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Economic freedom, good governance and the dynamics of development

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ABSTRACT

The purpose of this research is to provide empirical evidence about what institutions are most likely to favor development in its different stages. Firstly, we identify the three development stages that prevailed in the world between 1996 and 2011 according to the income classification of the World Bank corroborated with data from the UNDP Human Development Index. Secondly, we consider that a country had a "successful" behavior if it improved its development stage in that period. Grouping countries based on "success", instead of according to the income level, allows us to introduce the dynamics of development in the analysis. Thirdly, we formulate a panel data and a probit model to determine the institutions that are behind the success cases. The results identified economic freedom as the most important institution in all development stages; governance was also found essential, but only in the countries in the intermediate stage of development.

1. Introduction

Determining the nature and sources of prosperity and wealth of nations has been, and still is, one of the issues most debated by economists. Since the early 1980s, a large number of economists and economic historians have applied institutional analysis to the study of economic and social performance and, in so doing, have shown that institutions[1] have the power to significantly affect the incentives to accumulate, innovate and incorporate new technologies and processes in a nation's economy (Compton, Giedeman, & Hoover, 2011). This renewed interest in the study of institutions and their relationship with development has resulted in new theoretical and empirical findings, new databases and new ideas (Berggren, 2003).

Man-made institutions can determine in large part whether a country will experience economic success (Rode & Coll, 2012). The concepts of freedom and governance encompass most of the formal economic and political institutions analyzed in research to date; both of these concepts and their components are the focus of the analysis developed in this paper. More specifically, in the empirical analysis, the formal institutions included were either of a political (those that regulate the functioning of the state)

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[1]Humanly devised constraints that structure political, economic and social interactions (North, 1991).

or an economic nature (those that regulate the functioning of markets)[2] and the institutional indicators used were: the Index of Economic Freedom (IEF), as developed by the Fraser Institute (Gwartney et al. 2012); the Governance Indicator (GI), as developed by Kaufmann, Kraay, and Mastruzzi (2010)[3] for the World Bank; and the Democracy Index (DI), as published by The Economist Intelligence Unit.

Our main purpose is to provide empirical evidence on the specific institutions that are most likely to favor economic and social performance in the different development stages. The empirical analysis of the institutional environment will allow for the identification of the channels that facilitate the interaction between institutional frameworks and the process of development. In summary, this paper intends to contribute to the debate on economic growth as follows.

First, it addresses one of the criticisms typically leveled at growth regressions, such as the presence of heterogeneity across the countries analyzed. In this sense, clusters of countries were made to define the development stages that prevailed in the world between 1996 and 2011. The comparison of the countries comprising each group, every year, will reveal those countries that were able to progress in terms of development during the aforementioned period ("successful countries"). The grouping of countries based on "success" into homogeneous clusters reduces the heterogeneity across countries as well as the harmful effects that this heterogeneity generates in the estimation results. The idea behind this methodology is taken from Durlauf and Johnson (1995), and it has been used by other authors such as Quah (1997), Liu and Stengos (1999), Alfò, Trovato, and Waldmann (2008), Galor (2007), Høyland, Moene, and Willumsen (2012) and Izquierdo et al. (2016).

Second, this paper focuses on an issue perhaps not sufficiently addressed in the empirical literature on institutions, related to the different impact of institutions according to the level of development achieved by every country. If this is the case, not all economic policies will be equally efficient in all countries, and different actions will have to be applied depending on the development stages on each country. Park and Ginarte (1997), Butkiewicz and Yanikkaya (2006) and Lee and Kim (2009) show results along this line. However, these researches do not consider some of the dynamics of development. In particular, the groups of countries remain constant over time, not taking into account the differences in the rates of growth between countries and the possibility that a country changes its category in the period considered. This fact increases the heterogeneity within the groups which, as we mentioned earlier, could affect the results obtained. This paper explores an alternative method for the creation of clusters that incorporates the temporal dynamics in the analysis, therefore resulting in the formation of more homogeneous groups.

Third, this research paper considers a different concept of growth than that typically used in empirical literature. The majority of those studies try to demonstrate the importance of institutions in the development of nations by using the GDP per capita growth as the reference variable in the models. We try to offer a broader measure of what we mean by

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[2]Informal institutions such as traditions, beliefs, attitudes, habits of mind, codes of conduct and other cultural elements were not considered.

[3]Of the academic contributions that have improved the quality of the available governance indicators the debate between Kurtz and Shrank (2007) and Kaufmann, Kraay, and Mastruzzi (2007a; 2007b) stands out as one of the most interesting.

economic development, based on the joint consideration of the Gross National Income (GNI) per capita (World Bank, 2017) and the Human Development Index (HDI) which in addition to living standards (measured by GDP pc growth), also synthesizes two basic dimensions of human development: longevity and health; and education (United Nations Development Programme, 2016).

Finally, the cluster methodology and the concept of "success" allow addressing one of the limitations of growth regressions: the existence of a reverse causality between institutional factors and economic growth. Some complex econometric methods have provided solutions to this problem (IV or system-GMM estimation vs OLS estimation) but these methods require either the search for suitable instrumental variables, which is not always easy, or the use of lags in the estimation process, which presents a limitation in the case of institutional variables because of their low temporal variability (Faust, 2007). The use of clusters in the analysis contributes to limit the impact of the presence of endogeneity in the results obtained because economic growth, rather than the achievement of the category of success, is to a greater extent behind the causes that favor an institutional improvement high enough to impact on the dependent variable, that is, to generate bias in the estimators.

This paper is organized as follows: Section II includes the clusters of countries, that is, the development stages that prevailed in the world between 1996 and 2011. The comparison among the countries composing each group in both years will reveal those countries that were able to progress in terms of development during the aforementioned period. Section III shows the empirical approach for model identification used in the paper. Section IV, includes the results achieved by applying alternative econometric regressions. The main conclusions are summarized in Section V. In this sense, the results obtained, using the methodology of clusters based on the concept of "success", show that institutional factors are crucial to advancing development but their importance varies according to the different development stages.

2. Stages of development in the world

Using the data of the GNI per capita, and according to the income classification of the World Bank, it is possible to identify three clusters, or stages of development: less-developed, intermediate and advanced (Table 1).

2.1. Static analysis in 2011

In the cluster analysis regarding 2011, there were 62 countries in the cluster of economies at the advanced development stage. The intermediate stage of development included 102 countries. Lastly, the less-developed countries consisted of 35 economies that have failed to follow the path of growth and greater liberty and that live, for the most part, in extreme poverty. Countries known as failed states predominate in this cluster, i.e., countries whose economies have stalled as a result of endemic problems such as armed conflict, civil wars and coups. These nations are also frequently burdened by poorly managed natural resources, adverse geographical conditions (in particular, lack of access to the sea) and, above all, ineffective or negligent governments indirectly or directly responsible for the persistent poverty of their countries (Collier, 2008).

Table 1. Distribution of countries by clusters using World Bank data of GNI per capita, 2011 and 1996.

A. Stage of development in 2011

Less-developed countries

Afghanistan, Bangladesh, Benin, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kenya, Kyrgyzstan, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Sierra Leone, Somalia, Tajikistan, Tanzania, Togo, Uganda and Zimbabwe.

Intermediate countries

Albania, Algeria, Angola, Antigua and Barbuda, Argentina, Armenia, Azerbaijan, Belarus, Belize, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Cabo Verde, Cameroon, Chile, China, Colombia, Costa Rica, Cuba, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Fiji, Gabon, Georgia, Ghana, Grenada, Guatemala, Guyana, Honduras, India, Indonesia, Iran, Iraq, Ivory Coast, Jamaica, Jordan, Kazakhstan, Kiribati, Laos, Latvia, Lebanon, Lesotho, Libya, Lithuania, Macedonia, Malaysia, Maldives, Marshall Islands, Mauritius, Mexico, Micronesia, Moldova, Mongolia, Morocco, Namibia, Nicaragua, Nigeria, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Republic of Congo, Romania, Russia, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Senegal, Seychelles, Solomon Islands, South Africa, Sri Lanka, Sudan, Suriname, Swaziland, Syria, Thailand, Tonga, Tunisia, Turkey, Turkmenistan, Ukraine, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, West Bank Gaza, Yemen and Zambia.

Advanced countries

Andorra, Aruba, Australia, Austria, Bahamas, Bahrain, Barbados, Belgium, Brunei, Canada, Cayman Islands, Channel Islands, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Faeroe Islands, Finland, France, French Polynesia, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea Rep., Kuwait, Liechtenstein, Luxembourg, Macau, Malta, Monaco, Netherlands, New Caledonia, New Zealand, Northern Mariana Islands, Norway, Oman, Poland, Portugal, Puerto Rico, Qatar, Saint Kitts and Nevis, Saudi Arabia, Singapore, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Taiwan, Trinidad and Tobago, United Arab Emirates, United Kingdom, United States and Virgin Islands (U.S.)

B. Stage of development in 1996

Less-developed countries

Afghanistan, Albania, Angola, Armenia, Azerbaijan, Bangladesh, Benin, Bhutan, Bosnia and Herzegovina, Burkina Faso, Burundi, Cambodia, Cameroon, Central African Republic, Chad, China, Comoros, Democratic Republic of Congo, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, India, Ivory Coast, Kenya, Kyrgyzstan, Laos, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Moldova, Mongolia, Mozambique, Myanmar, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Republic of Congo, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Somalia, Sri Lanka, Sudan, Tajikistan, Tanzania, Togo, Uganda, Vietnam, Yemen, Zambia and Zimbabwe.

Intermediate countries

Algeria, Antigua and Barbuda, Argentina, Bahrain, Barbados, Belarus, Belize, Bolivia, Botswana, Brazil, Bulgaria, Cabo Verde, Chile, Colombia, Costa Rica, Croatia, Cuba, Czech Republic, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Fiji, Gabon, Georgia, Greece, Grenada, Guatemala, Hungary, Indonesia, Iran, Iraq, Jamaica, Jordan, Kazakhstan, Kiribati, Latvia, Lebanon, Libya, Lithuania, Macedonia, Malaysia, Maldives, Malta, Marshall Islands, Mauritius, Mexico, Micronesia, Morocco, Namibia, Oman, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Puerto Rico, Romania, Russia, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Saudi Arabia, Seychelles, Slovakia, Slovenia, Solomon Islands, South Africa, South Korea, Suriname, Swaziland, Syria, Thailand, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Ukraine, Uruguay, Uzbekistan, Vanuatu, Venezuela and West Bank Gaza.

Advanced countries

Andorra, Aruba, Australia, Austria, Bahamas, Belgium, Brunei, Canada, Cayman Islands, Channel Islands, Cyprus, Denmark, Faeroe Islands, Finland, France, French Polynesia, Germany, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, Korea Rep., Kuwait, Liechtenstein, Luxembourg, Macau, Monaco, Netherlands, New Caledonia, New Zealand, Northern Mariana Islands, Norway, Portugal, Qatar, Singapore, Spain, Sweden, Switzerland, Taiwan, United Arab Emirates, United Kingdom, United States and Virgin Islands (U.S.).

Figure 1 makes a comparison of the different development stages in 2011, using the standardized data from the HDI, the IEF, the GI and the DI (all indicators are expressed on a scale from 0 -low institutional and development level- to 10 -high institutional and development level-). The HDI shows a large gap between the less-developed countries and the rest of the world, whilst the gap between the intermediate stage and the advanced stage of development is much smaller.
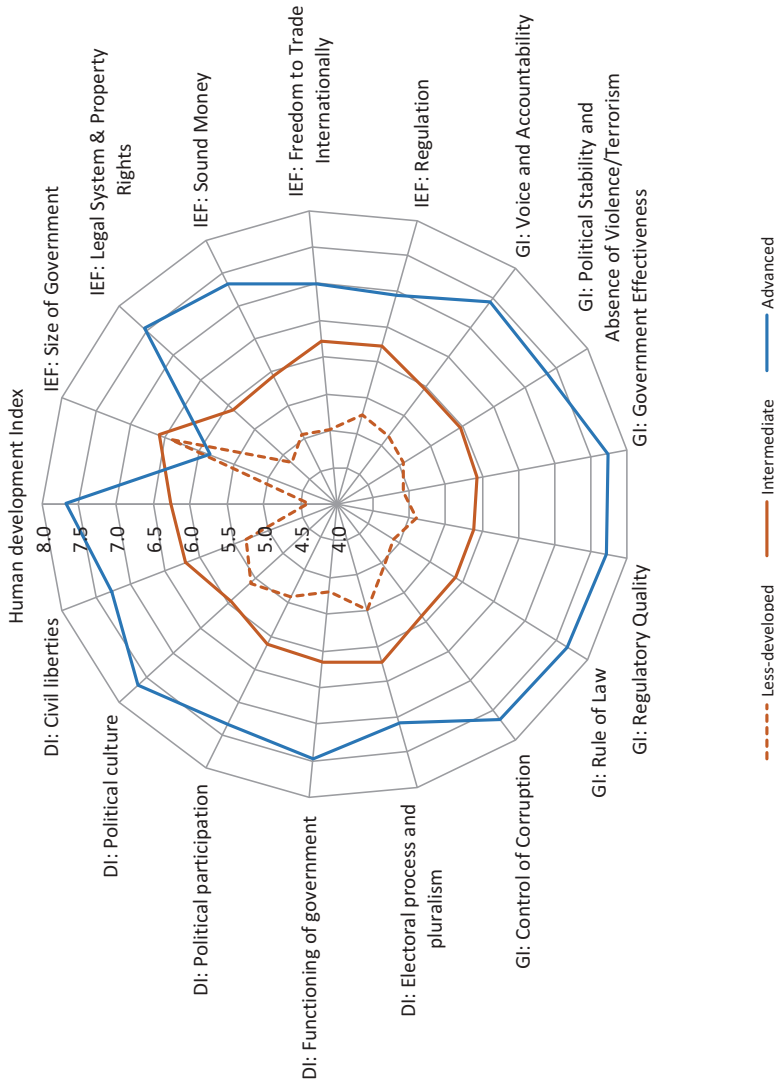
Figure 1. Institutional framework and HDI in different development stages, 2011.

All indicators are expressed on a scale from 0 (low institutional and development level) to 10 (high institutional and development level).

In the less-developed group, the principal disparities were in terms of economic freedom and governance. These countries had the worst scores on indicators concerned with legal system and property rights, rule of law and government effectiveness. However, regarding the indicator that measures the size of government, there is an inverse relationship with regard to development because it is the advanced countries that register the lowest values.

Regarding the cluster consisting of intermediate countries, the most significant difference between this cluster and the advanced group was with respect to the indicators related to governance and democracy, which are the indicators related to government effectiveness/functioning of government, regulatory quality, legal and property rights, political stability and absence of violence, the rule of law, control of corruption and political culture. It is worth noting the proximity between the intermediate and advanced countries regarding the indicators related to freedom to trade internationally and regulation, although the latter group did register higher values.

2.2. Dynamic analysis: 1996–2011

By comparing the composition of the clusters in 1996 and 2011, we incorporate a dynamic component into the study making it possible to identify the "successful" group of economies, i.e., the countries that improved their classification in terms of their level of development during the period according to the income classification of the World Bank. Countries were defined as "successful" if they were in the less-developed stage in 1996 but by 2011 had moved into the intermediate stage of development. Similarly, those countries that had passed from the intermediate stage of development in 1996 to the advanced stage in 2011 were also considered "successful" economies.

However, in order to analyze the dynamics of development and, therefore, the success cases in this framework, it is necessary to consider the improvement occurred not only in economic terms but also in human development terms. It is for this reason that the success classification obtained from GNI per capita data of the World Bank needs to be corroborated with data from the HDI referred to the period 1996–2011 (Figure 2). In the group of less-developed countries, there are three cases of "success" (Ivory Coast, Senegal y Sudan) that in terms of the HDI data should be considered unsuccessful due to the low levels of this index in both years; while there are two countries (Kenia y Tajikistan) in the "unsuccessful" category that presents HDI levels similar to those in the "successful" category. Additionally, the HDI growth could be measured by the distance between the point that represents the country in the graph and the trend line of adjustment of each cluster. In this sense, the Republic of Congo and Lesotho have registered zero or negative growth of HDI, so they are classified in the "no success" group; while Bangladesh, Uganda and Rwanda have recorded HDI growths of around 50%, so they will be classified within the "success" cluster.

In the case of the intermediate countries, Saudi Arabia and Trinidad and Tobago have HDI levels well below those of the rest of the countries in their group, so they will be considered "unsuccessful"; while the opposite case is that of Uruguay and Chile that become part of the "success" group. On the other hand, there are two countries (Morocco and Papua New Guinea) with a low level in the HDI in 1996 when compared to the rest of the countries that belong to their cluster, so they are changed to the cluster of "less-developed" and are considered successful countries according to their GNI per capita levels.
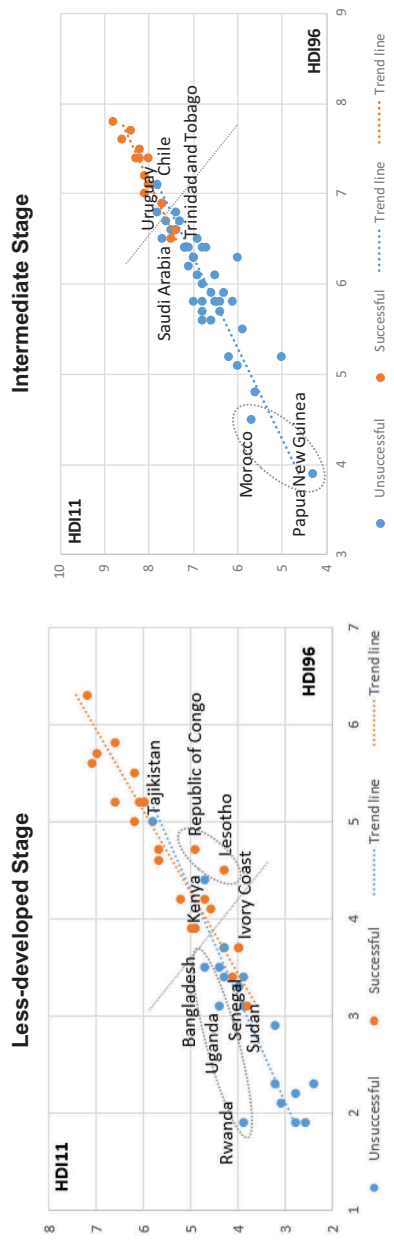
Figure 2. Clusters of countries based on "success" regarding HDI.

All indicators are expressed on a scale from 0 (low development level) to 10 (high development level).

As a result of these changes, we obtained the new clusters (Table 2) that will be the reference in the rest of this research. We can conclude that of those countries defined as less-developed in 1996, half of the countries moved into the intermediate group by 2011 and 19% of the countries in the intermediate group in 1996 achieved the category of advanced economy by 2011. It is also worth noting that none of the countries analyzed were found to have descended into a worse group than the one that they belonged to in 1996, indicative of the recent period of prosperity experienced by the global economy.

3. Empirical approach for model identification

3.1. Some comments on growth regressions

The research into the essence of economic growth and institutions has featured interesting methodological debates. The vast majority of studies within the empirical literature on economic growth are based on Equation (1) (Barro, 1991),

$$\ln(Y_i) - \ln(Y_i^0) = \alpha + \beta W_i + \gamma \ln(Y_i^0) + \varepsilon_i, \tag{1}$$

whereby the differences in the growth rate of gross domestic product per capita (GDP pc) between countries are related to a set of explanatory variables. This research chiefly consists of cross-sectional studies, which feature a large sample of countries where the dependent variable is the growth rate of GDP pc (Y_i) during a particular period and the regressors (W_i) are flow variables (investment rate in the economy, growth rate of labor force, international openness, government expenditure as a percentage of GDP, etc.)

Table 2. Distribution of countries by "success" using the data of GNI per capita and HDI.

A. Less-developed countries

Unsuccessful group

Afghanistan, Benin, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Ivory Coast, Kyrgyzstan, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Republic of Congo, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Togo and Zimbabwe.

Successful group

Albania, Angola, Armenia, Azerbaijan, Bangladesh, Bhutan, Bosnia and Herzegovina, Cameroon, China, Equatorial Guinea, Ghana, Guyana, Honduras, India, Kenya, Laos, Moldova, Mongolia, Morocco, Nicaragua, Nigeria, Pakistan, Papua New Guinea, Rwanda, Sao Tome and Principe, Sri Lanka, Tajikistan, Uganda, Vietnam, Yemen and Zambia.

B. Intermediate countries

Unsuccessful group

Algeria, Antigua and Barbuda, Argentina, Belarus, Belize, Bolivia, Botswana, Brazil, Bulgaria, Cabo Verde, Colombia, Costa Rica, Cuba, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Fiji, Gabon, Georgia, Grenada, Guatemala, Indonesia, Iran, Iraq, Jamaica, Jordan, Kazakhstan, Kiribati, Latvia, Lebanon, Libya, Lithuania, Macedonia, Malaysia, Maldives, Marshall Islands, Mauritius, Mexico, Micronesia, Namibia, Palau, Panama, Paraguay, Peru, Philippines, Romania, Russia, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Saudi Arabia, Seychelles, Solomon Islands, South Africa, Suriname, Swaziland, Syria, Thailand, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Ukraine, Uzbekistan, Vanuatu, Venezuela and West Bank Gaza.

Successful group

Bahrain, Barbados, Chile, Croatia, Czech Republic, Estonia, Greece, Hungary, Malta, Oman, Poland, Puerto Rico, Saint Kitts and Nevis, Slovakia, Slovenia, South Korea and Uruguay.

This classification is based on the distribution of Table 1 by comparing the composition of the clusters in 1996 and 2011. Countries have been reclassified using the data of UNDP Human Development Index (see details in Section II.B): a) unsuccessful less-developed countries: Ivory Coast, Lesotho, Republic of Congo, Senegal and Sudan; b) successful less-developed countries: Bangladesh, Kenya, Morocco, Papua New Guinea, Rwanda and Uganda; c) unsuccessful intermediate countries: Saudi Arabia and Trinidad and Tobago; d) successful intermediate countries: Chile and Uruguay.

and stock variables, which are measured at the beginning of the period (such as indexes of educational attainment and health care, among others). The initial level of GDP pc (Y_i^0) is included very often in these stock variables because according to the neoclassical growth model, countries that are close to their steady state grow at a slower rate because of the existence of conditional convergence. The individual effect of each country (ε_i) captures other unobservable determinants of growth.

These regressions have been submitted to significant econometric reviews (Rodrik 2005). In the first instance, a lack of robustness in the findings is a concern because of the existence of uncertainty implicit in the definition of the model being verified. Because of the large number of explanatory variables that can be included in a growth regression (Sala-i-Martin, Doppelhofer, & Miller, 2004), the same phenomenon can be explained by different models; however, there is no consensus on what the most appropriate model is. To test the robustness of the results, some studies have included alternative estimations using different variables, whilst implementing sample control by eliminating part of the observations, in an attempt to identify whether there are differences in the parameters of different regressions (Rodrik, Subramanian, & Trebbi, 2004).

Another common criticism refers to the bias and inconsistency in the estimations due to omitted variables and the inherent problem of endogeneity. One of the most important omitted variables in this type of regressions is the level of growth at which an economy converges owing to the impossibility of measuring this variable (Lefort, 1997). This unobservable effect, which may be due to immeasurable differences in the types of technology available in different countries or due to other determinants of per capita income in a steady state, is not represented in the regressors but in the individual effect of each country. The problem lies in the correlation between the individual effect and one of the explanatory variables used in the growth equations, the initial GDP pc level. This correlation leads to bias and inconsistency in the estimator of the regressors' parameter. This problem has been resolved by doing estimations using panel data because fixed effects are able to control the unobservable characteristics of countries.

In contrast, the problem of endogeneity in the regressors used arises because some of the W_i vector's components are conceptually dependent on growth (the endogenous variable in Equation (1)). Although the problem does not occur with the same intensity in all components of the explanatory variable vector, it is present in some of the components, particularly in those related to institutional factors (Rodrik et al., 2004). Acemoglu, Johnson, and Robinson (2001), Easterly and Levine (2003) and Rodrik et al. (2004), among others, have addressed the endogeneity problem in institutional variables via the instrumental variables (IV) estimation, using instrumental variables related to colonial origins and geographical endowments. However, although the use of instrumental variables is a statistical solution to the problem, it should be noted that within the context of growth studies it is very difficult to find instrumental variables that satisfy the criteria of exogeneity. Other authors have addressed the problem of endogeneity via the generalized method of moments (GMM) estimator, which uses lagged values of the variables as instruments. However, the use of lags is not always advisable in the case of institutional variables due to their low temporal variability (Faust, 2007).

Finally, another criticism made to the growth regressions concerns the heterogeneity across countries included in the sample. There are large differences between countries

with regard to economic, social and institutional factors that affect the results in terms of their statistical significance, making it difficult to identify common patterns of behavior. Durlauf and Johnson (1995) reject the cross-country linear model specification in favor of a multiple regime in which different countries obey different linear models when grouped. According to Durlauf (2001) econometric models should consist in large part of the identification of patterns present in observations, rather than in complex parametric model estimations.

Other empirical evidence support this line of thinking: Quah (1997) analyzed the evolution of cross-section distributions to identify data patterns in the presence of heterogeneity; Liu and Stengos (1999) showed that initial output and schooling levels have nonlinear effects on growth rates and suggested the presence of multiple regimes; Alfò et al. (2008) found that the explanatory power of the Solow growth model was enhanced when cross-country heterogeneity was considered; Galor (2007) segmented economies into three fundamental regimes – slow growing economies, fast growing countries in a sustained growth regime, and economies in the transition between these regimes; Høyland et al. (2012) also suggested to allocate countries into groups based on a criterion of similarity and to use the trade-off between within-group homogeneity and between-group heterogeneity; and Izquiero et al. (2016) showed that the prioritization of the productivity determinants seems to be specific to the income per capita group to which a country belongs.

In line with this empirical literature advocating an identification of patterns present in observations, the approach taken in this paper focuses on the criticism of heterogeneity and attempts to identify the homogeneous groups of countries with common patterns of behavior. There is some research that follows this line of work when trying to link institutions to the growth of economies. Park and Ginarte (1997) found that intellectual property rights matter for the developed economies but not for the less-developed economies; according to Butkiewicz and Yanikkaya (2006), the relationship between growth and democratic institutions are especially relevant for developing nations; while the results of the research of Lee and Kim (2009) showed that institutions turn out to be more important for lower-income countries than for middle- and high-income countries.

In all these cases, the groups of countries are formed according to the levels of income, by means of alternative estimates for each of the defined subsamples. The main drawback of this grouping technique is that the groups of countries remain constant over time, not considering the temporal dynamics of each national economy, which could generate group changes over time. In this sense, grouping of countries based on "success", as described in Section II, allows the construction of more homogeneous clusters by taking into consideration the temporal dynamics that shows which economies changed group throughout the analyzed period.

3.2. Data and methodological analysis

The main purpose of this research was to identify the factors that lead a country to be classified as "successful". To identify these factors, several alternative estimates were carried out. First, the results of a panel data model (the traditional approach used in growth regressions), which uses GDP per capita growth as the dependent variable, are compared with those obtained using a probit model, the approach proposed in this

paper, in which the dependent variable distinguishes between the "successful" countries (value 1) and the other countries (value 0).

We consider the following specification for the panel data model:

$$Y_{it} = \alpha_i + \sum_{k=1}^{14} \beta_k X_{kit} + \gamma^{IEF} IEF_{it} + \gamma^{GI} GI_{it} + \gamma^{DI} DI_{it} + \varepsilon_{it}, \tag{2}$$

where Y is the GDP per capita growth rate. The set of regressors includes the institutional explanatory variables related to economic (IEF), civil and political freedoms (DI), in addition to good governance (GI). However, to measure the effect of these variables on the dependent variable, it is necessary to include a set of control variables (X). The variables used ($k = 13$) were the ones associated with the economy (investment, savings, research and development, technology, trade openness and population growth), education (public expenditure on education, average years of education, education index and school enrolment) and health (expenditure on public healthcare, life expectancy and mortality).[4] In the case of panel data analysis, the initial level of GDP per capita is used as a regressor too, to include the conditional convergence in the analysis. Finally, α is the constant term (fixed effects), β is the parameter of the control regressors, and γ is the coefficient of the institutional indexes; and i and t indicate the sample observations (countries and years respectively). According to the methodology commonly used in the growth literature, we aggregate the observations into five-year periods.

For the probit model we estimate two alternative specifications. First, we use the aggregate indicators (IEF, GI and DI),

$$\text{Prob}(Y_i = 1) = \frac{1}{1 + e^{-(\alpha + \sum_{k=1}^{13} \beta_k X_{ki} + \gamma^{IEF} \Delta IEF_i + \gamma^{GI} \Delta GI_i + \gamma^{DI} \Delta DI_i)}}, \tag{3}$$

and secondly, we consider the components of the indicators,

$$\text{Prob}(Y_i = 1) = \frac{1}{1 + e^{-(\alpha + \sum_{k=1}^{13} \beta_k X_{ki} + \sum_{j=1}^{5} \gamma_j^{IEF} \Delta IEF_{ki} + \sum_{l=1}^{6} \gamma_l^{GI} \Delta GI_{ki})}}, \tag{4}$$

where j and l indicate the components of each institutional indexes (IEF and GI respectively).

The variables were tested by means of two methods: one method measured the variables in units (levels) and the other method measured the changes in the variables (the average five-year growth rate in the panel data model, and changes between 1996 and 2011 in the probit model). From a statistical point of view, the results were found to be more significant with the latter method. These results emphasize the fact that a country's inclination to develop does not result from it having a high indicator value but from registering a significant improvement in it. Therefore, the results reported in the following paragraphs relate to the variables measured in terms of variation, except for the variable initial GDP per capita, which is taken in 1996, at the beginning of the

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[4]Data from these variables were obtained from the World Development Indicators database (World Bank, 2012).

period under analysis, and it is expressed in logarithm. In addition, the data were standardized to compare the value of the estimated coefficients.

Because of the high simultaneity inherent in growth processes, the statistical analyses of endogeneity will be considered in both cases. In this sense, the probit estimation limits the effects of endogeneity on results, insofar as it reduces the reverse causality between "success" (vs. growth rate) and institutions.

Furthermore, because among the "successful" countries, there was a mix of economies with different levels of development, both less-developed and intermediate economies, the possibility existed that this mix could lead to nebulous conclusions that obscured the existence of different patterns according to the level of development. To avoid this inconvenience and to achieve more accurate results, two different probit samples were estimated for the different country samples. The first sample only included the 1996 countries from the "less-developed" cluster. In this case, the differences between the countries that had managed to move into the intermediate group by 2011 and the one that had not, were analyzed. The second sample was made up of all the countries from the group of intermediate economies in 1996, which made it possible to compare countries that had advanced out of the group by 2011 to those countries that remained in the intermediate group.

This way of grouping countries, based on "success", allows us to incorporate the economic dynamics in the analysis. Thus, since not all less-developed, or intermediate, countries have evolved in the same way, they should not be grouped in the same group over time. The grouping mode used in this paper takes these differences into account. The results of this analysis will allow us to evaluate the significance of institutions with regard to the level of development attained by nations to detect the institutions most relevant to the promotion of development and to evaluate whether the significance of these institutions remains the same throughout all development stages or varies, depending on the particular stage or cluster.

4. Estimation results: which institutions matter?

4.1. Institutions and development: panel data analysis vs. probit analysis

In the first instance, the results of a panel data model (the usual approach in growth regressions), which includes all the observations of the countries analyzed by using five-year averages for the period 1996–2011, and a probit model, which includes both less-developed as well as intermediate countries identified in the year 1996, were compared (Table 3). In each case, four alternative models are estimated. Due to the correlation between the factors that measure the institutional strength of countries, the first three models proposed (Models (1) to (3) for panel data, Models (5) to (7) for probit) include, in addition to the same set of control variables, the institutional factors IEF, GI and DI separately; as such, their individual contribution to "success" can be studied in isolation. In the last model (Models (4) and (8)), the three indicators are included together to quantify the indicator with the greatest explanatory power.

Several estimations were run including alternative combinations of the control variables described in Section III until model stability was achieved. The final estimations only include the control variables of the stable model (trade openness, years of

Table 3. Comparison of the panel data and probit estimates in the full sample.

	Panel data analysis				Probit analysis			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Initial position								
Log(GDPpc$_{1996}$)	−1.25*	−1.59**	−1.85***	−1.12*				
	(0.71)	(0.70)	(0.71)	(0.71)				
Control variables								
Trade openness	0.13***	0.12***	0.13***	0.13***	1.67***	0.60**	0.58**	1.83***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.44)	(0.23)	(0.24)	(0.44)
Years of education	0.07*	0.09*	−0.03	0.04	0.60***	0.00	0.08	0.76***
	(0.04)	(0.05)	(0.08)	(0.06)	(0.23)	(0.18)	(0.18)	(0.26)
Savings	−0.02	−0.02	−0.03**	−0.01	−0.21	0.02	0.03	−0.26
	(0.01)	(0.01)	(0.01)	(0.01)	(0.26)	(0.18)	(0.19)	(0.27)
Population growth	−0.96***	−1.22***	−1.13***	−0.96***	0.78**	−0.13	−0.12	0.75**
	(0.25)	(0.23)	(0.24)	(0.26)	(0.37)	(0.2)	(0.21)	(0.38)
Intercept	8.37***	10.22***	11.32***	7.84***	−0.63***	−0.4**	−0.37**	−0.62***
	(2.93)	(2.86)	(2.90)	(2.93)	(0.22)	(0.17)	(0.17)	(0.23)
Institutional variables								
IEF: Index of Economic Freedom	0.42***			0.42***	0.56**			0.60*
	(0.14)			(0.14)	(0.27)			(0.34)
GI: Governance Indicator		0.00		0.00		0.25*		−0.43
		(0.00)		(0.00)		(0.15)		(0.29)
DI: Democracy Index			0.06*	0.03			0.25*	0.45**
			(0.03)	(0.03)			(0.14)	(0.22)
Goodness of fit								
Number of observations	167	166	166	165	54	67	67	54
Number of countries	60	60	60	60	54	67	67	54
R^2/Pseudo R^2	0.37	0.33	0.29	0.37	0.39	0.11	0.11	0.42
Test of exogeneity								
X^2 test	35.11***	17.85**	10.53	48.28***	0.89	0.06	0.07	0.01
p-value	0.00	0.01	0.10	0.00	0.34	0.80	0.79	0.92

The table shows the results of panel data and probit analyzes for the cross section of countries. Four alternative models are estimated: Model (1) and (5) include the Index of Economic Freedom; Model (2) and (6) include the Governance Indicator; Model (3) and (7) include the Democracy Index; and Model (4) and (8) include three institutional factors (IEF, GI and DI) together. The following control variables are not included in the regressions, because they did not obtain statistically significant results in the stable model: investment, research and development, technology, public expenditure on education, education index, school enrolment, expenditure on public healthcare, life expectancy and mortality. Test of exogeneity: instrumental variables = Lags (−1) in panel data and variation 1996–2000 in probit. Robust standard errors are shown in parentheses. *** Significance at 1% level; ** Significance at 5% level; * Significance at 10% level.

education, savings and population growth) for which the value of the estimated parameter and its robust standard errors are displayed. The last rows of each proposed model display the number of observations included in the estimation, a measurement of the goodness of fit and an exogeneity test.

The initial value of GDP per capita exerts a significant influence upon growth rate, and the sign of the coefficient was correct according to the Convergence theory. With respect to the control variables, the only variables that achieved any statistically significant results were trade openness, savings and population growth (from the economic variables group) and average years of education (from the education group). The estimation of panel data showed that the variables that obtain statistical significance in a greater number of occasions are trade openness and population growth; while in the probit estimation they are trade openness followed by years of education. In this latter case, the variable population growth obtained a statistically significant result, although with an opposite sign than expected, which may be due to

the heterogeneity that exists because the sample includes less-developed countries along with intermediate ones (this point will be treated in the next section). None of the control variables used to measure the level of healthcare in a country obtained statistically significant results.

Regarding the institutional variables (IEF, GI and DI), the results clearly show that these variables raise the probability of "success", although the pattern is not as clear in the panel data analysis for the factors that measure political institutions. In all probit estimations, statistically significant parameters were obtained in regressions where these indicators were included individually (Model (5) to (7)). The estimation results that included the three institutional factors (Model (8)) demonstrate that the IEF is the most important institutional factor in terms of promoting the development of countries. The DI also obtained a statistically significant result, although the amount of its parameter is inferior to the one of the IEF. In the case of the panel data analysis only statistically significant results were obtained for the IEF, which is also revealed as the main institutional factor to favor development when this methodology is used. However, none of the factors used to measure political institutions obtained statistically significant results, except the democracy index in the regression where this indicator was included individually.

An exogeneity test was conducted to determine whether the phenomenon of endogeneity was present in the estimations. The tests used were the Hausman test for panel data analysis and the one proposed by Smith and Blundell (1986) for dichotomous models, which test the null hypothesis of exogeneity of the regressors. The results on exogeneity differ in both estimates. In the case of probit analysis, the results do not allow a rejection of the null hypothesis of exogeneity. The result is the opposite in the case of the estimation with panel data, except in the model which incorporates the GI variable as the institutional factor. The results obtained suggest that the use of "success" as an explained variable, rather than the growth rate of GDP, reduces the effect of bias in the estimators, which results from the endogeneity problem.[5]

4.2. Identification of different patterns: less-developed countries vs intermediate countries

To reduce sample heterogeneity and to test whether different factors affect "success" differently according to the level of development, two samples were examined: a subsample of less-developed countries in 1996; and a subsample of intermediate countries in 1996. Within each sub-sample, there is a distinction between successful countries, which changed their group in 2011, and unsuccessful countries, which did not.

Table 4 displays the statistical results obtained via the different estimations proposed for the probit model for each of the two samples examined. In this case, the institutional factors were introduced separately (Model (1) to (3) and (5) to (7)) and together in the last model (Model (4) and (8)). The first thing to note is that, with regard to the

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[5]The initial values of the institutional factors were used as instrumental variables: lags of one period of the institutional variables were used in the case of panel data analysis; and the variation between 1996 and 2000 of the institutional indicators was used in the probit analysis.

Table 4. Results of probit estimates in the subs amples.

	Less-developed countries				Intermediate countries			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Control variables								
Trade openness	1.61**	0.01	−0.09	1.63**	2.41***	2.05***	2.44**	5.49***
	(0.70)	(0.24)	(0.24)	(0.75)	(0.92)	(0.77)	(0.97)	(1.96)
	[0.25]	[0.00]	[−0.03]	[0.25]	[0.23]	[0.24]	[0.24]	[0.35]
Years of education	0.92*	0.44*	0.48*	0.82	1.8***	1.09**	1.26***	4.18**
	(0.57)	(0.28)	(0.26)	(0.53)	(0.56)	(0.44)	(0.4)	(1.84)
	[0.14]	[0.11]	[0.15]	[0.12]	[0.17]	[0.13]	[0.13]	[0.27]
Savings					−1.71***	−1.53***	−1.63**	−4.9**
					(0.63)	(0.59)	(0.66)	(2.46)
					[−0.16]	[−0.18]	[−0.16]	[−0.32]
Population growth	−3.14***	−1.23***	−0.84***	−3.09***				
	(1.03)	(0.39)	(0.32)	(0.87)				
	[−0.48]	[−0.31]	[−0.26]	[−0.47]				
Intercept	2.71***	0.89***	0.7***	2.69***	−3.31***	−2.51***	−2.39***	−8.42**
	(0.92)	(0.27)	(0.26)	(0.74)	(0.96)	(0.69)	(0.77)	(3.82)
Institutional variables								
IEF: Index of Economic Freedom	2.1***			1.89***	0.9***			2.07*
	(0.65)			(0.58)	(0.30)			(1.10)
	[0.32]			[0.28]	[0.09]			[0.13]
GI: Governance Indicator		0.75***		0.23		0.74*		0.95
		(0.26)		(0.35)		(0.44)		(1.06)
		[0.19]		[0.03]		[0.09]		[0.06]
DI: Democracy Index			0.29	−0.03			0.89***	2.73*
			(0.23)	(0.46)			(0.31)	(1.44)
			[0.09]	[0.00]			[0.09]	[0.18]
Goodness of fit								
Number of observations	27	40	40	27	37	40	40	37
Pseudo R^2	0.59	0.34	0.18	0.59	0.66	0.55	0.62	0.76

The table shows the results of the probit regressions for the cross section of countries. Four alternative models are estimated for each sample (less-developed countries and intermediate countries): Model (1) and (5) include the Index of Economic Freedom; Model (2) and (6) include the Governance Indicator; Model (3) and (7) include the Democracy Index; and Model (4) and (8) include three institutional factors (IEF, GI and DI) together. The following control variables are not included in the regressions, because they did not obtain statistically significant results in the stable model: investment, research and development, technology, public expenditure on education, education index, school enrolment, expenditure on public healthcare, life expectancy and mortality. Robust standard errors are shown in parentheses and the marginal effects in square brackets. *** Significance at 1% level; ** Significance at 5% level; * Significance at 10% level.

goodness of fit, the level of adjustment was higher in the subsamples than in the sample that included all the observations, which highlights the importance of separating the analysis into groups of countries to reduce the sample's heterogeneity.

In addition, different behavior patterns are observed according to the sample analyzed in both the set of control variables and in the institutional factors. In the case of the control variables, and for the sample of less-developed countries, population growth is the variable that obtains statistically significant results in all the estimates. The parameter has negative sign, indicating that in these countries it would be necessary to pay more attention to the demographic aspects to obtain a greater impetus of their economies. Education is highlighted as another of the most important factors to achieve a higher level of development, while the trade openness variable is statistically significant only in the model that includes IEF as an institutional factor. Finally, the savings variable was not included in the model for this sample of analysis, since no significant results were obtained in any case.

However, in the sample of intermediate countries this variable is of high importance, so that the accumulation of savings in developing economies acts as a brake on growth. In this sample, the variables trade openness and years of education also obtained statistically significant results in all the estimates. However, the population growth rate was not relevant in any of the models, so this variable was not included in the estimates.

In relation to the institutional factors, different patterns are also observed according to the sample analyzed. Greater economic freedom is revealed as a factor associated with the achievement of "success" in both samples. In particular, the marginal effect (values in square brackets in Table 4) shows that the improvement of one standard deviation in the indicator (since the data are standardized an unitary growth is equal to increasing the value in one standard deviation) would increase the probability of success around 30 percentage points, in the case of the less-developed countries, and 15 percentage points in the case of the intermediate countries.

The aspects related to political institutions were more significant in the sample of intermediate countries than in the sample of less-developed countries. Thus, in this last sample, the GI indicator obtained a statistically significant parameter when this indicator was included individually (an improvement of one standard deviation in this indicator would increase the probability of success about 20 percentage points), but lost its statistical significance when all the institutional factors were introduced in the model together. In the case of the sample of intermediate countries, in the model where all the institutional factors are present, DI obtained statistically significant parameters and a similar value to the coefficient of the IEF indicator (improvements of one standard deviation in these indicators would increase the probability of success about 15 percentage points).

4.3. Going deeper into the institutional indicators: probit analysis by components

Finally, to identify the specific components of the economic freedom and political institutions that should be prioritized in the development agenda of failing states, the probit model was repeated for each of the two samples examined, using as institutional factors the components of the indicators IEF and GI: six indicators in the case of the IEF and five indicators in the case of the GI. The ID indicator was removed of the list of regressors because one component of the GI indicator (Voice and Accountability) measures this same concept.

Because of the correlation between the components of the indicators, the incorporation of the components into the regression is done through a two-stage strategy. In the first stage, univariable regressions are estimated, which only include one component in each regression. The statistical significance obtained and the pseudo R^2 allow to establish the order of entry of the components in the second stage, in which a multivariable probit is estimated. At each step a new component, along with the set of control variables, is included. Only the components that obtained a statistically significant parameter in the previous step are maintained in the model. The process ends when the model saturates, that is to say, when the incorporation of new components no longer lead to new statistically significant results.

The results of first stage are shown in Table 5. Among the factors related to economic freedom, in the sample of less-developed countries, the freedom to trade internationally indicator was revealed as the single most influential factor for the

Table 5. Univariable probit estimates incorporating components of institutional factors as regressors.

	Less-developed countries			Intermediate countries		
	Coef.	Std. err.	Pseudo R^2	Coef.	Std. err.	Pseudo R^2
Index of Economic Freedom (IEF)						
IEF: Size of Government	0.02	(0.19)	0.00	0.52***	(0.2)	0.14
IEF: Legal System & Property Rights	0.43***	(0.16)	0.10	−0.29	(0.26)	0.03
IEF: Sound Money	0.16	(0.22)	0.01	0.12	(0.16)	0.01
IEF: Freedom to Trade Internationally	1.00***	(0.27)	0.31	0.14	(0.19)	0.01
IEF: Regulation	0.37*	(0.22)	0.05	0.38*	(0.2)	0.06
Governance Indicator (GI)						
GI: Voice and Accountability	−0.09	(0.15)	0.00	0.22*	(0.15)	0.02
GI: Political Stability: Absence of Violence	0.18	(0.13)	0.02	0.16	(0.17)	0.01
GI: Government Effectiveness	0.18	(0.13)	0.02	−0.03	(0.13)	0.00
GI: Regulatory Quality	0.31*	(0.18)	0.03	0.22*	(0.13)	0.03
GI: Rule of Law	0.22	(0.15)	0.02	0.25*	(0.14)	0.03
GI: Control of Corruption	0.15	(0.14)	0.01	0.11	(0.13)	0.01

The table shows the results of the univariable probit regressions for each sample (less-developed countries and intermediate countries), incorporating as regressors the components of the institutional factors (IEF and GI). Robust standard errors are shown in parentheses. *** Significance at 1% level; ** Significance at 5% level; * Significance at 10% level.

success of this kind of countries, followed by legal system and property rights and regulation indicators. In the case of intermediate countries, the most relevant indicator was the size of government, followed by regulation. The sound money indicator did not obtain significant results in any of the samples. Among the components of the GI only regulatory quality indicator obtained statistically significant results in both samples. The rule of law and voice and accountability indicators were also found to be important in explaining success in the sample of intermediate countries.

Table 6 displays the results of the multivariable probit models. The statistical results obtained for the control variables are similar to those results described in the previous estimates. With regard to the institutional indicators, the pattern is repeated in that the components of the IEF have an impact on the probability of "success" in the less-developed and intermediate groups; however, the GI components only have an effect upon the success of the intermediate countries.

Among the factors related to economic freedom, different results were obtained in each sample. The freedom to trade internationally indicator was revealed as the single most influential factor for the success of the less-developed countries (an improvement of one standard deviation in this indicator would increase the probability of success about 36 percentage points). The indicator of the legal system and property rights was also relevant to less-developed countries, but its impact on the probability of success was lower (11 percentage points). The parameter of regulation indicator was significant only for the intermediate countries, increasing the probability of success about 15 percentage points.

Additionally, the components of the GI were found to be relevant only to countries at the intermediate stage and did not provide any significant results with respect to countries in the less-developed group. Furthermore, the only component of the GI that obtained a statistically significant parameter in the intermediate countries was the rule of law, that showed an impact in the probability of success of 9 percentage points.

In short, even taking for granted that the improvement in economic freedom determined a higher probability of success in terms of development in both samples, it is true that its impact was higher in the group of less-developed countries.

Table 6. Multivariable probit estimates incorporating components of institutional factors as regressors.

	Less-developed countries		Intermediate countries			
	(1)	(2)	(3)	(4)	(5)	(6)
Control variables						
Trade openness	−1.03**	−0.78	1.61***	4.76*	6.18*	6.41**
	(0.52)	(0.75)	(0.60)	(2.70)	(3.31)	(2.82)
	[−0.15]	[−0.10]	[0.21]	[0.33]	[0.42]	[0.36]
Years of education	1.04**	0.99*	1.23***	4.21	5.64*	4.76*
	(0.48)	(0.58)	(0.41)	(2.82)	(3.29)	(2.68)
	[0.15]	[0.12]	[0.16]	[0.3]	[0.39]	[0.27]
Savings			−0.95**	−2.77**	−3.15**	−4.04***
			(0.44)	(1.29)	(1.39)	(1.42)
			[−0.13]	[−0.19]	[−0.22]	[−0.23]
Population growth	−2.02***	−3.62***				
	(0.7)	(1.26)				
	[−0.29]	[−0.45]				
Intercept	0.84**	1.4**	−2.08***	−7.01*	−8.83*	−8.13**
	(0.40)	(0.70)	(0.66)	(3.96)	(4.64)	(3.52)
Index of Economic Freedom (IEF)						
IEF: Size of Government			0.27			
			(0.32)			
			[0.04]			
IEF: Legal System & Property Rights		0.89**				
		(0.44)				
		[0.11]				
IEF: Freedom to Trade Internationally	2.05***	2.91***				
	(0.74)	(1.11)				
	[0.30]	[0.36]				
IEF: Regulation				2.72*	3.44*	2.39*
				(1.65)	(1.87)	(1.28)
				[0.19]	[0.24]	[0.13]
Governance Indicator (GI)						
GI: Regulatory Quality					−0.65	
					(0.51)	
					[−0.04]	
GI: Rule of Law						1.53**
						(0.6)
						[0.09]
Goodness of fit						
Number of observations	25	25	36	37	37	37
Pseudo R^2	0.61	0.67	0.55	0.74	0.74	0.79

The table shows the results of the multivariable probit regressions, whose specifications include the components of the institutional factors (IEF and GI) as regressors. At each step, a new component is included into estimation, according to the order identified in the univariable probit regressions. Robust standard errors are shown in parentheses and the marginal effects in square brackets. *** Significance at 1% level; ** Significance at 5% level; * Significance at 10% level.

Furthermore, the results showed that the way to approach this improvement in every group of countries should be different, considering the dissimilar impact of the different indicators in each group. For instance, in the case of the less-developed countries, the priorities would be a higher level of freedom to trade internationally and the reinforcement of the legal system and the property rights. On the contrary, in the intermediate countries the priority would be a better regulatory framework.

Governance was also a key factor, but only for the countries of the intermediate stage. In this case, the priority would be the improvement of the rule of law. Therefore, in the intermediate stage of development, both economic institutions, like regulatory framework, and political institutions, like the rule of law, showed a similar impact in the probability of success and both would play an equally important role in the political agenda in these countries.

4.4. The success gap

The results of the probit model can be used to establish a rank order of unsuccessful countries to determine which are most likely to succeed in the future and, conversely, which countries can be classified as failing states in institutional terms. Figure 3 shows the success gap, that is, the location of these failing states in relation to the values of the IEF and GI as achieved by the group of successful countries. Specifically, taking into account the minimum values registered by the successful countries, it is possible to establish four quadrants to place the unsuccessful states in institutional terms.

The first quadrant includes the best placed countries, that is, those with IEF and GI values higher than the minimums recorded in the success group. In the less-developed group in 2011, within this quadrant are Madagascar, Mali, Tanzania and Malawi. Haiti and Ivory Coast, although not within this quadrant, also have good positions in terms of IEF, the main indicator in this group of countries to achieve success. In the intermediate group if 2011, the countries in the first quadrant are Eastern European countries (Bulgaria, Lithuania, Latvia and Romania) together with African countries (Botswana, Namibia, Mauritius and South Africa), an Asian country (Malaysia) and two Latin Americans (Costa Rica and Brazil).

At the other extreme are the failing states; these are the countries that register a low level in both, IEF and GI indicators. In the less-developed group in 2011, the countries with a higher institutional gap are Chad, Burundi, Myanmar, Central African Republic, Democratic Republic of Congo, Republic of Congo and Zimbabwe. These countries are far from the levels that the success countries of their group register in IEF and GI. Particularly, they need to increase their progress in terms of the IEF by approximately 40% to approach ratings equivalent to success, and 20% in terms of the GI. Within the intermediate group of 2011, worthy of note is the case of Venezuela; its progress in terms of the IEF and GI is small, and its institutional gap with respect to the success group, stands at 60% for the IEF case and at 40% for the GI. For the rest of countries located in this quadrant (Argentina and Ecuador of Latin America, Tunisia, Gabon and Algeria of Africa, together with Ukraine and Syria) score 30% lower than the countries in the successful group with regard to the IEF and GI.

Within the group of less-developed countries, there is a group of countries with a high institutional gap in terms of IEF: Benin, Guinea-Bissau, Nepal, Niger, Senegal, Sierra Leone and Togo. These countries exhibited a deterioration, compared to the successful group, of approximately 30% in terms of IEF. Also, in the cluster of inter-mediate countries, there are a group of countries that should make institutional improvements although, in this case, in terms of GI; we referred to a large group of Latin American countries (Belize, Bolivia, Colombia, El Salvador, Guatemala, Jamaica, Mexico, Panama, Paraguay, Peru, Dominican Republic and Trinidad and Tobago) along with Egypt, Fiji, Indonesia, Jordan, Russia, Thailand and Turkey. They need to improve their GI ratings by approximately 20% to approach the success group.

5. Concluding remarks

The empirical analysis of this paper contributes to broaden the debate on the interaction between institutional framework and the process of development. Although many studies have shown that there is a positive relationship between institutions and economic growth, this paper analyzes which institutions are the most influential for
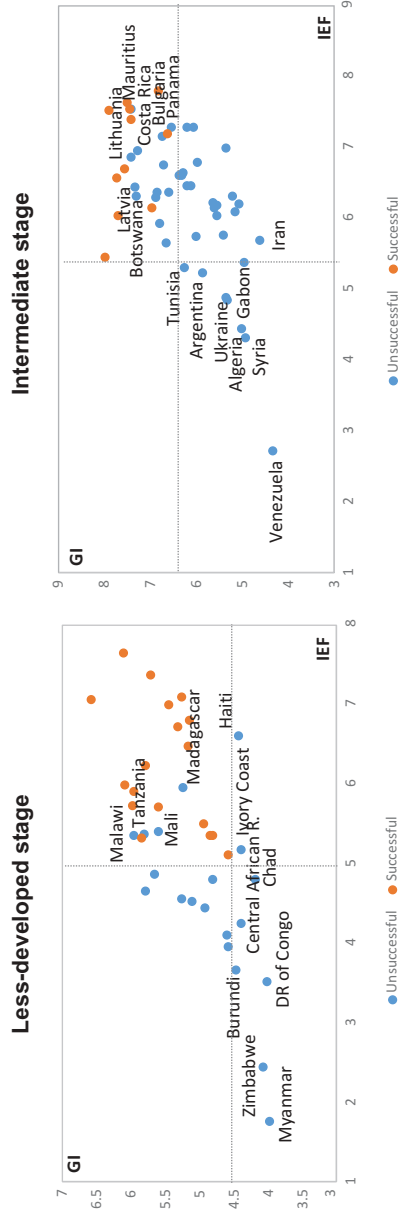
Figure 3. Success gap in the failing states (less-developed and intermediate countries).
All indicators are expressed on a scale from 0 (low institutional level) to 10 (high institutional level).

development and whether there are differences according to the level of development. In order to do so, the evolutionary dynamics of the countries are considered. First, countries are grouped in levels of development at two moments in time, and then we identify those countries that registered movements toward a higher level of development between these two moments. The analysis via homogeneous groups of successful countries yields more accurate results and also contributes to the determination of those institutions that should be prioritized in the development agenda.

In line with the results obtained in previous studies, the countries that managed to surpass their stage of development during the period under analysis were the ones that adopted, or potentiated, good institutions, successfully adapting them to their own idiosyncrasies. Particularly, the empirical analysis revealed that economic freedom was the most important institution to promoting development. Governance was also shown to be influential, particularly with respect to intermediate economies that had moved into the advanced development stage; however, governance was less significant than economic freedom.

Even taking for granted that governments must be committed to improve all components of the institutional framework, our results show that there is a sequence of institutional development. A country needs to ameliorate some basic institutions before it can improve others, despite their importance. For instance, the priority for the less developed countries must be economic freedom. There is no point trying to strengthen governance if a country does not have as a priority the openness of its economy to international markets and a strong commitment for the protection of the property rights. Moreover, as countries improve their level of development, both economic freedom and governance become priorities. According to our results, a better regulatory framework and a stronger rule of law were significant only for countries in the intermediate stage of development. Perhaps this is an indicator that these aspects become key factors only once a country has solved other more basic problems in the early stages of development.

The existence of these differences with respect to the levels of development suggests that governments and multilateral institutions should compile a list of differentiated policy proposals, according to a sequence of priorities. These political proposals could be followed by countries with different levels of development so that the systems of technical assistance to developing countries could be improved.

Among the countries that were unable to succeed during the aforementioned period, those belonging to the intermediate group are better positioned than the less-developed stages to move to a higher stage of development. To achieve this goal in the future, the less-developed countries would have to raise their level of economic freedom by approximately 40% to approach ratings equivalent to success. With respect to the intermediate countries, the unsuccessful ones would need to raise their levels of economic freedom and governance by 30%.

The results of this research show that irrespective of development stage, the engine of economic growth in market economies is the entrepreneurial spirit and its catalyst is a robust institutional setting where economic freedom and governance are given priority, thus stimulating a diverse business dynamic, which encourages the creation of viable businesses and therefore economic growth.

Disclosure statement

No potential conflict of interest was reported by the authors.

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