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Abstract
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Contract Enforcement and Argentina's Long-Run Decline

Argentina has slipped from being among the ten richest countries in the world by the eve of World War I to its current position close to developing countries. Why did Argentina fall behind? In this paper we employ a structural model to investigate the extent to which contract enforcement, as captured by Clague, Keefer, Knack, and Olson's "Contract Intensive Money", conditioned broad capital accumulation and economic growth in Argentina and, consequently, the country's relative international position. Our results suggest that poor contract enforcement played a major role in Argentina's unique experience of long-run economic decline.

How has Argentina, a country which occupied a position among the ten richest countries in the world in terms of income per capita in the period 1880-1929, slipped to its current place in the ranking, closer to that of Turkey than to Western Europe's?

Argentina began to lose ground compared with Australia and Canada, countries whose development was also largely due to the exploitation of natural resources and the exports of staple goods, in the late nineteenth century[1]. That is, before the dates (the First World War, the Great Depression and the post-World War II era) with which, up to now, economic historians signaled the beginning of Argentina's retardation[2]. However, it was not until the second half of the twentieth century, and in particular during its last quarter, when she fell behind definitively[3]. Why was Argentina not able to catch up with Australia and Canada during the twentieth century? Why did Argentine drop back? are questions that still await a definitive answer.

Investment, as a means of rising capital intensity, is, according to the neo-classical explanation of growth, the way to increase output per person. However, the increase in both

human and physical capital depends, ultimately, on the existence of a set of incentives provided by institutions[4]. In this paper we investigate the extent to which poor contract enforcement conditioned broad capital accumulation and economic growth in Argentina and, consequently, the country's relative decline.

How to measure the connections between institutions, 'a construct of the human mind', and investment and growth represents a major challenge[5]. Christopher Clague, Philip Keefer, Stephen Knack, and Mancur Olson suggested a way of measuring compliance with contracts and the security of property rights, which they define as "contract intensive money" [henceforth, *CIM*] and is equal to the percentage of deposits in the money supply (M2)[6]. The idea behind this indicator is that the way financial assets are held depends on the definition of property rights. When economic agents think they are operating in a stable context, in which property rights are well defined and guaranteed, it is not risky to keep assets in deposit accounts and, consequently, cash becomes a less attractive option. Therefore the proportion of deposits in the money supply will tend to increase. Better contract enforcement will encourage investment and, hence, lead to a higher rate of growth. The opposite situation would be caused by a poorly defined institutional framework.

In the paper we observe that the *CIM* measure is closely associated to economic freedom, political stability, and financial development, and can be interpreted as an indicator of contract enforcement[7]. The long-run association between contract enforcement, as measured by *CIM*, broad capital accumulation and growth in Argentina is investigated with a system of structural equations. Our results suggest that poor contract enforcement played a major role in Argentina's unique historical experience of economic decline.

In the rest of the article we survey interpretations of the origins of Argentina's comparative retardation (section 2), examine quantifiable institutional indicators and find that *CIM* is positively associated with them and can be represented as a measure of contract

enforcement (section 3). Later, we investigate the determinants of growth using a structural model which includes *CIM* (section 4). To conclude we explore the counterfactual scenario of how different Argentina's growth would have been if, in terms of contract enforcement, she had been closer to Australia and Canada (section 5).

When and why did Argentina begin to decline?

Argentina, Australia and Canada are often compared as they are all considered *areas of new settlement,* countries which became exporters of primary goods under British influence and followed similar paths between the end of the nineteenth century and the mid-twentieth century. These large, scarcely populated countries were blessed with supplies of natural resources which gave them a privileged international position despite the fact that they were geographically distant from the centers of economic activity[8].

Graph 1 presents Argentina's performance relative to Australia and Canada, in terms of product per person (expressed as its difference in natural logarithms). We have used purchasing power parity adjusted GDP per capita expressed in 1913 US relative prices for the period 1875-1939, and 1980 US relative prices for the period 1940-2001[9]. The levels of real product per person for 1913 and 1980 are taken from Leandro Prados de la Escosura[10]. The volume indices used to project these benchmarks back and forth over for the whole period are taken from Angus Maddison, except for the period 1875-1935 in Argentina, for which we used Roberto Cortés Conde's GDP reconstruction[11]. Argentina caught up rapidly with Australia and Canada until the late nineteenth century when Argentina's relative position began to stagnate and the decline set in (although occasionally drawing level with Canada until the 1930s). A significant, negative structural break took place in 1974 after which Argentina fell further and further behind[12].

Why was Argentina not able to maintain its relative position to Australia and Canada? What was the cause of Argentina's progressive decline? are recurrent questions which historians and economists have been trying to answer for some time.

The origins of Argentina's falling behind have been the object of much attention and battery of mostly untested explanations has been proposed. The definitive closing of the frontier was, according to Guido Di Tella and Manuel Zymelman, the main difference between Argentina and the other areas of new settlement as no adequate alternatives to compensate for the end of geographical expansion were found[13]. Christopher Platt and Guido Di Tella pointed to the political tradition and immigration origins as the key differential factors, while Carlos Díaz Alejandro suggested that a restrictive immigration policy, similar to Australia's, by encouraging the relative scarcity of labor would have increased productivity[14]. Institutions have been blamed for Argentina's falling behind. Tim Duncan and John Fogarty argued that the contrast between the stable, flexible government of Australia and the bad government of Argentina is the crucial difference[15]. In Carl Solberg's influential view, while the policy of land distribution led to a large number of small farmers in Canada, in Argentina resulted in a small number of landowners with large plots of land with the consequence of higher wealth inequality[16]. Moreover, the erosion of the rule of law since the 1930s is at the roots of Argentina's slide from the Core into the Periphery[17].

Demography also seems to have had a part in Argentine's falling behind. Alan Taylor pointed that the relatively high dependency rate and the slow demographic transition in Argentina led to lower savings rates than in Australia and Canada[18]. If Argentina's dependency rate had been similar to the average of those of Australia and Canada, her savings rate would have doubled. Much of the capital entering the country would do so as a reaction to such low savings rates[19]. Argentina depended on foreign capital, so the First World War and the subsequent 'de-globalization' reduced the capital inflow and had a negative impact on both capital formation and economic growth, giving rise to the beginning of her historical retardation[20].

Industrialization policy seems to matter for Argentina's differential performance in the Interwar years. In Argentina, an import substitution industrialization (ISI) strategy was in sharp

contrast with the export led growth strategy favored by Canada. From the thirties onwards, capital accumulation was hampered by the relatively high prices of (mostly imported) capital goods, which was the result of an industrial policy of import substitution[21]. Multiple exchange rates, a black market for foreign currencies, the depreciation of the national currency and high customs tariffs were the underlying distorting factors behind the high relative prices of capital goods[22]. The resultant lower capital intensity, in turn, would explain the lower rates of labor productivity achieved by Argentina in comparison with Australia and Canada.

Property rights of land that promoted inequality, the erosion of rule of law, a high demographic burden, permissive immigration policy, and ISI strategy, appear among the main explanatory hypotheses of Argentine's falling behind. We will make an effort to quantifying the institutional framework in which they developed and exploring the relationship between institutions, broad capital accumulation, and economic growth.

Measuring institutions

In an attempt to define the institutional framework and measure its influence, Clague et al. proposed an indicator known as 'Contract Intensive Money' (*CIM*) which represents the money kept in deposits as a proportion of the money supply:

$$CIM = (M2-C)/M2 \qquad \text{(I)}$$

Where *C* is currency outside banks and *M2* is the money supply including current and term deposits[23].

The rationale that lies beneath this indicator is that when economic agents trust that contracts will be respected and do operate in an environment considered to be safe, they hold a larger proportion of their money as deposits, so the *CIM* indicator tends to increase. *CIM* measures the proportion of transactions that rely on third-party enforcement and, hence, provides an indicator of the security of property rights[24]. If contracts are enforced, a favorable atmosphere for investment is created. In this environment the rate of capital formation will tend to rise,

leading to economic growth. It follows that there should be a positive association between *CIM*, the investment rate and growth[25].

Another institutional dimension to be considered is economic freedom. High public spending, import substitution, hyperinflation, and large gaps between the official and the market exchange rates are restrictions to economic liberty that have occasionally featured Argentine economic history. In order to take them into account we have constructed a 'Reduced' Index of Economic Freedom [henceforth *RIEF*][26]. The components of *RIEF* are, public consumption (*Gi*) as a proportion of total consumption (that is, private consumption, *Ci*, plus *Gi*) (*Gi*/(*Gi*+*Ci*)), the 'depreciation in the real value of money' (*inflation rate*/100+*inflation rate*), weighted nominal protection (*tariff*), and the difference (in logs) between the official exchange rate and the market rate ('*black market'*). To compute *RIEF* we have used factorial analysis, based on the principal components method, and the results appear in Table 1. The variables appear in the first component with positive weightings, which indicates that they are inversely related with economic freedom, so we had to multiply the value of each variable by -1 to obtain the components' values in the 'reduced' index. *RIEF* was calculated as a linear combination of these four variables, with the shares of the values obtained by factorial analysis for each component as a proportion of their total value as their respective weightings[27].

There are other institutional aspects that can be approached indirectly through quantitative indicators. Such are the cases of institutional instability, the degree of democratization, income distribution, or financial development. Institutional stability is a very elusive variable and we have proxied it by the length of tenure of Supreme Court justices (Iaryczower, Spiller and Tommasi 2002) [*Supreme*, hereafter]. As for the democracy indicator we resorted to Polity IV, in particular, the political index, *Polity2*[28]. Financial development has been also pointed as a crucial institutional dimension of growth and we approximated by the ratio of money supply (M2) to GDP [*Depth*, thereafter][29]. Lastly, we explored the connection between income inequality and

growth. Income inequality has been associated to growth: either negatively, if it is linked to social instability which, in turn, would impinge on investment and, hence, on growth, or positively, if it is associated to the higher savings propensity of those at the top of the income distribution[30]. Lack of quantitative historical evidence from which constructing income distribution measures led Jeffrey Williamson to propose an 'inequality index' defined as the ratio between GDP per worker and unskilled wage [*INEQ,* thereafter] that has been adopted here[31]. The rationale for the index is that while the numerator captures returns to all factors of production per worked hour, the denominator only encapsulates returns for raw labor, whose property is far more widespread than that of any other factor[32].

Is there a long-term relationship between *CIM*, and economic freedom, institutional stability, income distribution, and financial development? (Graphs 2-7). To provide an answer we have carried out an exhaustive analysis of the cointegration between CIM and each of these variables individually considered. The conventional approach assumes that cointegration vectors are time-invariant. However, there is the possibility of a general type of cointegration, where the cointegrating vector is allowed to change at an unknown single break during the sample period[33]. A structural brake would be reflected by a change either in the intercept, in the slope, or in the regime in which the variables are relating to each other.

The results, presented in the Appendix, provide empirical support for the presence of cointegration. The variables which represent economic freedom (*RIEF*), financial development (*DEPTH*), institutional stability *(Supreme)* and income inequality (*INEQ*) are individually cointegrated with *CIM* in a Gregrory-Hansen sense[34]. In particular, different models report that cointegration between *CIM* and *RIEF*, *DEPTH*, and *Supreme* is present with a break point in 1960, 1946, and 1942, respectively.

The fact that a cointegration relationship has been found means that each of these variables has a common trend with *CIM* and, hence, a stable short-run relationship can be

established which leads us to develop a Granger causality test between *CIM* and the rest of the variables. The results presented in the Appendix suggest that *RIEF*, *DEPTH*, *Supreme*, and *INEQ* are individually 'causing' *CIM*. Thus, we can conclude that *CIM* may be consider as a variable that summarizes, and is caused by, variables such as economic freedom, institutional stability, income distribution, and financial development.

In order to explore the kind of association established between CIM and the rest of variables we can now proceed with a cointegration analysis to test the existence of a long run relationship between *CIM*, as the dependent variable, and *RIEF*, *DEPTH*, *Supreme* and *INEQ* as the explanatory variables so *CIM* is modeled as an endogenous variable.

Instead of using extensions of the Gregory-Hansen method for the case of multiple breaks, which would induce us to search for the breaks in an endogenous way again (see Bai and Perron 1998) we have accepted the breaks founded in the previous analysis of the individual relationship between CIM and its explanatory variables[35]. Nevertheless, we have chosen the combination of breaks that reports the best adjustment in the model based on the F-statistic and on the AIC selection criteria.

The results shown in Table 3 confirm the existence of a cointegration relationship between this set of variables which are the fundamental determinants of *CIM*'s long-run behavior. Furthermore, the sign of this correlation changes from mid-twentieth century onwards as the cointegration shifted to a new long-run relationship. A change of regime occurred since 1960 in the long-run relationship between *RIEF* and *CIM* and, henceforth, *RIEF* exhibited a slightly negative relationship with *CIM*. Thus, a 10 percent increase in *RIEF* would raise *CIM* by 0.9 percent before 1960 while, thereafter, a similar increase would reduce *CIM* by 0.2 percent. A similar finding is found from 1942 onwards for the long run relationship between *CIM* and *Supreme*. It can be shown, then, that a 10 percent increase in *Supreme* rises *CIM* by 0.6 percent up to 1942, while reduces it by 0.2 percent thereafter. A positive association is found between

both *DEPTH* and *INEQ*, and *CIM*. Thus, a 10 percent rise in *DEPTH* would increase *CIM* by 1.3 percent, while a similar increase in *INEQ* leads to a 0.8 percent increment in *CIM*. Since 1960 the financial development, *DEPTH*, and income distribution, *INEQ*, variables became the main determinants of the positive trend observed in *CIM* up to the end of the twentieth century, offsetting the decline in economic freedom, *RIEF*, and in institutional stability, *Supreme*[36]. Why income inequality is positively associated to contract enforcement poses a most challenging question. Is it because since natural resources were the abundant factor in Argentina, openness, associated to growth, is in a Stolper-Samuelson way, also associated to inequality?[37].

Together with this long-run association we can also derive a short-run relationship, that is, the error correction model associated to the cointegration relationship. The results shown in Table 4 are quite eloquent and confirm the idea that the variation in *CIM* is influenced by deviation (in the previous period) from long-run equilibrium, represented by the parameter $e_{t-1.}$

Moreover, in the short-run, CIM depends on the contemporary and past variations in *RIEF*, *DEPTH*, *Supreme*, and *INEQ*. More specifically, the variation of *CIM* in a particular year would be higher, the larger the change in economic freedom (*RIEF*) (two years before), in the level of democracy (*Polity2*), and in financial development (*DEPTH*). Additionally, an increase in income inequality (*INEQ*), leads to a rise in *CIM*. Conversely, an increase in both *Supreme* and the separation of powers variable (*Separation*) (two years before) leads to a reduction in the variation of *CIM,* which reflects institutional stability[38].

Trends in CIM

Graph 2 offers the evolution of *CIM* in Argentina between 1863 and 2000, while Graph 8 presents its behavior relative to Australia and Canada.

A mildly rising trend in *CIM* took place during the late nineteenth century and the early twentieth century. This was an era of high political stability and formal democratic institutions that concealed authoritarian Governmental practices (Graph 3). Male universal suffrage had been

effective since 1853 but was severely constrained by the requirement of Argentinean citizenship at a time of massive immigration. Electoral fraud and lack of political competition showed in the low electoral turnout[39]. Political stability and the protection of property rights favored, nonetheless, economic progress. *CIM* expansion was interrupted by cyclical drops, the longest one during the Baring crisis. The Baring crisis evidenced the conflict between a high fiscal deficit, the impossibility of maintaining a constant exchange rate and a poorly regulated banking system[40]. The lack of co-ordination between monetary policy and fiscal policy appear as the factor which, in the final analysis, caused the crisis and led to the collapse of the banking system[41]. This situation seems to have led to a marked decrease in *CIM*.

The turn of the century signaled the beginning of a period of economic recovery and political stability which lasted until the First World War while the expansion of *CIM* peaked in 1921. In fact, the highest *CIM* levels are to be found in the Interwar years. Such a favorable evolution of *CIM* coincides with the period in which Argentina enjoyed a transition to an open democracy with an independent judiciary and a clear separation of powers (Alston and Gallo 2006) that is delimited between 1912, when compulsory universal vote for men over 18 years and secret ballot was introduced (Colomer 2004), and the 1930 coup d'etat. Economic policies maintained orthodoxy until the 1930s crisis. Free trade policy continued virtually unaltered[42]. Moreover, between 1890 and 1929 Argentina was anchored to the currency board with the *Caja de Conversión* having as its principal mission to guarantee the currency's value abroad[43].

CIM decreased in the years following 1934, although its value remained high for another decade. This deterioration occurred at the time the foundations of independent judiciary (that is, that justices' preferences show in their decisions without facing Government's retaliation) were eroded as the 1930 coup d'etat was condoned by the Supreme Court and followed by electoral fraud which paved the way for populism and for a departure from a democratic system with checks and balances[44]. This decline in *CIM* might be also associated with changes in

macroeconomic policy. The public sector implemented a policy of balance budget after the Depression, which required new sources of income and reductions in spending[45]. The change in trade policy would also play its part[46]. Exchange controls were introduced and the peso was significantly devalued more than once after the devaluation of the pound in 1931. Quantitative restrictions were also introduced at this time[47]. Inward-looking policies laid the foundations of corporatist policies and populism[48].

Perón's arrival to power in 1946 and his consecutive terms of office coincide with a fall of *CIM* to levels similar to those of the last decade of the nineteenth century. The electoral fraud of the 1930s which led to a popular disbelief in the rule of law, has been argued, help explain Juan Domingo Perón's landslide victory in the first experience of male and female universal suffrage in Argentina[49]. The impeachment of the Supreme Court, as it represented an obstacle to populist policies, and the introduction of the 1949 Constitution destroyed the separation of powers and implied that property rights were no longer maintained through the rule of law (Graph 4).

Early Peronism was a period of macroeconomic shocks during which a strategy of import substitution industrialization was put into practice. Bilateral trade, exchange control and multiple exchange rates were its most important characteristics[50]. The increase in the role of government reflected in the increase in state-owned property, interventionism (including control of rents and prices) and higher levels of public spending, mainly financed by the inflationary tax[51]. The expansive macroeconomic policy, which aimed at the redistribution of wealth and the increase of spending to finance populist policies, led to inflation. Argentina's inability to return to the rule of law translated into political and economic volatility (high inflation, drastic devaluations) during the decades that follow Perón's arrival to power[52]. Instability and lack of economic freedom impinged on *CIM*[53].

CIM did not start its recovery until the late 1960s and it was only in the late 1970s that levels of the early 1930s were regained. The sixties saw a policy change which included an

attempt to face the challenges of inflation, public deficit and foreign debt, as well opening up the economy[54]. Perón's second term of office was characterized by an expansive monetary policy, which resulted in an uncontrolled rise in the level of inflation[55]. Faced by hyperinflation and negative real interest rates, the financial reform of 1977 only achieved short-lived success, which was interrupted by the 1980 crisis[56]. This situation was made worse by the flight of capital, large fiscal and external deficits and, especially, by an enormous foreign debt which would reach record levels in 1982, the year of The Falklands' War[57]. Attempts to control the hyperinflation and carry out fiscal reform in 1983 and the following years resulted in another failure. This situation corresponds with a slump of *CIM* that would only recover over the 1990s when the Menem government brought the hyperinflation under control, established a fixed rate of exchange and introduced deregulation.

The evolution of Argentina's *CIM* relative to Australia's and Canada's provide support for our findings and point to the late nineteenth and early twentieth century, to the post-World War II era (the so called 'Golden Age'), and the late 1980s and early 1990s as the phases in which the gap between Argentina and the two other regions of new settlement deepened (Graph 8).

CIM and economic growth in Argentina

To what extent did contract enforcement influence Argentina's long-run performance? To provide a response we use a structural growth model based on a system of simultaneous equations designed to avoid problems of endogeneity.

Our starting point is a conventional equation in which the level of real product per head is dependent on GDP per capita in the previous period, on the rate of change of the economically active population [EAP] (as an indicator of the growth of labor), on the average enrolment rate in primary and secondary education (to represent the growth of human capital), on the average rate

of investment (as an approximate measure of the growth of physical capital) and, finally, on the rate of variation of the exports ratio to GDP (to indicate how openness changed over time)[58].

In additional equations we have attempted to endogenize each explanatory variable. For example, the investment rate, one of our main variables, is considered as endogenous in Equation 2 and its behavior is specified as dependent on the real interest rate, the relative price of capital goods, per capita GDP growth (lagged one period), the variation in the dependency rate and, finally, on *CIM*. Moreover, we investigate how much does CIM impinge on other variables which are considered endogenous too, such as the EAP variation, education enrollment, and the change in openness.

In the estimation we have employed the seemingly unrelated regression method (SUR) that solves the problem of contemporary correlation between the equations' residuals. The average values of the variables and their standard deviations are shown in Table 2. The econometric results are presented in Table 5. All variables have the expected sign and level of significance. The level of real GDP per head is directly and significantly related to investment and schooling rates and also (though not significantly) to the rate of variation of the EAP. A standard deviation increase in the rate of investment would represent, two periods later, a rise of 1.7 percent in per capita GDP; the same increase in the rate of primary and secondary enrolment, six periods later, would rise per capita GDP by 3.8 percent. From these results we can say that investment in a broad sense, in physical and in human capital, is the main force behind the evolution of the GDP per head in Argentina. Lastly, an increase of standard deviation in the rate of variation of openness would induce a rise of 1.2 percent in the level of income per capita.

It is worth highlighting that the explanatory variables of the level of per capita GDP are influenced by *CIM*. For example, from Equation 2 we can conclude that the lower the real interest rate and the relative price of investment goods (in terms of consumer goods), the higher the proportion of GDP dedicated to capital formation in a previous period, while the larger the

increase in *CIM*, the higher the investment rate. In other words, if the real interest rate and the relative price of capital goods decrease by one standard deviation, the rate of investment would rise by 3.3 and 5.8 percent, respectively[59]. In turn, one standard deviation increase in the level of CIM five periods earlier would raise the rate of investment by 2.6 percent. Thus, the improvement in contract enforcement, captured by *CIM* levels, appears as a one of the major determinant of capital formation in Argentina.

Moreover, these results lend support to the view that attributes the low capital accumulation to a high dependency rate in the 'age of mass migration' and to high relative prices of capital goods since the central decades of the twentieth century[60]. A standard deviation increase in the variation of the dependency rate means a decrease in the rate of investment of about 2.4 percent. Additionally, the level of education enrollment, one of the main variables affecting the level of the GDP per head, would increase of about 1.3 percent as a consequence of an increase of a standard deviation in *CIM*. It also is worth mentioning that the more open the economy and the more developed its financial system, the lower the price of capital goods.

All in all, the results of the estimated system of equations suggest that, in Argentina, contract enforcement and the security of property rights, as measured by *CIM*, would lead to higher rates of human and physical capital accumulation and, thus, to a higher level of per capita GDP.

Concluding Remarks: A Counterfactual Proposition

In this paper we have analyzed the causes of Argentina's long-run decline using a structural model which incorporates contract enforcement in the form of the *CIM* indicator. Our results show that poor contract enforcement and lack of security of property rights hindered investment in broad capital and, consequently, economic growth.

A comparison of *CIM* levels with those of Australia and Canada suggests that, economic agents had less confidence in the compliance of contracts in Argentina (Graph 8). In fact, the

average value of *CIM* for Argentina is 0.70 over 1863-2001, compared with an average of 0.90 and 0.84 for Australia and Canada, respectively. This lower value corresponds with an average lower share of investment in GDP, 15.1 percent for Argentina, compared with 20.8 for Australia and 19.4 percent for Canada (computed for 1885-1998, 1861-2001 and 1870-2001, respectively).

What would have happened if property rights had been better defined and contracts better enforced in Argentina? Would Argentina have caught up with Australia and Canada in terms of material welfare? To provide an answer, we propose a counterfactual exercise which illustrates the contribution of an improvement in *CIM* to investment and, indirectly, to growth: What would have been the effects on rate of investment and education enrollment and, indirectly, on per capita GDP if Argentina's *CIM* would have been equivalent to the average of Australia's and Canada's?

The result of this counterfactual exercise indicates that, *ceteris paribus*, a higher *CIM* would have led to a higher rate of physical and human capital accumulation especially in those periods for which Argentina's deviation from Australia and Canada is larger: 1882-1911, 1946-1972, and 1988-1998 (Table 6). In particular, a higher *CIM* would have increased substantially the investment rate during the second half of the twentieth century. The simultaneous rise of the enrollment and investment rates would increase the pace of economic growth and, thus, reducing the per capita GDP gap with Australia and Canada (Table 7).

Actually, had Argentina reached a *CIM* similar to the average of Australia's and Canada's, she would have kept pace with Australia until 1960 (Graph 9a), and though her decline with respect to Canada would have began in 1940, a substantial deterioration would have not occurred until the 1960s (Graph 9b).

Thus, the case that Argentina's long-run decline has deep institutional roots is supported by the evidence provided here. Better contract enforcement and definition of property rights would have allowed Argentina to keep pace with Australia and Canada until the second half of

the twentieth century. Why her position deteriorated from the 1960s onwards deserves, however, another quantitative and comparative exploration.

APPENDIX

ECONOMETRIC ANALYSIS

What does CIM depend on? In order to provide a formal answer we have carried out a cointegration analysis between CIM and the variables representing economic freedom (RIEF), -a variable constructed through the Principal Component analysis- and financial development (DEPTH) -defined as the percentage of the monetary supply over the GDP. The objective is to find a stable relationship in the long run between CIM and each of these variables which will permit us to test for causality, that is, the direction in which those variables are effecting each other.

To do so and due to the fact that all these variables are integrated of order one (I(1)), as can be seen in Table A.1, we are able to contrast the null hypothesis that there is not a cointegration relation between CIM and each of these two variables[61].

We start with the cointegration analysis between CIM and RIEF. The Augmented Dickey-Fuller test (ADF) applied to the residuals from the cointegration relation shown below does not permit us to reject the null hypothesis because the value obtained is smaller than the critical value at 1% significance (-2.129 and –4.040 respectively)

$$LCIM_t = -11.098 + 0.005*T + 0.142*RIEFt + e_t$$
$$(-8.169) \quad (7.981) \quad (6.304)$$

where the symbol L represents the variables in logarithms, and T is a time-trend variable.

Nevertheless, this result can be due to the existence of a break in the cointegration relation between both variables[62]. If the model is indeed cointegrated with a one-time regime shift in the cointegrating vector, the standard ADF test may not reject the null hypothesis and one could wrongly conclude that there is not long-run relationship. If this is our case, we should be able to find, in a endogenous way, the break which exhibits the minimum value, -the maximum value in absolute terms-, in an ADF test applied to the residuals from the cointegration relation

which contains this particular break. We have to treat the timing of this shift as unknown The structural change would be reflected in changes in the intercept and/or in the slope.

$LCIM_t$= -14.291 + 0.007*T + 0.291*RIEFt – 0.246*DU60 – 0.325*(DU60*$RIEF_t$) + e_t
(-14.228) (13.881) (13.535) (-6.847) (-11.545)

Where DU60 is a dummy variable that represents a change in the level of the relationship after 1960 and (DU60*RIEF) represents a change in the regime for the relationship between CIM and RIEF after 1960, and (*) means rejection at 1% significance.

ADF: Model C: -6,136*
Model C/T –6,112*
Model (none) –6,162*

In fact, that break is founded in 1960 which indicates that a structural change exists in the cointegration relation represented by a change in the level and by a change of regime in the cointegration relationship between CIM and RIEF after that date. Moreover, that break permit us to reject the null hypothesis at 1% of significance what lead us to the conclusion that there exist a cointegration relation in the long run between these variables with a break in 1960.

Moreover, using the residuals from the estimation of the long-run equilibrium relationship and considering this break, we can estimate the error correcting model what allows us to carry out the causality analysis relating to CIM and RIEF.

$$\Delta LCIM_t = \alpha_1 + \alpha_{lcim} e_{t-1} + \sum_{i=1} \alpha_{11}(i) \Delta LCIM_{t-1} + \sum_{i=1} \alpha_{12}(i) \Delta RIEF_{t-1} + \varepsilon_{lcim,t}$$

$$\Delta RIEF_t = \alpha_2 + \alpha_{RIEF} e_{t-1} + \sum_{i=1} \alpha_{21}(i) \Delta LCIM_{t-1} + \sum_{i=1} \alpha_{22}(i) \Delta RIEF_{t-1} + \varepsilon_{RIEF,t}$$

If α_{lcim} is zero and all α_{12} (i)= 0, then it can be said that ΔRIEF does not Granger cause ΔLCIM in the long run. In the same sense, ΔLCIM does not cause ΔRIEF if α_{RIEF}=0 and all α_{22}(i)=0. The results of the estimations are below:

$$\Delta LCIM_t = -0{,}166 e_{t-1} - 0{,}053 \Delta LCIM_{t-1} + 0{,}148 \Delta LCIM_{t-2} - 0{,}003 \Delta RIEF_{t-1} + 0{,}021 \Delta RIEF_{t-2} + 0{,}071 DU60 \Delta RIEF + \varepsilon_{lcim,t} \quad (1)$$

$$\Delta RIEF_t = 0{,}770 e_{t-1} + 0{,}045 \Delta LCIM_{t-1} + 0{,}103 \Delta LCIM_{t-2} - 0{,}087 \Delta RIEF_{t-1} - 0{,}001 \Delta RIEF_{t-2} + 1{,}057 DU60 \Delta RIEF + \varepsilon_{RIEF,t} \quad (2)$$

The Wald test applied to contrast the hypothesis that sustains $\alpha_{lcim}=\alpha_{12}(i)= 0$ permits us to reject the idea that all coefficients are zero and, hence, we can conclude that RIEF Granger cause CIM.

Wald test (1) Ho: $\alpha_{lcim} = \alpha_{12}(i)= 0$
F-stat.= 7.270 (3.96)
Chi-sq.= 29.081 (12.84)

Nevertheless, the Wald test applied to the second equation (equation (2)) indicates that $\alpha_{RIEF}=0$ and all $\alpha_{22}(i)=0$. From this result we conclude that CIM does not Granger cause RIEF.

Wald test (2) Ho: $\alpha_{RIEF} =\alpha_{22}(i)=0$.
F-stat.= 3.783 (3.96)
Chi-sq.= 11.350 (12.84)

What happens with the long-run relationship between CIM and DEPTH? Which variable causes which? Appling a similar approach we did before for CIM and RIEF, we can confirm the idea that there exits a long-run relationship between both variables and that the causality runs from DEPTH to CIM, that is, DEPTH Granger-causes CIM. The results of our analysis are shown below:

Long run relationship between CIM and DEPTH:

$LCIM_t = -5.464 + 0.003*T + 0.153*LDEPTHt+e_t$
(-6.488) (6.068) (3.776)

However, and as it was the case in the analysis of the relationship between CIM and RIEF, we are not able to reject the null hypothesis that sustains that there is not a cointegration relation (the value from the ADF test is of –1.552 respect to a critical value of -4,040 at 1% significance). So, we apply the Gregory-Hansen method to obtain the following results:

$LCIM_t = -13.769 + 0.007*T + 0.087*LDEPTHt – 0.44*DU46 + e_t$
(-15.205) (14.825) (3.083) (-11.869)

Where DU46 is a dummy variable that represents a change in the level of the relationship after 1946.

ADF: Model C: -3.750*
Model C/T –3.735*

Model (none) –3.767*

Finally, we can prove that the results from the causality test are effectively indicating that DEPTH Granger-causes CIM as it can be seen below:

$$\Delta LCIM_t = -0{,}066e_{t-1} + 0{,}153\Delta LCIM_{t-2} - 0{,}069\Delta LDEPTH_{t-1} - 0{,}074\Delta LDEPTH_{t-3} + \varepsilon_{lcim,t} \quad (1)$$

$$\Delta LDEPTH_t = 0{,}101e_{t-1} - 0{,}01\Delta LCIM_{t-1} + 0{,}194\Delta LCIM_{t-2} + 0{,}269\Delta LDEPTH_{t-1} - 0{,}234\Delta LDEPTH_{t-2} + \varepsilon_{ldepth,t} \quad (2)$$

Wald test (1) Ho: $\alpha_{lcim} = \alpha_{12}(i) = 0$
F-stat.= 5.036 (3.96)
Chi-sq.= 15.108 (12.84)

Wald test (2) Ho: $\alpha l_{depth} = \alpha_{22}(i) = 0$
F-stat.= 0.349 (3.96)
Chi-sq.= 1.014 (12.84)

And proceeding in the same way for SUPREME and for INEQ (Inequallity), we have obtained:

$LCIM_t$= -11.947 + 0.0058*T +1.881*LSUPREMEt – 0.163*(DU42*LSUPREMEt) + e_t
(-16.916) (16.283) (12.283) (-10.378)

Where DU42 is a dummy variable that represents a change in the level of regime in the cointegration relationship after 1942.

ADF: Model C: -4.604*
Model C/T –4.585*
Model (none) –4.623*

Finally, we can prove that the results from the causality test are effectively indicating that SUPREME Granger-causes CIM and INEQ as it can seen below :

$$\Delta LCIM_t = -0{,}019e_{t-1} + 0.024 * \Delta LCIM_{t-1} + 0{,}115\Delta LCIM_{t-2} - 0.069 * \Delta LCIM_{t-3} - 0{,}003 * \Delta LSUPREME_{t-1} + 0.005 * \Delta LSUPREME_{t-2} - 0.006 * \Delta LSUPREME_{t-3} + \varepsilon_{lcim,t} \quad (1)$$

$$\Delta LSUPREME_t = 0.466e_{t-1} + 3.564 * \Delta LCIM_{t-1} + 0{,}285\Delta LCIM_{t-2} + 0.956 * \Delta LCIM_{t-3} + 0.249 * \Delta LSUPREME_{t-1} - 0.085 * \Delta LSUPREME_{t-2} - 0.123LSUPREME_{t-2} + \varepsilon_{l\,\mathrm{sup}reme,t} \quad (2)$$

Wald test (1) Ho: $\alpha_{lcim} = \alpha_{12}(i) = 0$
F-stat.= 4.130 (3.96)
Chi-sq.= 16.522 (12.84)

Wald test (2) Ho: $\alpha l_{supreme} = \alpha_{22}(i) = 0$
F-stat.= 1.964 (3.96)
Chi-sq.= 7.856 (12.84)

And the causality test for CIM and INEQ:

$$\Delta LCIM_t = -0{,}219 e_{t-1} + 0.024 * \Delta LCIM_{t-1} + 0{,}213 \Delta LCIM_{t-2} - 0{,}033 * \Delta LINEQ_{t-1} - 0.040 * \Delta LINEQ_{t-2} + \varepsilon_{lcim,t} \quad (1)$$

$$\Delta LRYEAP_t = 0.156 e_{t-1} 0{,}072 * \Delta LCIM_{t-1} + 0{,}013 * \Delta LCIM_{t-2} - 0.006 * \Delta LINEQ_{t-1} - 0.105 * \Delta LINEQ_{t-2} + \varepsilon_{lryeap,t} \quad (2)$$

Wald test (1) Ho: $\alpha_{lcim} = \alpha_{12}(i) = 0$
F-stat.= 4.583 (3.96)
Chi-sq.= 13.750 (12.84)

Wald test (2) Ho: $\alpha l_{ineq} = \alpha_{22}(i) = 0$
F-stat.= 0.743 (3.96)
Chi-sq.= 2.230 (12.84)

Table A1. Cointegration Order of the Variables Considered in the Model.

	LEVELS				First Difference			LEVELS			First Difference			
Variable (logs)	K*	ADF (C)	ADF (C/T)	ADF (None)	ADF (C)	ADF (C/T)	ADF (None)	P-Perron (C)	P-Perron (C/T)	P-Perron (None)	P-Perron (C)	P-Perron (C/T)	P-Perron (None)	Order of Integration
Per Capita GDP	1	-2.656 ***	-3.334 ***	2.601	-12.54	-12.73	-11.905	-2.728 ***	-2.993	2.781	-12.646	-13.116	-11.892	I(1)
EAP	1	-3.464 **	-1.390	5.214	-7.360	-8.282	-3.968	-3.539 *	-1.255	6.609	-8.119	-8.650	-3.904	I(1)
Investment	1	-2.376	-3.392 **	-0.862	-9.519	-9.472	-9.549	-1.775	-2.993	-0.673	-9.858	-9.783	-9.882	I(1)
Enrolment	1	-1.776	-2.103.	-3.496 *	-13.37	-13.46	-12.64	-1.866	-2.174	-4.159 *	-13.840	-14.297	-12.545	I(1)
Variation in Openness	0	-1.994	-2.192	-0.283	-11.25	-11.23	-11.30	-1.806	-2.091	-0.096	-11.756	-11.814	-11.804	I(1)
Interest Rate	3	-2.036	-2.078	-1.177	-7.649	-7.703	-7.681	-6.191	-6.108	-2.452	-13.195	-13.233	-13.270	I(1)
Depreciation	2	-1.911	-2.070	-1.583	-9.376	-9.379	-9.427	-2.444	-2.357	-2.185	-9.360	-9.363	-9.410	I(1)
CIM	0	-1.872	-2.290	-1.262	-12.71	-12.56	-12.689	-1.985	-2.543	-1.225	-12.876	-12.853	-12.761	I(1)
DEPTH	3	-1.857	-2.061	-0.125	-7.938	-7.922	-7.953	-1.712	-2.194	-0.205	-8.815	-8.770	-8.862	I(1)
RIEF	2	-0.981	-2.357	-0.889	-9.453	-9.406	-9.416	-0.856	-3.104	-0.809	-13.826	-13.750	-13.579	I(1)
Supreme	1	-3.225 **	-3.215	-1.263	-7.374	-7.380	-7.402							I(1)
INEQ	3	-0.298	-1.268	1.061	-8.010	-8.103	-7.906	-0.226	-1.390	2.179	-13.651	-14.253	-12.848	I(1)

* significant at 1%;
** significant at 5%;
*** significant at 10%

Sources

Argentina

'*Black Market*' (official-market exchange rate deviation, in logs), 1913-1984, IEERAL, "Estadísticas"; since 1985, Vázquez-Presedo, *Estadísticas Históricas*.

Consumption, Total and Government (ratio to GDP), Della Paolera et al., "Historical Statistics".

Contract Intensive Money (*CIM*) [(M2-C)/M2], 1863-91, Cortés Conde, "Fiscal Crisis"; 1892-1948, Della Paolera et al., "Historical Statistics"; since 1948, IMF, *Financial Statistics*. Adjusted to IMF levels of M2 and C (currency in circulation).

Dependency Rate, (percentage of population below 15 and above 64 over population ages 15 to 64), 1875-1900, Mitchell, *Historical Statistics*; since 1900, Astorga et al., "Latin American Database."

'*Depreciation in the Real Value of Money'* (inflation rate/(100+inflation rate), Della Paolera et al., "Historical Statistics".

Economically Active Population, 1875-1900, Mitchell, *Historical Statistics*; since 1900, Astorga et al., "Latin American Database."

'*Financial Depth*' (ratio of money supply, M2 to GDP), M2 as for CIM; GDP at current prices, Della Paolera et al., "Historical Statistics".

Gross Domestic Product (GDP), at current prices, Della Paolera et al., "Historical Statistics"; at constant prices, 1875-1935, Cortés Conde, *economía argentina*; since 1935, Maddison, *World Economy*.

Interest Rate (1875-93, returns to public bonds; 1913-33, banking discount rate), 1875-1930: Della Paolera, "Experimentos"; 1930-1950, Della Paolera y Ortiz, "Dinero"; 1950-1973, Vitelli, *lógicas*; since 1973, IMF, *Financial Statistics*. Real interest rate obtained by adjusting the nominal interest rate by inflation.

INEQ, Real Income Inequality (ratio of real GDP per EAP to real wage rates), Real GDP and EAP from the sources quoted above. Real wages from Williamson, "Global Markets', and ILO, *Statistical Yearbooks*.

Investment Rate (investment ratio to GDP), Della Paolera et al., "Historical Statistics".

'*Openness*' (exports ratio to GDP), Della Paolera et al., "Historical Statistics"; since 1985, Vázquez-Presedo, *Estadísticas Históricas*.

Population, 1875-1900, Mitchell, *Historical Statistics*; since 1900, Astorga et al., "Latin American Database."

Polity2, this index ranges from high autocracy (-10) to high democracy (+10), Marshall and Jaggers, *Polity IV Project.*

Primary and Secondary Enrolment (proportion of population ages 5-18 in primary and secondary school), *Mitchell,* Historical Statistics; since 1900, Astorga et al., "Latin American Database."

'Reduced' Index of Economic Freedom' (*RIEF*), is an index whose components are public consumption (*Gi*) as a proportion of total consumption (*Gi*/(*Gi*+*Ci*)), the 'depreciation in the real value of money' (*inflation rate*/100+*inflation rate*), weighted nominal protection (*tariff*), and the difference (in logs) between the official exchange rate and the market rate ('*black market*'). The index is derived through the principal components method.

Relative Price of Capital Goods (the investment deflator ratio to the consumption deflator, in logs), Della Paolera et al., "Historical Statistics".

Separation of Powers, a dummy variable that takes value 1 when there is separation between legislative, executive, and judicial powers, and 0 otherwise, computed from Alston and Gallo, "Rule of Law", Figure IV.

Supreme Court Justices' Length of Tenure, number of years, kindly supplied by Pablo Spiller.

'*Tariff*' (Nominal weighted tariff, i.e., ratio of tariff revenues to imports' values), Della Paolera et al., "Historical Statistics"; since 1985, Vázquez-Presedo, *Estadísticas Históricas.*

Terms of Trade (ratio of export price to import price), Williamson (private communication), 1870-1913; Della Paolera et al., "Historical Statistics", 1913-84, since 1984, IMF, *Financial Statistics*.

Australia

Contract Intensive Money (*CIM*) [(M2-C)/M2], 1863-1948, Vamplew, *Australians*; since 1948, IMF, *Financial Statistics*. Adjusted to IMF levels of M2 and C (currency in circulation).

Investment rate (investment ratio to GDP), Vamplew (1987); since 1970, OECD, *National Accounts*.

Canada

Contract Intensive Money (*CIM*) [(M2-C)/M2], 1863-1948, Statistics Canada, *Historical Statistics*; since 1948, IMF, *Financial Statistics*. Adjusted to IMF levels of M2 and C (currency in circulation).

Investment rate (investment ratio to GDP), 1870-1926, Urquhart, "New Estimates"; 1926-1970, Statistics Canada, *Historical Statistics*; since 1970, OECD, *National Accounts*.

REFERENCES

Adelman, Jeremy. *Frontier Development. Land, Labour, and Capital on the Wheatlands of Argentina and Canada, 1890-1914*. Oxford: Clarendon Press, 1994.

Alesina, Alberto and Roberto Perotti. "Income Distribution, Political Instability, and Investment". *European Economic Review* 40 (1996): 1203-28.

Alhadeff, Peter. "Economic Controversies." In *The Political Economy of Argentina: 1880-1946*, edited by D.C.M. Platt and Guido Di Tella, ch. 6. London: Macmillan/ St. Antony´s College, 1986.

Alston, Lee J. and Andrés A. Gallo. "The Erosion of the Rule of Law in Argentina 1930-1947." Institute of Behavioral Sciences, University of Colorado, 2003.

Alston, Lee J. and Andrés A. Gallo. "The Erosion of Checks and Balances in Argentina: An Explanation for Argentina's Economic Slide from the Top Ten." Institute of Behavioral Sciences, University of Colorado, 2006.

Astorga, Pablo, Ame R. Bergés, and E.V.K. Fitzgerald. "The Oxford Latin American Economic History Database." The Latin American Centre at Oxford University, 2003. ***http://oxlad.qeh.ox.ac.uk/***

Bai, Jushan and Pierre Perron. "Estimating and Testing Linear Models with Multiple Structural Changes". *Econometrica* 66 (1998): 47-78.

Barro, Robert J. "Inequality and Growth in a Panel of Countries". *Journal of Economic Growth* 5 (2000): 5-32.

Berensztein, Sergio and Horacio Spector. "Business, Government, and Law". In *A New Economic History of Argentina*, edited by Gerardo Della Paolera and Alan M. Taylor, 324-68. Cambridge: Cambridge University Press, 2003.

Bueno De Mesquita, Bruce and Hilton L. Root. “When Bad Economics is Good Politics.” In *Governing for Prosperity,* edited by Bruce Bueno de Mesquita and Hilton L. Root, 1-16. New Haven: Yale University Press, 2000.

Cantón, Dario. *Elecciones y partidos políticos en la Argentina. Historia, interpretación y balance: 1910-1966*. Buenos Aires: Siglo XXI, 1973.

Clague, Christopher, Philip Keefer, Stephen Knack, and Mancur Olson. “Contract-Intensive Money: Contract Enforcement, Property Rights, and Economic Performance.” *Journal of Economic Growth* 4 (1999): 181-211.

Collins, W.J. and J.G.Williamson. “Capital Goods Prices and Investment,1870-1950.” This Journal 61, no. 1(2001): 59-94.

Colomer, Josep M. (2004). “Taming the Tiger. Voting Rights and Political Instability in Latin America.” *Latin American Politics and Society* 46, 2: 29-58.

Cortes Conde, Roberto. *La economía argentina en el largo plazo (siglos XIX y XX)*. Buenos Aires: Editorial Sudamericana, 1997.

_____. “Fiscal Crisis and Inflation in XIX Century Argentina.” Documento de Trabajo nº 18, Universidad de San Andrés, 1998a.

_____. *Progreso y declinación de la economía argentina*. Buenos Aires: Fondo de Cultura Económica, 1998b.

Della Paolera, Gerardo. “Experimentos monetarios y bancarios en Argentina: 1861-1930.” *Revista de Historia Económica* 12, no. 3 (1994): 539-90.

Della Paolera, Gerardo and Javier Ortiz. “Dinero, intermediación financiera y nivel de actividad en 110 años de historia económica argentina.” Documentos de Trabajo, Universidad Torcuato Di Tella, 1995.

Della Paolera, Gerardo and Alan M. Taylor. "Economic Recovery from the Argentine Great Depression: Institutions, Expectations and the Change of Macroeconomic Regime." This Journal 59, no. 3 (1999): 567-99.

_____. *Straining at the Anchor. The Argentine Currency Board and the Search for Macroeconomic Stability, 1880-1935*. Chicago: University of Chicago Press, 2001.

_____, eds. *A New Economic History of Argentina*. New York: Cambridge University Press, 2003.

Della Paolera, Gerardo, Alan M. Taylor and Carlos G. Bózolli (), "Historical Statistics." In *A New Economic History of Argentina*, edited by Gerardo Della Paolera and Alan M. Taylor, 376-85 (plus CD-Rom). Cambridge: Cambridge University Press, 2003.

Della Paolera, Gerardo, María Alejandra Irigoin and Carlos G. Bózolli. "Passing The Buck: Monetary and Fiscal Policies in Argentina: 1953-1999." In *A New Economic History of Argentina*, edited by Gerardo Della Paolera and Alan M. Taylor, 46-86. Cambridge: Cambridge University Press, 2003.

Díaz Alejandro, Carlos F. "Precios Relativos y Formación de Capital en la República Argentina." Documento de Trabajo no. 29, Instituto Torcuato Di Tella, 1965.

_____. *Essays in Argentine Economic History*. New Haven, Yale University Press, 1970.

_____. "Argentina, Australia and Brazil before 1929." In *Argentina, Australia and Canada: Studies in Comparative Development, 1870-1965*, edited by D.C.M Platt and Guido Di Tella, 95-109. London: Macmillan/ St. Antony´s College, 1985.

Di Tella, Guido. "Economic Controversies in Argentina from the 1920s to the 1940s." In *The Political Economy of Argentina: 1880*-1946, edited by D.C.M Platt and Guido Di Tella, 120-132. London: Macmillan/ St. Antony´s College, 1986.

Di Tella, Guido and Rudi Dornbusch, eds. *The Political Economy of Argentina, 1946-1983*. Pittsburgh: University of Pittsburgh Press, 1989.

Di Tella, Guido and Manuel Zymelman. *Las etapas del desarrollo económico argentino*. Buenos Aires: Editorial Universitaria de Buenos Aires, 1967.

_____. *Los ciclos económicos argentinos*. Buenos Aires, Paidós, 1973.

Duncan, Tim and John Fogarty. *Australia and Argentina: on Parallel Paths*. Victoria, Melbourne University Press, 1984.

Ferns, H.S., Ezequiel Gallo and Melville Watkins. "*The Prairies and the Pampas*: A Review Colloquium". *Business History Review* 67 (1993): 279-99.

Ferrer, Aldo. *La economía argentina*. Buenos Aires: Fondo de Cultura Económica, 1996.

Gallo, Ezequiel. *La pampa gringa. La colonización agrícola de Santa Fe, 1870-1879*. Buenos Aires: Editorial Sudamericana, 1983.

Gerchunoff, Pablo, and Lucas Llach. *El ciclo de la ilusión y el desencanto: Un siglo de políticas económicas argentinas*. Buenos Aires: Ariel, 1998.

Gregory, A. W. and Hansen, B. E.. "Residual-Based Test for Cointegration in Models with Regime Shifts". *Journal of Econometrics* 70 (1996): 99-126.

Gwartney, James and Robert Lawson. "The Concept and Measurement of Economic Freedom." *European Journal of Political Economy* 19 (2003): 405-30.

Hansen, B.E.. "Tests for Parameter Instability in Regressions with I(1) Processes." *Journal of Business and Economic Statistics*, 10, no. 3 (1992): 321-36.

Iaryczower, Matías, Pablo T. Spiller and Mariano Tommasi. "Judicial Independence in Unstable Environments, Argentina 1935-1998". *American Journal of Political Science* 46, no. 4 (2002): 699-716.

International Labor Office (ILO), *Statistical Yearbooks* (various years).

nstituto de Estudios Económicos sobre la Realidad Argentina y Latinoamericana (IEERAL). "Estadísticas de la evolución económica de Argentina 1913-1984." *Estudios* 9 (1986): 103-84.

International Monetary Fund [IMF]. *International Financial Statistics* CD-Rom. Washington D.C.: International Monetary Fund, 2003.

Kaldor, Nicholas. "Alternative Theories of Distribution". *Review of Economic Studies* 23 (1956): 83-100.

Knack, Stephen and Philip Keefer. "Institutions, and Economic Performance: Cross Country Test Using Alternative Institutional Measures." *Economics and Politics* 7 (1995): 207-27.

Kydland, Finn E. and Carlos E.J.M. Zarazaga. "Argentina's Lost Decade." *Review of Economic Dynamics* 5, 1 (2002): 152-65.

Maddison, Angus. *The World Economy: Historical Statistics*. Paris: OECD, 2003.

Mankiw, N. Gregory, David Romer and David N. Weil. "a Contribution to the Empirics of Economic Growth." *Quarterly Journal of Economics* CVII, 2 (1992): 407-37.

Marshall, M.G., Jaggers, K., 2002. *Polity IV project*. University of Maryland, College Park www.cidcm.umd.edu/inscr/polity

Mitchell, B. R. *International Historical Statistics. The Americas, 1750-1988*. New York: Stockton Press, 1995.

North, Douglass C. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press, 1990.

O'Connell, Arturo. "Free Trade in One Country: The Case of Argentina in the 20´s." In *The Political Economy of Argentina: 1880-1946*, edited by D.C.M. Platt and Guido Di Tella, ch. 5. London: Macmillan/ St. Antony´s College, 1986.

OECD. *OECD National Accounts*. Geneva: OECD, 2004. ***http://www.oecd.org/***

Persson, Torsten and Guido Tabellini. "Is Inequality Harmful for Growth?." *American Economic Review* 84, 3 (1994): 600-21.

Platt, D.C.M and Guido Di Tella, eds. *Argentina, Australia and Canada: Studies in Comparative Development, 1870-1965*. London: Macmillan/ St. Antony´s College, 1985.

_____, eds. *The Political Economy of Argentina: 1880-1946*. London: Macmillan/ St. Antony´s College, 1986.

Prados de la Escosura, Leandro. "International Comparisons of Real Product, 1820-1990: An Alternative Data Set." *Explorations in Economic History* 37, no. 1 (2000): 1-41.

Prados de la Escosura, Leandro. "Inequality and Poverty in Latin America. A Long-run Exploration". In *Comparative Economic History*, edited by T.J. Hatton, K.H. O'Rourke, and A.M. Taylor. Cambridge, MA: MIT Press, 2007.

Rock, David. *Argentina 1516-1987. From Spanish Colonization to Raúl Alfonsín*. Berkeley-Los Angeles: University of California Press, 1987.

Sánchez-Alonso, Blanca (2000). "Those Who left and Those Who Stayed Behind: Explaining Emigration from the Regions of Spain, 1880-1914." This Journal 60, no. 3: 730-55.

Sánchez-Alonso, Blanca. “Was Restrictive Argentina’s Immigration Policies in the Early twentieth Century?” (mimeo).

Sanz-Villarroya, Isabel. “Las tendencias a largo plazo de la economía argentina: 1875-2000.” *Revista de Historia Económica* 22, no. 1 (2004): 177-205.

_____. “The Convergence Process of Argentina with Australia and Canada: 1875-2000.” *Explorations in Economic History* 42, (2005), 439-458.

Solberg, Carl E. *The Prairies and the Pampas: Agrarian Policy in Canada and Argentina: 1880-1930*. Stanford, Stanford University Press, 1987.

Statistics Canada (2004), *Historical Statistics of Canada* ***http://www.statcan.ca/***

Sylla, Richard and Peter Rousseau. “Financial Systems, Economic Growth, and Globalization.” In *Globalization in Historical Perspective*, edited by Michael D. Bordo, Alan M. Taylor and Jeffrey G. Williamson, 373-413. Chicago: University of Chicago Press, 2003.

Taylor, Alan M. “External Dependence, Demographic Burdens and Argentine Economic Decline after the Belle Époque.” This Journal 52, no. 4 (1992): 907-36.

_____. “Tres Fases del Crecimiento Económico Argentino.” *Revista de Historia Económica* 12, no. 3 (1994): 649-83.

_____. “Argentina in the World Capital Market: Saving, Investment and the International Capital Mobility in the Twentieth Century.” *Journal of Development Economics* 57, no. 1 (1998a): 147-84.

_____. “On the Cost of Inward-Looking Development: Price Distortions, Growth and Divergence in Latin America.” This Journal 58, no. 1 (1998b): 1-19.

Taylor, Alan M. and J.G. Williamson. “Capital Flows to the New World as an Intergenerational Transfer.” *Journal of Political Economy* 102, no. 2 (1994): 348-71.

Timmer, Ashley S. and Jeffrey G. Williamson. “Immigration Policy Prior to the 1930s: Labor Markets, Policy Interactions and Globalization Backlash.” *Population and Development Review* 24, no. 4 (1998): 739-71.

Urquhart, M.C.. “New Estimates of Gross National Product, Canada, 1870-1926: Some Implications for Canadian Development.” In *Long-term Factors in American Economic Growth*, edited by Stanley L. Engerman and Robert E. Gallman, 9-94. NBER Studies in Income and Wealth, 51. Chicago: University of Chicago Press, 1986.

Vamplew, Wray. *Australians: Historical Statistics*. Canberra: Fairfax, Syme and Weldon, 1987.

Vázquez-Presedo, Vicente. *Estadísticas Históricas Argentinas: Suplemento (1970-1990)*. Buenos Aires: Macchi, 1994.

Vitelli, Guillermo. *Las lógicas de la economía argentina: inflación y crecimiento*. Buenos Aires: Prendergast, 1990.

Williamson, Jeffrey G. “The Evolution of Global Markets since 1830: Background Evidence and Hypotheses.” *Explorations in Economic History* 32, no. 1 (1995): 141-96 (updated).

Williamson, Jeffrey G. “Land, Labor and Globalization in the Third World 1870-1940.” This Journal 62, no. 1 (2002): 55-85.

Table 1.

Principal Components Analysis to Construct the 'Reduced' Index of Economic Freedom (RIEF)

	Public Consumption/Total Consumption	*Real Depreciation of Money*	*Weighted Nominal Protection*	*'Black market'*
Factor 1	0.959	0.883	0.549	0.381
Factor 2	0.040	0.030	-0.694	0.830

Sources: See text and Appendix.

Table 2.

Variables in the Models: Average and Standard Deviation

Variables	Average (Standard Deviation)
Per head GDP level	8.322
	(0.544)
Per Capita GDP Growth	0.013
	(0.072)
Initial GDP per capita (in logs)	8.431
	(0.410)
Economically Active Population Growth	0.022
	(0.019)
Primary and Secondary Enrolment(in logs)	-0.835
	(0.457)
Investment Rate (in logs)	-1.976
	(0.441)
Real Interest Rate	0.061
	(0.052)
Dependency Rate (Rate of Variation)	0.022
	(0.037)
Relative Price of Capital Goods (in logs)	-0.259
	(0.246)
CIM (in logs)	-0.337
	(0.141)
RIEF	-0.108
	(1.045)
Openness (Rate of Variation)	-0.003
	(0.151)
Financial Depth (M2/GDP) (in logs)	-1.101
	(0.378)
Terms of Trade Rate of Variation	0.011
	(0.106)
Supreme Court Justices' length of tenure (logs)	1.556
	(0.690)
INEQ (Inequality) (logs)	-0.160
	(0.295)

Sources: Appendix

Table 3.

Long-Run Relationship

Dependent: LCIM	Parameters
Constant	-13.185
	(-15.055)
Time	0.006
	(14.814)
RIEF	0.091
	(3.799)
LDEPTH	0.129
	(5.128)
LSUPREME	0.062
	(4.289)
LINEQ	0.084
	(2.733)
DU50	-0.165
	(-5.824)
(DU60*RIEF)	-0.113
	(-4.391)
(DU42*LSUPREME)	-0.086
	(-7.456)
R^2-Adj=0.846	
AIC= -5.709	
F=80.471	
Nº Obs.=116	

Note: ***t ratios*** in brackets.
L represents the variable expressed in logarithms.
DU50, is a dummy variable that represents a change in the level of the long-run relationship after 1950, and DU60 and DU42 are dummies variables that represent a change in the relationship of RIEF and SUPREME with CIM, after 1960 and 1942 respectively.

Test ADF over the residuals of the model

Modelo C: -6.245*
Modelo C/T –6.221*
Modelo (none) –6.272*

Test redundant variables (RIEF/LDEPTH):

Ho: the coefficients of the two variables are jointly zero:
F= 103.04 (critical value=4.79)
Log LR= 122.44 (critical value=10.60)

Test de White:

Ho: errors are homoscedastic and independents
White test= 12.73 (critical value=16.7)

RESERT test:

Ho: linear functional form
F= 0.241 (0.63)
Log LR= 0.256

Table 4

Error Correction Model

Dependent: DCIM	
e_{t-1}	-0.234
	(-4.184)
DRIEF(-2)	0.023
	(1.978)
DDEPTH	0.203
	(8.974)
DDEPTH(-1)	-0.093
	(-4.028)
DSUPREME	-0.015
	(-2.259)
DSUPREME(-2)	0.013
	(1.937)
DLINEQ	0.098
	(3.759)
POLITY2	-0.001
	(-1.815)
SEPARATION(-2)	0.010
	(2.385)
R^2-Adj.= 0.509	
AIC= -6.917	
F-st.= 15.544	
DW= 1.987	
Nº Obs.=113	

Note: D represents the variables in differences and e_{t-1} is the lagged error term of the cointegration equation from Table 4 and is the variable that represents the adjustment in the long-run.

Table 5. Econometric Model: Structural Estimation (SUR) (t ratios in brackets)

Dependent Variable	Per Capita GDP	Investment Rate	EAP Growth	Enrollment Rate	Openness Rate of Variation	Relative Price of Capital	CIM	Financial Depth
Constant				-3.691 (-2.982)			-13.574 (-16.400)	
Trend	0.001 (3.837)	-0.0002 (-3.446)	-0.0001 (-2.129)	0.001 (2.218)	-0.0002 (-4.198)	-6.75E-0.5 (-2.417)	0.007 (16.137)	-78.93E-0.5 (-3.227)
Initial Per Capita GDP(-1)	0.754 (11.892)		0.025 (2.284)	0.089 (2.609)				
EAP Growth (-1)	0.157 (0.415)		0.108 (1.232)					
EAP Growth (-2)					-0.838 (-1.214)			1.204 (1.997)
Investment Rate (-1)		0.835 (19.872)						
Dependency Rate of Variation (-6)		-0.641 (-1.944)						
Investment Rate (-2)	0.040 (1.708)							
Enrollment Rate (-1)			-0.034 (-4.154)	0.793 (16.568)				0.057 (1.434)
Enrollment Rate (-6)	0.083 (2.959)							
Openness Rate of Variation	0.082 (1.057)							
Per Capita GDP growth(-1)		0.978 (5.521)						
Per Capita GDP growth (-2)					0.224 (1.311)	-0.264 (-3.239)		
Interest Rate (-1)		-0.644 (-2.190)						-0.368 (-1.796)
Relative Price of Capital		-0.235 (-2.555)						
Relative Price of Capital (-1)					-0.437 (-4.148)	0.860 (18.387)		
DU45		0.215 (3.974)						
CIM (-1)				0.096 (2.040)				
CIM (-2)					0.202 (2.122)			
CIM (-5)		0.187 (1.903)	0.037 (3.144)					
Per Capita GDP growth								0.225 (1.566)
Openness (-1)					0.716 (11.699)	-0.064 (-2.377)		
Terms of Trade Variation						0.143 (3.297)		
RIEF							0.090 (4.011)	
DU50							-0.176 (-6.603)	
DU60*RIEF							-0.112 (-4.609)	
RIEF(-1)								0.065 (2.995)
Financial Depth							0.121 (5.118)	
Financial Depth (-1)								0.802 (17.747)
Financial Depth Variation						-0.146 (-3.301)		
SUPREME							0.064 (4.700)	
INEQ							0.074 (2.574)	
(DU42*SUPREME)							-0.088 (-8.198)	

R^2-Adj. Nº Observations= 125 Total System Obs.= 932	0.97	0.90	0.21	0.98	0.90	0.92	0.84	0.89

Table 6.

Simulation: Actual and Counterfactual Values (%)

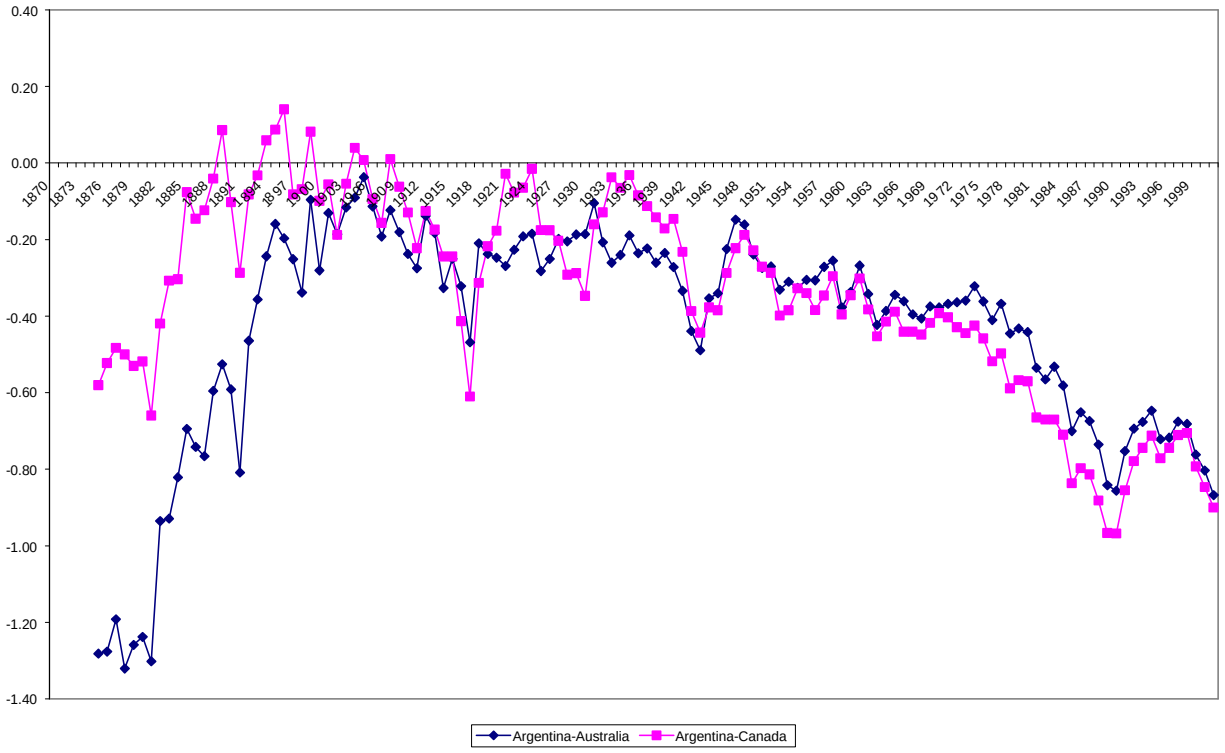
	Investment Rate		Enrollment Rate	
	Actual	Counterfactual	Actual	Counterfactual
1882-1911	13.2	13.3	20.4	25.1
1946-1972	18.5	40.4	52.4	62.3
1988-1998	17.8	30.6	88.3	95.6

Table 7.

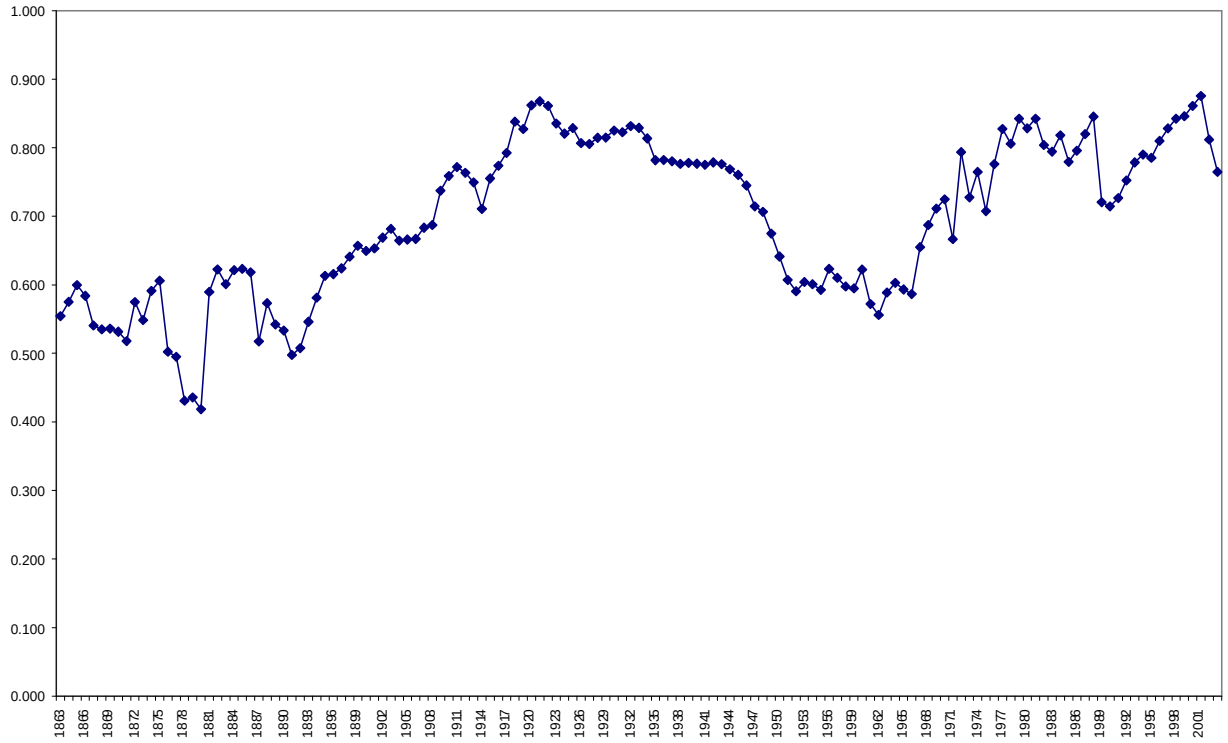
Argentina's Relative Per Capita GDP: Actual and Counterfactual Values (%)

	Australia = 100		Canada = 100	
	Actual	Counterfactual	Actual	Counterfactual
1882-1911	70.7	74.7	92.3	97.4
1946-1972	73.0	85.0	70.2	81.7
1988-1998	48.4	57.2	45.0	52.9

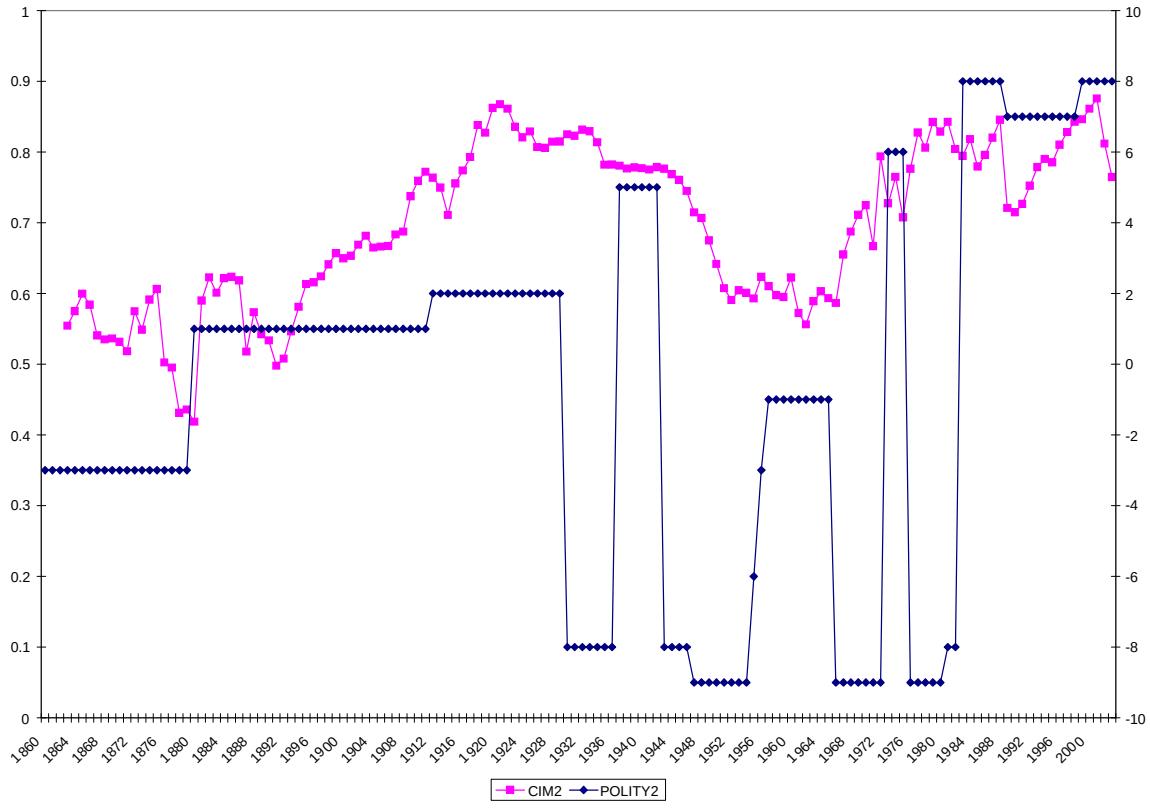
Graph 1. Argentina's Relative GDP per Head. 1875-2001 (differences in logs)
(U.S. Relative Prices) [$ 1913. 1875-1939; $ 1980. 1940-2001]



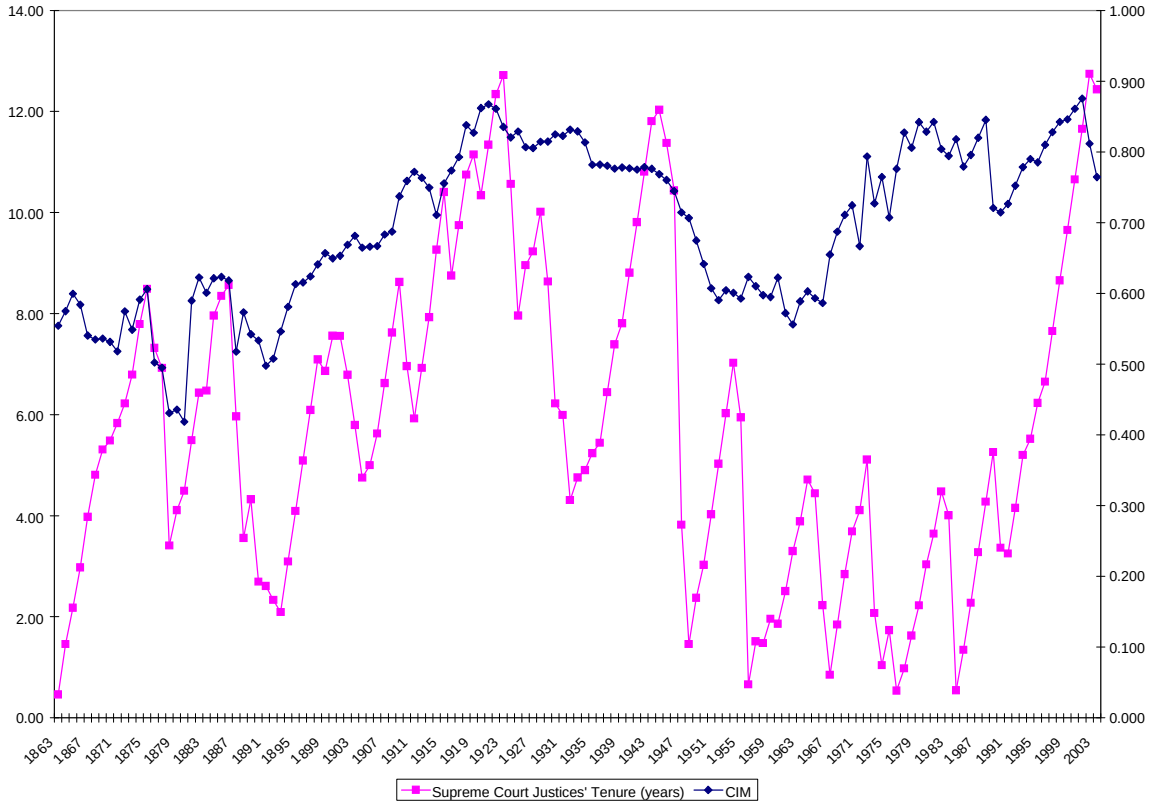
Graph 2. The Evolution of CIM in Argentina. 1863-2003



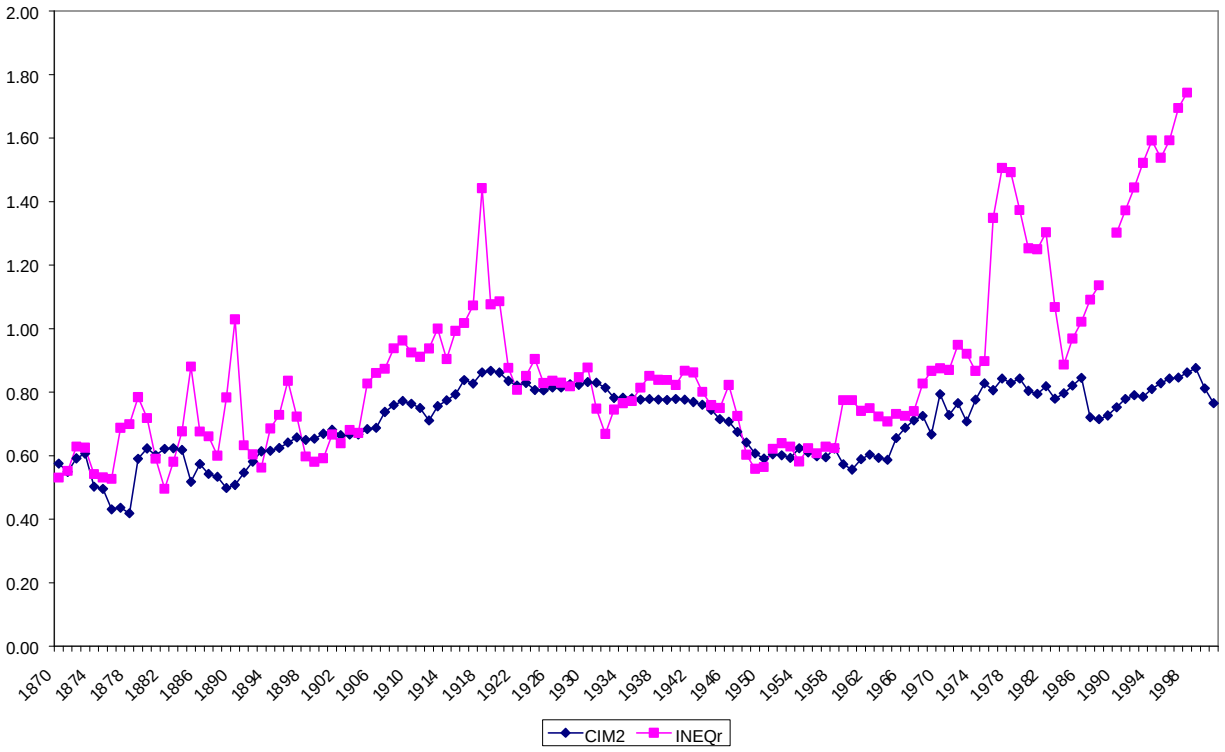
Graph 3. CIM and Polity2, 1863-2003



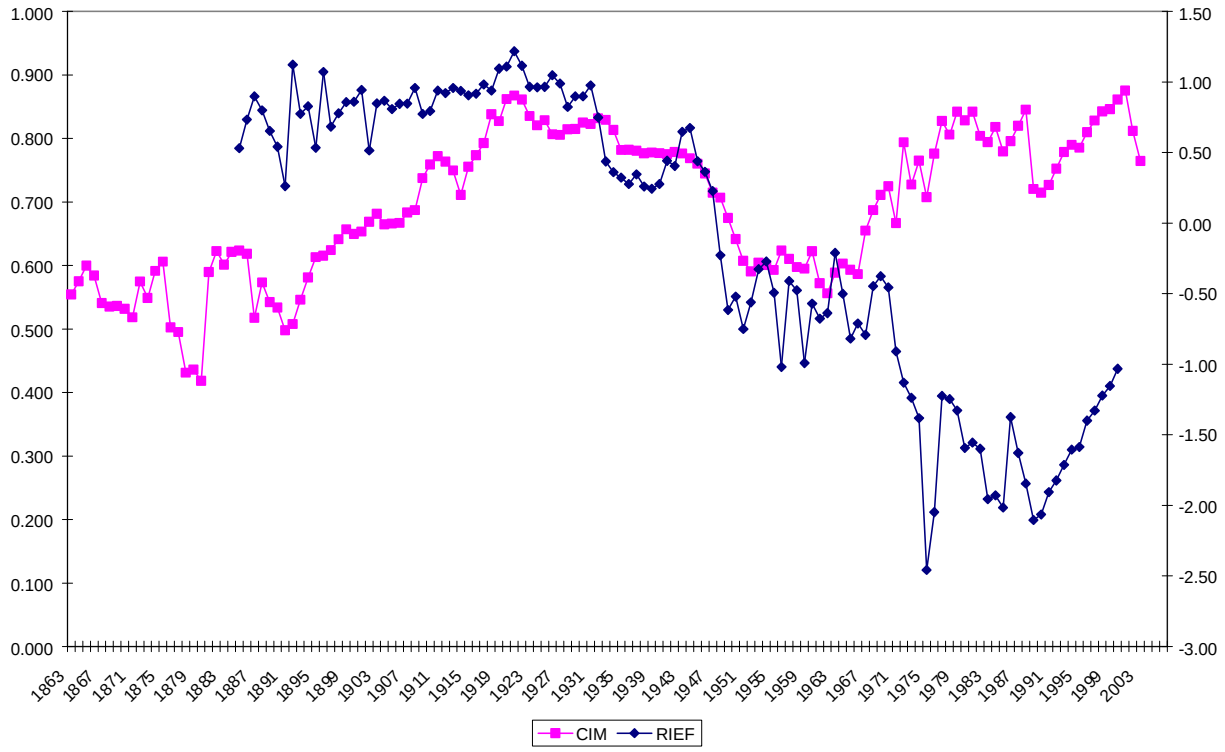
Graph 4. CIM and Supreme Court Justices' Length of Tenure, 1863-2003



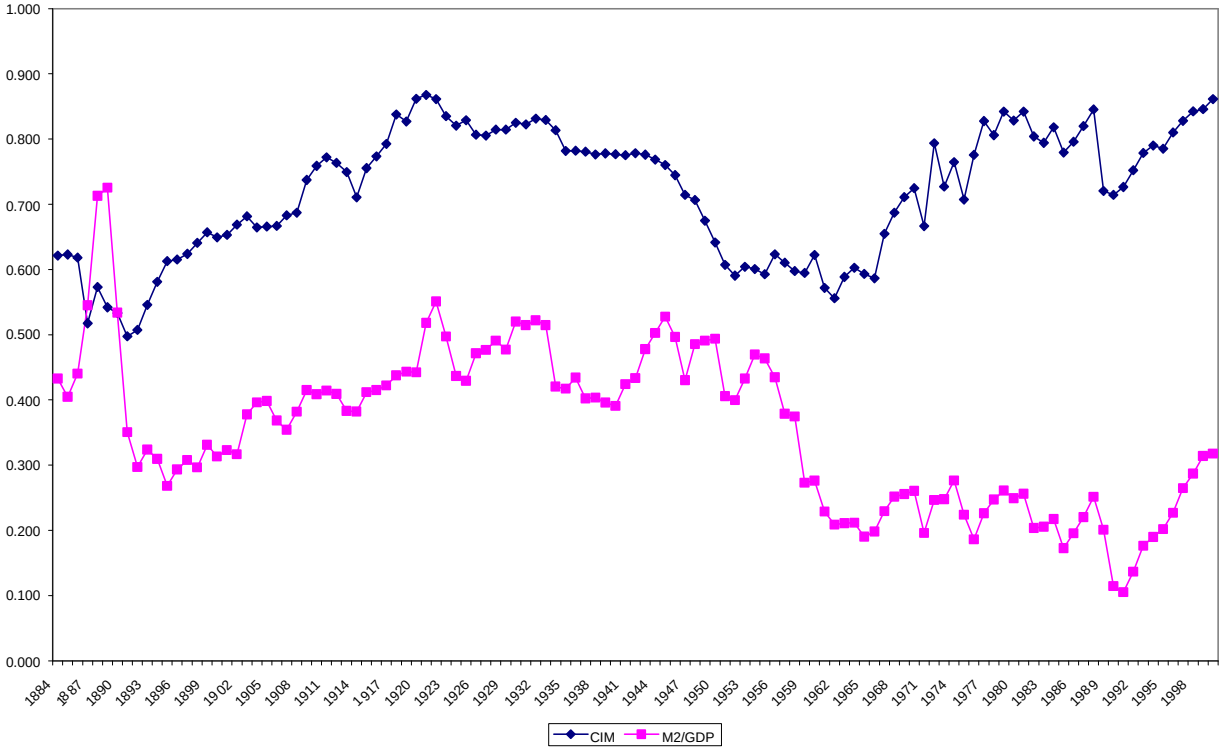
Graph 5. CIM and the Real Inequality Index, 1863-2003



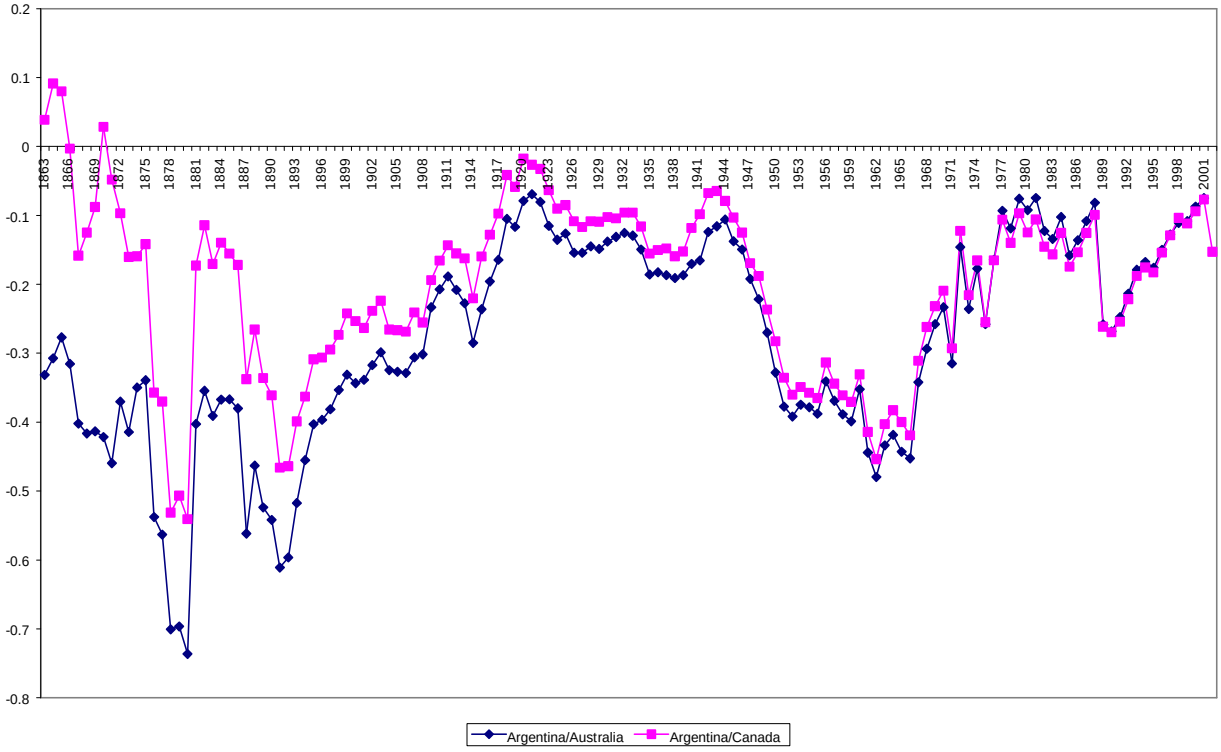
Graph 6. The Evolution of CIM and RIEF. 1884-2003



Graph 7. The Evolution of CIM and M2/GDP. 1884-2000

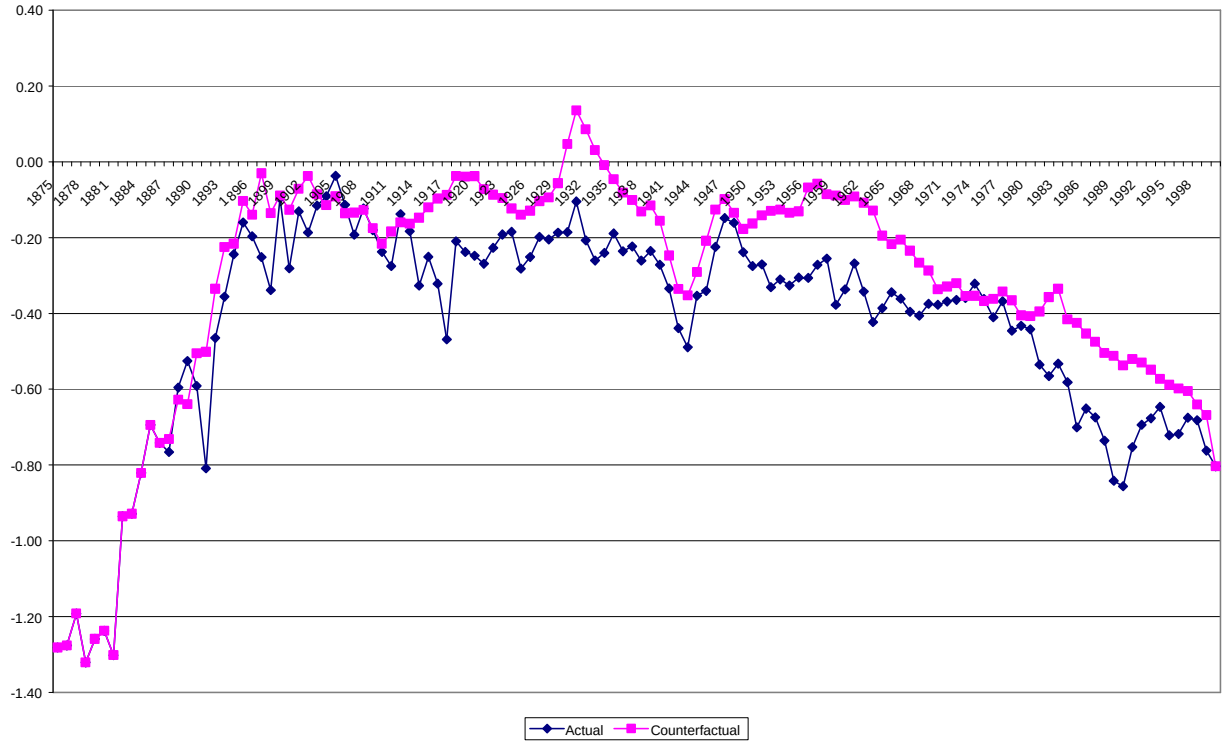


Graph 8. Argentina's Relative CIM. 1863-2002 (differences in logs)



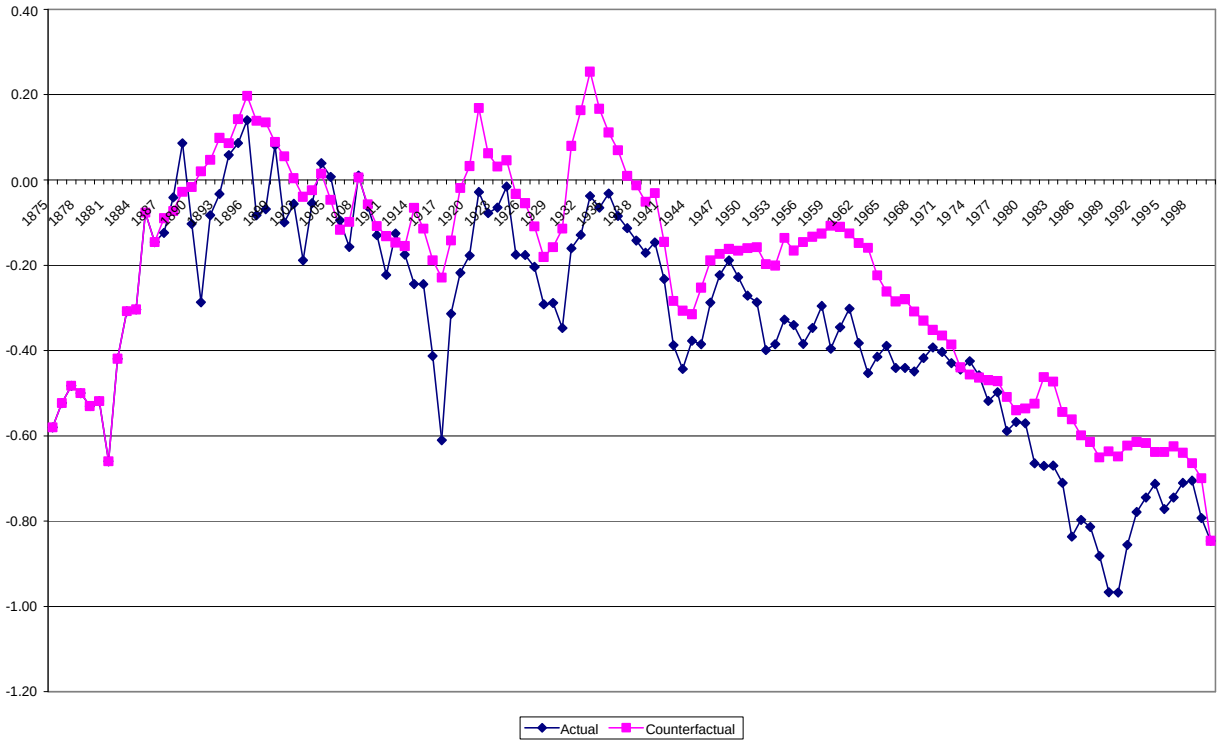
Graph 9a.

Actual and Counterfactual Argentina's Per Capita GDP Relative to Australia, 1875-2000
(differences in logs)
(U.S. Relative Prices) [$ 1913. 1875-1939; $ 1980. 1940-2001]



Graph 9b.

Actual and Counterfactual Argentina's Per Capita GDP Relative to Canada, 1875-2000
(differences in logs)
(U.S. Relative Prices) [$ 1913. 1875-1939; $ 1980. 1940-2001]



[1] These results are from the study of the relative series of GDP per capita between 1875 and 1990 using the unit root method and structural breaks. Cf. Sanz-Villarroya, "tendencias a largo plazo", and "Convergence".

[2] Cf. Cortés Conde, *economía argentina*; Di Tella and Zymelman, *etapas*; Díaz Alejandro, *Essays*; Ferrer, *economía argentina*; Taylor, "External Dependence", "Tres fases", and "Inward-Looking Development".

[3] See Sanz-Villarroya, "Convergence"; and Kydland and Zarazaga, "Lost Decade".

[4] North, *Institutions*, p. 134.

[5] As North, *Institutions*, p. 107 writes, "We cannot see, feel, touch, or even measure institutions; they are constructs of the human mind". Cf. Knack and Keefer, "Institutions", for an attempt to prove this relationship empirically.

[6] Clague, Keefer, Knack, and Olson, "Contract Intensive Money".

[7] It should be kept in mind, however, that stable institutions can be impediments for growth when under their rule risk taking is constrained and property rights are not enforced (Bueno de Mesquita and Root, "Bad Economics", p. 7).

[8] See Gallo, *Pampa gringa*; Duncan and Fogarty, *Australia and Argentina*; Platt and Di Tella, *Political Economy.*

[9] This procedure attempts to mitigate the index number problem caused by using real product per capita series expressed in relative prices of a distant benchmark year. This is the case with Maddison's *World Economy* figures in 1990 dollars, which are normally used in this type of comparison. Nevertheless, the use of Maddison's data does not significantly change the results (Sanz-Villarroya, "Convergence").

[10] Prados de la Escosura, "International Comparisons".

[11] Maddison, *World Economy*; Cortés Conde, *economía argentina.*

[12] Sanz-Villarroya, "Convergence".

[13] Di Tella and Zymelman, *etapas*.

[14] Platt and Di Tella, *Argentina, Australia, and Canada*; Díaz Alejandro, "Argentina, Australia, and Brazil". On the different migration policies applied in the 'areas of new settlement' cf. Timmer and Williamson, "Immigration Policy". They suggest, however, that Argentina introduced a restrictive immigration policy in the early twentieth century. Such a view is rejected by Sánchez-Alonso, "Argentina's Immigration Policies".

[15] Duncan and Fogarty, *Australia and Argentina*.

[16] Solberg, *Prairies and Pampas.* However, an open land market existed in Argentina where many more immigrants than generally believed became farmers (Sánchez-Alonso, "Those Who Left"). Gallo, *Pampa gringa*, argued that lack of capital and agricultural knowledge made advantageous for immigrants to become tenant farmers. Cf.

Adelman, *Frontier Development*, for a qualified assessment of Solberg's views. Also, Ferns, Gallo and Watkins, "Review".

[17] Alston and Gallo, "Checks and Balances".

[18] Taylor, "External Dependence".

[19] Taylor and Williamson, "Capital Flows".

[20] In fact, between 1900 and 1929, Argentina's savings rate was around 10 percent lower than that of Australia and Canada and her dependency rate was 5 percent higher (Taylor, "External Dependence, pp. 922-5). Taylor estimated that, in the long term, around two thirds of the difference between the savings rates in Argentina and Australia was due to the disparity in their dependency rates.

[21] Taylor, "Tres fases" and "World Capital Market".

[22] Taylor, "Inward-Looking Development"; Collins and Williamson, "Capital Goods Prices".

[23] Clague et al. "Contract Intensive Money".

[24] Clague et al. "Contract Intensive Money", p. 204, use factorial analysis to show that a group of institutional indicators which includes measures of political and civil freedom, the degree of property rights' definition, and of the frequency of revolutions and coups d'état, has a heavier load in factor 1, while financial development variables appear in factor 2. They, hence, conclude that CIM is mainly a measure of property rights enforcement. Cf. Sylla and Rousseau, "Financial Systems", for the long-run connections between financial development and growth.

[25] CIM would weaken as a measure of institutional quality if it were just a measure of savings, so the higher the interest rate, the larger the proportion of the money supply in deposits, and it would not be surprising to find an association between CIM and the rate of investment. We found, however, that CIM is a good predictor of the different components of capital formation that do not necessarily have a high correlation with savings rates and, hence, rejected this scenario for the case of Argentina. To do so, we run regressions for Equation 2 of Table 6 with farm investment, non-farm investment and government investment instead of total investment rates and the results were highly coincidental with positive and statistically significant associations between CIM and each component of total investment. Data for investment components comes from Della Paolera et al., "Historical Statistics".

[26] This index of economic freedom is reduced in the sense that it does not include other quantitative variables (and none of the qualitative variables) that are considered in the Fraser Foundation's Index of Economic Freedom, cf. Gwartney and Lawson, "Economic Freedom" for a definition and justification of the variables included in the Fraser index.

[27] These weightings are: 0.346 for *Gi/(Gi+Ci*), 0.318 for *Inflation/(100+Inflation*), 0.198 for *Tariff* and 0.137 for '*black market*'.

[28] The Polity2 index ranges from high autocracy (-10) to high democracy (+10) and it is part of Policy IV database. Cf. Marshall and Jaggers, *Polity IV Project*.

[29] Cf. Sylla and Rousseau, "financial Systems".

[30] Cf. Barro, "Inequality and Growth"; Kaldor, "Theories of Distribution"; Alesina and Perotti, "Income Distribution"; Persson and Tabellini, "Inequality".

[31] Williamson, "Land, Labor, and Globalization".

[32] An exploration about long-run income inequality in Latin America is carried out in Prados de la Escosura, "Inequality and Poverty".

[33] Gregory and Hansen, "Cointegration".

[34] Gregory and Hansen, "Cointegration".

[35] See Bai and Perron, "Linear Models".

[36] The battery of tests applied to the long-run relationship between CIM, RIEF, and DEPTH indicates that the determinants of CIM are not redundant as both RIEF and DEPTH have their own particular explanatory power. We are not able to reject the hypothesis that sustains that the errors in the model are homocedastic and independent. Hence, we do not have heteroscedasticity problems and the RESERT test shows that there is no linearity in the parameters and, thus, the linear specification we have proposed appears to be correct.

[37] Could it be argued that Argentina represents the scenario in which individual savings rates rise with per capita income and, hence, a rise in income inequality increases investment and, thus, growth?. As Barro, "Inequality and Growth", p. 8, points, this hypothesis implies a relatively closed economy to the extent the investment rate is closely related to the savings rate, as it seems to have been the Argentinean case.

[38] *Separation* is a dummy variable that takes value 1 when there is separation between legislative, executive, and judicial powers and has been computed from Alston and Gallo, "Rule of Law", Figure IV.

[39] Colomer, "Taming the Tiger".

[40] Della Paolera and Taylor, *Straining*.

[41] According to Della Paolera and Taylor, *Straining*, p. 11, the crisis showed initially the symptoms of a traditional banking crisis, that is an increase in the amount of cash in the hands of the public, an increase in the banks' reserves-deposits ratio and the elimination of some financial institutions, which meant the destruction of deposits.

[42] According to O'Connell, "Free Trade", p. 91, there were few changes in trade policy, while the rest of the world returned to protectionism. During the 1920s Argentina continued its free trade policy as a producer of staple goods. The main change was a tariff increase in 1923 from 25 to 60 percent of the official 'aforo' values. Cf. Di Tella, "Economic Controversies", pp. 122-23.

[43] The return to the gold standard took place in 1899 and, despite leaving it again in 1900, 1914 and 1929, the monetary authorities continued to act within its rules (Della Paolera and Taylor, "Economic Recovery").

[44] Iaryczower, Spiller, and Tommasi, "Judicial Independence"; Alston and Gallo, "Checks and Balances". Alston and Gallo emphasize the gap between the Conservatives' good economic policies and political short-sightedness during the 1930s.

[45] According to Della Paolera and Taylor, "Economic Recovery", the effects of the fiscal decisions taken could have led to contraction until 1935 and it cannot be said that a New Deal type policy was practiced.

[46] For Di Tella, the 1930 crisis was the watershed between free trade and protection in Argentina, although the main change came after the Second World War (Di Tella, "Economic Controversies", p. 128.

[47] Alhadeff, "Economic Controversies", p. 104.

[48] Berensztein and Spector, "Business", p. 363.

[49] Alston and Gallo, "Checks and Balances"; Colomer, "Taming the Tiger".

[50] Rock, *Argentina*.

[51] Di Tella and Dornbusch, *Political Economy*.

[52] Alston and Gallo, "Checks and Balances".

[53] Institutional instability reveals itself in the shortening of length of Supreme Court justices' tenure (Iaryczower, Spiller, and Tommasi, "Judicial Independence").

[54] There were attempts to create an atmosphere which was favorable to private capital by the adoption of measures to stabilize and liberalize the economy under Frondizi's presidency and following an agreement with the IMF. Exchange rates were unified and many controls, both internal and external, were lifted. Under the Onganía dictatorship (1966-1970), a stabilization plan was introduced based on a strict fiscal policy and salary increases which were limited to the previous year's rate of inflation. Exchange controls were also withdrawn at the same time (Di Tella and Dornbusch, *Political Economy*, pp. 109, 202).

[55] Inflation reached 900 percent between 1975 and 1976. Cf. Di Tella and Dornbusch, *Political Economy*.

[56] The Central Bank had to take control of 60 institutions in this year. Cf. Gerchunoff and Llach, *ciclo*, pp. 358-60.

[57] Gerchunoff and Llach, *ciclo*, p. 375.

[58] We have followed Mankiw, Romer and Weil, "Empirics", approximation in which the level of GDP, instead of its rate of growth, is used as the explanatory variable to test the Solow model. In the Solow model the rate of saving and population growth are considered exogenous and they determine the steady-state level of income per capita.

[59] It also worth noting that our results do not provide support for the view that maintains that the relative price of capital goods did not have a clear effect on the demand for investment, as the government could influence it via monetary policy and public investment (Díaz Alejandro, "Precios relativos", p. 25).

[60] Taylor, "Tres fases" and "World Capital Market".

[61] We did not find a significant cointegration relationship between CIM and the nominal interest rate which reinforces the idea of Clague et al., "Contract Intensive Money", that CIM is not a proxy for savings.

[62] According to Hansen, "Parameter Stability"; and Gregory and Hansen, "Cointegration".