Economic growth in the Global South. Analysis with panel data

Antonio AZUEJE [1], Rafael Gustavo MIRANDA DELGADO [2,*]

[1] Faculty of Economic, Business and Management Sciences, Los Andes University, (Venezuela)
(antonioaz8061@gmail.com)
[2] Faculty of Economic, Business and Management Sciences, Los Andes University, (Venezuela)
(rafaelgustavomd@hotmail.com)

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Summary: The aim of this research is to analyze economic growth in the Global South. It is stated that the variables chosen to explain the economic growth of the countries of the Global South, foreign direct investment (FDI), trade openness, and institutions, have had, individually and as a whole, a positive and statistically significant effect on the period from 2006 to 2019. Additionally, there has been a synergy and interdependence between the economic growth of the Global South, generating favorable international framework conditions to achieve the dual objective of these countries, development, and autonomy.

Keywords: Economic growth; Foreign direct investment; Trade opening; Institutions; Global South .

Jel Classification Codes : O10; O50

* Rafael Gustavo MIRANDA DELGADO , e-mail: rafaelgustavomd@hotmail.com

I-Introduction:

The emergence of the Global South is the most significant phenomenon of the contemporary Global Order. This new dynamism is especially due to the economic growth experienced by the Global South, and its greater trade and cooperation interactions. This economic growth has been led by China and India, which due to the magnitude of their markets have influenced economic dynamics worldwide and in the Global South in particular. All of this has reconfigured global governance and international political economy in particular.

Therefore, the aim of this research is to analyze economic growth in the Global South. The article is presented in three sections, in the first one, analytical elements; it is characterized based on a brief bibliographic review, the economic growth in the Global South, with emphasis on the cases of China and India for being the leaders of this phenomenon. Then, in variables, is analyzed the importance of foreign direct investment, trade openness, and institutionality for economic growth in general, and in particular for the countries of the Global South. Finally, in the model and results, the analysis with panel data is presented.

I.1.Analytical elements

Economic growth as a modern phenomenon began with the Industrial Revolution, having particular forces in the North Atlantic, Western Europe, and the United States. From that moment to the present, these countries were the ones that contributed the most to economic growth and trade worldwide, which gave them material support to configure the international institutions that are currently the framework of the Global Order. However, in contemporary times, the countries of the Global South have increased their contribution to the world economy in an absolute and relative way.

As pointed out in the UNDP annual report (2013) entitled The Rise of the South: Human Progress in a Diverse World, for the first time in 150 years the combination of the GDP of three economies of the Global South such as China, India, and Brazil equates all the main economies of the North, the United States, the United Kingdom, Germany, France, Italy, and Canada. This contemporary rise of the Global South for its scale and speed is unprecedented in history. For example, the industrial revolution doubled GDP per capita in one hundred and fifty years in Great Britain, in the United States it took fifty years, and both countries had a population of less than ten million, while China and India doubled their GDP per capita in twenty years with populations of around one billion, and its share in world production went from 33% to 45%. In trade, the Global South went from contributing 25% of total international trade in 1980 to 47% in 2010, and trade within the Global South increased from less than 8% in 1980 to 26% in 2011. South South investment has also increased, reaching 60% of all foreign investment received in the South.

These material elements have allowed the countries of the Global South to seek the reconfiguration of the international institutions of political economy and governance, which no longer correspond to contemporary economic resources. Additionally, these countries did not follow the economic policy parameters of the Bretton Woods institutions. This economic growth has been led by China and India, which due to the magnitude of their markets have influenced economic dynamics worldwide and in the Global South in particular. Therefore, the study of its growth is of special interest.

China is one of the countries with the greatest capacity for agency in contemporary times and more than a thousand years before the modern era, it dominated the world economy. Chinese production accounted for a third of world GDP in 1820, but with the industrial revolution of the 18th century, growth in the West rose rapidly and growth in China began to decline. With a weaker economy as a result of this event, China was repeatedly defeated by the Western powers, becoming a quasi-colony, transferring its extraterritorial rights to more than twenty countries, a situation that meant that its customs revenues became controlled by foreigners (Maddison, 2006; Lin, 2012).

Since the Opium War in 1840, the general population and elites struggled to make their country powerful and respected again, but their efforts produced little success. China's share of world GDP was around 5% and remained low until 1979. China's fate changed dramatically at the end of 1970 when it began to implement economic reform and opening up strategies. Average annual GDP growth was 9.9% over the next thirty years and international trade annual growth was 16.3% in the same period. In 1979 China was one of the poorest countries, with a per capita income of $210, and

80% of its total population was engaged in agriculture, the majority being illiterate. In contemporary times, China is a middle-income country, with a GDP per capita of $3,744 for 2009, surpassed Japan in 2010 as the world's second-largest economy, and replaced Germany as the world's largest exporter. Shanghai has been the world's busiest seaport by cargo tonnage since 2005 (Lin, 2012; Maddison, 2006)

During the period from 1979 to 2009, China's average annual growth was 9.9%, 2.7% percentage points higher than the growth target originally set by the State, which was 7.2%. These points added, became an additional economic volume 18.6 times greater than in 1978, more than double the objective of quadrupling GDP by 7.2%. From 1978 to 2009, the average annual growth of foreign trade was 16.3%, 6.4 percentage points more than GDP growth. In 2009, the volume of foreign trade exceeded $2.2 trillion, a jump of 107 points in thirty years. The foreign direct investment (FDI) that flowed into China in 2008 was $692 billion, making it one of the main destinations for foreign investment in the world, surpassed only by the United States. Finally, China has accumulated the largest foreign exchange reserves in the world, about $2 trillion (Lin, 2012).

The high growth rate in the first half of the eighties achieved a significant reduction in poverty, due to institutional changes in the organization of agriculture, the sector where poverty was mostly concentrated, and an equal distribution of land cultivation, which provided a space for rural income generation opportunities. In the mid-1980s, investments in education, agricultural research and development, and rural infrastructure were determining factors in reducing rural poverty in China. And in recent decades, the expansion of exports of labor-intensive manufactures has been the productive sector that has lifted numerous of the population out of poverty (Bardhan, 2010).

China is the oldest agricultural economy in the world and this sector continues to be of great importance in its economy. Although its contribution to GDP is only 12%, 45% of the workforce is engaged in agriculture. Chinese agriculture has increased its productivity thanks to a series of institutional and policy changes including the land use law in 1998 and the rural land contracting law in 1999, the new rules on land transfer and exchange of land. use rights announced in 2008, literacy among farmers, subsidy policies and investment in infrastructure (Bardhan, 2010).

In China, the industry focused on foreign concessions in cities such as Tianjin, Shanghai, Wuhan, Fuzhou, among others. China's investment in heavy industry was high in the decades between 1950 and 1970, almost half of the investment was made in infrastructure for this industry, so production grew rapidly and in 1978 it was already close to half of national income. In contemporary times, China has become the world's manufacturing industry, with a state-funded industrialization program and regional economic decentralization, which allows some autonomy and incentives for the local population (Lin, 2012; Bardhan, 2010).

Chinese economic growth has been especially resilient. For example, during the 2008 global financial crisis, China had ample fiscal space and abundant foreign exchange reserves, and immediately adopted a $685 billion stimulus package. The Chinese economy began to recover in the first quarter of 2009, its growth rate for this year reached 9.1% and 10.1% in 2010. Strong Chinese growth during the crisis was the most important driving force for global recovery (Lin, 2012). At the present time, China is the main exporter in the world and the second in imports. In 2018, it contributed 15.8% of world GDP (World Bank, 2020).

However, China continues to have numerous people living in poverty, its inequality problem has increased, especially the urban-rural gap, in addition to environmental and institutional problems.

But despite these limitations, China's economic growth since its reform and opening up has had a significant impact at the national and global levels, benefiting economies with an abundance of natural resources through international trade, such as those of Sub-Saharan Africa and South America, which have benefited from China's direct demand and the terms of trade, and additionally from Chinese foreign direct investment in these countries.

China's presence has been of particular importance to Africa's economic growth, which has reached a pace and geographic expansion unprecedented in its history. Of special interest is the dynamics of Chinese foreign direct investment (FDI) to Africa.

In recent years, especially from the mid to late 2000s, Chinese FDI increased in sub-Saharan African countries. In 2003, Chinese FDI in sub-Saharan Africa amounted to $70.14 million, representing 2.5% of total Chinese FDI abroad. In 2007, annual Chinese FDI in sub-Saharan Africa was around $1 billion, 5.1% of total Chinese FDI abroad, staying around that amount in 2008 and

2009, and increasing to more than $2 billion in 2010. This FDI has coincided with the economic growth of the region. In 2004, annual GDP growth in sub-Saharan Africa reached 6.2% and remained above 5.5% until the beginning of the 2008 financial crisis, when it fell to 5% and then to 1.7% in 2009. This increase in FDI has been accompanFDI by a deepening of diplomatic relations (Doku, Akuma and Owusu-Afriyie, 2017).

Chinese FDI has been concentrated in countries with an abundance of natural resources, especially oil, and with relative political stability. For example, by 2012, Nigeria, an oil country and the most populous in Africa, received 26% of Chinese FDI in West Africa, and Algeria, an oil country and with relative stability, received 21% of FDI in the north of Africa. However, there have also been initiatives to support other sectors. For example, the China Development Bank (CDB) established in 1994, has offered the China-Africa Development Fund with a broader vision of development, and the Exim Bank (China Export-Import Bank) also from 1994, supports projects in sectors specific infrastructure: roads, power plants, oil pipelines, telecommunications, among others (Doku, Akuma and Owusu-Afriyie, 2017).

In Latin America, the presence of China has also been significant. China is the region's second largest trading partner overall, and the first for Brazil, Chile, and Peru. Sino - Latin American bilateral trade in 2017 totaled $257.8 million, so that China's exports were $130.8 million and China's imports, $127 million. Trade with China continues to be basically raw materials, practically exclusively energy and mining, by manufacturing. In terms of FDI, the region is the second recipient of Chinese FDI, this reaches $150,000 million, about 15% of the Total Chinese FDI. 80% of this investment is concentrated in Brazil, Peru and Argentina (Miranda, 2020).

Thus, it is observed that China's economic growth has multiple channels to influence the growth of the Global South, including countries outside its continent. Its growth, trade and FDI have global reach.

Indian economic growth has been erratic but in recent decades it has remained at an annual rate of 6%. From 1950 to 1992, the Indian economy was characterized by low investment, production, and stagnation, growing only 8.5%. All these in a context where commercial banking was nationalized in 1969, and the law on monopolies and commercial practices was enacted in 1970, and the foreign exchange regulation law of 1973, which strictly regulated economic dynamics. For example, they mandatory that all development investments proposed by companies require government approval. The distribution of political and economic power also contributed to these disappointing results. Agreements between elites co-used public funds for private interests, for example, in the agricultural sector, the government ensured induced shortages and protected markets, blocking innovation and competition (Kar and Sen, 2016; Sen, 2007; Bardhan, 2010).

In the mid-1980s there were some institutional, industrial and trade policy reforms such as the release of industrial controls, the renewal of tariffs, the emphasis on export promotion, elimination of price controls and the reduction of corporate taxes. Incentives were generated to attract productive factors to modern sectors of the economy such as information technology. The growth rate during the 1980s was 3.19% per year (Kar and Sen, 2016; Sen, 2007).

However, it is from the 1990s, specifically in 1991 with the program of comprehensive economic reforms, with the greatest competition between political elites that sought allies in the business elites, when the deepest institutional and policy transformations were carrFDI out, giving a significant boost to economic growth.

The reforms include the abolition of the industrial licensing system and import controls, significant liberalization of the trade regime concerning capital and intermediate goods, reduction of tariff rates and taxes on capital goods, deregulation of the stock market, lack of control interest rate, macroeconomic stabilization with deficit reduction and exchange rate devaluation. These changes had significant effects on imports and investment, especially private investment, which went from 6.8% of GDP in the 1980 period to 12.3% of GDP in 1993. This led to a reduction in general costs, increased productivity, greater dynamism in the sectors of small and medium-sized companies, especially in the less expensive sectors such as manufacturing, information technology, hotels and restaurants, and higher growth rates in general (Kar and Sen, 2016; Sen, 2007; Ahluwalia, 1991; Srinivasan and Tendulkar, 2003).

The growth rate from 1993 to 2001 was 4.15%, and the main drivers of this growth were the communications sector with an annual growth rate of 15.7%, followed by the private banking and business services sector with an average of 7.4% per year, commerce, hotels and restaurants with 6.5% per year; and manufacturing with an average of 4.9%. During the period from 2002 to 2010,

the annual economic growth rate increased to 6.4%, with the communication sector now being the main drivers, which grew extraordinarily at an annual rate of 23.07%, followed by the construction sector, which grew at an average rate of 8.57% and the hotel and restaurant sector with an annual average 7.64% (Kar and Sen, 2016; Srinivasan and Tendulkar, 2003).

China and India achieved extraordinary economic growth thanks to their institutional reforms, trade and mesoeconomics policies. China and India are the leaders of economic growth in the Global South, but as noted, what is distinctive about the contemporary phenomenon is that economic growth has been in practically all regions of the Global South.

East Asia is the region that has exhibited the fastest economic growth since the 1960s. Although each economy in this subregion has had a different process, there are several points in common that have contributed to this growth. Naoko (2006) highlights the importance of regional integration and intra-regional bilateral agreements; the high levels of trade in intermediate goods have generated incentives to reduce transaction costs and greater productivity. On the other hand, Radelet and Sachs (1997) affirm that the economic growth of East Asia since 1960 corresponds to a great extent to the regional model of development implementing and the relocation of the production chain, with harmonized industrial policies and technology transfer.

Other factors that have contributed to the exceptional economic growth of East Asia are the rapid growth of exports supported by governments, prudent fiscal policies, high savings rates, public policy for literacy and basic education (Radelet and Sachs, 1997), increased productivity that allowed trade policies with a greater outward orientation (Kawai, 1994), domestic private investment and rapid growth of human capital, sustained by high savings rates (Young, 1994), and the ability to attract FDI thanks to its macroeconomic and institutional stability (Riverol and Miranda, 2017).

For its part, in Latin America the economic growth of the 2000s was driven by the increase in the prices of raw materials, especially hydrocarbons and mining products, and a massive inflow of capital during two periods of exuberance in international financial markets. Between mid-2004 and April 2006, and especially between mid-2006 and mid-2007, which has made it possible to grow rapidly and simultaneously generate a current account surplus (Ocampo, 2007).

However, this economic growth does not possess the qualities that growth had during the period of state-led development, between the end of World War II and 1980.

During this period, Latin America grew more than the world average, achieved the highest growth in the entire history of the region by 5.5% per year and 2.7% per capita. The engine of economic growth was the manufacturing industry sector, productivity also reached the highest levels in history, it is estimated that GDP per worker increased by 2.7% per year between 1950 and 1980, and it was the period of the greatest economic stability. The economic policy model for growth in this period was characterized by being a mixed model that combined import substitution with export promotion and regional integration, due to the growing attention on industrialization, the significant expansion of the spheres of action of the State in economic life, through the creation of public companies and in the development of some industrial sectors (Bértola and Ocampo, 2014).

Finally, Africa has seen economic growth driven especially by the increase in the international prices of natural resources. However, the rate of growth has not been the same for all countries, even with similar resources. The type of regime has been a significant variable in understanding the performance of African economies. During the period from 1986 to 1991, the small group of democratic countries managed to grow at a rate of 5.9% while the majority of authoritarian countries did so by 3.1%. In the 1990s, a process of political liberalization took place, but in a context of strong tensions, damaging the political order, so that the growth rate of the new democracies and authoritarian regimes converged from 1992 to 1996 towards growth rates around 3.3%, and for the period from 1997 to 2001, democracies grew at a rate of 4.2% and authoritarianism at a rate of 3.3%. At the beginning of the 2000s, between 2002 and 2006, in a context of rising commodity prices, democracies grew by 4.4% and authoritarian regimes by 4% (Lewis, 2008).

It should be noted that there is a significant plurality among the economies that have grown in the Global South. But it is observed that institutions and institutional changes have played a fundamental role. The attraction of FDI and trade liberalization has also been a significant element in understanding growth dynamics, in a context where China, and later India, have modifFDI the global economy, generating an environment of potential economic growth for the entire Global South.

To contribute to this debate, the impact of a set of variables on economic growth in the Global South will be estimated through a data panel model. Next, the variables to be analyzed in the model are discussed.

I. 2. Variables:

Economic growth

For economic growth, the Gross Domestic Product (GDP) per capita was taken; this is obtained by dividing the GDP by the population in the middle of the year. GDP is the sum of the gross value added of all resident producers in the economy plus all taxes on products, less any subsidy not included in the value of products. It is calculated without making deductions for depreciation of manufactured goods or for depletion and degradation of natural resources. The data were obtained from the World Bank (2021) and are expressed in current dollars. Additionally, the logarithm was applied to statistically improve the model and to observe the possible convergence of growth between countries. The economic growth of the countries of the Global South is our variable to analyze, or dependent variable. For the study, the countries of the Global South that reached a cumulative growth rate of at least 5% for the period from 1980 to 2019 were selected. Sixty-one countries were found that met this condition, but Qatar was excluded from the model due to the absence of its data in the institutional variable. Next, the sixty countries used in the model are listed in alphabetical order.

Angola, Argentina, Armenia, Azerbaiyán, Bangladesh, Benín, Bután, Bolivia, Brasil, Chile, China, Colombia, República Democrática del Congo, Costa Rica, Djibouti, Ecuador, República Árabe de Egipto, El Salvador, Etiopía, Filipinas, Gambia, Ghana, Guatemala, Guinea Ecuatorial, Guinea-Bissau, India, Indonesia, Kazajstán, Kenia, Lesoto, Líbano, Libia, Malasia, Malawi, México, Mongolia, Nepal, Nicaragua, Nigeria, Pakistán, Panamá, Paraguay, Perú, República de Corea, República Democrática Popular Lao, República Dominicana, Ruanda, Sierra Leona, Singapur, Sri Lanka, Sudán, Surinam, Tailandia, Tanzania, Turkmenistán, Turquía, Uruguay, Vietnam, Zambia, Zimbabue.

Following, in Table 1, is the descriptive analysis with the data of the variable to be used in the model, coefficient of variation (CV%), minimum (MIN), maximum (MAX), mean (MEAN), quartile 1 (Q1), quartile 2 (Q2), quartile (Q3).

Of the selected countries, during the period 2006 - 2019, at least 50% of them have a measured GDP that ranges from $ 194.67 million dollars (Ethiopia-2006) to $ 3,293.12 million dollars. The other half has a GDP that ranges from $ 3,293.12 million to $ 85,076.15 million (Qatar-2012). The GDP in these countries has a coefficient of variation of 170.98%, which indicates a high inequality in the levels of growth in the countries selected for the research.

Foreign direct investment (FDI)

FDI is the sum of equity capital, reinvestment of earnings, other forms of long-term capital, and short-term capital, as described in the balance of payments. This series reflects the net total, that is, the net FDI in the reporting economy from foreign sources minus the net FDI of the reporting economy to the rest of the world. This series reflects the net inflows into the reporting economy and is divided by GDP. The data are expressed in dollars at current prices. The variable was obtained from the World Bank (2021).

The FDI can offer a significant boost to economic growth through the absorption and adaptation of technology, technological diffusion within and outside the receiving sector, adaptation of new organizational processes, incorporation of more efficient production processes, the increase of the capital stock and of knowledge, incorporation into global value chains, expansion of markets, introduction of products by foreign companies, employee training and generation of formal and informal links that increase human capital (Caves, 1996; De Mello, 1999; Borensztein, De Gregorio y Lee, 1998).

However, the empirical evidence has not been consistent. For example, Aitken and Harrison (1999) in a study on Venezuela for the period from 1979 to 1989, found no evidence of technological diffusion of the FDI or of the contribution of the FDI to economic growth.

The FDI's ability to positively influence economic growth depends on the economy's ability to absorb and adapt technology, have a developed financial market, macroeconomic policies to avoid instability and external dependence, mesoeconomic policies to promote productive competition, and incentives to avoid the effects of displacement of investment and national production.

In contemporary times, the FDI has the quality of a greater plurality of investors, with the countries of the Global South playing a leading role, which can contribute to best practices for the benefit of economic growth in host and investor countries.

Following, in Table 2, is the descriptive analysis with the data of the variable to be used in the model.

Of the selected countries, during the period 2006 - 2019, at least 50% of them obtained direct foreign investment ranging from countries with a negative balance of $ -7,397,295,409.19 million (Angola in 2017) to $1,606,567,893.5 million dollars. The other half obtained a foreign direct investment measured from $1,606,567,893.5 million dollars to $290,928,431,467 million dollars (China in 2013). Foreign direct investment has a coefficient of variation of 309.37%, which indicates high inequality in countries that receive foreign direct investment.

Trade openness

The economic openness index is an indicator that measures the degree of openness of a country's economy, considering its foreign trade in relation to its overall economic activity as a whole, and is the result of the sum of imports of goods and services plus exports of goods and services, divided by GDP at buyer's price, all at current dollar prices. The variable was obtained from the World Bank (2021).

The effect of trade opening on economic growth is one of the most debated issues in the economic discipline. Grossman and Helpman (1991) have found that relatively open economies generally grow more than less open ones.

They point out that economic openness promotes the transfer of new technologies, which allows technological advancement and increased productivity. Barro and Sala-i-Martin (1997) point out that trade openness facilitates the diffusion of knowledge and technology, and that the competition effect leads to an increase in productivity, a better location of productive resources, greater investment and better specialization. Sachs and Warner (1995) also highlight those international competition forces governments to adopt more efficient policies to be competitive in the global economy.

However, the empirical evidence is not conclusive. It is observed that the relationship between trade openness and economic growth is not automatic. Trade openness is potentially favorable for economic growth, but for this potential to be realized, economies must have certain macroeconomic, institutional and economic policy conditions. Trade liberalization must be accompanied by a set of complementary policies in terms of attracting and adapting technology, productivity, structural change and commercial strategies. The timing and sequence of the opening must also be taken into account. For this reason, Kim and Lin (2009) suggest an opening with selective protection for undeveloped countries, since their limitations in investment, infrastructure and financial systems can lead to adverse results due to trade openness. Lucas (1988) also warns that trade openness can harm long-term economic growth, if the productive structures of the countries specialize in sectors with low capacity to increase productivity, as are the cases of most countries in Africa and Latin America that depend on the exploitation of natural resources. The ability to transform trade economic openness into economic growth will depend on human capital and investment in science and technology (Fagerberg, 1994), on the institutional quality of the countries (McMillan and Verduzco, 2011), on the ability to assume the costs of infrastructure and information on international trade (Kim and Lin, 2009), and the development of the national financial system (Aghion, Howitt and Mayor, 2005).

What makes trade openness especially favorable today is the change in world trade dynamics, where the Global South contributes a higher percentage of total trade and trades more among its economies. However, it should also be noted that without a set of appropriate policies for structural change, Chinese trade can lead to a re-primarization of the rest of the economies of the Global South.

Following, in Table 3, is the descriptive analysis with the data of the variable to be used in the model.

Of the selected countries during the period 2006 - 2019, at least 50% have a trade openness index that ranges from 0.19 to 0.65 units; with Sudan being the country with the lowest record (records the value 0, 19 during the years 2014 and 2015). The other half register values of 0.65 to 5.51 units, Djibouti being the country that reached 5.51 units in 2006. The index of economic openness in these countries has a coefficient of variation of 81.95%, which indicates a high inequality in the levels of trade openness in the countries selected for the study.

Institutions

The study of institutions has been one of the main contemporary contributions to the reflection on economic growth. The variable is a proxy, rule of law, which is representative of institutions in general, and was obtained from Freedom House (2021). The variable is an index on a scale from 0 to 15, with 0 being little or no institutional framework and 15 being the countries with the best possible institutional framework. The study of institutional variables has provided evidence to counter-argue several assumptions of the most influential school of thought in the reflection of economics, the neoclassical. The analysis of institutions and their impact on economic performance has broadened the reflection towards history and interdisciplinarity, dialoguing especially with political and sociological disciplines. Institutions define the actions of the State and economic policies and their efficiency; thus, they frame deliberate public efforts to achieve economic growth.

For North (1990), institutions are the rule of the game in a society, and they are the key to understanding the historical differences between countries. They are the basic structures to generate order and reduce uncertainty. Institutions are the meeting point between the economic and political sphere, so they are essential for economic growth.

Additionally, North (1990) points out that it are necessary to establish a network of organizational and institutional structures to promote economic change towards growth, and that the correct institutions are a prerequisite for the correct prices and the correct policies. Institutions are a cultural creation, so they can be shaped to generate the right incentives for sustained economic growth (North, 1990).

For their part, Acemoglu and Robinson (2012) point out that economic institutions shape economic incentives, incentives to save and invest, innovate and adopt new technologies. And the political institutions and the political process are what determine what the economic institutions will be, and how they work. Political institutions include written constitutions, the quality of democracy, the power and capacity of the state to regulate and govern society, the distribution of power, and the ability of different groups to act collectively to achieve their goals or prevent others from achieving their goals.

For this reason, institutions are considered to be the fundamental framework variables that promote, or impede, long-term economic growth. Additionally, institutions significantly condition the performance of other variables and their relationship with economic growth, such as economic openness and foreign direct investment (FDI).

Next, in Table 4, is the descriptive analysis with the data of the variable to be used in the model.

Of the countries selected during the period 2006 - 2019, at least 50% of them have a range on the institutional scale of 0 to 6 units, some of the countries with the worst performance in this index are Equatorial Guinea (2009 - 2019), Libya (2017 - 2019), Sudan (2006 - 2019) and Turkmenistan (2006 - 2007, 2015 - 2019). The other half registers values of 6 to 15 units, only Chile (2006 - 2013) and Uruguay (2006 - 2019) reached 15 units. The institutionality index in these countries has a coefficient of variation of 56.03%, which indicates a high inequality in the levels of institutionality in the countries selected for this study.

IIModel and results:

The model selected for the analysis is with panel data. The term panel data refers to a set of data with temporal observations for the same countries, that is, it combines the structural dimension with the temporal dimension, which allows a set of countries to be followed over time. By studying observations in repeated cross-sectional units, panel data are better suited for studying the dynamics of change.

For the model developed, the value of each of the variables was averaged, obtaining a single value per indicator for each of the sixty countries. The analysis period is from 2006 to 2019, and was chosen due to data availability. The regression equation has as a variable to explain economic growth, and as explanatory variables to foreign direct investment, trade openness, and institutionality.

The equation has the following formulation:

$$Log(\text{Economic Growth Mean})_{it} = a_{it} + b_1(Direct\ Foreign\ Investment\ Mean)_{it} + b_2(Trade\ Opennes\ Mean)_{it} + b_3(Institutionality\ Mean)_{it} + U_{it}$$

The estimate model is following:

$$Log(\text{Economic Growth Mean})_{it} = 16{,}28 + 0{,}000000011\ (Direct\ Foreign\ Investment\ Mean)_{it} + 0{,}450(Trade\ Opennes\ Media)_{it} + 0{,}07954\ (Institutionality\ Mean)_{it}$$

From which the following follows:

β2: For every billion that foreign investment increases in the countries under study, economic growth increases by 10.71% on average. β2 is statistically significant (p value = 0.0234 <0.05).

β3: For each unit that the index of economic openness increases in the countries under study, economic growth increases 0.45% on average. β3 is statistically significant (p - value = 0.0323 <0.05).

β4: For each unit that the institutionality index increases in the countries under study, economic growth increases 0.079% on average. β4 is statistically significant (p - value = 0.0397 <0.05).

R2: The model, with the independent variables data1 $ INV_MED, data1 $ APER_MED and data1 $ INST_MED explains around 20% of the total variability of the logarithm of economic growth in the countries under study. The F-statistic indicates that R2 is statistically significant (p - value <0.05).

Regarding the econometric criteria, the normal distribution of the residuals was confirmed, that there is no evidence of lack of homoscedasticity, that there are no predictors that show a very high linear correlation or variance inflation, and that there is no evidence of autocorrelation. The annexes show the output of the regression and these econometric tests.

III-Conclusion:

The variables chosen to explain the economic growth of the countries of the Global South, foreign direct investment (FDI), trade openness and institutions, have had, individually and as a whole, a positive and statistically significant effect for the period from 2006 to 2019.

From the literature review, we find that there is no consensus on which the most significant variables to explain economic growth are or whether its effects are positive or negative. Especially controversial are economic openness and foreign direct investment. However, it can be stated that these relationships are not automatic and that their success, or failure, depends on other variables, so their analysis must be carrFDI out together. For their part, institutions, as the literature review and empirical analysis show, are essential for economic growth. Acceleration of economic growth, like those of China and India, was preceded by significant institutional changes. Additionally, there has been a synergy and interdependence between the economic growths of the Global South, generating favorable international framework conditions.

Finally, this economic growth and interdependence of the Global South has the capacity to modify the political economy and international governance, being able to contribute to the dual objective of these countries, development and autonomy.

- Appendices:

Table 1. Descriptive analysis of the economic growth variable

CV%	170,98%
MIN	US $194,67
MÁX	US $85.076,15
MEDIA	US $6.671,82
Q1	US $1.274,14
Q2	US $3.293,12
Q3	US $7.796,26

Table 2. Descriptive analysis of the variable foreign direct investment (FDI)

CV%	309,37%
MIN	US $-7.397.295.409,19
MÁX	US $290.928.431.467
MEDIA	US $9.579.371.776,17
Q1	US $311.582.722,53
Q2	US $1.606.567.893,5
Q3	US $6.476.844.891,78

Table 3. Descriptive analysis of the trade openness variable

CV%	81,95%
MIN	0,19
MÁX	5,51
MEDIA	0,81
Q1	0,48
Q2	0,65
Q3	0,91

Table 4. Descriptive analysis of the institutions variable

CV%	56,03%
MIN	0,00
MÁX	15,00
MEDIA	6,34
Q1	4,00
Q2	6,00
Q3	8,00

1. *Regression*

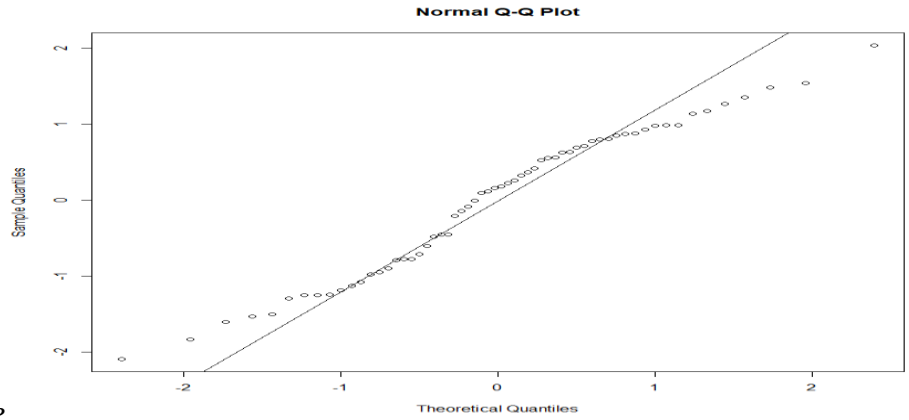
```
Call:

lm(formula = log(data1$CRECI_MED) ~ data1$INV_MED + data1$APER_MED +
    data1$INST_MED)

Residuals:
    Min      1Q  Median      3Q     Max
-2.0932 -0.8204  0.1690  0.8003  2.0379

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    1.628e+01  3.290e-01  49.489   <2e-16 ***
data1$INV_MED  1.071e-11      4.595e-12   2.330   0.0234 *
data1$APER_MED 4.501e-01  2.051e-01   2.195   0.0323 *
data1$INST_MED 7.954e-02  3.776e-02   2.106   0.0397 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 1.012 on 56 degrees of freedom
Multiple R-squared:  0.2004,   Adjusted R-squared:  0.1576
F-statistic: 4.679 on 3 and 56 DF,  p-value: 0.005495
```



2. *Normality of waste*

Shapiro-Wilk normality test:

```
        Shapiro-Wilk normality test

data:  modelo5$residuals
W = 0.96617, p-value = 0.09457
```

3. *Homoscedasticity*

Studentized Breusch-Pagan test:

```
data:  modelo5
BP = 2.2609, df = 3, p-value = 0.52
```

4. *No multicollinearity*

VIF analyses:

```
data1$INV_MED data1$APER_MED data1$INST_MED
     1.005995      1.001996      1.006259
```

5. Autocorrelation

Durbin Watson Test:

```
 lag Autocorrelation D-W Statistic p-value
   1      0.04886377       1.851884   0.478
 Alternative hypothesis: rho != 0
```

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