INSTITUTIONAL COMBINATION AND ECONOMIC GROWTH IN URUGUAY (1870-2010)

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Abstract

The discussion about the effects of the institutional frameworks over development has become a central topic between academics from different disciplines interested on the long run process of development. Nevertheless, the consensus about what institutions are and through which channels they affect the development process is in dispute. Also is the way of measure institution.

Based on different theoretical views from the New Institutional Economics approach, we can stand that the "better institutions" fulfill a triple condition: provide the economic conditions which enable to take investment decisions on a commitment environment; provide the political conditions to distribute the benefits of this investment; and that are sustainable over time, so they secure the commitment of the previous stands.

The aim of this article is to present an institutional achievements index, which reflects the historical combination of those dimensions for the case of Uruguay between 1870 and 2010.

Measuring Uruguay's institutional achievement is important for three reasons. First, because there are few studies explaining the economic and political development of the country based on an institutional theoretical framework. Second, most of the previous investigations about the topic rely on differing views about the way institutions influenced this process. Third, these earlier studies share something in common; all of them imply that the role of institution has been mostly negative.

This paper offers an alternative view from the previous studies. We find that institutional achievement of Uruguay has been acceptable in a relative perspective, and some elements to question the relation attributed to institutions as one of the factors which contribute to the historical economic divergence of the country.

Key words: *Institutions, economic development, measure institutions, Uruguay*
JEL-CODE: N26; O17; O43; P14; P48

INSTITUTIONAL COMBINATION AND ECONOMIC GROWTH IN URUGUAY (1870-2010)[I]

I. Introduction

Uruguayan economic growth has become an important subject of study among the community of local economic historians in recent decades. The main reason for this concern is the fact that, in the early twentieth century, the Uruguayan economy GDPpc had a level close to that of the core countries (France, Germany, UK and USA). A century later, the Uruguayan GDPpc represents only 40% of the core countries' average GDPpc (Figure 1).

<<Figure 1 here>>

This divergence in terms of per capita income is remarkable not only compared with the core countries, but also is with other economies that have had similar characteristics in terms of productive specialization and factor endowments, such as New Zealand (Figure 2).

<<Figure 2 here>>

Understanding why an economy, who had achieved a relative level of welfare, fell away from this path of development; why a country that has been an example compared to other Latin American economies, in terms of educational performance and health couldn't hold a growth that allows it to converge; or how a country that has established very early in the century a stable democratic system with a high degree of participation, with a modern party system has been unable to achieve high economic growth rates, has been the central concern of several local studies in recent years (Alvarez 2009, Alvarez & Willebald 2009; Bértola & Porcile 2000; Oddone, 2005; Willebald, 2011; Rama, 1990; Fleitas et al, 2011; Zurbriggen 2005).

These studies, in many cases, use institutions as explanatory factors, but none of them did a study of the institutional achievement. Despite the fact that none of these studies used the same criteria on what they call "institutional factors", most of them, for different reasons, have a negative vision of the institutional performance. They consider that the institutional framework have not been adequate to: hold the growth processes (Rama, 1990), or to bring on the technical progress' adoption (Bértola & Porcile 2000, Alvarez, 2009), or to manage the external economics' shocks (Oddone, 2005); the institutions also were unable to process social demands which economic booms has generated (Rama, 1990; Zurbriggen 2005), or to improve the distribution of that growth (Alvarez & Willebald 2009; Willebald, 2011).

If institutions are the ultimate causes of development, as the New Institutional Economic (NIE) theory asserts, then it would be reasonable to think that the poor economic performance of Uruguay must be related with a "poor" institutional performance. Nevertheless, in the socio-political history of the country, despite a few critical views on institutional frameworks of Uruguay[ii], they have some disagreements with the negative vision about institutions of the Economic History. A concise description of those two visions about the institutional development in Uruguay is presented in section 2.

This article starts with a brief presentation of the stages of development in Uruguayan economy, in order to show the different development models applied in the country and its effects over economic growth. In section II, we present these two visions about the institutional performance, and in section III we develop the way in which we will measure institution to analyze the institutional performance. Later, in section IV, we present an interpretation of Uruguayan institutional performance, whose main advantage is to focus on institutional performance itself and not as part of more general studies.

Based on the Institutional Achievement Index (IAI) results presented in section IV, we see how, despite we can recognize some elements which sustain the statements of both visions about institutions in Uruguay, if we analyze the institutional performance in general terms, we can tell a different history about Uruguayan institutions.

Holden by these results, we have reasons to have certain doubts about the incidence of institutional performance on economic divergence for the Uruguayan case, so, in section V we presented some conclusions and future research agenda based on those results.

II. The economic history of growth in Uruguay: periods of analysis

The normative dimension, intrinsic to each development model, is associated with a particular sense of justice which is reflected in the rules that individuals agreed in order to regulate their social actions (Sen, 1998).

The promotion of certain values, the incentives to act in one way or another, is regulated by the institutional framework. Furthermore, these institutional frameworks contain themselves the keys to adapt and change institutions and on that depends the flexibility of institutional frameworks.

The economic historiography in Uruguay has found three key periods which coincide with three different development's models on the analysis of the long run development process of the country.

The first of them, which extend from 1870 to 1929, was called "first export-led growth model". During this period, the population growth rates were high, encouraged mainly by immigration, and, despite this, the growth rates of per capita output were high too. The rapid growth was possible by one hand, by the increase of export volumes and the improvement in the terms of trade of tradable commodities.

Also took place a process of productivity improvement due to the transportation revolution and the process of enclosure in the late XIX. On the early twentieth century take place the state consolidation in a Weberian sense and, during the two presidencies of José Batlle y Ordóñez (1904-1907 and 1911-1915), and the subsequent presidencies of the Colorado Party[iii], had broadens the base of a primitive welfare state, with the promoting of many social protection policies.

The batllismo, with its fiscal base supported in revenue taxes on incoming foreign trade, began having serious financial problems after 1913 when livestock-sector output stagnated at the beginning of the WWI. This was compounded by the dismantling of the gold standard and the rising cost of freight and transport insurance.

Thus, a successful economic and social development model lost their capacity to do politics, entering into a process of transition that, despite of the recovery during the 1920 decade, would extend until the 1930s. It finished with the 1929 crisis' effect.

In the 30's, in a closure of major economies context, Uruguay also closed it economy and starts the second development model implemented in the country. This second period includes the process of state-led industrialization and covers the period 1930-1972.

The Uruguayan economy, after overcoming the economic crisis of the 30' grew until the 1950s. The productive base migrated to production from other livestock commodities (wool, dairy) and there was an increase in agricultural production. Manufacturing grew substantially and rapidly diversified under tariff protectionism. The model was successful in the first phase of import substitution, and productivity growths were based on the incorporation of imported capital.

Until the 1950s it was possible to keep the model successfully. But, with a badly planned protectionism, prey to rent-seeking political operators, a state increasingly suffocated by a clientelistic demand, an easily exhaustible domestic market for their dimensions, and a low capacity to promote capital-intensive industries, were a lethal combination for the growth model. This, it found its growth ceiling when the terms of trade started to be unfavorable, undermined, once again, the fiscal state base and all the protectionist scaffolding which made their success possible.

With the 1973 coup starts the third development model implemented in Uruguay, known as the second model of export-led growth. It is characterized mainly by foreign trade liberalization and a growing financial deregulation, looking to integrate the country economy on global markets but mainly oriented to the regional market.

After an attempt to re- position the cattle exports as the base of growth (which was truncated by the oil shocks of the 70's), it sought to encourage "non-traditional exports"-based traditional raw materials industry-.

Exports were promoted at the beginning of the model, through large tax exemptions and low interest rates, changing this in the late 70s', when the overvaluation (product of controlled floating exchange rate applied from 1978) became unsustainable the trade deficit.

The debt crisis came on 1982 'and had an impact on GDPpc over the whole decade.

The end of the dictatorship period and the democracy restoration in 1985 did not mean a change in the development model in an economic sense. Trade openness and financial determining that the growth process during the 90s were extremely volatile.

The 2002 economic crisis recovery occurs in a changing political context in which the access left-wing party to the government in 2004 is characterized by the seeking of a more equitable income distribution pattern, which is possible to sustain due to the high growth rates experienced after 2005.

In the present article, the third model was divided into two sub-periods, one comprising the dictatorial period (1973-1984) and other compressing the democratic period (1985-2010), because we consider that, despite the economic development model in the whole period is the same, the political model in both sub-periods is completely different, and therefore this affects the way in which decisions are made.

III. Two visions about institutions in Uruguay

As was mentioned earlier, the concept "institutions" is not always used in the same way by different authors, and many scholars from different disciplines on Uruguay have analyzed the institutional phenomena, but without explicitly using institutional frameworks (in the NIE's conception of institutions). It is not easy to find studies that focus strictly on institutional performance, although it is possible to find many studies that emphasize the role of institutions (sometimes without naming them as such), especially in the recent Uruguayan Political History investigation.

The outline done in this section is kind of arbitrary in this sense, since we present them to show off the discussion that gives rise to this investigation, but none of the studies reviewed aims to present a story of institutional performance of Uruguay as we pretend to do on this article.

Except the studies of Rama (1990), Oddone (2005) and Fleitas et al (2011) we did not find investigations that seeking to explain economic performance strictly in terms of institutional performance (or with the quality of institutions), but many of those who focus on the first, have found on institutions a possible explanatory factor for the economic development.

Some studies of the Political Science and Political History of Uruguay can be classified as those institutionalism focused mainly on organizational analysis. Most of those studies do not focus on relationships between political institutions and economic growth, and none focuses on quantifying the consequences or the impact of the political structure over development, but it concentrated in seeing how the functioning of certain institutions or organizations determined the historical and political development with analysis mainly descriptive.

These studies help us to underline some institutional characteristics of the political institutional framework, and it shares some common elements which are important to mention.

In this sense, there are some investigations focused on the study of the legal structure of the country and the party system which assert that institutional framework of the country where an example in the Latin American context (González, 1993; Buquet, 2003, Chasqueti, 2003; Lanzaro, 2003, Pareja, 1996, among others).

Meanwhile, the critical views about the institutional functioning inside this trend, study the exhaustion of political, social and institutional framework after 1950, and to the deterioration of social relations in the late 60 '(Real de Azúa, 1963, 1973).

One common feature in many studies is an idealized view of the institutional performance during the first batllismo (1903-1929). It is considered by most researchers as a high point of institutional innovation that led to changes not only in the political sphere, even in the economically and socially transformation of the country (Panizza, 1990: 35 y ss).

A second subject of agreement which can be found in those investigations is the weakened of Uruguayan institution which comes with political clientelisms and the economic rent-seeking (Solari, 1964; Rama, 1990; Zurbriggen, 2005; among others).

Many authors have focused on how the different facets of the economic rent-seeking mentality and the political patronage undermined, on the one hand, the democratic rules-of-the-game and the possibilities of exercising citizenship in a substantive way, and, on the other hand, created a rent-seeking mindset regarding entrepreneurship. Profiteering became a socially legitimate practice and patronage became a common practice in the political process during the state-led industrialization period. These practices continued even after the period ended.

All these investigations also understand that the erosion of particular institutions (mainly political) are the background that leads to the 1973 coup.

Among the investigations of the national Economic History that have focused on the long-term growth of the country and its determinants, we can find some that take into account the institutions in their explanatory frameworks, or refer to "institutional factors" as contributing elements to explain it.

These analyzes are characterized, in many cases, by strong comparative vocation and by seeing the process of divergence of the Uruguayan economy in comparative terms as a long-winded phenomena.

Oddone's thesis (2005) is tributary of those researches of political science and political history despite being a research on economic history. It seeks to explain the causes of divergent economic performance of Uruguay in the long run, searching the causes in the political process (particularly in economic policy applied after 1930).

Other studies have focused on the effects over long-term growth of the combination and interaction between technological learning, structural change and institutional development (Bértola and Porcile, 2000).

Other papers seeks to expose the domestic determinants that led to the economies of the River Plate (Argentina and Uruguay) and Australasia (Australia and New Zealand)- whose trajectories in the early twentieth century was similar in terms of growth, specialization patterns and initial factor endowments- to diverge in terms of per capita income and inequality over the century (Álvarez et al, 2007; Álvarez & Willebald 2009).

Most of them consider the role of property rights distribution and how it affect the process of agricultural frontier expansion in both regions, as well as it have determined different patterns of accumulation that affect income inequality and economic growth (Willebald & Alvarez, 2009; Alvarez 2009; Willebald, 2011).

Finally, we should mention the recent article of Fleitas et al. (2011) which, using the Contract Intensive Money[iv] (CIM) as a proxy of contract enforcement, they try to establish links between institutions enforcement and investment rates over SXX, finding significant relationship between these two variables and the investment rate as a determinant of economic growth.

A difference in the point of view between economic history and political history can be seen in their evaluation of institutions before 1930. While political history studies agree that the deterioration of the "good institutional framework" in Uruguay occurred after 1930, probably circa 1950; economic history studies, which do not share that idealized vision of institutions pre-1930, maintain that the divergence process post 1930 has its roots in the institutional matrix, among others elements, that developed at the end of SXIX and early SXX.

IV. Conceptualizing and measuring "institutions": our argument

a. Institutions, definitions and growth

It is truly difficult to establish a precise definition of what institutions are. Many investigations, especially those of the New Institutional Economics, have devoted much effort to define institutions; nevertheless, there is no single and precise definition of the concept.

Many authors agree that institutions are those codes of conduct that mediate the social interaction. These codes, regardless if they are written or unwritten, define the normative dimension of this social interaction, and determine what is "good", "desirable" and "fair". It implies that institutional frameworks promotes certain behaviors and discourages other, and gives a certain degree of foresight about how individuals act and the consequences of their decisions.

These conceptions of good, desirable and fair, evolve over time, as do the codes that penalize or promote these behaviors.

Much of the literature also agrees that institutions should create enabling environments for investment decisions (in terms of human capital, technological progress, and in physical capital). These decisions should not be understood strictly tied to economic production processes. Institutional framework need also to ensure the individual freedom which allows individuals to make their life decisions in order to reach their personal goals.

b. About our concept of institutions

In our opinion, there are different institutional forms that can fulfill that role. On one hand, are those which regulate and gives predictability to economic exchanges. Those must provide the security needed when an actor going to make their investment decisions in three ways: securing the rate of return of their investments, guaranteeing the investor's ability to obtain future profits and to calculate the cost of investment.

In this sense, a stable and predictable system of prices is a fundamental requirement, and so is the existence of a system to ensure the contracts compliance. Both requirements are necessary, but not enough, to increase the actors' freedom to act in the market, to invest and therefore promote economic growth.

Another kind of institutions necessary to generate those reliable and predictable environments are those meant to secure decisions ensuring they will be respected by all members of the social system. The distribution of power (both economic and political) provides actors an equality among them that is conducive to the necessary freedoms to make decisions.

Finally, these arrangements, both political and economic, should be preferable in present and future to all parts to ensure the sustainability of the growth process in the long run. Norms must be adapted gradually to changes in conceptions of good, fair and desirable, as already stated, but these changes must occur in a way which actors can anticipate it, adapting their expectative.

This way of view institutions is different from that handle by the other studies listed before, principally because contemplate political and economic elements at once.

We understand impossible to separate consequences and feedbacks between both aspects if we want to understand the overall institutional performance. Thus, in this paper we choose to put political institutions in an equal level as economic institutions, even though many authors treat the formers as pre-conditions to the second one (Acemoglu, Johnson & Robinson 2001, 2004, Acemoglu & Robinson 2012 , among others). This decision, which is both theoretical and empirical, is based on research findings like those presented in Siniscalchi, 2012 and 2013.

So we state that the *institutional combinations* are the key to understand the process of institutional achievement. These combinations are the product of the interaction, not always with a clear causal direction, between political and the economic factors and the system of checks and balances exercised between one and another aspect of the institutional frameworks.

c. Measuring institutions

The way we have characterized the institutional frameworks in previous section allows us to define three dimensions of institutions, which we will use to construct an institutional achievement index (IAI)

The first dimension is one of the most persistent within neoinstitucional literature, and refers to the development of a reliable environment for economic decisions. This dimension is associated with property rights respect, the contract enforcement and the capacity of agents to use the price system as a functioning of markets' reflects.

The link between economic growth and institutions which secure property rights and contract enforcement is clear in the literature: investment will only be considered as a viable alternative by the agents if the institutional framework assures appropriation of gains (which needs clear property rights) and the ability to recourse to an impartial authority to administer justice in case of contracts were not fulfilled (enforcement of contracts) (Acemoglu, Johnson & Robinson, 2004: 9).

The second dimension to take into account refers to how political and economic power is distributed. This dimension is important for several reasons: on one hand, because the way in which a society is politically organized (how political power is distributed among their members) has a strong influence on how the gains of economic growth are distributed (Acemoglu & Robinson, 2009, North, Wallis, & Weingast, 2009, among others). On the other hand, the political organization affects the degrees of freedom that citizens have to make decisions (Sen 2000); and finally, the concentration of economic power (the inequality among members of a society) has implications to keep the political arrangements trough time (Muller, 1995:967).

The third dimension that we take into account refers to the sustainability of the institutional agreements. Institutions must not only generate reliable investment environments and solve distributional conflicts peacefully, but also must accomplish these conditions at present and in near future (Przeworsky & Curvale, 2007).

The way that these three dimensions have interacted within each other and how they condition one to another over time, is impossible to predict arbitrarily. Thus, as this article state that *institutional combinations* reflects in a better way the institutional long-term performance of a country, IAI is calculated by assigning different weights to each dimension and each indicator within them.

To find these specific weights for each variable the Principal Components Analysis (PCA) was used, and then we calculate the IAI as the weighted sum of the components according to the percentage of variance explained by each of them[v]. We estimate a different PCA for each development model described in section II.

a. *Dimensions and indicators*

The IAI, which combine the three dimensions listed above, have been measured as table 1 describes.

<<Table 1 here>>

Thus, the **first dimension**, which includes those **institutional structures to create safe environments for economic decision**, will be measured by **two indicators**. One which reflects the enforcement of contracts is the **Contract Intensive Money** (CIM).

Clague et al. (1999) argue that markets are entities that exist in all societies, including the poorest, and that are developed even in those where trade is prohibited, but not all markets that are generated in a society are the suitable for economic growth. The suitable one are those in which *"... economic actors make exchanges requiring significant and irreversible commitments in the present, whether in the form of goods manufacture and shipped or fixed investments made, in the expectation of payment or a stream of returns in the future."* (Clague et al. 1999:186)

These markets, according to the authors, cannot develop in societies where property rights and contracts enforcement are absent. Thus, in societies where contracts are reliable the transactions outside the banking system are minority, and the money is only used to make small exchanges. That is why they states that the belief of agents in contracts enforcement and clear property rights (which encourage or discourage investment) can be proximate through the widespread use of the currency in the system (Clague et al. 1999:188). This is which this indicator reflects. and it is calculated as the ratio of non currency money to total money supply, or (M2-C)/M2, where M2 is a broad definition of money supply and C is currency held outside banks, and in the case of Uruguay was constructed by Roman & Willebald (2011).

<<Figure 3 here>>

The second indicator attempting to reflects the capacity of actors to anticipate, with some degree of certainty, the benefit and the cost of their investment. This, among other things, means taking into account the price system, and the inflation rate is a reflection of the ability to trust on prices as indicators of markets functioning.

Then, the indicator for market predictability will be expressed as $1 - \pi$ (where π is the annual inflation rate), and is calculated as $1-\pi$, since lower inflation rates should indicate greater predictability, while higher rates indicate greater uncertainty. After calculating the difference, the indicator was normalized according to its highest and lowest historical values, and adjusted to vary between 0 and 1. The sources used for this indicator was: the annual inflation series of the National Institute of Statistics -INE- (from 1937 to 2010); and the earliest data available from the INE (1937) was retro-projected by inflation data[iv] constructed by Bértola et al (1998) to cover the period 1870 to 1937.

<<Figure 4 here>>

The **second dimension** of the IAI is **the distribution of political and economic power**. The economic one determines the ways in which resources are distributed within a society and political power is the one which creates conditions for a more or less egalitarian distribution of those resources.

To measure this dimension we selected **two different indicators**: first, **income distribution** (measured by the Gini coefficient), assuming that income concentration could be consider as a proxy of the economic power distribution kept by members of the society. In a polarized society, with a bad income distribution, those which has the control over economic resources have more power than those who have not it. On the other hand, in an egalitarian society the economic power and the resources are better distributed within citizens. The source used for this indicator is Bértola (2005) and INE estimations for 2001-2010 period.

<<Figure 5 here>>

For political power distribution, based on the idea that **democratization's level** is a way to approach the distribution of political power among the members of a society, we use, following Dahl (1971, 1989) and Vanhanen (2000), a democratization index which is the geometrical average of: in one hand, an indicator of participation (% of voters in each election over total voting age population); and, in other hand, a public contestation indicator (% of seats in a legislature obtained by the opposition). They were combined into a democratization index, and then, normalized with their historical minimum and maximum values, so as to assume values between 0 (complete absence of democracy) and 1 (perfect democracy).

The original democratization index used was developed by Vanhanen (2000) and his series of participation and public contestation were used for the period 1870-1909. From 1910 to 2010, we reconstruct the series (following the author's criteria), using Nahum (2007), Caetano & Rilla (2005) and Electoral Court statistics.

<<Figure 6 here>>

The third dimension, regarding the sustainability of institutional arrangements over time, is measured by four indicators, which are calculated as the standard deviations of the variables measured in our three dimensions over the 5 years preceding the year which is being measured. The idea behind these indicators is to consider that, while changes in the other dimensions can be processed in a manner favorable to the formation of agents' expectations, if they are very volatile in previous years, they conditioned negatively the decisions.

<<Figure 7 here>>

Finally, to construct IAI, factor analysis (PCA) was calculated for each historical economic development model described in section II.

The result of IAI is presented in Figure 8.

<< Figure 8 here>>

IV. An institutional achievement history of Uruguay through the ISDI

Figure 8 shows the IAI for the entire period of analysis. What history tells us? A priori, and knowing that the maximum possible value for the index is 1, we can see on table 2 that the average is 0.55 for the whole period, which indicates that, on average, institutional performance Uruguay between 1870 and 2010 is not strictly poor. The problem is the high volatility that it present (standard deviation is 0.20).

<<Table 2 here>>

In order to have a better comprehension of the index we will analyze each development model based on the components matrix[vii] by periods and the evolution of each indicator. Table 3 presents the rotated component matrix[viii].

<<Table 3 here>>

Analyzing each variable in the different periods, we can see how those institutions designed to set the economic conditions for a reliable investment environment have played a negative role on institutional performance of Uruguay during all periods. The contract enforcement always has a negative sign in the different factors, and is always the first explanatory factor, except in the 1985-2010 sub periods when loads in factor which helps to explain only 17% of total variance.

The market predictability indicator, like its predecessor, its contribution is consistently negative and it explanatory capacity is always high (it is always correlated to the first or second explanatory factor).

Does this mean that economic institutions have failed? The consistently negative sign shows that better performance of these variables have a negative impact on IAI and when the crises come it deepens the "institutional crisis" that these institutions themselves have.

This helps us to understand why the literature referring to the role of institutions in economic performance of Uruguay has tended to have a negative view of institutional performance.

In this sense, if the institutions that should generate the necessary reliability environments for investment decisions have consistently failed, is reasonable to think that this should affect the investment rates (as Fleitas et all., 2011 states) and the technical progress adoption (as Bértola and Porcile (2000) suggests).

Now, if we look at the variables related with generation of political conditions to distribute benefits of investment, we can see that, in the case of the political power distribution, it does not have a pattern of importance as clear as the economic variables one (is not always correlated with the factor who explain most percentage of variance). It seems to have a positive correlation when substantial advances in power distribution has occurred, and has negative effects when this distribution has been little or null.

The distribution of economic power always appears with a positive sign, except for the period 1973-1984, and it is always correlated with democratization in the same factor.

Finally, considering the sustainability over time of institutional arrangements, we can see that the four indicators always appear with a positive sign. If we interpret this dimension as a proxy of expectations formation for agents' decisions, it reflects a certain "procyclicality" on expectations. They adapt to the past trajectory of institutions, and go with the cycle which they described.

From the previous analysis some reflections arise: first, we can see that, compared to economic institutions that have a systematically negative impact, the political responses were different among the different periods of analysis, and we can conclude that the contribution to achievements in institutional performance seems to be higher when the strategy was to distribute the power, rather than concentrate it.

Second, the investigations quoted in the background of this study coincide in assigning a negative role to institutional performance in some specific periods of the century, which, as already stated, differ between positions. These statements are not entirely clear if we see our findings. Contrary to this views which seems to see contrasts between good and bad institutions, the IAI shows a dynamic of checks and balances between economic and political institutions that challenge the postulates of both visions. In this sense, it is questionable whether the "guilt" which these visions attribute of institutions in Uruguay economic failure.

V. Concluding remarks and agenda

This analysis attempts, in a general sense, review the role of institutions in economic growth process Uruguay.

Choosing Uruguay to perform this analysis is particularly appropriate because, although there are no institutional analysis in general terms, or with a NIE literature as theoretical framework behind, on the Uruguayan economic literature, in recent years, and especially in economic history, it has resorted to using institutions as an "explanatory wildcard" for many economic phenomena.

Among these are included those which attributed to institutions a role as possible elements that determine the divergence in terms of economic development (understood not only as economic growth but also related to income distribution).

In this sense, these postures about the role of economic institutions contrast with those institutional analysis of the political history and political science, principally because they focus in a different set of institutions (as well as their way of analyze them also varies respect to the first).

For that reason we characterize and measure the institutions in this article trying to combine both aspects, reflecting these institutional combinations between politics and economics and, the way in which these two phenomena exert checks and balances to each other.

Thus, IAI shows that the general institutional performance has been characterized by high volatility, which has had crisis, but also have had fast recovery processes. In this sense, institutional performance shows a path dependence (we can see it, for example, in the procyclicality of agents expectations through the indicator of sustainability of institutional arrangements), but also a good responsiveness which makes that crises do not become systemic.

The picture presented by IAI, and especially analyzing it by periods, leads us to question the long-term relationships between institutional performance and economic growth. With the understanding that despite its problems, institutional performance does not seem to have been so poor as national literature has shown, and yet economic growth has not been enough to keep the country on the path of growth that has had at the beginning of the 20th century.

The question seems to be: were the "bad" Uruguayan institutions guilty of failure in terms of economic growth? The answer, in the light of our analysis is: no. Institutional performance was volatile but not bad, anyway their improvements have not been translated into improvements in growth.

Three possible relations to be tested in future investigations arise: First, if Uruguayan institutions have not had a bad performance in the long term, and yet economic growth has been low, then it is possible -at least for the Uruguayan case- that the relationship outlined by the NIE's theory do not occur, and the institutional framework has no incidence over growth process.

Second, it is possible that, in a comparative sense the institutional performance of Uruguay have had a low response to growth needs, and, as occurs with economic growth which grow in an absolute term but not in a relative one, they do not achieve enough level to capitalize improvements into high growth rates.

Third, maybe the institutional improvements helped to maintain certain kind of development, not focused on economic growth, and the divergence in this sense is "the cost pay" for those other improvements.

Finally, it is possible that the divergence process of small economies like Uruguay are influenced more by the low diversification in their productive sector, the inadequate formation of human capital, their specialization of production based on natural resources, than the incidence of the institutional frameworks. In this sense, if this hypothesis is corroborated, so we were in condition to affirm that institutions matters, but cannot support all the weight of development over their shoulders.

Notes:

[i] The present paper is an effort to summarize part of the principal results of my thesis to obtain the degree of Mg in Economic History (FCS-UdelaR). In this sense, some parts of the discussion could be missed in order to attend the article's extension required. For a full discussion of the topic please see: Siniscalchi, S (2013) *“Combinaciones institucionales y desempeño económico en el Uruguay 1870-2010: Un análisis del desempeño institucional del Uruguay en el largo plazo”* FCS-UdelaR.

[ii] None of these visions question the uruguayan institutional performance, or the quality of those institutions in general, they stressed the functioning of certain institutions, in particular in some moments of century (Real de Azua 1963; Zurbriggen 2005; Panizza 1990; Solari, 1988).

[iii] This period between the first presidency of Batlle y Ordoñez until his death in 1929, it is knowing as “the first batllismo”

[iv] Contrac Intensive Money (CIM) developed by Clague et al. (1999) is calculated as the ratio of non-cash money in total money supply, and is used as a proxy of contract enforcement and the property rights' respect. The logic behind the indicator is that agents will not have money in banks in those systems which the contracts are not credible, so, more money in bank means more contract enforcement. We will back to this point in further sections.

[v] The specifications of the PCA are described at the appendix 1 (pp. 18 to 19)

[vi] This is, indeed, a variation of prices from the implicit GDP deflector.

[vii] The component matrix gives information about which variables are acting in each factor and the sign of it influence.

[vii] The rotated matrix (with a verimax method) is a change in coordinates which maximizes the sum of the variances of the squared correlations between variables and factors.

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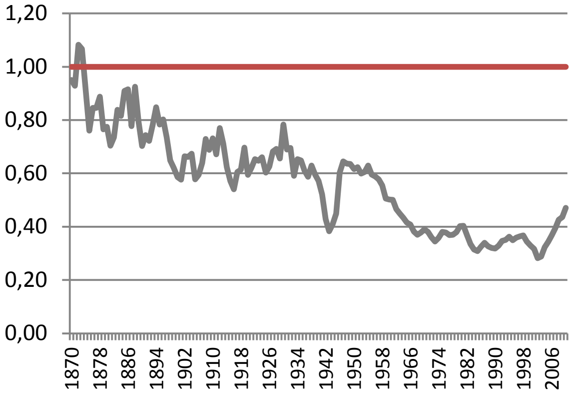
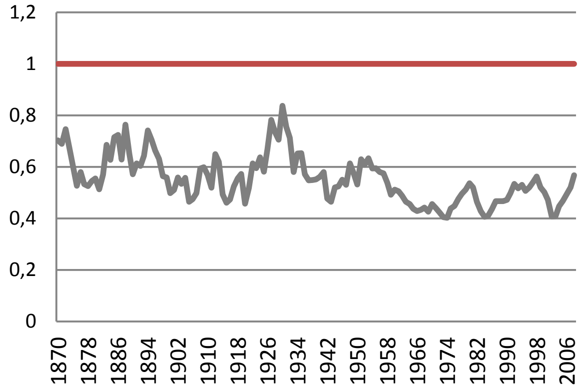
Figures and tables:

Figure 1: GDPpc (GK USD 1990 PPP) of Uruguay relative to Core Countries (=1) (1870-2008)



Source: Uruguay: Bértola & Ocampo (2012); Core: Maddison (2010)

Figure 2: PBIpc (GK USD 1990 PPP) of Uruguay relative to New Zealand (=1) (1870-2008)



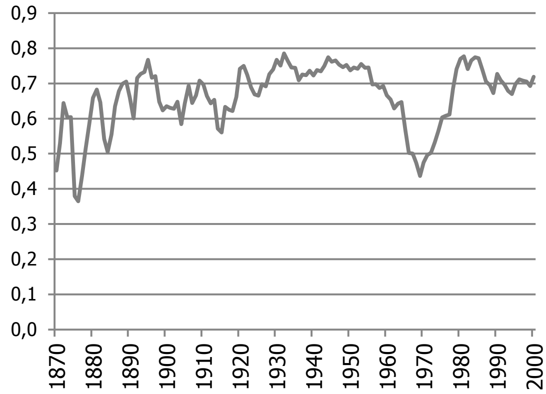
Source: Uruguay: Bértola & Ocampo (2010).
New Zealand: Maddison (2010)

Table 1: Dimensions, indicators and sources to construct the IAI

Dimension	Sub-dimension	Indicator	Proxy	Source
Economic environment for investment decisions	economic enforcement and accountability	Enforcement of the contracts	Contract Intensive Money	Román & Willebald (2011)
	market stability	Price stability	1-Inflation	Bértola et al. (1998); INE (2010)
Political environment to distribute the benefits	political power distribution	Democratization level	Democratization index	Own estimation based on different sources (see Annex)
	economic power distribution	Distribution of the economic resources	1-Gini coefficient	Bértola (2005)
Sustainability of the arrangement	predictability of the institutional arrangements	Previous development of the other kind of agreements	Standard deviation of: CIM; 1-Infla; Idemo, 1-GINI in the previous 5 years	Own estimation

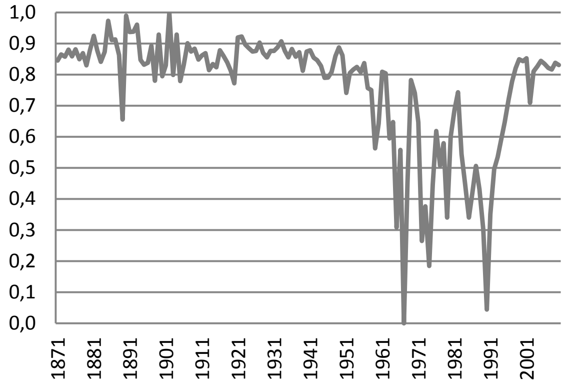
Source: own elaboration.

Figure 3: Contract Intensive Money for Uruguay (1870-2000)



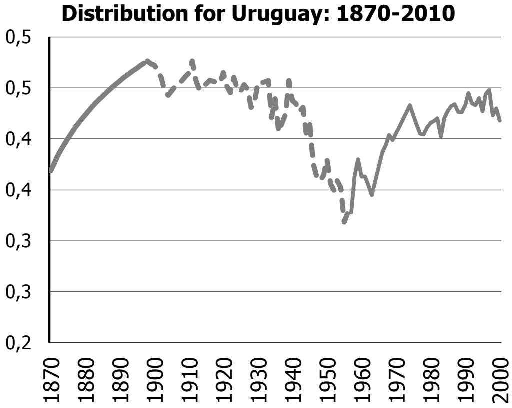
Source: Román y Willebald (2011)

Figure 4: Market functioning indicator (1-π) for Uruguay (1871-2010)



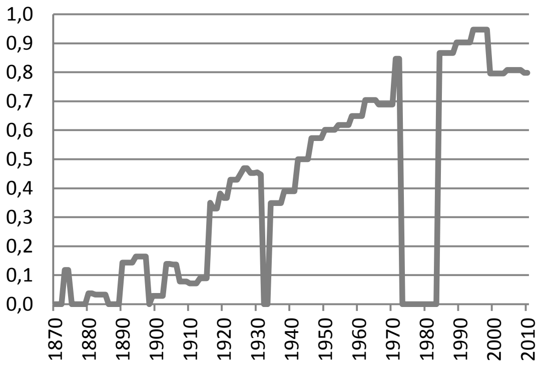
Source: INE (2011), Bértola et al. (1998).

Figure 5: Economic Power Distribution for Uruguay: 1870-2010



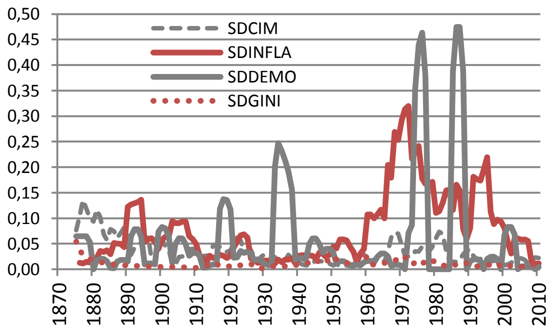
Source: Bértola, L (2005); INE (2007, 2011)

Figure 6: Political Power Distribution for Uruguay (1870-2000)



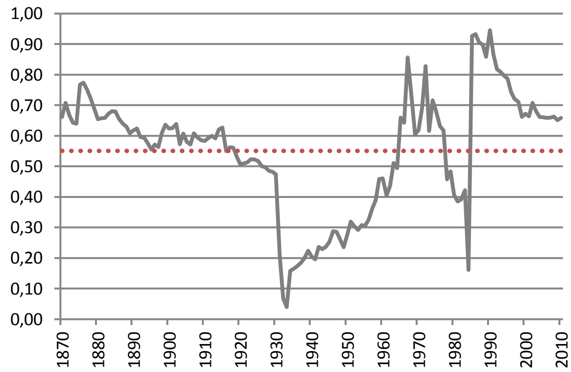
Source. Own elaboration (see text)

Figure 7: Sutainability of institutional arrangement for Uruguay (1875-2010)



Source. Own elaboration (see text)

Figure 8: IAI for Uruguay (1870-2010)



Source: Own elaboration. See text and annex.

Table 3: Component matrix (rotation) by period

	1870-1929			1930-1972		1973-1984			1985-2010		
Component	1	2	3	1	2	1	2	3	1	2	3
Contract enforcement	**-0,789**			**-0,923**		**-0,955**					**0,741**
Functioning of the market		**0,741**		**-0,728**		**-0,577**			**-0,772**		
Political power distribution	**-0,604**				**0,821**		**-0,843**		**0,741**		
Economic power distribution	**0,938**				**0,584**	**0,925**			**0,732**		
Enforcement stability	**0,865**			**0,867**			**0,855**			**0,755**	
Market stability		**0,804**		**0,844**		**0,893**			**0,865**		
Political power dist. stability			**0,952**		**-0,827**	**0,795**					**0,819**
Economic power dist. stability	**0,913**				**0,744**			**0,961**		**0,811**	
Coefficient of determination											

Rotation method: Verimax. Source: Own elaboration.

Note: To facilitate the appreciation of these relationships and help to interpret the components coefficients they were ordered by their absolute magnitude and omitted those smaller than 0.5 in absolute value.

Appendix 1: Principal Component Analysis

Table A1: Accuracy of PCA by periods

	1870-1929	1930-1972	1973-1984	1985-2010
Matrix correlation determinant	0,005	0,001	0,000	0,005
Sampling adequacy Kaiser-Meyer-Olkin.	0,6	0,8	0,6	0,5
Bartlett's Test of Sphericity				
Chi-square aprox	259,4	264,9	61,4	109,4
Sig.	0,000	0,000	0,000	0,000

Source: Own elaboration

Initial component matrix and Rotated component by periods

	1870-1930						1931-1972			
	Component matrix (a)			Rotated component matrix (b)			Component matrix (a)		Rotated component matrix (b)	
	1	2	3	1	2	3	1	2	1	2
CIM	-0.78	-0.05	-0.26	-0.79	0.08	-0.21	-0.91	-0.33	-0.92	-0.30
INFLA	0.02	0.73	-0.29	0.11	0.74	-0.24	-0.79	-0.16	-0.73	-0.36
IDEMO	-0.56	-0.33	0.00	-0.60	-0.24	0.01	0.81	-0.42	0.39	0.82
GINI	0.94	0.07	-0.08	0.94	-0.06	-0.14	0.87	-0.07	0.65	0.58
SDCIM	0.87	0.04	-0.05	0.86	-0.08	-0.11	0.65	0.57	0.87	-0.06
SDINFLA	-0.38	0.78	0.20	-0.25	0.80	0.28	0.87	0.25	0.84	0.34
SDDEMO	-0.06	0.05	0.95	0.01	-0.02	0.95	-0.51	0.65	-0.01	-0.83
SDGINI	0.93	-0.04	0.05	0.91	-0.17	-0.01	0.65	-0.44	0.24	0.74

(a) Extration method: PCA.

(b) Rotation method: Varimax & Kaiser normalization.

Initial component matrix and Rotated component by periods (cont)

	1973-1985						1985-2010					
	Component matrix (a)			Rotated component matrix (b)			Component matrix (a)			Rotated component matrix (b)		
	1	2	3	1	2	3	1	2	3	1	2	3
CIM	-0.93	-0.24	0.04	-0.95	0.03	-0.09	-0.22	0.75	0.26	-0.33	0.15	0.74
INFLA	-0.76	0.42	-0.18	-0.58	0.54	-0.41	-0.86	-0.14	-0.08	-0.77	-0.36	-0.19
IDEMO	-0.19	-0.86	-0.34	-0.39	-0.84	-0.17	0.75	-0.28	-0.10	0.74	0.21	-0.26
GINI	0.88	0.31	0.04	0.93	0.07	0.14	0.83	0.19	0.08	0.73	0.37	0.23
SDCIM	-0.60	0.73	0.08	-0.35	0.86	-0.20	0.66	0.09	-0.61	0.40	0.76	-0.28
SDINFLA	0.95	-0.09	-0.15	0.89	-0.37	0.06	0.64	-0.52	0.46	0.87	-0.37	-0.10
SDDEMO	0.71	0.31	-0.23	0.80	0.04	-0.15	0.36	0.48	0.69	0.40	-0.08	0.82
SDGINI	0.17	-0.25	0.91	-0.02	-0.03	0.96	0.33	0.60	-0.47	0.00	0.81	0.18

(a) Extration method: PCA.

(b) Rotation method: Varimax & Kaiser normalization.