influence of political regimes on growth of the economy in both developed and developing countries. Panel data is collected for all the major developed and developing countries for 17 years, ranging from 2002-2018. The variables included in the model are “**GDP** [measured by GDP current LCU], **Political Regimes index** [using dummy variable 1 for dictatorship and 0 for democracy], **Education** [measured by primary school enrollment], **Investment** [measured by gross capital formation], **Trade Openness** [measured by Trade (% of GDP)], **Population growth** [measured by annual population growth] and **Inflation** [measured by GDP deflator]”. The data for the variables; “GDP, Education, Investment, Trade openness, Population growth and Inflation” was collected from WDI website. While, the Political Regimes Index was constructed using the data from Polity IV. A dummy variable for the Political regimes was created containing values ranging from 0 (democratic) to 1 (extreme dictatorship).

Gross Domestic product (GDP) is the aggregate amount of products manufactured in a country. It is measured through GDP per capita for both developed and developing countries. With the exception of few countries, a consistent trend can be observed from the following line charts of GDP per capita over 17 years.

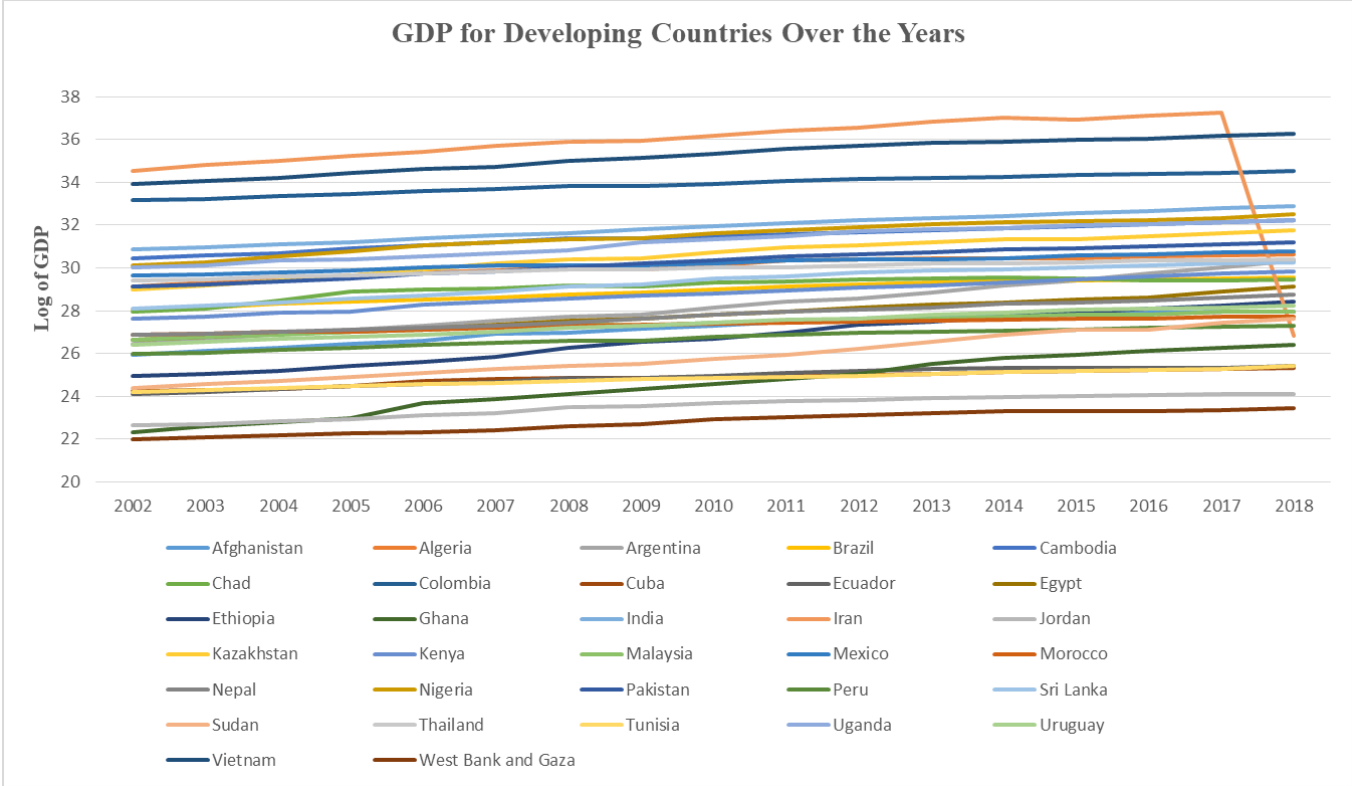


Fig. 3

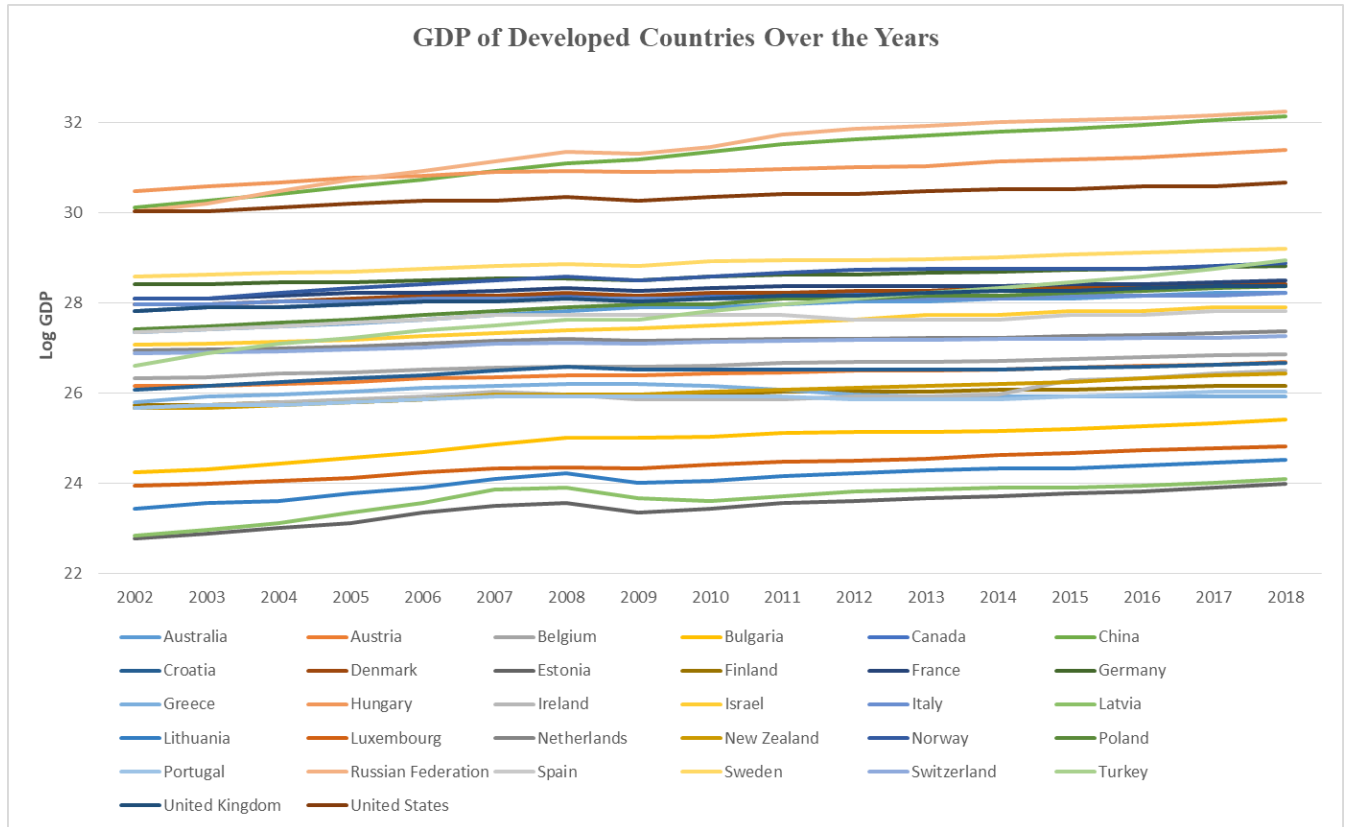


Fig. 4

Fig. 3 shows GDP for Developing countries from 2002-2018. Overall, the GDP of the majority of the developing countries have a slight upward trend. Iran has the highest GDP amongst 32 developing countries until 2017, when it experienced a sharp decline. The country with second highest GDP is Vietnam and it has a trivial increasing trend over the period 17 years. The West Bank and Gaza has the lowest GDP amongst all of the developed countries which can be explained by the unstable political situation.

Moving on to Fig. 4 which shows that GDP of 32 developed countries over 17 years. We can see that overall the trend of GDP is constant for all of the countries. However, we can see that there was a significant drop in the GDP of the countries between the years 2007-2008 which could be due to the financial crisis which originated from the developed countries. The highest GDP is generated by Russia which is 31.23619. While, the second largest GDP is generated by China, because it is one of the largest economies of the world which is rapidly growing. However, the

country with the lowest GDP is Estonia, although its GDP rose slightly during 2006-2007, but it fell again in 2008.

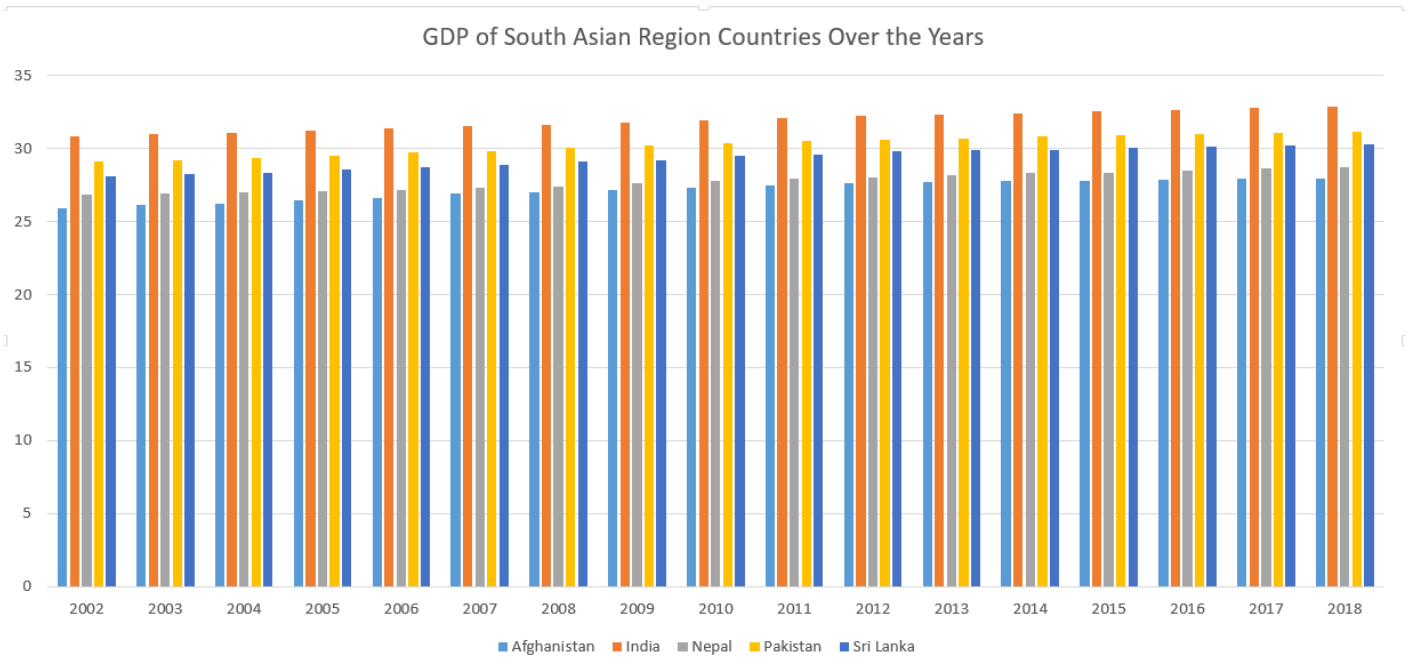


Fig. 5

The GDP of the countries in the South Asian Region is shown in Fig. 5. We can see that overall India has the highest GDP amongst other countries in the region. The highest GDP in India was generated in the year 2018 which was around 32.878. While the lowest GDP is of Afghanistan, due to political and economic instability. In case of Pakistan, the highest GDP was generated in year 2018 with a value of 31.18. This could be as a result of political stability in Pakistan through having a successful transition from one democratic regime to another.

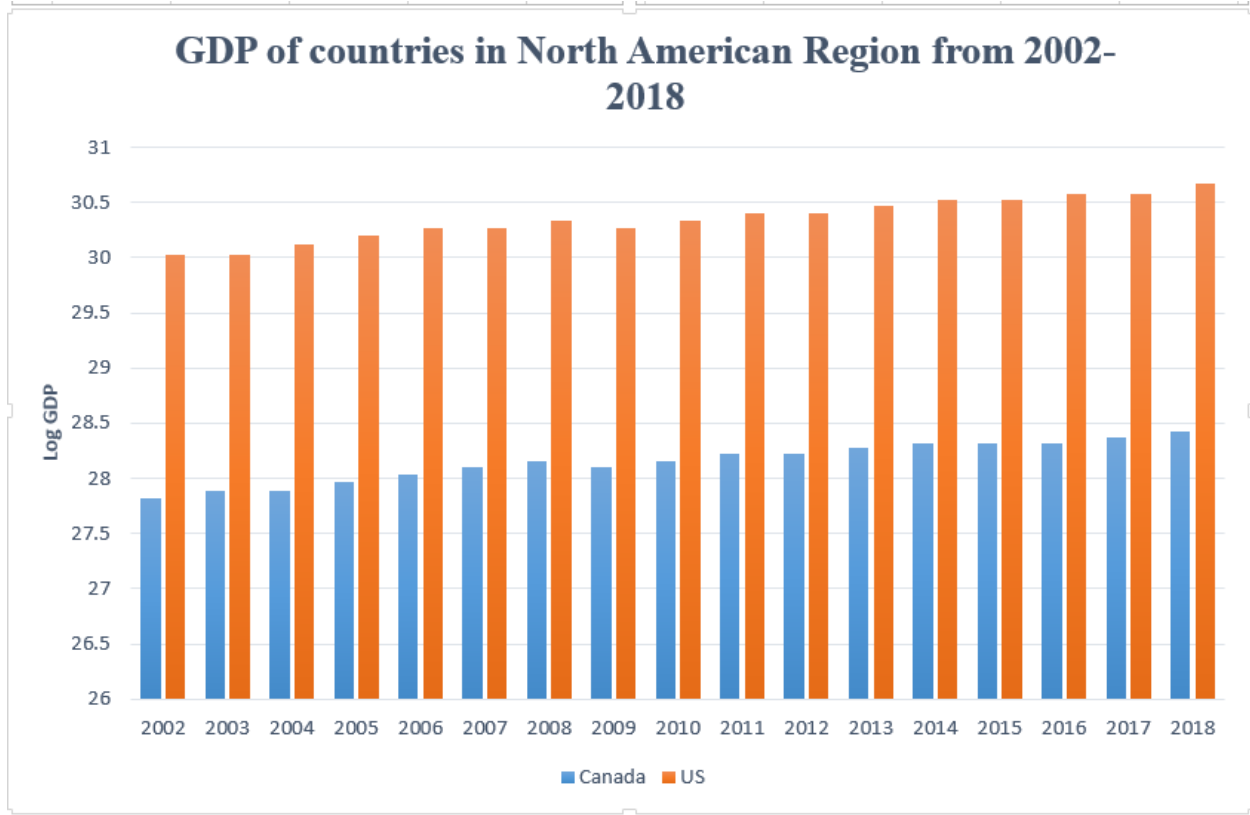


Fig. 6

Figure 6 shows GDP of North American Countries over 17 years. We can clearly see that the United States have a higher GDP as compared to Canada for all the years. The highest GDP generated in the United States was in year 2018 which was around 30.67. Canada has a significantly lower GDP compared to the United States and had the highest GDP in 2008 with a value of 28.1616. Moreover, we can see that both countries have a similar increasing and decreasing trend because Canadian and United States economies are closely inter-linked.

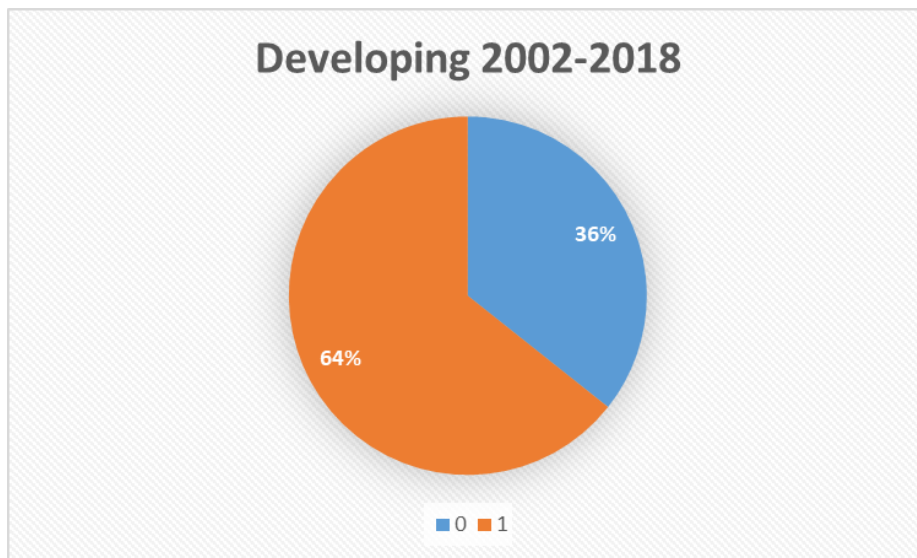
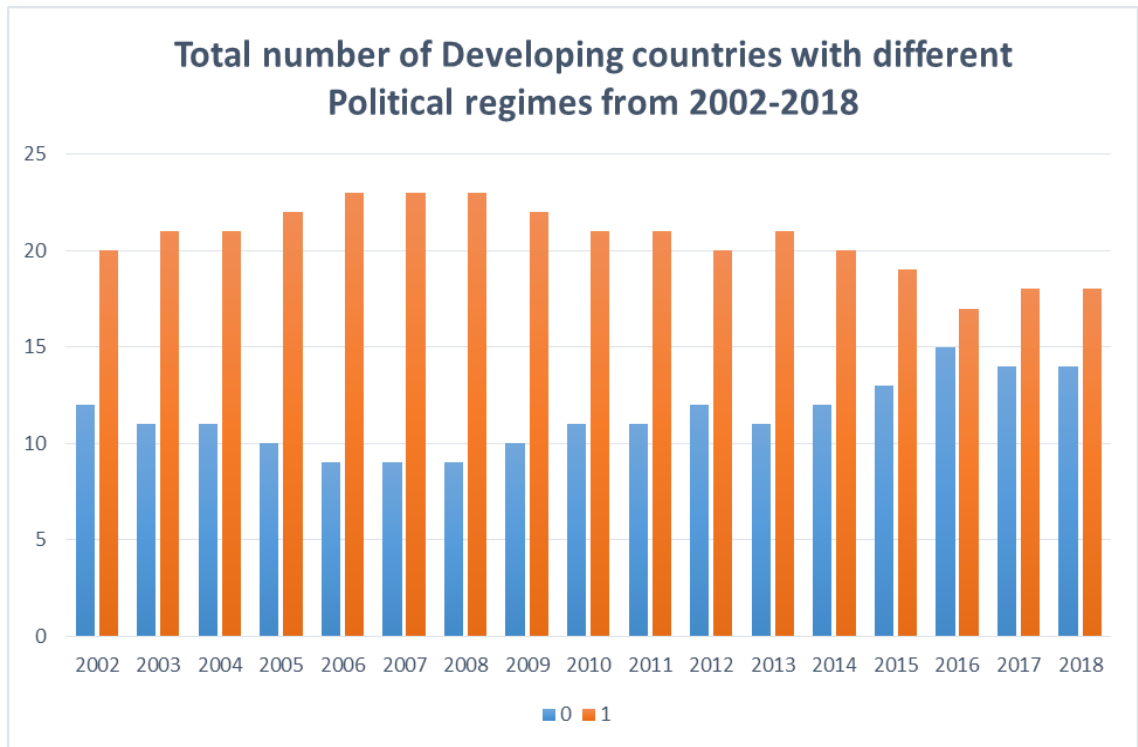


Fig. 7

The above Figure 7, represents the total number of Developing Countries with different political regimes over the period of 17 years. The Political Regimes Index is constructed using dummy variables; where 0 is for a “democratic regime” and 1 is for a “dictatorial regime”. It can be clearly seen that overall 64% of developing countries were governed under an autocratic regime while, only 36% of the developing countries had a democratic regime between years 2002-2018. The

highest number of developing countries which experienced a dictatorship rule was during 2006-2008. While, democratic rule was common in most of the developing countries in year 2016.

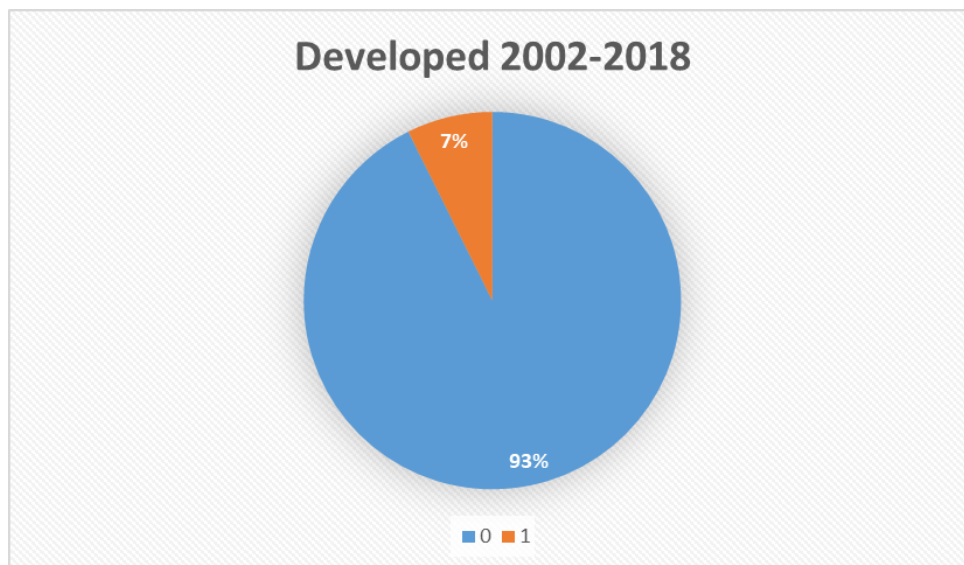
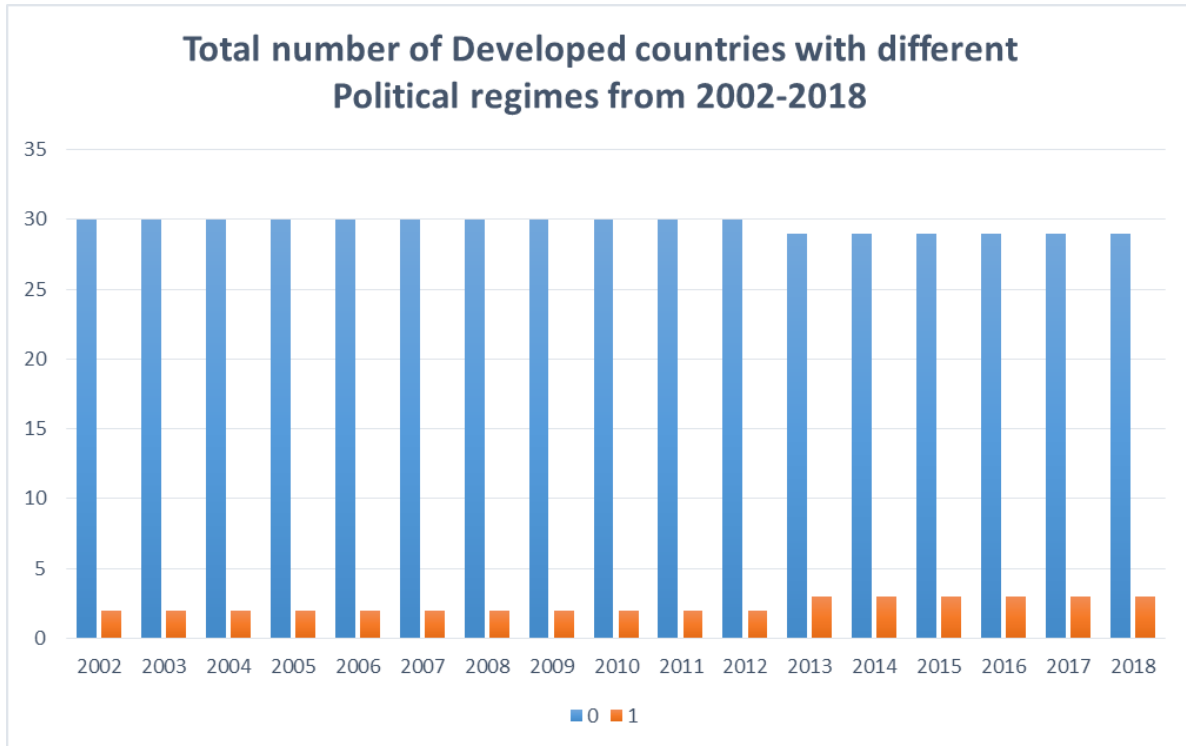


Fig. 8

The total number of Developed countries with different Political Regimes as shown in Figure 8. The pie chart shows that overall 93% of 32 developed countries were governed under a democratic

regime, while only 7% of the countries had an autocratic regime. The highest number of developed countries having an autocratic regime were in year 2013.

Therefore through analysis of the graphs we can deduce that dictatorship regime is present in developing countries while, democratic regimes are more predominant in developed countries.

4.2 Summary Statistics

Summary statistics as shown in Fig. 9 below, shows the “number of observations, mean, standard deviation and min and max values of mean and standard deviation” for all of the variables

Table 1: Combined Summary Statistics

Variable		Mean	Std.Dev.	Min.	Max	Observations
GDP	Overall	27.9623	2.75866	22.0042	37.2468	N= 1088
	Between		2.71535	22.7993	35.504	n= 64
	Within		0.587865	19.2683	30.0561	T= 17
POL	Overall	0.3585	0.47977	0	1	N= 1088
	Between		0.454646	0	1	n= 64
	Within		0.162839	-0.5827	1.00552	T= 17
EDU	Overall	4.627	0.12619	2.54263	5.01035	N= 1088
	Between		0.097599	4.2417	4.89755	n= 64
	Within		0.080854	2.62306	4.92127	T= 17
INV	Overall	23.783	7.19032	0	60.1562	N= 1088
	Between		5.819347	10.0231	44.142	n= 64
	Within		4.281866	6.6137	54.2433	T= 17
TRADE	Overall	80.77	50.834	19.1008	408.362	N= 1088
	Between		49.62475	25.8963	334.958	n= 64
	Within		12.5591	-0.0872	154.174	T= 17
POP	Overall	1.09419	1.11295	-2.2585	5.43159	N= 1088
	Between		1.068665	-1.2854	3.80112	n= 64
	Within		0.336784	-0.9148	2.72467	T= 17
INF	Overall	124.973	181.5723	8.52488	3064.15	N= 1088
	Between		127.1655	52.1904	1003.44	n= 64
	Within		130.5199	-637.38	2185.68	T= 17

Source: Author's own calculations using World Development Indicators and World Governance Indicators (The table gives an overall summary statistics)

Through Table 1, we analyze the statistics of the data in greater detail. The statistics summarize

the data between developing and developed countries with 544 observations each of 32 developing and 32 developed countries. The table shows that there are 1088 observations in total for both developed and developing countries. The mean GDP which is our major dependent variable rounds to 28 for a given year and the standard deviation is 2.7586. The minimum value of GDP among all its values is 22 whereas, the maximum value is 37.246. The within values shows the variation in the variables across different time periods whereas, between values represents variation in the variables across countries. For GDP the within standard deviation is 0.5879 while the between standard deviation is 2.715. The average of Political Regimes Index which is our major independent variable is 0.358 in a given year, while its standard deviation is 0.47977. Their minimum value is 0 and maximum value 1 because the index consists dummy variables. The within and between standard deviations are 0.1628 and 0.4546 respectively. Moving on to other independent variables, the average of Education is 4.6270 which is quite a low number and its standard deviation is 0.12619. The minimum and maximum value of Education are 2.5426 and 5.01035 respectively. The within and between standard deviations are 0.0809 and 0.097599 respectively. Investment has an average value of 23.7829, while its standard deviation is 7.1903. The within and between standard deviations are 4.28187 and 5.819347 respectively. Trade Openness has a mean value of 80.77 and standard deviation of 50.8340. The minimum and maximum value of Trade Openness are 19.10 and 408.362, which shows a huge disparity in the data. The mean and standard deviation of Population Growth is 1.0941 and 1.1129 respectively. Its minimum and maximum value is -2.258 and 5.4315 correspondingly. The within and between standard deviations are 0.3368 and 1.0687 respectively. Lastly, the average of Inflation is 124.9733 which is quite a large number and its standard deviation is 181.5723. The minimum value is 8.5248 and maximum value is 3064.15 and the within and between standard deviations are highest with 130.199 and 127.1655 respectively.

Table 2: Summary Statistics of Developing Countries

Variable		Mean	Std.Dev.	Min.	Max	Observations
GDP	Overall	28.6168	3.2029	22.0042	37.2468	N= 1088
	Between		3.15326	22.7993	35.504	n= 64
	Within		0.78031	19.9229	30.7106	T= 17
POL	Overall	0.6434	0.47944	0	1	N= 1088
	Between		0.43533	0	1	n= 64
	Within		0.21432	-0.2978	1.11397	T= 17
EDU	Overall	4.6335	0.14864	4.0913	5.0103	N= 1088
	Between		0.13552	4.2417	4.89755	n= 64
	Within		0.06535	4.27059	4.84417	T= 17
INV	Overall	24.0921	8.5089	0	60.1562	N= 1088
	Between		6.8333	10.0231	39.9461	n= 64
	Within		5.20423	6.92281	54.5524	T= 17
TRADE	Overall	67.7819	37.7053	19.1008	210.374	N= 1088
	Between		36.4494	25.8963	165.047	n= 64
	Within		11.5011	27.7049	119.315	T= 17
POP	Overall	1.71703	0.99615	-0.267	5.43159	N= 1088
	Between		0.95252	0.09069	3.80112	n= 64
	Within		0.33428	-0.2919	3.34751	T= 17
INF	Overall	158.422	252.01	8.5249	3064.15	N= 1088
	Between		174.638	52.1904	1003.44	n= 64
	Within		184.145	-603.94	2219.13	T= 17

Source: Author's own calculations using World Development Indicators and World Governance Indicators (The table gives a comparison between developed and developing countries statistics)

In case of Developing Countries as shown in Table 2, the total number of observations are 544. The average of GDP is 28.6168 while, its standard deviation is 3.2029. The minimum and maximum value of GDP for all its values is 22.0042 and 37.2468 correspondingly. The within values shows the variation in the variables across different time periods whereas, between values represents variation in the variables across countries. For GDP the within standard deviation is 0.7803 while the between standard deviation is 3.1533. For major independent variable; which is

Political Regimes Index, the mean value is 0.6434 while, its standard deviation is 0.47944. Its minimum and maximum values are 0 and 1 respectively, as it is constructed using dummy variables. The within and between standard deviations are 0.21432 and 0.43533 respectively. Moving on to other independent variables, Education has a mean value of 4.6335 and standard deviation of 0.1486. Its minimum value is 4.9013 and maximum value is 5.0103 and the within and between standard deviations are 0.06535 and 0.13552 respectively. Investment has an average 24.0921 and its standard deviation is 8.5089; the minimum value being 0 and maximum being 60.1562 and the within and between standard deviations are 5.20423 and 6.8333 respectively. Moving on to Trade Openness, which carries an average of 67.7819 and standard deviation of 37.7053; the minimum and maximum value being 19.1008 and 210.374 respectively shows a huge discrepancy in the data. Population Growth has a mean of 1.71703 while its standard deviation is 0.99615; with a minimum value of negative 0.26696 and maximum value of 5.43159 while, the within and between standard deviations are 0.33428 and 0.9525 respectively. Lastly, Inflation shows an average and standard deviation of 158.4218 and 252.0099, which it carries a minimum value of 8.5249 and maximum value of 3064.15, which also shows a large variation in the data. The within and between standard deviations for Inflation are 184.145 and 174.638 respectively

Table 3: Summary Statistics of Developed Countries

Variable		Mean	Std.Dev.	Min.	Max	Observations
GDP	Overall	27.3078	2.0291	22.7774	32.2362	N= 1088
	Between		2.03877	23.4718	31.3874	n= 64
	Within		0.287974	25.9493	28.416	T= 17
POL	Overall	0.7353	0.26124	0	1	N= 1088
	Between		0.250905	0	1	n= 64
	Within		0.084557	-0.2794	0.72059	T= 17
EDU	Overall	4.62062	0.09848	2.54263	4.84084	N= 1088
	Between		0.03015	4.5466	4.72248	n= 64
	Within		0.093894	2.61664	4.91485	T= 17
INV	Overall	23.4739	5.559	10.217	47.8188	N= 1088
	Between		4.683024	17.1461	44.142	n= 64
	Within		3.101371	14.2928	37.1859	T= 17
TRADE	Overall	93.7582	58.42314	22.1543	408.362	N= 1088
	Between		57.68746	27.1917	334.958	n= 64
	Within		13.54542	12.901	167.162	T= 17
POP	Overall	0.47135	0.84261	-2.2585	2.89096	N= 1088
	Between		0.782778	-1.2854	1.89327	n= 64
	Within		0.339578	-1.4235	2.02456	T= 17
INF	Overall	91.5249	15.7162	19.9279	213.797	N= 1088
	Between		7.458626	63.966	114.535	n= 64
	Within		13.89264	26.0699	190.787	T= 17

Source: Author's own calculations using World Development Indicators and World Governance Indicators (The table gives a comparison between developed and developing countries statistics)

Table 3 shows summary statistics of Developed Countries, the total number of observations are 544. The average of GDP which is our major dependent variable is 27.3078 while, its standard deviation is 2.0291. The minimum and maximum value of GDP for all its values is 22.7774 and 32.236 correspondingly. The within and between standard deviations are 0.28797 and 2.03877 respectively. For major independent variable; which is Political Regimes Index, the mean value is 0.7353 while, its standard deviation is 0.26124. Its minimum and maximum values are 0 and 1

respectively, as it is constructed using dummy variables and the within and between standard deviations are 0.08456 and 0.25091 respectively. Moving on to other independent variables, Education has a mean value of 4.62062 and standard deviation of 0.09848. Its minimum value is 2.54563 and maximum value is 4.84084 and the within and between standard deviations are 0.09389 and 0.03015 respectively. Investment has an average 23.4739 and its standard deviation is 5.5590; the minimum value being 10.2170 and maximum being 47.8188. The within and between standard deviations are 3.1014 and 4.6830 respectively. Moving on to Trade Openness, which carries an average of 93.758 and standard deviation of 58.42314; the minimum and maximum value being 22.1543 and 408.362 respectively shows a huge discrepancy in the data. Population Growth has a mean of 0.47135 while its standard deviation is 0.84261; with a minimum value of negative 2.25846 and maximum value of 2.89096 and the within and between standard deviations are 0.33958 and 0.782778 respectively. Lastly, Inflation shows an average and standard deviation of 91.52487 and 15.7162, which it carries a minimum value of 19.9279 and maximum value of 213.797, which also shows a large variation in the data. The within and between standard deviations for Inflation are 13.8926 and 7.4586 respectively

Therefore, while comparing the means of developed and developing countries it can be observed that the major differences are in variables like; Trade, Population growth and Inflation. Trade for developed economies is 93.75 which is greatly higher than developing countries since they have better economic opportunities. Similarly, mean population growth is larger in developing countries with 1.7170 compared to developed countries and mean inflation is also higher in developing countries with 158.422 in comparison to developed countries.

4.3 Correlation

Correlation depicts the cause and effect relationship between the variables. It is very important to analysis the correlation between different variables for research as it measures the magnitude or strength of between two variables. The correlation between variables can be either positive or negative. If the values are close to +1, it shows a positive relationship, whereas values with a correlation of -1 depicts a strong negative relationship and values with 0 indicates there is no correlation existent between two variables.

Table 4: Combined Correlation

Matrix of correlations							
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) GDP	1.000						
(2) POL	0.237	1.000					
(3) EDU	0.184	-0.167	1.000				
(4) INV	0.276	0.177	0.112	1.000			
(5) Trade	-0.250	-0.099	-0.041	0.016	1.000		
(6) POP	0.103	0.477	-0.229	0.015	-0.106	1.000	
(7) INF	0.047	0.123	-0.130	-0.027	-0.145	0.112	1.000

The combined correlation between developing and developed countries is shown in Table 4. The table shows that only Trade Openness has a negative relationship with the major dependent variable; GDP. This explains that GDP will decrease by 1% if Trade Openness increase by 0.250. While, the Political Regimes Index, Education, Investment, Population Growth and Inflation has a positive correlation with GDP. This means that GDP will increase by 1% when any of these variables increase by their corresponding coefficients. Moreover, the highest positive correlation is with Political Regimes index and Population Growth which is negative 0.477. The highest negative correlation is between GDP and Trade Openness with the value of -0.250.

Table 5: Correlation of Developing Countries

Matrix of correlations							
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) GDP	1.000						
(2) POL	-0.008	1.000					
(3) EDU	0.266	-0.338	1.000				
(4) INV	0.332	0.090	0.172	1.000			
(5) Trade	-0.009	0.318	-0.031	0.174	1.000		
(6) POP	-0.180	0.327	-0.486	-0.050	0.047	1.000	
(7) INF	0.003	0.022	-0.167	-0.040	-0.195	0.006	1.000

Table 6: Correlation of Developed Countries

Matrix of correlations							
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) GDP	1.000						
(2) POL	0.500	1.000					
(3) EDU	-0.034	0.008	1.000				
(4) INV	0.133	0.468	-0.032	1.000			
(5) Trade	-0.439	-0.208	-0.033	-0.110	1.000		
(6) POP	0.227	-0.009	-0.007	0.058	0.050	1.000	
(7) INF	0.030	-0.056	-0.092	-0.084	0.043	0.144	1.000

In case of Developing Countries, Table 5 shows that Political Regimes Index, Trade Openness and Population Growth have a strong negative relationship with GDP. This shows that GDP is likely to decrease by 1% when any of these variables increase by their individual coefficients. Moreover, the highest positive correlation is between GDP and Investment as shown in Fig. 6 which is 0.332. Whereas, the highest negative correlation is -0.338 which is between the Political Regimes Index and Education.

As for Developed Countries as shown in Table 6, only Education and Trade Openness has a strong negative correlation with our major dependent variable, which is GDP. Whereas, the Political Regimes Index, Investment, Population Growth and Inflation have a strong positive correlation with GDP. This means that GDP will increase by 1% when any of these variables increase by their corresponding coefficients. The highest positive correlation is between GDP and the Political Regimes Index for developed countries with a value of 0.5. While, the highest negative correlation is between GDP and Trade Openness with a value of -0.439.

4.4 T-Test Hypothesis

The T-Test hypothesis is a tool widely used to analyze the statistical significant of the mean. It assumes that sample mean is same as the population mean. The test is conducted for all of the variables used in this research using 95% confidence interval. The t-critical value at 5% confidence interval is 1.96. Therefore, the decision rule is that we reject the “Null hypothesis” if (t-value > t-critical) which shows that the mean difference between developed and developing countries is significantly different from each other. For both developed and developing countries there are in total 544 observations each.

Table 7: Two-sample t-test with equal variances for all variables

	Obs1	Obs2	Developed	Developing	Diff	Std_Err	t_value
GDP	544	544	27.3078	28.6169	-1.3090	2.75866	-8.0526
POL	544	544	0.07353	0.6434	-0.56985	0.014545	-24.3429
EDU	544	544	4.62062	4.63346	-0.01284	0.0038256	-1.6791
INV	544	544	23.4739	24.0921	-0.61822	0.21799	-1.4787
TRADE	544	544	93.7582	67.7819	25.9763	1.54113	8.7133
POP	544	544	0.47135	1.71703	-1.2457	0.03374	-22.2683
INF	544	544	91.5249	158.4218	-66.8969	5.50472	-6.1794

The t-stat value for the major dependent variable, which is GDP is 8.053 therefore, we reject the “Null hypothesis” as the t-stat value is significant. The t-stat value for the major independent variable, which is the Political Regimes index is 24.343. Therefore we can say that the mean difference between developed and developing countries is significantly different from each other. T-stat values for Education and Investment are 1.6791 and 1.4787. Since they are less than t-critical, so we accept the null hypothesis and the mean difference amongst developed and developing countries is not significantly different from each other. The t-stat value for Trade Openness is 8.713, which is greater than t-critical, thus we reject the null hypothesis. The t-stat values for Population Growth is 22.2683. Therefore we can say that the t-value is significant. Finally, the t-stat value of inflation is 6.1794, hence we reject the null hypothesis and the mean difference amongst developed and developing countries is significantly different from each other.

Part V: Estimation Strategy

5.1 Empirical Estimation

Political regimes are likely to have an impact on a country’s growth rates. Studies which are in favor of a democratic regime reveal that democracy leads to efficient allocation of resources and stimulate eagerness amongst individuals to invest and work by providing a healthy environment of freedom and security (Leblang, 1996). However, those with a view that dictatorship regimes are better able to enhance economic growth as compared democratic regime support that democratic governments are less efficient in implementing the reforms compared to a non-democratic government which can harm the pace of economic growth in different ways such as, by creating irregular wage movements across the country, which can sometimes hinder the persistent and rapid economic growth of a country (Polterovich, 2007).

Regression Equation:

$$GDP_{it} = \beta_0 + \beta_1 POL_{it} + \beta_2 EDU_{it} + \beta_3 INV_{it} + \beta_4 TRADE_{it} + \beta_5 POP_{it} + \beta_6 INF_{it} + \epsilon_{it}$$

GDP_{it} is the subscript for Gross domestic product per capita, in which ‘i’ is the ‘unit of analysis’ of the country and ‘t’ is the ‘time period’

POL_{it} is the subscript for political regime index, including both democratic and autocratic regimes

EDU_{it} stands for Education level in a country

INV_{it} stands for investment in a country

$TRADE_{it}$ stands for Trade openness in a country

POP_{it} stands for Population growth

INF_{it} stands for Inflation,

ϵ_{it} is the Error term, which consists of all the variables that are unobserved and are likely to impact economic growth

Lastly, β_0 is constant and $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ & β_6 are the slope coefficients
Dependent variable:

Gross domestic product (GDP) is the dependent variable in this model and is used as a proxy to measure Economic Growth. GDP is defined as “a variable which has connotation of quantitative expansions in economic variable, especially aggregate and per capita national as measured by such statistics as GDP and GNI” (Hayami, 2005). The data for GDP per capita will be collected from the WDI website for all the countries included in the model.

Independent variables:

POL, which stands for Political regimes, is the main explanatory variable in this model. The term ‘Political regimes’ comprises of both democratic and authoritarian regimes. According to Antić (2004) democracy means an institutional arrangement in which people who govern a country, acquire power through competitive elections. On the other hand, the term dictatorship is derived from dictation and is a synonym for a system with indefinite ruling by an individual or concentrating of power in few hands. The political regime index will be measured using the polity

IV database by introducing a dummy variable which will range from 0 (democratic) to 1 (extreme dictatorship). “Polity IV data base rates countries on the basis of political competition, the openness and competitiveness of executive recruitment, and the extent of legislative and judicial constraints on the chief executive”. Various studies suggest that there is an inverse or negative correlation between dictatorship and economic development because a dictator is less likely to provide social facilities like education and health care. Thus, dictatorship hinders in economic development of a country and there is a positive impact on economic growth due to transition from dictatorship to democracy (Karim Khan, 2016). There is a positive link between democracy and economic growth as, it will provide people with freedom to participate in the process of development and enable them to improve their standards of living (Pourgerami, 1988)

EDU stands for education level in a country and will be measured through the primary school enrollment rate. Education is defined as the process of obtaining knowledge or skills and the ability of the people to read and write through going to educational institutions (Education, n.d.). The data for secondary school enrollment for different countries will be taken from WDI and World Bank websites. According to different theories and studies education is expected to have a positive impact on GDP thus, higher literacy rates mean faster growth in the economy (Feng, 1997). Moreover, economic growth in an economy is stimulated through investment in the human capital as it would raise creativity and productivity amongst people and can also contributed towards technological advancement in the region (Durham, 1999).

INV which is investment is defined as additions made to the fixed assets plus changes in the level of the inventories of a country such as, purchase of equipment, construction of schools and hospitals and transportation networks Tuovila (2019). Investment will be measured in terms of Gross capital formation as a percentage of GDP and this data will be collected from WDI website for all the countries. Investment significantly improves economic growth as it contributes towards rise in the level of income Weed (1983). Additionally, Investment also helps in increasing productivity and improves the operational efficiency of a country thus, stimulating high economic growth in the country hence it has a positive relationship with GDP (Antić, 2004).

TRADE is trade openness which is basically the sum of exports and imports as a percentage of GDP. It is defined as the inward and outward orientation of the resources of a country amongst other countries Abdullah R. Alotaibi (2014). The data for Trade as a % of GDP will be collected

from WDI website for this paper. Trade openness promotes specialization, efficient use of resources, increase productivity of a country and leads to technological innovation, therefore a positive relationship between trade and GDP is predicted as stated by (Siermann, 1996). Moreover, higher degree of trade openness will lead to an increase in economic growth as it creates greater prosperity in the region through circulation of new creative ideas from one country to another (Durham, 1999).

POP stands for the population growth in a country and will be measured by Population growth rate (annual percentage). Population is the total number of individuals and residents in a country irrespective of their citizenship. The data will be taken from WDI website for all the countries chosen in this paper. According to some studies the relation between size of the population and GDP is predicted to be negative as asserted by Antić (2004) that the more populous a country is the lower will be its growth rates. However, other studies consider population growth as one of the factors that enhances economic growth as it increases productivity, thus Population growth can also have a partially positive impact on GDP.

Lastly, INF which stands for inflation in this paper is measured through annual rate of GDP deflator. Inflation is defined as a continuous increase in the general price level and an increase in the cost of living Chen (2019). The data for an annual rate of GDP deflator will be collected from WDI for all the countries chosen to be assessed by the model. A higher level of inflation lowers level investments and foreign direct investment (FDI) due to a higher cost of borrowing, therefore it hampers the economic activities in an economy (Feng, 1997). Moreover, Fischer also proves that a high inflation leads to low growth, hence a negative connection between inflation and GDP is suggested. Additionally, inflation creates uncertainty and inconsistency in the economy which discourages investment thus, causing a fall in the growth of the economy. Therefore, there is a negative link between the growth of an economy and inflation (JOHN GERRING, 2011).

To empirically test the influence of political regimes on growth rate, we will use ordinary least squares ('OLS') model with fixed and random effects, as panel data is being used.

5.2 Estimation Strategy

The main estimation strategy used will help in assessing the influence of Political Regimes on growth of the economy using the panel dataset. Henceforth, it is necessary to include both the FE and RE models. To choose the most appropriate model, the hausman test will be conducted

followed by the post estimation commands of the selected model to further strengthen the hausman test results. The statistical software, STATA will be used to run the regressions and the post estimation commands.

Part VI: Estimation Analysis

Regression Analysis

This part of the paper highlights the estimation techniques used to evaluate the effect of political regimes on growth of the economy for both developing and developed countries. The first estimation specifies the overall impact of both the dependent and independent variables on economic growth using panel fixed effect model. Whereas, the second estimation shows the segregated effect of all the variable on economic growth on developed and developing countries separately through a panel random and fixed effect model.

6.1 Overall Estimation

To ascertain conclusively the influence of political regimes on growth of the economy, we need to use the fixed effects (FE) and random effect (RE) model. The FE model is used to evaluate the impact of independent variables on response variable. It includes variables which do not change or vary at a constant rate over a time period therefore, they might or might not impact the independent variables. The RE model is the opposite of the FE model. Here the disparity in the variables is presumed to be random and is found in the error term. The variation is not interrelated through the predictor variables included in the model. The regression equation used to assess influence of political regimes on growth of the economy is as follows:

$$GDP_{it} = \beta_0 + \beta_1 POL_{it} + \beta_2 EDU_{it} + \beta_3 INV_{it} + \beta_4 TRADE_{it} + \beta_5 POP_{it} + \beta_6 INF_{it} + \epsilon_{it}$$

Test: Ho: difference in coefficients not systematic

Table 8.1: Hausman (1978) specification test

	Coef.
Chi-square test value	19.152
P-value	.004

To decide the model which is most relevant to use, “hausman test” was conducted, which helps in identifying the endogenous independent variables within the model. Outcomes of the test showed the probability of 0.0039. As this value is less than 10%, 5% and 1% significance level, therefore it clearly distinguishes that the FE model is the most applicable. Hence, column (1) of Table 8.5 indicates the outcomes of a simple FE model.

Table 8.2: Testing for time fixed effects

	Coef.
F(16, 1002)	58.46
<u>Prob > F</u>	0.0000

As the FE model is being used, so the first post estimation test conducted was of “time fixed effects”. This test is directed to identify the presence of any variance in the years used in the model. The results of the test presented a probability of 0.0000 with an F-value of 58.46. As this probability is significant because it is less than 1% significance level therefore, the time fixed effects should be used and the time dummies need to be incorporated in our regression as shown in column (2) of the table 8.5.

$$H_0: \sigma(i)^2 = \sigma^2 \text{ for all } i$$

**Table 8.3: Modified Wald test for heteroskedasticity
In fixed effect regression model**

	Coef.
chi2 (64)	91663.55
Prob > chi2	0.0000

In order to satisfy the assumption of regression that all the residual from the population have a constant variance, Modified Wald test is directed. The results of the heteroskedasticity test reveal a probability of 0.0000 with a chi value of 91663.55. As this probability is significant at 10%, 5%

and 1% significance level, a robust test was carried out to remove the heteroskedasticity and incorporate homoscedasticity into our regression equation as shown in column (3) where fixed effects model is corrected for the heteroskedasticity excluding time fixed effects and the column (4) signifies the correction of fixed effects model from heteroskedasticity

H0: no first-order autocorrelation

Table 8.4: Wooldridge test for autocorrelation in panel data

	Coef.
F(1, 63)	156.026
Prob > F	0.0000

The fixed effects model was tested for serial correlation using the Wooldridge test which helps in determining whether the correlation between countries is interrelated. However, the outcome of this test revealed a probability of 0.0000 which is significant at 1%, 5% and 10% significance level with an F-value of 156.026, therefore, indicating that the probability is significant and there is first-order autocorrelation present in the model. The reason for this can be that there is presence of reverse casualty in the model or some endogenous variables have been included in the model for which instrumental variables have to be included. We could have included several other variables in the model, but due to time constraint we might have neglected some of the variable which resulted in a positive autocorrelation.

The table below shows the outputs generated by running regression using both the FE and RE model.

Table 8.5: Regression results for effect of Political regimes on Economic growth across countries

VARIABLES	(1) GDP FE	(2) GDP Time FE	(3) GDP FE with Robust	(4) GDP Time FE with Robust	(5) GDP RE
POL	-0.190* (0.0997)	-0.0682 (0.0729)	-0.190 (0.210)	-0.0682 (0.0836)	-0.155 (0.0992)
EDU	0.371* (0.204)	0.244 (0.149)	0.371 (0.554)	0.244 (0.322)	0.399* (0.205)
INV	0.0202*** (0.00384)	0.0186*** (0.00284)	0.0202* (0.0117)	0.0186*** (0.00671)	0.0207*** (0.00386)
TRADE	-6.54e-05 (0.00130)	-0.00687*** (0.000996)	-6.54e-05 (0.00333)	-0.00687*** (0.00221)	-0.000634 (0.00128)
POP	-0.00497 (0.0491)	0.0496 (0.0358)	-0.00497 (0.0798)	0.0496 (0.0443)	0.00384 (0.0487)
INF	0.00202*** (0.000125)	0.00106*** (9.71e-05)	0.00202*** (0.000572)	0.00106*** (0.000239)	0.00201*** (0.000126)
2003.time		0.0740 (0.0684)		0.0740*** (0.0101)	
2004.time		0.204*** (0.0685)		0.204*** (0.0240)	
2005.time		0.326*** (0.0689)		0.326*** (0.0356)	
2006.time		0.450*** (0.0694)		0.450*** (0.0453)	
2007.time		0.554*** (0.0697)		0.554*** (0.0512)	
2008.time		0.669*** (0.0700)		0.669*** (0.0577)	
2009.time		0.658*** (0.0685)		0.658*** (0.0486)	
2010.time		0.786*** (0.0688)		0.786*** (0.0586)	
2011.time		0.901*** (0.0696)		0.901*** (0.0697)	
2012.time		0.963*** (0.0697)		0.963*** (0.0741)	
2013.time		1.019*** (0.0696)		1.019*** (0.0756)	
2014.time		1.071*** (0.0697)		1.071*** (0.0797)	
2015.time		1.112*** (0.0696)		1.112*** (0.0804)	
2016.time		1.156*** (0.0695)		1.156*** (0.0843)	
2017.time		1.232*** (0.0702)		1.232*** (0.0899)	
2018.time		1.131*** (0.0711)		1.131*** (0.184)	
Constant	25.59*** (0.961)	26.06*** (0.703)	25.59*** (2.584)	26.06*** (1.519)	25.47*** (1.013)
Observations	1,088	1,088	1,088	1,088	1,088
R-squared	0.230	0.602	0.230	0.602	
Number of countries	64	64	64	64	64

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Column (1) shows regression outcomes of a simple fixed effects model on the hypothesized regression equation. The time fixed effects are significant therefore, the time dummies need to be incorporated in our regression as shown in column (2). A robust test was carried out to remove the heteroskedasticity and incorporate homoscedasticity into our regression equation as shown in

column (3) where fixed effects model is corrected for the heteroskedasticity excluding time fixed effects and the column (4) signifies the correction of fixed effects model from heteroskedasticity. While, column (5) signifies the results of a random effects model. Through thoughtful analysis of the table 8.5 above, we can see that similar results are predicted through random and fixed effects models. For both model Investment positively and significantly impacts GDP, while, Inflation also has a significantly positive influence on growth of the economy (GDP) at 1% level of significance. According to the fixed effects model Education, Investment and Inflation significantly and positively affect the Economic growth (GDP). Since there may have been variation in certain years, therefore time effects have been incorporated in the fixed effects model shown in column (2) and (4).

The time fixed effects have been significant at 1% significance level showing that invariant components have to be taken into account. The time fixed effects started to increase during year 2009 due to the financial crisis which adversely impacted the growth rates of both developing and developed countries.

To analyze the link between Political Regimes and growth of the economy column (1) will be interpreted. As the most important part of the analysis is to determine the relationship which emerges between political regimes and Economic growth through the estimation strategy adopted. Through an in-depth analysis it can be observed that Political regimes yield a significantly negative impact on growth of the economy (GDP) which is significant at 10% significance level although there is a chance that Heteroskedasticity was present in the model. Using the fixed effects estimation model, it can be interpreted that countries with dictatorship as a political regime experience 19% lower Economic growth (GDP) as compared to countries with democratic regimes. There are various explanations for the direction of the causality depicted through the above regression table. According to Leblang (1996) apart from the major variables of political regimes and economic growth other variables like property rights and trade were also considered to assess the effectiveness of different political regimes. The article concluded that democracy indirectly results in economic development as it provides better property rights than military regimes. Hence, a dictatorial regime will have a poor system for property rights which leads to lower production and exchange of goods and service and in return depresses the economic growth of a country. Additionally, in a dictatorship regimes the dictators is less likely to provide better

social facilities such as; education and health care. Hence, dictatorship hinders in the growth of the economy and a positive impact on economic growth will only be experienced when a country transforms from dictatorship to democracy (Karim Khan, 2016).

Moving to other independent variables, we can observe that the link between education and GDP is positively significant at 10% significance level. Therefore, it can be inferred that a 1 unit growth in education level will increase economic growth by 0.371%. This positive causal relationship is shown in different studies as well. One way through which economic growth in an economy is stimulated through investment in the human capital as it would raise creativity and productivity amongst people and can also contribute towards technological advancement in the region (Durham, 1999).

Moreover, Investment also has a strong positive and significant link with growth of the economy at 0.01 significance level. Using the fixed estimation strategy, it can be deduced that a 1 unit rise in level of investment in a country would increase economic growth (GDP) by 2.02%. This link between variables has been hypothesized by various researches such as, according to Weed (1983) Investment significantly expands economic growth as it contributes directly towards rise in the level of income in an economy. Additionally, Investment helps in increasing productivity and improves the operational efficiency of a country thus, spurring high economic growth in the country which indicates its positive relationship with GDP (Antić, 2004).

Lastly, the correlation between Inflation and GDP is favorable and significant with a significance level of 1%. Therefore, an increase in inflation by 1 unit causes a rise in growth of the economy (GDP) by 0.202% of developed countries compared to developing countries, keeping everything else in the model constant. The effect of inflation on growth of the economy has been a constant debate on this topic in several previous researches and there is no consensus over one type of casual relationship between these variable. In accordance to Keynesian view, there is a positive link between inflation and prices in the long run despite of opposite common view. Since in long run wages, prices and output is no longer fixed so an introduction of expansionary fiscal policy would cause an increase in both the inflation and the output of an economy. Hence, modest inflation would spur economic growth in the country (Algaeed, 2016).

6.2 Segregated Estimation

Additionally, separate regressions were carried out for both the developed and developing countries through both panel fixed and random effects model. The regression outcomes using the FE model for developed countries and RE model for developing countries along with their respective post regression estimation tests are shown in the tables below

6.2.1 Developed Countries

Test: Ho: difference in coefficients not systematic

Table 9.1: Hausman (1978) specification test

	Coef.
Chi-square test value	31.378
P-value	0.000

In order to determine the model which is appropriate to use and to identify the endogenous independent variables within the model, hausman test was conducted. The results of hausman test in table 9.1 showed a P-value of 0.00. As this value is less than 10%, 5% and 1% significance level, therefore it clearly distinguishes that the FE model is the most fitting model to apply here. Hence, column (1) of table 9.5 indicates the results of the simple FE model for advanced countries.

Table 9.2: Testing for time fixed effects

	Coef.
F(16, 490)	3.61
Prob > F	0.000

Since the FE model is being used, so the first post estimation test conducted was of time fixed effects. This test determines whether any variation in the years needs to be incorporated in the FE model. The outcomes of the test showed a probability of 0.0000 with an F-value of 3.61. The probability is significant at 1% significance level therefore, the time fixed effects should be used

and time dummies need to be incorporated in our regression as shown in column (2).

$$H_0: \sigma^2(i) = \sigma^2 \text{ for all } i$$

**Table 9.3: Modified Wald test for heteroskedasticity
In fixed effect regression model**

	Coef.
chi2 (64)	6174.91
Prob > chi2	0.000

To check for heteroskedasticity in the FE model to determine whether residuals drawn from the population have a constant variance, Wald test is conducted. The results of the Heteroskedasticity test reveal a probability of 0.0000 with a chi value of 6174.91. As this probability is significant at 1% significance level, a robust test was carried out to remove the Heteroskedasticity and incorporate homoscedasticity into our regression equation as shown in column (3) where fixed effects model is corrected for the heteroskedasticity excluding time fixed effects and the column (4) signifies the correction of fixed effects model from heteroskedasticity in table 9.5.

$$H_0: \text{no first-order autocorrelation}$$

Table 9.4: Wooldridge test for autocorrelation in panel data

	Coef.
F(1, 31)	37.053
Prob > F	0.000

The fixed effects model was tested for serial correlation using the Wooldridge test which helps in determining whether the correlation between countries is interrelated. However, the outcome of this test revealed a probability of 0.0000 with an F-value of 37.053, therefore, indicating that the probability is significant at 1% significance level and there is first-order autocorrelation present in the model. The reason for this can be that there is a presence of reverse causality in the model or

some endogenous variables have been included in the model for which instrumental variables have to be included. We could have included several other variables in the model, but due to time constraint we might have neglected some of the variable which resulted in a positive autocorrelation.

The table below shows the outputs generated by running regression using the FE and RE model collectively.

Table 9.5: Regression results of impact of Political regimes on Economic growth in developed countries

VARIABLES	(1) GDP FE Developed	(2) GDP Time FE Developed	(3) GDP FE with Robust Developed	(4) GDP Time FE with Robust Developed	(5) GDP RE Developed
POL	-0.573*** (0.0534)	-0.412*** (0.0572)	-0.573*** (0.142)	-0.412** (0.163)	-0.563*** (0.0547)
EDU	-0.0512 (0.0416)	-0.0555 (0.0405)	-0.0512 (0.0742)	-0.0555 (0.0782)	-0.0516 (0.0427)
INV	0.0152*** (0.00137)	0.0156*** (0.00150)	0.0152*** (0.00327)	0.0156*** (0.00408)	0.0151*** (0.00140)
Trade	0.000368 (0.000316)	-0.000432 (0.000340)	0.000368 (0.000951)	-0.000432 (0.00109)	0.000313 (0.000323)
POP	-0.0161 (0.0124)	-0.00375 (0.0124)	-0.0161 (0.0279)	-0.00375 (0.0287)	-0.0155 (0.0127)
INF	0.0211*** (0.000356)	0.0180*** (0.000588)	0.0211*** (0.00182)	0.0180*** (0.00245)	0.0211*** (0.000365)
2003.time		0.0156 (0.0217)		0.0156* (0.00834)	
2004.time		0.0437** (0.0219)		0.0437*** (0.0154)	
2005.time		0.0716*** (0.0223)		0.0716*** (0.0244)	
2006.time		0.0910*** (0.0232)		0.0910*** (0.0322)	
2007.time		0.105*** (0.0241)		0.105** (0.0404)	
2008.time		0.106*** (0.0248)		0.106** (0.0462)	
2009.time		0.117*** (0.0242)		0.117** (0.0444)	
2010.time		0.132*** (0.0251)		0.132** (0.0508)	
2011.time		0.124*** (0.0266)		0.124** (0.0580)	
2012.time		0.121*** (0.0273)		0.121* (0.0633)	
2013.time		0.142*** (0.0272)		0.142* (0.0744)	
2014.time		0.148*** (0.0277)		0.148* (0.0752)	
2015.time		0.165*** (0.0282)		0.165** (0.0764)	
2016.time		0.176*** (0.0285)		0.176** (0.0751)	
2017.time		0.183*** (0.0298)		0.183** (0.0765)	
2018.time		0.164*** (0.0313)		0.164** (0.0749)	
Constant	25.28*** (0.203)	25.51*** (0.200)	25.28*** (0.347)	25.51*** (0.393)	25.28*** (0.353)
Observations	544	544	544	544	544
R-squared	0.908	0.918	0.908	0.918	
Number of countries	32	32	32	32	32

Standard errors in parentheses
 *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Column (1) of table 9.5 signifies the regression output of simple fixed effects model. The above mentioned table shows various estimation strategies adopted to select the most suitable model to analyze the postulated relationship. Since there may have been variation in certain years, therefore time effects have been incorporated in the fixed effects model shown in column (2) and (4). A robust test was carried out to remove the Heteroskedasticity and incorporate homoscedasticity into our regression equation as shown in column (3). While, column (5) shows regression results of random effects estimation strategy on the theorized relationship.

The time fixed effects have been significant at 1% 5% and 10% significance level showing that invariant components have to be taken into account. The time fixed effects started to increase during year 2009 due to the financial crisis which adversely impacted the growth rates of both developing and developed countries. The highest coefficient of time dummies was in 2017 because countries had a stagnant growth rate and the economies were heading again towards a global recession and increase in level unemployment.

Across all estimation models the variables like, Political regimes index, Investment and Inflation yield a similar significance level. For both developing and developed countries, Political regimes; which is our major independent variable, the results are negatively significant on GDP.

To analyze the link between Political Regimes and growth of the economy column (4) will be interpreted. Through a thorough analysis of the link between the predictor and dependent variable i.e. political regimes and economic growth, it can be observed that across all models the results are negatively significant at 5% or 1% significance level. Therefore, it can be explained that countries with dictatorship as political regime are likely to experience a 41.2% decrease in their economic growth (GDP) as compared to countries with democracy. Although there has been a lot of debate regarding the link between these variables but, the proponents of democracy-growth hypothesis argue that dictatorship adversely impacts the economic, social and political parts of life in an economy. In the context of political aspect, dictatorship amplify the culture of nepotism and augments rent seeking and corruption in an economy. In terms of economic development, dictatorial institutions discourage investment in research and development thus, impeding the chances of economic success. (Acemoglu, 2012). Furthermore, since developed countries are known as welfare states, so according to Siourounis (2008) a democratic government is redistributive in nature, thus the tax revenues are used to lessen the imperfections in the market

and subsidize education and health care. A dictatorship regime is often known to have an adverse connection with growth through its association with low human capital and poor political instability.

Moving on to the control variables, the link between Investment and economic expansion (GDP) is favorable and has a significant influence on advanced economies at 1% significance level. Henceforth, a one unit increase in level of investment for developed countries will increase the GDP by 1.56%. Various researches have supported this significant positive causation especially in case of democratic regimes. Referring to a study conducted on a large sample of countries from 1974 to 2013 showed growth is positively and significantly impacted by investment, as an increase in investment means an increase in capital spending which results in an increase the GDP of the economy and investment augments economic growth more in a democratic regime as compared to a dictatorship regime (M. Ishtiaq, 2016). In addition to it, increase in investment also results in expansion the aggregate demand which in return results in low unemployment and increase level of employment in a country. This investment has a positive impact of GDP through the aggregate demand mechanism (Rabnawaz, 2016).

Lastly, Inflation also positively and significantly influences GDP at 0.01 significance level although this impact is higher for developed countries in comparison to under-developed countries. The model emphasize that a one unit rise in inflation would result in an increase in GDP by 1.80%. This causal relation can be explained the Tobin effect which explains that increase in inflation would cause people to switch their money assets with interest bearing assets. Hence enhancing the capital concentration with the country which then causes an expansion in the growth rates of country (Hanif, 2004).

Even though population growth has an insignificant but negative relationship with Economic growth in case of developed nations. However, this relationship has been tested by various studies. According to a study on 105 countries from 1960-1989, population growth adversely effects economic growth as it is likely to lower the savings per person and impede physical capital growth, hence it reduces growth rates. Moreover, when the population increases it means that more resources have to be shared amongst people, this results in the fall in economic growth of a country (Durham, 1999).

6.2.2 Developing Countries

Test: Ho: difference in coefficients not systematic

Table 10.1: Hausman (1978) specification test

	Coef.
Chi-square test value	6.865
P-value	.334

To assess the applicability of the model, “hausman test” was directed which helps in identifying the endogenous explanatory variables within the model. The results of the hausman test using segregated estimation models exhibited a probability value of 0.3335. Therefore, it clearly indicated that the RE model should be applied for developing countries as, the probability value is insignificant because it is greater than 10%, 5% and 1% significance level.

H0: no first-order autocorrelation

Table 10.2: Wooldridge test for autocorrelation in panel data

	Coef.
F(1, 31)	67.866
Prob > F	0.0000

The first post estimation test conducted for random effects model was the Wooldridge test for testing serial correlation within the data, the test gave a result of 0.0000 which is significant at 1%, 5% and 10% significance level for developing countries with an F-value 67.866. Since the value is insignificant it implies that first-order autocorrelation present in the model because due to limited time some of the variables may have been overlooked. The reason for this can be that there is presence of reverse casualty in the model or some endogenous variables have been included in the model for which instrumental variables have to be included. We could have included several other variables in the model, but due to time constraint we might have neglected some of the variable which resulted in a positive autocorrelation.

Test: $\text{Var}(u) = 0$

**Table 10.3: Breusch and Pagan Lagrangian multiplier test
For random effects**

	Coef.
Chi-bar2 (01)	3510.74
Prob > chibar2	0.0000

Lastly, the “Breusch and Pagan Lagrangian multiplier” test for RE model was carried out to assess whether simple OLS estimation should be used or a random effects regression and to assess the significance of the research. The null hypothesis of this test states that variance is zero across all entities. The test results revealed probability values of 0.0000 which is significant at 1%, 5% and 10% significance level for developing countries thus, specifying significant results and depicting that random effects regression can be used for this model.

Table 10.4: Regression results of impact of Political regimes on Economic growth in developing countries

VARIABLES	(1) GDP RE Developing	(2) GDP RE Robust Developing	(3) GDP FE Developing
POL	-0.293** (0.137)	-0.293* (0.166)	-0.304** (0.138)
EDU	1.788*** (0.481)	1.788 (1.409)	1.736*** (0.484)
INV	0.0236*** (0.00576)	0.0236* (0.0129)	0.0230*** (0.00577)
Trade	-0.0108*** (0.00260)	-0.0108 (0.00768)	-0.0112*** (0.00263)
POP	0.0216 (0.0902)	0.0216 (0.129)	0.0316 (0.0911)
INF	0.00169*** (0.000163)	0.00169*** (0.000500)	0.00170*** (0.000163)
Constant	20.38*** (2.342)	20.38*** (6.684)	20.65*** (2.288)
Observations	544	544	544
R-squared			0.295
Number of countries	32	32	32

Standard errors in parentheses
 *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Column (1) in Table 10.4 indicates the results generated through RE model for less-developed nations while, column (3) signifies results of FE model for under-developed nations. It can be observed that similar to the regression outputs of developed countries variables like; Political regimes index, Investment and Inflation are significant across all estimation method for developing countries as well. Although Political regimes unfavorably influence GDP for both developing and developed nations but this negative impact is smaller for developing countries compared to advanced economies as mentioned above.

To analyze the link between Political Regimes and growth of the economy column (2) will be interpreted. Through examining the major independent variable, it is evident that Political regimes negatively and significantly impact on Economic development (GDP) at 10% level of significance. Therefore, we can interpret that developing countries having dictatorship as a political regime are

likely to experience a fall in economic growth (GDP) by 29.3% in comparison to developing countries under democratic rule. The explanation for this negative causality has been supported by various studies such as; According to the United Nations Development Program report (UNDP), 1994, the poor countries of the world spend less on the welfare of the people and spend most of their scarce resources on unnecessary purchases of weapons and military. Also, the imposition of dictatorship leads to decline in the public services as proven by the empirical example of Nigeria, where the school enrollment fell by 9% and child vaccination coverage rate fell by more than half during a military coup of 1983. Due to this dictatorship is inversely impacts both social and economic aspect related with social benefits and provisions as dictators require lesser support from the public compared to the Democrats ((UNDP), Human Development Report, 1994). Moreover, Khan, Batoool & Shah (2016) evaluated the relationship between political institutions and economic growth. Political institutions consisted of two kinds of institutions; democratic and dictatorial institutions and economic growth was measured through human development index (HDI). The results of a cross sectional study over 92 countries concluded that dictatorial regimes are negatively related with economic growth and HDI will increase by 17% in case of a transition from dictatorship to democracy.

For the control variables, Investment has a significant and positive influence on growth of the economy (GDP) at 10% level of significance. Henceforth, a one unit increase in investment would result in an increase in GDP by 2.36%. Different researches have supported this causal relationship because according to a study on 12 MENA countries over the period 1998–2011 policies which encourage investment such as, tax reduction benefits and promote political stability are more likely to be implemented by democratic regimes, thus this helps in enhancing economic growth through investment (Boujelbene, 2016).

Lastly, Inflation again has a highly significant and positive influence on Economic growth (GDP) at one percent significance level, therefore we can interpret that a one unit rise in the level of inflation of a country would result in 0.169% increase in the growth economy. To further explain this relationship, studies have shown that inflation have a statistically favorable effect on growth of the economy especially in less-developed nations like; Pakistan, India and Bangladesh. Therefore the clarification of these results was that moderate inflation in emerging economies

would stimulate economic expansion as the impact of inflation is immersed by fast growth rates in the economy (Mwakanemela, 2013).

Although education has an insignificantly positive influence on economic development in our model. However, there are various researches which have tested this positive relationship. According to a research done on 114 countries from 1970-1989 economic growth in an economy is stimulated through investment in the human capital as nations achieve greater growth rates because the country is able to acquire developmental advantage in the international marketplace on the basis of its skilled labour (Leblang, 1996).

6.3 Comparison between developing and developed countries

Through comparison of table 9.5 and 10.4 we can observe that the result are consistent for developing and developed countries. The key variable which were significant in both models were Political regimes index, level of Investment and Inflation; for both models Political regimes had an adverse effect on economic development while, Investment and Inflation yield a favorable effect on economic development. Conversely, the coefficients of these variables vary for both developing and developed countries.

For our major independent variable, Although Political regimes have an unfavorable consequences on GDP for both developing and developed countries but this negative impact is smaller for less-developed nations compared to advanced countries. The explanation for this can be that in case of developing countries some dictatorial rule is fine although it will still have a negative impact on growth because dictatorship regimes are more efficient in suppressing the opposition and conflicts and are considered to be useful in devising effective policies to curtail the political instability Bank (1991). Whereas, in case of developed countries since policy formulation mechanism is already well established so they don't require a dictatorial regime to do it.

Moving on to control variable, Investment has a positively significant influence on growth of the economy for both developed and developing economies. However, the positive impact of investment is greater for developing countries in comparison to developed countries because developing countries have a lot of potential to achieve growth led by investment. However, since developed countries have already reached their maximum output potential due to which they enter into stagnation phase. In case of developing countries since they have a lot of unutilized resources so, inflow of investment would result in economic expansion.

Although Trade Openness has an insignificant but negative correlation with growth of the economy for developed and developing economies in our selected model. But this relationship has been tested by various studies. The reason as to why developing countries have a negative relationship while, developed countries have a positive relationship is because most of the developing countries are not economically self-sufficient so they have to import from other countries which results in a negative trade balance for most of the developing countries.

Part VII: Relevance and Contribution

The relevance of this paper is to analyze a phenomenon which is very essential in today's world as the effect of different political regimes have been a topic of discussion since a long period of time and researcher still have contradicting views on which political regime is the best for a rapid and sustainable economic growth in a country. The concept of political regimes has evolved overtime. The world has witnessed development in the political systems from a basic political system of self-governance to monarchies and then towards more complex democratic and dictatorial regimes which exist in today's world. Starting from Classical theories, these theories put the foundation of 'self-regulating democracies' and 'capitalistic market development' to enhance the economic growth in the economy. These theories highlighted the importance of a democratic political economy for the market to correct itself and determine the demand and supply (MEYER, 1999). After classical theories, neoclassical growth theories also emphasized on the importance of a proper political structure in the economy to achieve economic growth. Later, Karl Marx introduced the concept of dictatorial regimes as; he argued that capitalists exploit the labor and the lower class. Thus, he suggested that communism should be introduced where equal rights should be given to all the people in the economy. Following his footsteps, many countries today consider themselves as communist states such as, China, the USSR and Cuba (KENTON, 2019). Recent studies have stressed on the importance of a strong and proper political regime by stressing that political freedom is necessary to achieve high growth rates in a country.

The contribution of this paper is that this research paper analyses 64 different developed and developing countries to measure the influence of Political regimes on growth of the economy. Moreover, a political regime index is constructed which is used to measure the extent of political independence in a country. Also, the index will assess countries on the basis of "political competition, the openness and competitiveness of executive recruitment, and the extent of

legislative and judicial constraints on the chief executive”. This paper is essentially very important for developing countries like, Pakistan, because it can help in illuminating the misconception that a dictatorship regime works the best for developing countries. This study does not only include 50 countries but also evaluate the effect of political regimes on growth of the economy over the 10 years, thus a large panel data is used to test the hypothesis and examine how political regimes effect developed and developing countries’ growth rates differently.

Part VIII: Conclusion & Policy Recommendations

This research paper tried to analyze the empirical relationship between Political Regimes and Economic Growth for both developing and developed economies by collecting the data for 64 countries (32 developing and 32 developed) over the period of 17 years (2002-2018). Various studies have supported the view that inefficient political regimes especially dictatorship regimes are likely to influence the growth of an economy negatively. However, there are various other factors which come into play and may impact the growth rates of an economy. We were able to present dual results for the hypothesized relationship. Firstly, through overall regression using FE model the results indicated a negatively significant causality between Political regimes and GDP across the group of 62 countries. Our segregated regression analysis using the FE and RE model also supported the significant negative correlation between the theorized variables. The results also emphasized that the key variables like, Education, Investment and Inflation also favorably influence the growth rates of the countries.

In order to mitigate the adverse effects of ineffective Political Regimes and to magnify the positive impact of the control variables countries need to implement certain policies to ensure sustainable growth rates.

Countries with a dictatorship regime need to ensure that policies are implemented to improve the social, political and economic aspects of an economy as dictatorial regimes are known to provide a poor system for property rights which leads to lower production and exchange of goods and service and in return depresses the economic growth of a country. Therefore, policies such as investing in “basic legal and property registration institutions” would help in securing the property rights of the citizens (Ghatak, 2009). Moreover, in a dictatorship regimes the dictators is less likely to provide better social facilities such as; education and health care (Leblang, 1996). Therefore in order to overcome these issue government needs to ensure that improved and easy access of social

facilities is provided especially in case of developing countries. Provision of financial incentive to the health providers would be one way to ensure quality improvement in the health sector. Also, government can address the issue of shortages of trained medical officials by expanding the number medical intuitions and removing barriers to medical doctor immigration.

In order to strengthen the democratic political regimes there must be investment in public education to strengthen the public support for democracies and make them aware of the civil rights which in return would enhance their ability to elect a fair and honest leader. Moreover, there is a need to give importance to all institutions and eradicate corruption amongst these institutions and politicians to ensure efficient performance of government officials. Additionally, there should be cooperation between civil and military leadership to effectively deal with social issues such as terrorism and poverty. According to several studies, in long run, it is better to have democracy than dictatorship as there is no rational developmental reasoning for having dictatorship, particularly for less developed nations (Woo, 2014).

In case of Pakistan, although growth rates were high during some dictatorial regimes but, the road to success for a sustainable growth in long-run is through a well-performing democracy with proper monitoring of government officials and running of free and fair recurring elections would ensure formulation of a reasonable framework for credible polices would help in accelerating growth in Pakistan (Khalid Mahmood, 2010).

Additionally, government should also focus on improving the provision of good quality education and increasing the school enrollment rates through policies like, training programs for teachers across regions and introduction of social protection reforms to minimize the education attainment gap mainly in rural areas. In order to enhance the level of investment in the economy governments of mainly developing nations should provide subsidies such as, tax holidays to major industries, tax concession for R&D firms and establishment of export processing zones to attract both domestic and foreign investment and to avail the benefit of positive spillover effect in terms of newer technology, hence resulting in economic development.

Lastly, there were certain limitations of this research due to time constraint which if catered to would have immensely improve the validity of the analysis. A different measure to quantify Economic Growth can be integrated in the model as currently some of the control variables are not generating the predicted results such as, Inflation and Population growth. Moreover, the number

of countries included in the data could be increased to augment the diversity in the data for better results. Also, instrumental variables could have been included to overcome the presence of serial autocorrelation with in the model.

In conclusion, the policy perspective is mainly to enhance the political stability and improve efficiency of the government along with other factors which can influence growth rates of an economy. However it is important to understand that democracy should not be considered as the only precondition to enhance economic development. Lastly, it is also not recommended to change a political system if it produces exceptional economic performance and at the end of the day the main focus should be to adopt a political structure which complements the growth rates and social and political aspects of an economy.

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Appendix

Appendix 1

Countries:

Developed	Developing
1. Australia	1. Afghanistan
2. Austria	2. Algeria
3. Belgium	3. Argentina
4. Canada	4. Brazil
5. China	5. Cambodia
6. Croatia	6. Chad
7. Cyprus	7. Columbia
8. Czech Republic	8. Cuba
9. Denmark	9. Ecuador
10. Estonia	10. Egypt
11. Finland	11. Ethiopia
12. France	12. Ghana
13. Germany	13. India
14. Greece	14. Iran
15. Hungary	15. Jordan
16. Iceland	16. Kazakhstan
17. Ireland	17. Kenya
18. Israel	18. Malaysia
19. Italy	19. Mexico
20. Latvia	20. Morocco
21. Luxembourg	21. Nepal
22. Netherlands	22. Nigeria
23. New Zealand	23. Pakistan
24. Norway	24. Peru
25. Poland	25. Philippines
26. Russia	26. Sri Lanka
27. South Korea	27. Sudan
28. Spain	28. Thailand
29. Switzerland	29. Tunisia
30. Turkey	30. Uganda
31. UK	31. Vietnam
32. US	32. West Bank

Appendix 2

Variable	Proxy	Expected sign
GDP	Gross domestic product per capita	
POL	Political regime index	+/-
EDU	Level of Education	+
INV	Investment	+
TRADE	Trade openness in a country	+
POP	Population growth	+/-
INF	Inflation	-

Appendix 3

Overall Regression

VARIABLES	(1) GDP RE
POL	-0.155 (0.0992)
EDU	0.399* (0.205)
INV	0.0207*** (0.00386)
TRADE	-0.000634 (0.00128)
POP	0.00384 (0.0487)
INF	0.00201*** (0.000126)
Constant	25.47*** (1.013)
Observations	1,088
R-squared	
Number of countries	64

Standard errors in parentheses
 *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Segregated Regression

Developed countries

	(1)
VARIABLES	GDP RE Developed
POL	-0.563*** (0.0547)
EDU	-0.0516 (0.0427)
INV	0.0151*** (0.00140)
TRADE	0.000313 (0.000323)
POP	-0.0155 (0.0127)
INF	0.0211*** (0.000365)
Constant	25.28*** (0.353)
Observations	544
R-squared	
Number of countries	32

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Developing countries

	(1)
VARIABLES	GDP FE Developing
POL	-0.304** (0.138)
EDU	1.736*** (0.484)
INV	0.0230*** (0.00577)
TRADE	-0.0112*** (0.00263)
POP	0.0316 (0.0911)
INF	0.00170*** (0.000163)
Constant	20.65*** (2.288)
Observations	544
R-squared	0.295
Number of countries	32

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1