

POLITICAL UNCERTAINTY AND ECONOMIC UNDERDEVELOPMENT*

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Abstract

Political instability has been emphasized as a major source of uncertainty in Latin America. However, arbitrariness, i.e. the lack of constraints on the government, can also be seen as a major source of uncertainty in developing countries. Two dimensions of political uncertainty are thus distinguished, instability and arbitrariness. Empirically, low polity persistence is used for political instability, and low political constraints are used for arbitrariness. Unlike the usual approach in the literature, I relate this specific measure of political uncertainty to income per capita, rather than growth. The reason to explore this link is that if uncertainty leads to high interest rates, both capital and income per capita should be low. The conjecture that steady state income is lower with high political uncertainty leads to focus on its two dimensions. The data indeed suggest a strong positive relationship of political certainty, i.e. the combination of political constraints and polity persistence, with income per capita. Economic convergence may be conditional on the gradual process of elimination of political uncertainty.

Resumen

La inestabilidad ha sido enfatizada como una fuente de gran incertidumbre en América Latina. Sin embargo, la arbitrariedad, es decir la falta de frenos al gobierno, puede también ser vista como una fuente mayúscula de incertidumbre

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en países en desarrollo. Distingo en consecuencia dos dimensiones de incertidumbre política, inestabilidad y arbitrariedad. Empíricamente, uso la baja persistencia política como medida de inestabilidad, y la ausencia de contrapesos al poder ejecutivo para la arbitrariedad. A diferencia del enfoque usual en la literatura, no relaciono esta medida específica de incertidumbre política con el crecimiento, sino con el ingreso per cápita. La razón para explorar este nexo es que, si la incertidumbre lleva a mayores tasas de interés, tanto el stock de capital como el ingreso per cápita debieran ser bajos. La hipótesis de que el ingreso de estado estacionario es menor con alta incertidumbre política me lleva a enfocar sus dos dimensiones. De hecho, los datos sugieren una fuerte relación positiva de la certidumbre política, es decir de la combinación de división de poderes y persistencia del sistema político, con el ingreso per cápita. La convergencia económica puede depender del proceso gradual de eliminación de la incertidumbre política.

JEL: E22, G11, O16, P16.

Key words: *political uncertainty, instability, arbitrariness, economic development, convergence hypothesis.*

Political uncertainty and underdevelopment

“The certainty of what each individual ought to pay is, in taxation, a matter of so great importance, that a very considerable degree of inequality, it appears, I believe, from the experience of all nations, is not so great an evil as a very small degree of uncertainty.”

Adam Smith, *The Wealth of Nations*, book V, chapter II.

1. INTRODUCTION

Though individuals try to better their material condition, this intent by itself does not lead to economic development. As North (1981) puts it, one path is to direct efforts and resources into productive activities. Another is to channel that into re-distributive activities that from an aggregate viewpoint are unproductive, or downright destructive. A society is more efficient if productive activities predominate, but the choice of voluntary or involuntary exchange will depend on the private benefits that individuals perceive.

The endogenous uncertainty on what other individuals will do can be reduced by ideology and institutions (North, 1981). Ideology affects the payoffs of different courses of action by influencing the preferences of individuals (e.g., do not to kill or steal). Institutions affect the payoffs of different courses of actions through the incentives offered (e.g., the penalties of the legal system for murder or theft). The influence of basic political institutions is the focus of this paper. Political ideology is very important, but we do not analyze it here.

Adam Smith pointed out in *The Wealth of Nations* that civil government arose to protect property rights. The government institutes a system of law and order to limit involuntary exchange among individuals, and to make economic accumulation possible. However, this remedy can bring its own maladies. The problem of who controls the government crops up.¹ If the government is not subject to limits, it can in turn confiscate the property of individuals. This reintroduces, at another level, the problem of endogenous uncertainty.

My aim is to explore the impact on economic development of political uncertainty. The emphasis on uncertainty is motivated by the experience of Latin America, characterized by an exceptional degree of economic uncertainty, measured for example by the volatility of key macro variables (Hausmann and Gavin, 1996). The basic argument of this paper is that high economic uncertainty can be traced to high political uncertainty.

In Section 2, two dimensions of political uncertainty are distinguished, instability and arbitrariness. Section 3 states the basic hypothesis about the relation between political uncertainty and economic underdevelopment. Section 4 looks at empirical evidence. Section 5 looks at the implications for future research.

2. POLITICAL INSTITUTIONS

Uncertainty can be understood as a problem of incomplete information. To identify political uncertainty, two dimensions are distinguished: instability and arbitrariness. These dimensions are characterized in terms of the idea of institutions as the rules of the game.

2.1. Institutions as the rules of the game

Economic decisions are taken within a certain institutional framework. North (1981, 1990) characterizes institutions as the set of rules that constrain the behavior of individuals. These rules are both formal, e.g. tax codes, and informal, e.g. social norms in relation to tax evasion.

The interpretation of institutions as the rules of the game can be expressed in a game theoretic setup very precisely, since the rules define what game is being played. A change in the rules of the game redefines the game by affecting the incentives an agent faces.² For example, the classic prisoner's dilemma assumes a specific legal framework. In the prisoner's dilemma, a law that reduces penalties to suspects that cooperate with legal authorities is implicit. This is what pushes the Nash equilibrium to (Confess, Confess), where each prisoner serves a 3-year prison sentence:

¹ This discussion goes back at least to Plato's guardians in *The Republic*, with the resulting question of who guards the guardians.

² Baird, Gertner and Picker (1994) illustrate how drivers do not have incentives to drive carefully in a setup without civil liability. A law that makes the driver responsible for running over a pedestrian when driving recklessly defines a new game that, in equilibrium, leads to a lower number of accidents.

FIGURE 1

		Prisoner 2	
		Not confess	Confess
Prisoner 1	Not confess	1.1	6.0
	Confess	0.6	3.3

If there were no reward for cooperating, the game would instead look like this:

FIGURE 2

		Prisoner 2	
		Not confess	Confess
Prisoner 1	Not confess	1.1	6.6
	Confess	6.6	6.6

Without rewards for cooperation, one can see that the equilibrium (Not confess, Not confess) is weakly dominant. The way laws usually act is not affecting the choices open to an individual, but rather affecting the payoffs by attaching certain consequences to the choices. Even though the legal setup tries to prohibit certain actions, generally all that can be done is to impose a punishment when a prohibition is trespassed.

2.2. Political uncertainty

This paper focuses on formal institutions, more specifically on political institutions. Because of the scope of political institutions, societies are bounded by national frontiers.³

To appreciate the importance of political institutions, the contrasts between East and West Germany, and North and South Korea, stressed by Olson (1996)

³ Though there are wider heritages that cover groups of countries, such as countries with French, English or German legal tradition discussed in La Porta *et al.* (1998), our unit of analysis is each individual country.

are particularly instructive. Despite a common heritage, with shared family ties and cultural traditions, these countries had very divergent economic performances. These differences did not have to do with informal institutions, but rather with a political frontier. Political institutions are fundamental in the sense that they are the basis of the legal system, and hence of property rights. Political institutions affect the degree of economic uncertainty perceived by society, since they affect the security of property rights.

Uncertainty about political institutions can be interpreted in at least two ways, as arbitrariness and as instability. To distinguish both dimensions, it is convenient to use the characterization of political institutions as the rules of the game. As to arbitrariness, even when the rules of the game are known, if these rules allow the government a lot of leeway, the end results of an individual's decisions will depend on the whims or caprice of the political leader. As to instability of the rules of the game, even if a political system assures limits to the arbitrary conduct of political power, if these rules do not last over time there will be no track record of how they work in practice.

Both arbitrariness and instability lead individuals to not know exactly what they are playing at. In terms of game theory, political uncertainty can be seen problem of incomplete information.

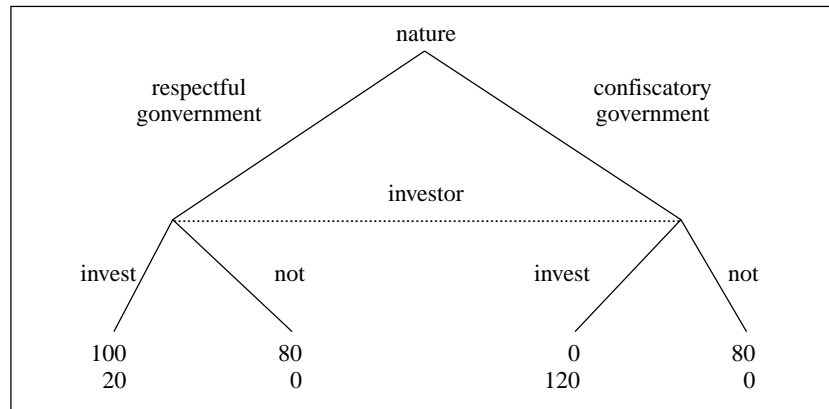
2.3. Arbitrariness

The first perspective on political uncertainty, arbitrariness, can be expressed as rules of the game that do not restrict possible outcomes. To characterize the problem of uncertainty in this dimension in terms of incomplete information, consider an investor in a setup where the government faces no political constraints. The investor can decide to sink an investment in the country, or to invest in a risk-free asset abroad with a lower yield. If there is no restriction on the possible actions of the government, it is important for the investor to know the preferences of the ruling government.

Under complete information, government preferences are common knowledge so the decision is simple. If the government does not wish, say for ideological reasons, to confiscate assets, the investor will be willing to invest in the country. If, on the other hand, the government is not an illustrated despot and has no qualms about confiscating assets, the investor will prefer to stay out.

When the investor does not know beforehand the government's preferences, there is a problem of incomplete information. The investor's decision will depend on how it perceives the government's type. Depending on its type, the government either prefers to respect contracts or it prefers to confiscate assets. This incomplete information generates uncertainty. The problem is illustrated in Figure 3, where the final payoffs of the investor are specified above the payoffs of the different government types.

FIGURE 3



The optimal decision of the investor will depend on the probability p that the government's type is confiscatory. Even though from a social viewpoint the best outcome is that the resources be invested in the country, the temptation of certain types of government to confiscate resources can lead the investor to prefer a risk-free asset abroad. When probability p is sufficiently high, the equilibrium is to stay out. Uncertainty is caused by the existence of a discretionary and arbitrary government power to dispose as it wishes of capital assets.

This problem of incomplete information is caused by adverse selection.⁴ In the case of an autocrat, it might be benevolent and illustrated, or not. Akerlof (1970) pointed out how the problems of adverse selection at the market level can be solved through institutions. At a political level, modern democracies tend to avoid the problem of adverse selection by establishing beforehand institutional restrictions to the decisions of the executive power.

Adam Smith refers to uncertainty as arbitrariness in his reference to the drawbacks of not knowing in advance what taxes apply to economic activity. More to the point of the argument in this paper, this aspect of uncertainty is linked to the political structure. When North (1981), building on the argument in North and Thomas (1973), contrasts economic development in the Netherlands and England with economic stagnation in France and Spain during the 17th Century, he addresses a crucial difference. North contrasts the arbitrary taxation power of the Crown in France and Spain with the General Courts in the Netherlands, and the English Parliament, which had to give their assent to the Sovereign to impose taxes. Limited government allows to protect property rights

⁴ There can also be a problem of moral hazard or opportunism: if there are no limitations to a government's decisions, it can take advantage of its position to exploit citizens. For example, Spiller (1995) points out that government commitments are more credible in countries with political systems that restrict the discretion of the executive branch through a series of formal political institutions. Otherwise, the government can engage in opportunistic behavior. While opportunism is very important, I do not emphasize opportunism here since it does not cause uncertainty unless the type of the government is not known (i.e., unless there is an adverse selection problem).

in a much more effective way than a regime with complete discretionality. The design of limited government comes from Montesquieu and Madison, and their ideas about a system of checks and balances to limit the arbitrary and despotic behavior of political power.

Limited government reduces political uncertainty in our setup: the constitutional protection of property rights can make the preferences of the executive branch irrelevant, since this decision ceases to be within its attributions. This is the meaning of constitutional guarantees backed by an independent court. Credibility of property rights is, of course, fundamental for capital markets. Under the guarantee that the government cannot confiscate assets, investment becomes a game of complete information. In our illustration in Figure 3, a change in formal political institutions that eliminates arbitrariness can lead to the economically efficient solution.

A government limited by the rule of law is not simply the difference between dictatorship and democracy. In a democracy, what is required is a constitutional, or liberal, setup, that respects certain basic rights. In the Latin American tradition –and elsewhere as well– this constitutional component has been less emphasized than the popular component (Nino, 1996).

2.4. Instability

The second perspective on political uncertainty, instability, can be interpreted as rules of the game that are continually changing. This problem has been a historical regularity in the repeated, and failed, attempts of Latin America to establish constitutional democracies in the 19th and 20th centuries. The best of the written constitutions is no good if it is only worth the paper it is written on.

In relation to this dimension of political uncertainty, I do not want to emphasize the uncertainty that is caused by a shortening of time horizons, which of course disturbs the process of capital investment at its core.⁵ I wish to emphasize another aspect that is present even if the survival of the political regime is not at risk. In this regard, Olson (2000) notes that rights in new democracies can be more insecure than an autocracy. We emphasize a reason that has to do with the track record of a system. In a new constitutional democracy, what the constitution actually says has to be filled in with government practice, as well as with the interpretation of constitutional rights and obligations by courts, as *The Federalist* says of the U.S. Constitution. Besides, it takes time to enact specific legislation that governs property rights.

Political instability is formally related to the problem of arbitrariness discussed in Figure 3 above. In a new political regime, there is a lot of incomplete information. The preferences of the different branches of government, and the enforcement of the constitutional provisions that establish the division of power, are not well known, so an investor does not know what environment it actually faces. Political instability can lead to decisions that seem to be myopic. However, without secure rules of the game it is not convenient to pledge resources to activities that lead to sink capital and take a long time to mature.

⁵ If a new regime is less likely to survive than an established regime, this will lead to higher uncertainty.

Over time, both the preferences and the actual workings of the political system become common knowledge. Hence, uncertainty can be expected to decrease with polity persistence. However, political stability implies very different things for uncertainty under autocracy and under limited government. Under autocracy, it is true that one can learn about the preferences of the autocrat over time, and that reduces the degree of asymmetric information. However, this information is limited to the reign of the autocrat, or until the change of the favorite in charge of running the government. On the other hand, under limited government institutions are the key of the system, and their role is not restricted to the life span of any one individual. Thus, stability under limited government can be expected to fundamentally reduce political uncertainty.

In short, low political uncertainty requires both political constraints and polity persistence. In this setup, individuals know exactly what they are playing at.

3. LOW GROWTH OR UNDERDEVELOPMENT?

The literature on economic growth includes political factors, and in particular political uncertainty, among the significant determinants of growth. Besides our specific characterization of political uncertainty, the analysis that follows differs from the standard literature in one important respect. It focuses on the impact of political uncertainty not on growth, but rather on the level of income per capita.

From a theoretical viewpoint, political uncertainty may not impact on the long-run growth rate, but rather on the steady state level of income per capita. A country with high political uncertainty may have low income in relation to the most developed nations on earth, but its average growth rate might not differ significantly.

In econometric terms, the relation between political uncertainty and economic growth in common growth regressions may be misspecified. The reason is as follows. First, countries that have rules of the game that are unstable, or that allow an arbitrary behavior of political power, will face high political uncertainty. Since property rights depend upon the legal system, which in turn is founded on the political system (as argued in Section 2), political uncertainty implies insecure property rights. Second, countries with higher economic uncertainty can be expected to have higher interest rates.⁶ These higher interest rates should lead not only to lower investment –often used as an explanatory variable in empirical growth equations–, but also to a lower capital stock, as established long ago in macro discussion that shows that interest rates are determinants of the desired capital stock. And countries with a lower steady state level of capital will have a lower steady state income per capita.⁷

⁶ It is standard in finance to relate higher returns to higher risk. Druck and Streb (2001) formalize the relation between higher uncertainty and higher interest rates.

⁷ In research that sparked this paper, Avila (1989) used macroeconomic volatility as a proxy for country risk, linking it however to low growth in Argentina. Instead, Avila (1993) focuses on the link between high country risk and low relative income per capita, as this paper.

If one puts steps one and two together, high political uncertainty implies a low level of economic development. This is the conjecture that is explored in the next Section. Before that, a brief comment on our specific construct of political uncertainty.

Barro and Sala-i-Martin (1995, chap. 12), when they summarize the factors that affect the rate of growth, emphasize the negative effect of a series of institutional factors. For our purposes, two are specially relevant: (i) political instability, measured using an average of coups and assassinations, which they consider diminishes the security of property rights; and (ii) weak rule of law, measured using the 'rule of law' index of the International Country Risk Guide (ICRG), which captures lack of law enforcement, non-effective solution of disputes, and disorderly political succession.

Section 2 argues that political uncertainty comprises two dimensions, the degree of arbitrariness allowed by the rules of the game, and the instability of these very same rules. In relation to the two variables in Barro and Sala-i-Martin, measure (i) relates to the second dimension of political uncertainty, instability of the rules of the game. Measure (ii) on weak rule of law has to do with an outcome of the political system that is on a different level than the basic institutional structure. However, one would expect it to be linked to an underlying political conjunction of arbitrariness and instability of the rules of the game. In this precise direction, Clague, Keefer, Knack, and Olson (1996) find that property and contract rights are better in political systems that are both stable and democratic.

Olson (2000) points out that the difference between development and underdevelopment is the difference between the existence or not of capital markets. This fits in perfectly in the present discussion. Capital markets are based on trust. This trust has to do with rules of the game that assure that contracts are respected, something impossible with unstable rules or with rules that allow the most absolute arbitrariness.⁸

4. EMPIRICAL EVIDENCE

The theoretical conjecture in Section 3 leads to expect a direct link between political uncertainty and economic underdevelopment. If institutions are the rules of the game, a political structure that either allows the executive power a lot of leeway, or that does not have a large track record, leads to uncertainty about what the actual property rights are.

I will use political constraints and polity persistence to capture the two dimensions of political uncertainty discussed in Section 2, arbitrariness and in-

⁸ In a case study of financial markets in Argentina, Streb (1998) described how violations of the rule of law were behind the process of high inflation. He interpreted the violations of the rule of law as an endogenous determinant of high country risk, which led to the progressive disappearance of capital markets and to the process of economic stagnation in Argentina. Unlike this paper, the link between the lack of law enforcement and the underlying political structure was not explored.

stability. The data on income per capita, adjusted in terms of purchasing power parity, are from the Penn World Table. The Table provides data over the 1960-1990 period.

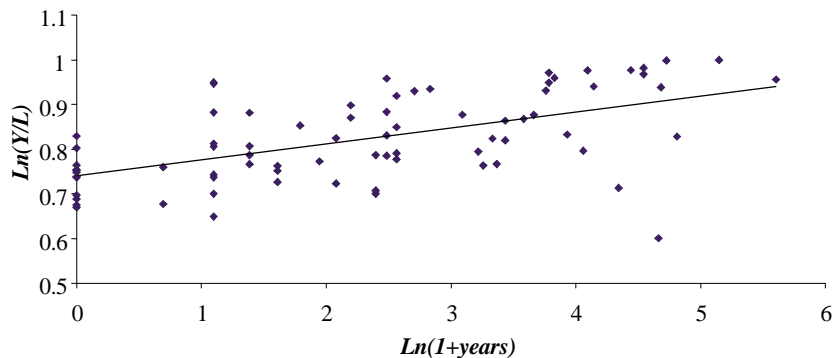
The analysis here is heuristic, to try to see how these basic political variables relate to economic development. I first take a look at the relation between polity persistence and income per capita. Then I take a look at the relation between political constraints and income per capita. Finally, I cross both dimensions to see their joint interaction with income per capita. This last point is the evidence that bears directly on my conjecture about low political uncertainty being required to reach economic development.

4.1. Polity persistence and income per capita

I take a specific indicator of institutional stability, polity persistence, which measures the basic political arrangements through which countries are governed (cf. Henisz, 2000). Changes of regime are given, among others, by a transition from democracy to dictatorship, or from a unitary to a federal system; by the exclusion of significant groups from the political process; and by the establishment of a legislature to limit the power of the executive. Political instability is inversely related to the persistence of the political system.

In a scatter diagram, the relation between the log of income per capita and polity persistence turned out not to be linear. Consequently, I took a log transformation of polity persistence. The values for 1960, 1975 and 1990 are graphed, normalizing income per capita so that each year the US = 1.⁹

FIGURE 4.1
INCOME PER CAPITA AND POLITY PERSISTENCE: 1960



⁹ The number of countries included is 76 (1960), 114 (1975), and 96 (1990).

FIGURE 4.2
INCOME PER CAPITA AND POLITY PERSISTENCE: 1975

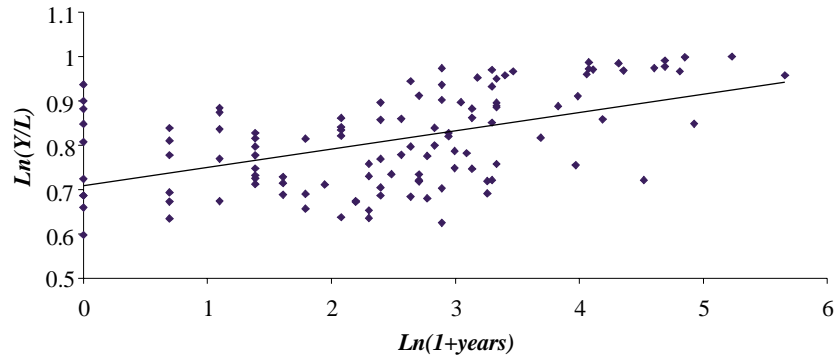
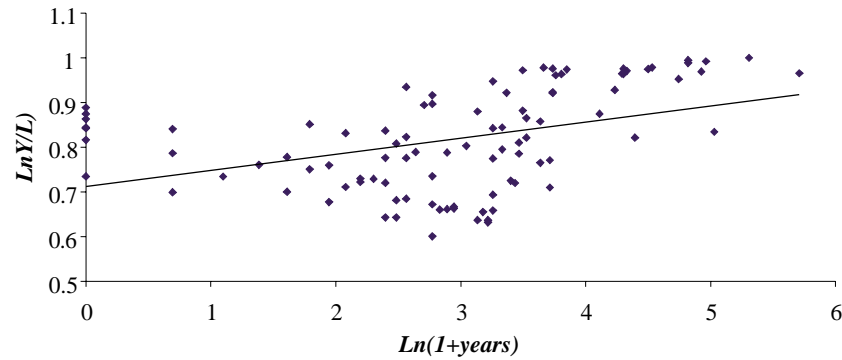


FIGURE 4.3
INCOME PER CAPITA AND POLITY PERSISTENCE: 1990



The natural log of income per capita is denoted $\ln(Y/L)$, and the natural log of polity persistence is $\ln(1+years)$, where *years* stands for the years of persistence and *I* is added since the log is not defined for $years=0$. Once one normalizes income, the scatter diagrams show a pretty stable, positive, association between polity persistence and income per capita.¹⁰

The problem with the interpretation of these graphs is that the relation of causality between political instability and level of economic development may be bi-directional (cf. Barro y Sala-i-Martin, 1995). Nevertheless, if one runs a regression, one can derive an interesting consequence from the non-linear association between *years* of polity persistence and $\ln(Y/L)$.

¹⁰ Note that scatter diagrams relating polity persistence and the rate of growth show nothing. The problem is that most developed nations have high polity persistence, and at the same time they have low average rates of growth. Only when one excludes the most developed nations does a positive association between polity persistence and the average rate of growth emerge.

TABLE 1
DEPENDENT VARIABLE: $\ln(Y/L) - \ln(Y/L)_{US}$

	Regression		
	Year 1960	Year 1975	Year 1990
Intercept	0.74 (44.04)***	0.71 (38.38)***	0.71 (27.45)***
$\ln(1+years)$	0.04 (5.91)***	0.04 (6.27)***	0.04 (4.41)***
Adjusted R ²	0.31	0.25	0.16
Observations	76	114	96

Note: t-statistics are in parenthesis (three asteriks denote significance at 10%, 5% and 1%).

The results in Table 1 entail a non-linear relation between growth and political stability. Starting with low levels of stability, a small increase in the duration of the institutional regime is associated to a larger rate of growth than at high levels of stability. This is simple to see deriving $\log(Y/L)$ with respect to *years*, which provides the rate of growth:

$$(1) \quad \ln(Y/L) = \alpha + \beta \ln(1 + years) \Rightarrow \frac{1}{Y/L} \frac{d(Y/L)}{d(years)} = \frac{\beta}{1 + years}$$

This can be related to the convergence hypothesis, according to which poor countries are expected to grow faster than rich countries: since countries with low polity persistence usually are poor, one would expect them to grow faster according to the convergence hypothesis.

However, political stability does not seem enough for development. Anarchy is worse than autocracy, as Olson convincingly argues.¹¹ But until the 1974 coup, Ethiopia was the poorest country in the Penn World Table. At the same time, it was one of the countries with largest institutional stability. So even if instability is bad in itself, its elimination does not seem to be the enough for development.

¹¹ Olson (2000) highlights the problem of instability using the simile of the government as a band of bandits. A roving bandit will try to take all that is at its reach. A stationary bandit that acts as an autocrat will limit its current exactions due to its interest in future revenue. So even in the case of involuntary exchanges, the interest in not killing the chicken with golden eggs can make the autocrat have an interest in the productivity of the economy.

4.2. Political constraints and income per capita

We now look at the second dimension of political uncertainty, arbitrariness. Henisz (2000) intends to capture respect for property rights based on an indicator that, unlike the ICRG, does not measure outcomes but rather political structure.

Henisz constructs a very nice variable of political constraints that captures the problem of political uncertainty as arbitrariness. A higher value of political constraints is associated to higher guarantees, while a lower level is associated to a higher level of arbitrary power. A value of 0 corresponds to an executive power that is subject to no limits, while the value approaches 1 as a legislative power, a federal system, and a judicial system are added. Whether there is divided government or not, and whether the judiciary is independent, also matters. Henisz (2000) is interested in how political constraints can affect economic growth. Here, we look instead at their relation to economic development.

The variable political constraints can shed light on debated issues such as the quality of institutions in Latin America. Burki and Perry (1998) point out that Latin America is relatively backward in its institutional development, using a composite index based on the ICRG that captures subjective opinions on respect of property rights and state corruption.¹² In stark contrast, Gaviria *et al.* (1999) point out, using Henisz' political constraint variable, that after the OECD and Europe and Central Asia, Latin America follows next in the ranking of the ability of political institutions to make a credible commitment to property rights.¹³ And, what is relevant for our present purposes, Gaviria *et al.* (1999) also point out that this ranking of institutional roughly corresponds to the ranking of economic development.

Arbitrariness is characterized here a special type of rule, the rule that all is fair game for public authority. Though the terminology is different, the opposition between arbitrariness and limited government can be contrasted to the discussion in the literature on discretion versus rules.¹⁴ This literature is controversial.

Keynes, speaking of the Gold Standard, said that no contracts were sacred. You had to analyze the rationality of respecting them, just like in the case of marriage vows (Keynes, 1923). This of course raises problems of credibility. The modern literature recognizes a clear trade-off, where discretionality gives larger flexibility to react to events, but commitments give greater credibility (Persson and Tabellini, 1991). Up to a point, it is an empirical question whether

¹² The Southern Cone, and especially Chile, stand out in the region, but as a whole Latin America is only above Sub-Sahara Africa.

¹³ Once again, Chile stands out in Latin America using this indicator.

¹⁴ Cf. references in Shepsle (1991), who discusses how to reduce discretionality with institutional arrangements that restrict the power of each actor to make arbitrary changes, making commitments credible. Note that limited government, as all types of setups where decisions must be made, still implies discretion. Only that the discretionary decisions of one branch of government are subject to the discretionary veto power of other branches of government.

flexibility or credibility is more important.¹⁵ The relationship between the variable *polcon* –political constraints– and $\ln(Y/L)$, taking 1960, 1975, and 1990 as sample years, is depicted in the following Figures.

FIGURE 5.1
INCOME PER CAPITA AND POLITY CONSTRAINTS: 1960

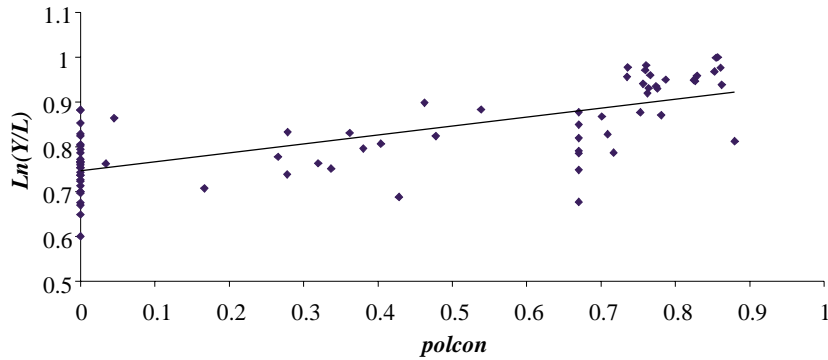
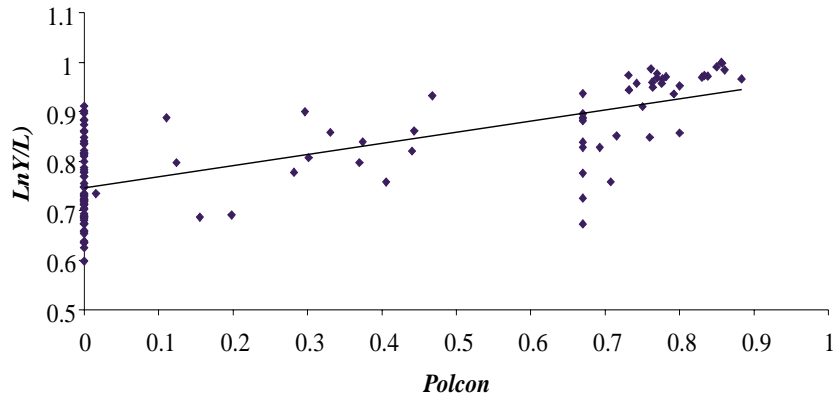
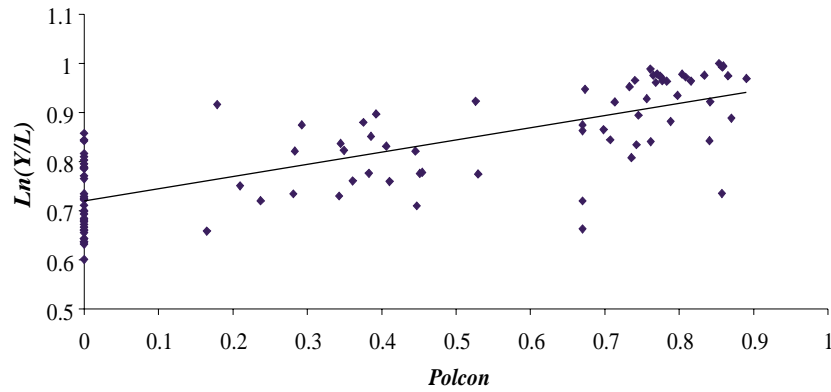


FIGURE 5.2
INCOME PER CAPITA AND POLITY CONSTRAINTS: 1975



¹⁵ The empirical issue of credibility versus flexibility is addressed by Gaviria *et al.* (1999). They test to see if countries with higher political constraints that had a bad initial status quo, in terms of anti-market regulations, have grown more slowly than countries that started economic reforms with lower initial political constraints. Overall, they find that the credibility component of political constraints outweighs the loss of flexibility. From a theoretical viewpoint, there may be good reasons to expect limited government to be more efficient. Olson (2000) points out that when power is shared more widely, there is a more encompassing interest that pulls in the direction of larger economic efficiency. And North highlights in his historical studies that limits to political constraints allow to define property rights better, so we are closer to Coase's scheme where it is possible to solve through negotiations the problems of externalities, and to take advantage of mutually advantageous exchanges.

FIGURE 5.3
INCOME PER CAPITA AND POLITY CONSTRAINTS: 1990



The relationship between both appears to be positive and robust, so one can dismiss at once the idea that current political constraints are a barrier to economic development. Running a regression, one finds the following:

TABLE 2
DEPENDENT VARIABLE: $Ln(Y/L) - Ln(Y/L)_{US}$

	Regression		
	Year 1960	Year 1975	Year 1990
Intercept	0.74 (64.18)***	0.75 (82.49)***	0.72 (64.03)***
<i>Polcon</i>	0.20 (8.91)***	0.22 (11.14)***	0.25 (11.53)***
Adjusted R ²	0.51	0.52	0.58
Observations	76	114	96

Note: t-statistics are in parenthesis (three asteriks denote significance at 10%, 5% and 1%).

Again, the problem of causality remains in the interpretation of these results. I treat political development as exogenous, but it clearly depends on other influences. It might be that economic development leads to limited government, not the other way around.¹⁶

¹⁶ Nevertheless, the historical analysis in North and Thomas (1973) and North (1981) suggests that limited government leads to economic development. Druck and Streb (2001) face this causality issue squarely: they find that changes in political constraints Granger cause economic growth, not vice-versa. They interpret this result in the sense that political development leads to economic development, as North suggests (cf. also comments in the Conclusions).

4.3. Political uncertainty and income per capita

In the previous parts of this Section I looked at the relationship between economic development and each individual dimension of political uncertainty. Our last step is to combine the two dimensions of political uncertainty. According to the present framework, the key variable that drives economic development is the combination of political stability with restraints to arbitrary political power. I try to disentangle the effects in what follows.

First, I follow a graphical approach to look at the relationship between our measure of political uncertainty and economic development. In the Figures below, we expand the points in the scatter diagrams in Figure 6.1, representing the degree of polity persistence by the size of each bubble.

In the Figures, bubbles tend to drift up if political constraints are larger than zero. That is, polity persistence seems to be conducive to higher income per capita if limited government is in place. In line with the conjecture in Section 3 on the need of low political uncertainty for development, this evidence seems to show that both political stability and limited government are present in the countries at the frontier of economic development. The absence of either political constraints or polity persistence could explain why so many countries are poor.

To see this in a more quantitative fashion, I first run a regression for each of the sample years, including each dimension of political uncertainty separately. This regression is subject to the same caveat as the previous regressions in terms of possible two-way causality. However, the main purpose of these regressions is as a reference point to elucidate the relationship between different specifications of basic political institutions and economic development.

FIGURE 6.1
INCOME PER CAPITA AND POLITICAL CONSTRAINTS
(SCALED BY POLITY PERSISTENCE): 1960

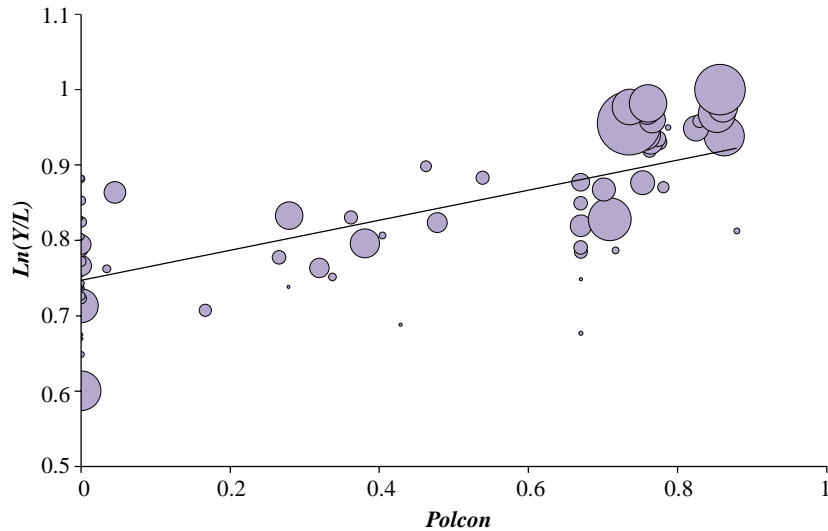


FIGURE 6.2
INCOME PER CAPITA AND POLITICAL CONSTRAINTS
(SCALED BY POLITY PERSISTENCE): 1975

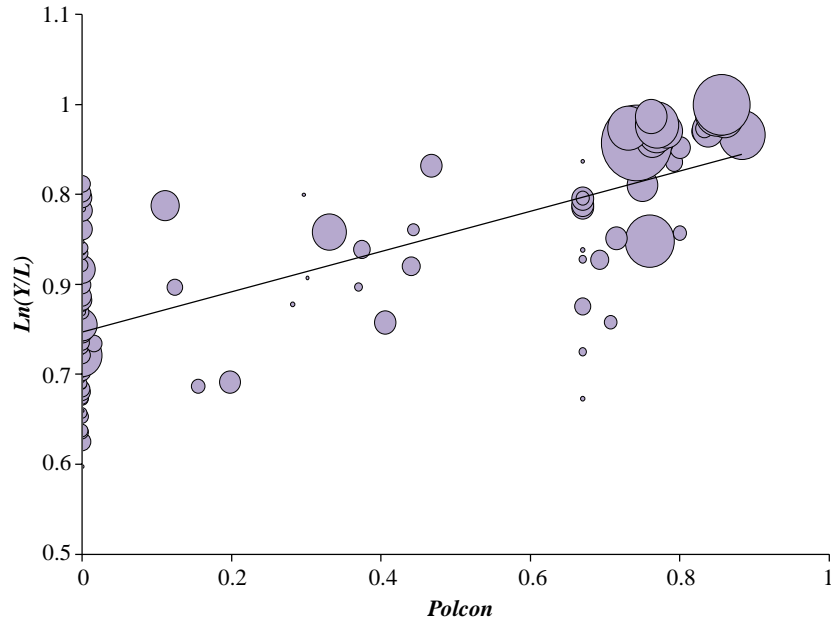


FIGURE 6.3
INCOME PER CAPITA AND POLITICAL CONSTRAINTS
(SCALED BY POLITY PERSISTENCE): 1990

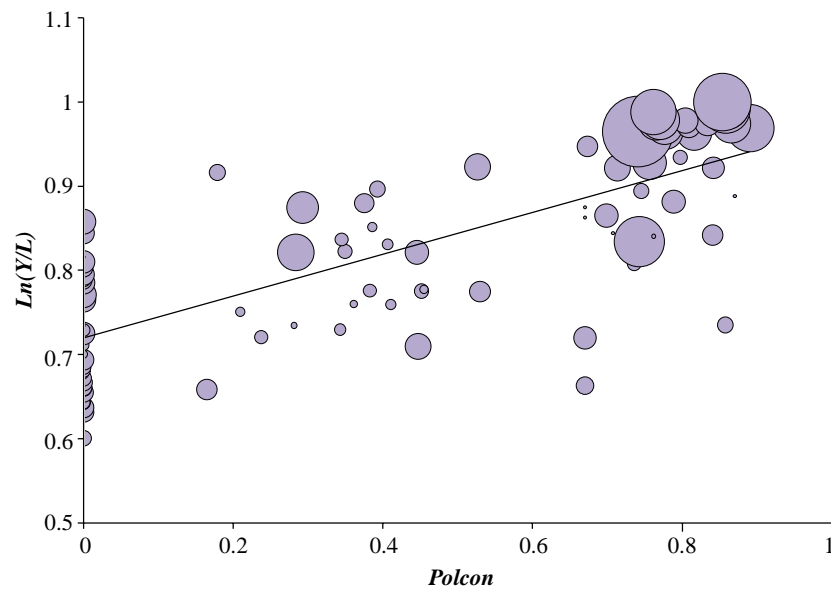


TABLE 3
DEPENDENT VARIABLE: $\ln(Y/L) - \ln(Y/L)_{US}$

	Regression		
	Year 1960	Year 1975	Year 1990
Intercept	0.72 (52.49)***	0.71 (50.04)***	0.68 (37.84)***
$\ln(1+years)$	0.02 (2.92)**	0.02 (3.25)***	0.01 (2.42)**
<i>Polcon</i>	0.16 (6.47)***	0.19 (8.88)***	0.23 (10.23)***
Adjusted R ²	0.56	0.56	0.60
Observations	76	114	96

Note: t-statistics are in parenthesis (one, two, and three asteriks denote significance at 10%, 5% and 1%).

Even though both variables in Table 3 are statistically significant, according to Section 2 these two variables by themselves are not the best variables to include. That Section argues that political uncertainty is eliminated if and only if there is both limited government and political stability. The evidence in Figures 6.1 through 6.3 points in that same direction.

The influence of political uncertainty might be captured with a construct that represents the degree of political certainty: $Certainty \equiv polcon * \ln(1+years)$. This variable might not be the exact specification, but it covers both dimensions of political uncertainty distinguished before. Running a regression with this construct, one finds the following:

TABLE 4
DEPENDENT VARIABLE: $\ln(Y/L) - \ln(Y/L)_{US}$

	Regression		
	Year 1960	Year 1975	Year 1990
Intercept	0.75 (82.74)***	0.76 (91.57)***	0.74 (74.22)***
<i>Certainty</i>	0.06 (11.11)***	0.06 (11.62)***	0.06 (11.56)***
Adjusted R ²	0.62	0.54	0.58
Observations	76	114	96

Note: t-statistics are in parenthesis (one, two and three asteriks denote significance at 10%, 5% and 1%).

The conceptual definition of political uncertainty as a composite of low political constraints and low polity persistence is highly significant. Appendix 1 shows that these results are robust to the inclusion of the ICRG law and order index widely used in the literature. The *certainty* construct also captures most of the variation in the data explained by the two separate variables in Table 3.

When the *certainty* variable is included in a regression together with *polcon* and $\ln(1+years)$ of polity persistence, Appendix 2 shows that polity persistence is no longer significant by itself. However, the year by year estimates do not discriminate clearly between *polcon* and *certainty*. A way to get more power in the tests is to pool the data. I do this in two ways.

First, given that the dependent variable has been up to now per capita income relative to the US in the years 1960, 1975 or 1990, which eliminates the growth trend, the dependent variables can also be detrended.¹⁷ Running a regression with the detrended data, the results are as follows:

TABLE 5
DEPENDENT VARIABLE: $\ln(Y/L)_i - \ln(Y/L)_{iUS}$

	Regression with adjusted data
Intercept	0.77 (77.41)***
$\ln(1+years)_i - [\ln(1+years)_{iUS} - \ln(1+years)_{1960US}]$	-0.01 (-1.98)**
$Polcon_i$	-0.00 (0.38)
$Certainty_i - [Certainty_{iUS} - Certainty_{1960US}]$	0.06 (15.25)***
Adjusted R ²	0.58
Observations	286

Note: t-statistics are in parenthesis (one, two and three asteriks denote significance at 10%, 5% and 1%).

Political constraints are not significant, and all the positive variation of relative income per capita is captured by the political certainty construct that captures the product of limited government and political stability. Interestingly, polity persistence by itself, i.e. without limited government, has a negative relationship to economic development. The only odd thing is that the detrended data include negative values of $\ln(1+years)$ and *certainty*, so these results have to be interpreted with care.

¹⁷ Since *polcon* did not vary in the US over the sample period, this variable is not adjusted.

Another way to look at the data is not to detrend either the dependent or the independent variables. Introducing a time variable to capture any residual growth trend, the results are as follows:

TABLE 6
DEPENDENT VARIABLE: $\ln(Y/L)_t - \ln(Y/L)_{1960US}$

	Regression with adjusted data
Intercept	0.75 (60.00)***
$\ln(I+years)_t$	-0.00 (-0.08)
$Polcon_t$	0.09 (3.35)***
$Certainty_t$	0.04 (4.42)***
Time	0.02 (3.89)***
Adjusted R ²	0.61
Observations	286

Note: t-statistics are in parenthesis (one, two and three asteriks denote significance at 10%, 5% and 1%).

According to the results in Table 6, both *polcon* and *certainty* are significant variables, while polity persistence is not significant. These results are more in accord with regressions with yearly data, and do not allow to do away with *polcon*.

As noted in Appendix 2, the problem may be in the way that the track record of limited government is captured: polity persistence is not the appropriate variable, and this may explain why some countries with high political constraints and a history of political constraints appear with a very low value of *certainty*. This issue is open to future research.

The results on *certainty* above can be related to the convergence hypothesis in the growth literature. As mentioned in Section 4.1, the log specification of polity persistence implies a decreasing rate of growth as time goes by. Since polity persistence only has a significant positive relationship to income per capita when political constraints are present, one might expect poor countries to grow much faster than rich countries only once they have put limited government in place.

In this regard, episodes like the economic miracles in Japan, Germany, Italy, and South Korea in the postwar come to mind. These are countries that achieved rapid and sustained growth. They also coincided with the establishment of political systems that tended to limited government, so the quality of the political institutions that were put in place is a fundamental factor to take into account.

5. CONCLUSIONS

This paper attempts to suggest a different approach to the issue of economic development. First, it focuses exclusively on the role of basic political institutions, to the exclusion of almost all else. Second, unlike the usual approach in the literature, it treats political uncertainty as a determinant of economic development, not of growth.

Political institutions are analyzed from the perspective of uncertainty. Two dimensions of political uncertainty are distinguished. On the one hand, instability of the rules of the game. On the other, rules of the game that allow the government an ample and arbitrary power. Low political uncertainty is identified with both political stability and limited government power.

The central conjecture of this paper is that political uncertainty implies economic underdevelopment. Conceptually, the reason is straightforward. Political uncertainty leads to higher risk, pushing interest rates up. This puts a brake on the process of capital accumulation, making the country remain relatively backward.

In the empirical analysis, political constraints are used for non-arbitrariness, and polity persistence is used for political stability. Both polity persistence and political constraints are positively related to income per capita, but the paper tries to disentangle their effect. The graphical analysis is striking: there seems to be no positive relation between political stability and economic development, unless there are positive political constraints.

In the regression analysis, low political uncertainty –the combination of high political constraints and high polity persistence– has a close relationship with economic development. This construct wipes out the statistical significance of polity persistence, reinforcing the idea that political stability on its own, without limited government, is not enough for economic development. The evidence on political constraints is more ambiguous, since it retains a separate statistical significance. A problem is that polity persistence does not conceptually capture the past history of constitutional government, since the past receives a zero weight if there is any kind of interruption. More clear-cut results would require the construction of a correct measure, for the present purposes, of the track record of limited government. This unsettled issue is open to future research.

If there is indeed a causal relationship between political development and economic development, the regression results in Section 4 on the positive relationship between political *certainty* and the log of income per capita bear directly on the convergence hypothesis. Poor countries usually have low polity persistence. Hence, they can be expected to grow faster than rich countries, insofar as growth tapers off with polity persistence. But the condition to get on the growth track seems to be to have limited government in the first place, because political stability by itself seems to take countries nowhere.

The present analysis tries to clarify the relationship between political variables and economic performance, but it does not address the causality issue directly. The procedure followed by Douglass North to elucidate the problem of causality between political development and economic development is the case study approach of economic history. North (1981) points out that limited government historically opened up the path to sustained economic growth. The

industrial revolution took place in the countries that assured a system of limited government, putting a stop to arbitrary government power that disturbed property rights.¹⁸

The interaction of political stability and political constraints with the level of economic development uncovered here can also help to shed light on this issue of causality. Besides carrying out Granger causality tests, Druck and Streb (2001) explore the interpretation of this data in the sense that limited government is the determinant of economic development. If political constraints were the product of economic development, it is not clear at all why one should expect political stability to matter so much. On the other hand, if it takes time for limited government to have a positive influence of income per capita, this time dimension makes perfect sense.

The paper does not try to explain, more fundamentally, the appearance of limited government. Once they appear, for evolutionary reasons one would expect more efficient political institutions to last more. Precisely England and the United States, the two countries with the most stable political institutions, started off the system of limited government.

To dig down more deeply might mean to go into the issue of political ideology, which may be an important driving force of political development. Rodríguez (2000) stresses the negative effects of wrong economic ideas, and the positive effects of good economic theory, for economic development. The present paper can be interpreted in the sense that good political theories are crucial for economic development.¹⁹

REFERENCES

- Akerlof, George (1970). "The market for 'lemons': quality, uncertainty and the market mechanism", *Quarterly Journal of Economics*, Vol. 84; 488-500.
- Avila, Jorge (1988). "El valor económico de la certidumbre", *Ensayos Económicos*, Vol. 41; 1-25.

¹⁸ North and Weingast (1989) do a detailed case study of how the appearance of constitutional restrictions brought about sudden changes to England after the 1688 Revolution, with the development of capital markets that made capital accumulation possible in England. This case is not restricted to Europe: similar things happened in Latin America. For instance, in Argentina limits to political power in the 1853 Constitution preceded the extraordinary process of capital accumulation and economic take-off (Saiegh, 1996). In both cases, one can say that a revolutionary episode that put limited government in power started off the process of economic development.

¹⁹ For Weingast (1995), the social consensus behind federalism in the United States preserved the market from federal government interventions. Once the consensus changed in the 1930's, the restrictions to these interventions were eliminated. In a case like Argentina, the changes in consensus were more traumatic, especially after 1930 with the habit of getting rid of governments through coups instead of through consensual political mechanisms. Argentina in fact was part of a larger wave of either Fascist or Communist inspiration that swept the world in the inter-war period and eliminated many of the guarantees of limited government.

- Avila, Jorge (1993). "El potencial argentino de crecimiento durante el Plan Brady", in Felipe de la Balze (ed.), *Reforma y convergencia. Ensayos sobre la transformación de la economía argentina*, Buenos Aires: ADEBA.
- Baird, Douglas, Robert Gertner; and Randal Picker (1994). *Game Theory and the Law*, Cambridge: Harvard University Press.
- Barro, Robert, and Xavier Sala-i-Martin (1995). *Economic Growth*, New York: McGraw-Hill.
- Burki, Shahid, and Guillermo Perry (1998). *Beyond the Washington Consensus: Institutions Matter*, Washington: The World Bank.
- Clague, Christopher, Philip Keefer, Stephen Knack, and Mancur Olson (1996). "Property and contract rights in autocracies and democracies", *Journal of Economic Growth* 1: 243-276.
- Drelichman, Mauricio (2000). "Law, institutions and growth. A semiparametric study", *mimeo*, Northwestern University.
- Druck, Pablo, and Jorge Streb (2001). "Economic development as a matter of political geography", *mimeo*, Universidad del CEMA.
- Gaviria, Alejandro, Ugo Panizza, Jessica Seddon, and Ernesto Stein (1999). "Political institutions and economic outcomes", *mimeo*, Inter-American Development Bank.
- Hausmann, Ricardo, and Michael Gavin (1996). "Securing stability and growth in a shock-prone region: The policy challenge for Latin America", in Ricardo Hausmann and Helmut Reisen (eds.), *Securing Stability and Growth in Latin America*, Paris: OECD.
- Henisz, Witold (2000). "The institutional environment for economic growth", *Economics and Politics*, forthcoming.
- Keynes, John M. (1923). "Public finance and changes in the value of money", in *A Tract on Monetary Reform* (volume 4 of *The Collected Writings of John Maynard Keynes*, Cambridge: Macmillan).
- La Porta, Rafael, Florencio López-de-Silanes, Andrei Shleifer, and Robert Vishny (1998). "Law and Finance", *Journal of Political Economy*, Vol. 106; 1113-55.
- Nino, Carlos S. (1996). *The Constitution of Deliberative Democracy*, New Haven: Yale University Press.
- North, Douglass (1981). *Structure and Change in Economic History*, New York: Norton & Co.
- North, Douglass (1990). *Institutions, Institutional Change and Economic Performance*, New York: Cambridge University Press.
- North, Douglass, and Robert Thomas (1973). *The Rise of the Western World: A New Economic History*, Cambridge: The University Press.
- North, Douglass, and Barry Weingast (1989). "Constitutions and commitment: the evolution of institutions governing public choice in seventeenth-century England", *Journal of Economic History*, Vol. 49; 803-832.
- Olson, Mancur (1996). "Big bills left on the sidewalk: Why some nations are rich, and others poor", *Journal of Economic Perspectives*, Vol. 10 (2); 3-24.
- Olson, Mancur (2000). *Power and Prosperity. Outgrowing Communist and Capitalist Dictatorships*, Basic Books: New York.

- Persson, Torsten, and Guido Tabellini (1991). *Macroeconomic Policy, Credibility and Politics*, Chur: Harwood Publishers.
- Rodríguez, Carlos (2000). "Macroeconomic policy lessons from LDC's", *Journal of Applied Economics*, Vol. 3; 169-216.
- Saiegh, Sebastián (1996). "The rise of Argentina's economic prosperity: An institutional analysis", *mimeo*, Stanford University.
- Shepsle, Kenneth (1991). "Discrecionalidad, instituciones y el problema del compromiso del gobierno", in Sebastián Saiegh y Mariano Tommasi, *La nueva economía política: racionalidad e instituciones*, Buenos Aires: Eudeba (1998 translation).
- Smith, Adam (1776; 1976 re-edition). *The Wealth of Nations*, Chicago: University of Chicago Press.
- Spiller, Pablo (1995). "Institutions and commitment", *mimeo*, UC Berkeley.
- Spiller, Pablo, and Mariano Tommasi (1999). *Las fuentes institucionales del desarrollo argentino*, CEDI-Fundación Gobierno y Sociedad.
- Streb, Jorge (1998). "Y, si no hay más remedio ... Inflación, desconfianza y la desintegración del sistema financiero en Argentina", *Desarrollo Económico*, Vol. 38; 199-214.
- Streb, Jorge (2000). "Por qué importan las instituciones políticas para el desempeño económico: incertidumbre política y subdesarrollo", *Documento de Trabajo 173*, Universidad del CEMA.
- Weingast, Barry (1995). "The economic role of political institutions: Market-preserving federalism and economic development", *Journal of Law, Economics, and Organization*, Vol. 11; 1-31.

APPENDIX

1. POLITICAL UNCERTAINTY AND THE LAW AND ORDER INDEX

The paper develops a sui generis definition of 'political uncertainty'. Now I control for the introduction of another variable widely used in the literature, the ICRG 'law and order' index (*L&O*). Each country is coded in two dimensions, strength and impartiality of the legal system (from 0 to 3) and an assessment of observance of the law (0 to 3), having a range which goes from 0 (lowest) to 6 (highest). The main problem with the law and order index is that its coding starts only in 1982 (cf. Drelichman, 2000).

One can expect this variable to have a specific influence on economic performance, since the ICRG index is used to provide orientation to potential investors. It is measuring a feature that is key for economic decisions, namely the respect for property rights and the adherence to the rule of law in a given country. On the other hand, the variable 'political uncertainty' measures a structural characteristic of the political system that is more indirectly related to economic performance.

Comparing the *L&O* variable for 1982 with the *certainty* variable for 1990 that is the product of *polcon* and $\ln(1+\text{years})$ of polity persistence, Table 6 shows the following:

TABLE 7
DEPENDENT VARIABLE: $\ln(Y/L) - \ln(Y/L)_{us}$ in 1990

	Regression		
	(1)	(2)	(3)
Intercept	0.74 (71.47)***	0.67 (33.92)***	0.72 (37.91)***
<i>Certainty</i>	0.06 (11.95)***	0.05 (5.38)***	
<i>L&O</i>	0.05 (9.37)***	0.01 (1.87)*	
Adjusted R ²	0.66	0.55	0.67
Observations	73	73	73

Note: t-statistics are in parenthesis (one, two and three asteriks denote significance at 10%, 5% and 1%).

Though the *L&O* variable is certainly significant in these regressions, it does not obliterate the significance of the *certainty* construct proposed in this paper.

In fact, even if the *certainty* construct had turned out not to be significant, that would not necessarily have damaged the line of argument of the paper. The paper argues that the political system underlies the legal system, which in turn sets the framework of property rights for economic activity to take place. That is, the paper looks at the political system as a determinant of the legal system, and 'law and order' as an outcome of basic political variables (as well as other intervening factors that are ignored here). If the relationship were very close, and the *L&O* variable included additional information, *certainty* could turn out not to be significant at all even though in a causal sense it would be the driving variable.

2. POLITICAL UNCERTAINTY AND ITS COMPONENTS

This Appendix shows the yearly regressions when the *certainty* variable is included in a regression together with *polcon* and $\ln(1+\text{years})$. The detrended data are pooled in Table 5 in text.

TABLE 8
DEPENDENT VARIABLE: $\ln(Y/L)_t - \ln(Y/L)_{tUS}$

	Regression		
	Year 1960	Year 1975	Year 1990
Intercept	0.76 (48.16)***	0.73 (38.56)***	0.74 (25.92)***
$\ln(1+years)$	-0.00 (-0.52)	0.01 (1.30)	-0.00 (-0.57)
<i>Polcon</i>	0.04 (1.05)	0.13 (2.67)***	0.11 (2.08)**
<i>Certainty</i>	0.05 (3.66)***	0.02 (1.38)	0.04 (2.39)**
Adjusted R ²	0.62	0.56	0.62
Observations	76	114	96

Note: t-statistics are in parenthesis (one, two and three asteriks denote significance at 10%, 5% and 1%).

Observe that polity persistence usually has the wrong sign, and is not in the least significant. This supports the conjecture that political stability, without checks and balances to political power, is not a sufficient condition for economic development.

The yearly data have more trouble discriminating between *polcon* and *certainty*. There may be an issue of multicollinearity: though *certainty* is a non-linear combination of the other two variables, there is a linear component, as a Taylor expansion would show.

Another thing that may be at work is that some countries with high-income per capita and high political constraints do not have a long record of polity persistence, e.g. Portugal and Spain in 1975, or Chile, Czechoslovakia and Poland in 1990. Since many of these countries do have a past record of political constraints, a measure other than polity persistence is needed to capture the history of political constraints. The construction of a variable that reflects the time dimension of political constraints remains an issue open for future research.