The Political Economy of Private Savings: Savings Decisions under Institutional Instability

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The objective of this paper is to show that there is a positive relationship between institutional stability, credibility and the rate of private saving. The most recent literature about disparities between saving rates uses a political economy argument to explain how and why the institutional instability could affect the public decision, which determines the public saving. However, it does not suggest in the same way that such instability could affect negatively private saving. This lack of the theory will be analysed here using the theoretical referential of the New Institutional Economics (NEI), where it is pointed out, in the processes of private decision of accumulation of assets, the role of the government enforcing (i) the stability of the market rules and (ii) the property rights. Firstly, we are going to discuss some theoretical aspects linking growth with politics and institutions. Secondly, it will be presented a menu-dependent model applied to savings decisions. The model is based on theoretical efforts made by Hertzian-Moldau (JET,1993) and Garcia & Silva (1996). Such framework will establish that differences on political and institutional restrictions can explain distinct saving standards. The conclusion of the paper will also suggest the necessity of empirical studies (econometric and comparative institutional cases) on the subject. The fundamental practical interest of the research, that will be the subject for further investigation, is to try to justify the low levels of saving in Latin America (and in another emerging economies) using an institutional argument.

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1 We would like to thank the NPP-EAESP/FGVSP, FAPESP, ILAS-University of London, and Victor Bulmer-Thomas.
1. Introduction.

The objective of this paper is to show that the institutional stability can be an important factor in the determination of the rate of private saving in an economy. The institutional, and even the political stability, are fundamental, it will be argued here, to guarantee a strong and trustful financial market capable to encourage private saving and economic growth. The argument that will be developed in this paper is theoretical, but it represents the first step towards empirical studies in this research field.

The practical interest of this kind of research refers to Latin America. According to World Bank (1996, p. 89), the Latin America's average saving rate in the beginning of the nineties was of just 20% of GDP, while in East of Asia it was 35%. This fact can represent part of the explanation for the growth rates differentials between the two regions. Since one of the great concerns in Brazil and for the remaining of the Latin America countries is the sustained long-term growth, the study of the determination of savings must take a central place in the economic research agenda. We will sustain that the political-institutional stability is an explanatory variable in the determination of the private saving.

Edwards (1997) shows, with arguments of political economy and public choice, that institutional instability can decrease public saving, but he doesn't establish any relationship between institutional instability and private saving. The central theoretical concern of this paper is exactly to show that the institutional instability can also rebound negatively in private savings. The paper intends, therefore, to contribute for the partial fulfilling of this lack in the political economy literature about growth and savings.

There are important relationships between phenomena as like as savings formation and growth theories and New Institutional Economics (NIE). The main vision, and to say, the methodological fundamental that is adopted in this paper is founded in NIE. NIE is a branch of a boarder research program that could be defined as New Political Economy (NPE). The other branch is Constitutional Economics (CE). NIE has some representatives as like as D. North, R. Thomas and B. Weingast and CE is represented, for example, by the work of J. Buchanan and G. Brennan. These two research programs could be included in a great research program due the fact of the existence of very similar heuristic concerns in the pursuit of enlarging, and not to refute or to deny, the heuristic borders of the neo-classical economics as a hole. Both the programs have the same interest: the study of the rules that are behind the operation of the ordinary markets, financial markets, and of the political market (or the State and the government).

There are convergence points between the two research programs. The first is in the study of the Constitution, the institutions, norms and the pay-off systems that emerge from them (from the Law and the Constitution lato sensu). Secondly, both of them are concerned with the necessity of any theory of the State to complement the neo-classical analysis (see North, and Buchanan & Tullock, ).

The second point in common among EC and to NEI it is the same weltanschauung, the same vision concerning rent seeking activities: when they are widespread and excessively disseminated in the economy, they generate inefficient results. Despite this fact, there are some differences between them.

Firstly, CE is more concerned with the study of the relationship between the constitutional incentive systems and the public agent's behaviour. On the other hand, NEI has

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3 Regarding the two researches programs see, for example, North (1990) and Brennan & Buchanan (1985).
its attention focused on the relationship between these systems and the agents' action in the market.

Secondly, NEI departs from a Coasian model wherein there are positive transaction costs. The evolution of some institutions, as the own market itself, would tend to minimise some information asymmetries and transaction costs. On the other hand, the efficiency could be affected negatively with the existence of another set of institutions. Additionally, as information is not perfect in NIE models, they usually suppose, in some sense, bounded rationality assumptions.

However, CE extends the *homo oeconomicus* for the public sphere without any change in the traditional rationality presupposition. Finally, the hypothesis about transaction costs is irrelevant for CE.

Although the differences between the programmes are clear, the study of the State and its relationships with economic efficiency and performance are a main and common concern of both of them.

However, what NPE and NEI have to say about savings, economic performance and growth? North (1993, p. 61) establishes the importance of the institutional dimension of economic decisions and growth:

“Why model institutions? The short answer is that they are the incentive structure of an economy and therefore fundamentally influence individual choices.

Let me give you a more complete answer from neo-classical growth theory. In a recent article entitled ‘A Contribution to the Empirics of Economic Growth’, Mankiw, Romer, and Weil (1991) summarise and extend the earlier models of Romer (1986, 1987, 1990) and Lucas (1988), concluding that 80 percent of the variation in income per capita in 98 countries can be explained by population growth, savings, and schooling. Thus a one-percent increase in the fraction of output saved or devoted to education leads to about a one-percent increase in the level of GDP per worker. Population growth operates on the other way. So all that countries need do is follow the prescription implied by that information and they will be rich. Why don’t they, if there is such a high pay-off? Because the institutional framework determines the pay-offs. Poor countries are poor because the pay-offs do not reward productive activity. All but the most myopic economists agree that institutions are important. what is missing is a way to integrate institutional analysis into economic theory.”

Institutions matter. The institutions of a society represent the rules of the game in the market of goods, services, financial and in the political market. The institutions are the group of rules that restrict the decisions of the economic agents in all of these markets. They generate a pay-off structure or incentives that determines the decisions and the results of the individual actions. For example, some economists (see North & Thomas, 1973 and North & Weingast, 1989 ) argue - and we follow them - that institutions have a fundamental role to explain (i) the development of the financial markets (and private saving incentives), (ii) the capital accumulation and (iii) the technological progress among economies; for them, growth

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3 The methodological discussion about the rationality assumption in NIE models are extremely complex and this is not my purpose here actually. There are some important references about the theme as like as Rutherford (1996).
must be seen as an institutional phenomenon. The main representative of this vision is Douglass North, but there are some mainstream economists who share the same approach (see, for example, Scully, 1988, Scully, 1992, and Murphy, Shleifer & Vishny, 1991).

North (1990, 1992) sustains that economic phenomena are founded in decisions of agents restrained by incentives that emerge from a set of institutional arrangements. The institutions are the rules of the game and the economic agents and the companies, the players.4 The institutions minimise the uncertainties and they define the pattern of socially desirable behaviour. For example, one of the main functions of the rules of the game would be the enforcement of the Law and of the property rights, creating the parameters for the establishment and execution of contracts, guaranteeing the return of the investments legally.

Nevertheless, there is a fundamental example about the relationships between private savings and institutions. This example will have a central role for our main argument that will be presented below. We can find in North & Weingast (1989) an analytical and historical exposition that illustrates the role of institutions in the explanation about economic growth and development. In this paper they show, with empirical evidences (behaviour of the financial markets), that the constitutional arrangements done in England after the Glorious Revolution guaranteed the property rights on assets and eliminated the State’s discretionary power to expropriate. The consolidation of the Fiscal State in England had contributed to the emerging of a trustful institutional stability. The basic argument is that these institutional reforms generated a fertile ground for the flourishing of the business, since there was a protection to the property right.

The same paper sustains, and this is by far the most important fact, that the financial market flourished in England after the reforms and that this fact would have been one of the main sources of the economic growth that would came later with the First Industrial Revolution.

For this reason, institutions could be seen as technologies - or social technologies. They can (or cannot) improve the economic output produced by the interaction of the agents who behave following the incentive structures created by them.

For example, the economic costs of a rent seeking society could be considerable. Baumol (1990) argues that the allocation of talents in activities as crime and corruption generates a cost, since these talents could be being used in innovative and managerial-productive activities that create organisational-managerial improvement and productivity gains. Of this point of view, the economic performance does not depend on the absolute offer of talents, but of the relative allocation of them between productive and unproductive activities (and, in general, rent seeking is an unproductive activity).5

But what does determine the allocation of talents between productive and unproductive activities?

The rules of the economic game create the structure of incentives that restricts the individual choices, and therefore, determine the talent allocation. Tanzi (1995), Murphy, Shleifer & Vishny (1991) have the same argument. For example, Tanzi (1995, p.171) argues that in societies wherein corruption is endemic - and corruption is a typical unproductive rent seeking activity - the incentives to investment in human capital will be low, and this fact has

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4 See also North, 1992, p.13.
5 One can argue that there is a sort of productive rent seeking. This is partially true. Consider the case of a lobby against protectionism. In principle, the lobby is productive since its objective is founded. However, even in this case, there would be Paretoan superiority if there was not the necessity of lobby action. For an extensive discussion on rent seeking activities and its costs, see Tollison (1982).
bad consequences to growth. The core of the argument is: institutions could generate incentive structures that are not growth-friendly.

Economic growth depends on institutions and institutional stability. Nevertheless, a determined institutional set could be more inefficient than others. For example, one can imagine an economy with a incentive structure that determines the allocation of talents and resources mainly in unproductive activities. These incentives could emerge from stable institutions. The problem here is associated with the quality of the institutions. In this sense, growth, convergence and path dependence are phenomena linked with institutional and constitutional change (see Scully, 1992, pp.56-105). Scully (1992, p. 9) clearly states the importance of the institutions concerning this subject:

"The new institutional economics focuses attention on the social, legal, political, and economic framework that sets the range of sanctioned human behaviour and choice. The institutional framework affects the allocation of resources within society. The new institutional economics is distinguished from the old in that its proponents are not only opposed to neo-classical theory but frequently are neo-classical economists. Neo-classical economics and the new institutional economics have been joined most productively in the incorporation of the theory of property rights into conventional theory of the firm (...)"

Institutions are not just the Constitution and the Law, but the State also. A "stateless" society in a Hobbesian natural state has a main characteristic: no property rights are enforced. For example, in a permanent civil war environment, there are not the fundamental incentives to save, invest and innovate. The property rights are essential for growth and its enforcement must be a constitutive function of the State. Contrary to neo-classical economics in general, NEI's vision and models include the State.

The Constitution is basically the set of rules that restrict the behaviour of public agents inside of the political market (see, about this, North & Thomas, 1973 and North, 1981, pp. 20-32). For this reason, the Constitution is the set of restrictions imposed to the State as a role (Buchanan, 1968, and Brennan & Buchanan, 1985). However, the State itself should be conceived formally as a guardian and supervisor of the enforcement of contracts and property rights in the economy. The own existence of institutional stability and credibility related to the institutions and contracts in general depends on the enforcement of the law and of the incentive structures. However, the State's discretionary power can create institutional instability.

The NPE theories of the State, all of them, with some marginal differences, consider the fact that the State is not neutral. The political market is a place wherein many competitive rent seeking groups act (see, for example, Buchanan & Tullock, 1962, Tullock, 1997, Buchanan, 1975, Becker, 1983, and Olson, 1965). Hence the economics of a rent seeking society must deal with a rent seeking State. There are two examples of institutional environments that can illustrate the relationships among the State, rent seeking, property rights and growth.

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7 It is important to note that the relationships between economic growth and lobbying can be more complex. There are some cases where this kind of rent seeking activity could be growth-friendly, as in the case of organised pressure groups that demand growth policies.
Firstly, suppose that the \textit{status quo} (the incentive set that emerges from institutions) determines, in a specific economy, the allocation of the majority of resources and human capital stock in unproductive activities. In this case, the institutions could be stable, but then could obliterate that achievement of better conditions for long run sustainable economic growth (Scully, 1992, pp.13-4, Ramseyer, 1997). There is the possibility of economic growth in such situation, but the economy will be attached to a specific \textit{path dependence}. One can imagine the same economy but with different institutions and government policies generating incentives to profit-seeking activities. The core of the argument here is that an institutional change towards a less rent seeking society promotes a Pareto improvement: the Constitutional and institutional changes lead the economy to a Pareto Superior Position. So, the quality of the State policies, for example, are important to explain different growth performances and absolute convergences (Barro, 1994, pp.23-4). We can consider a second situation, the worst one. The absence of property rights or the absence of a strong and constitutional-constrained State to enforce the law could obliterate growth and the possibility of convergence. Apparently, this is a big problem for some developing economies and there is evidence about it (see, for example, Bates, 1996, Ensminger, 1997, and Firmin-Sellers, 1996).

North & Weingast (1989) and North & Thomas (1973) consider that, for the development of the financial markets and for economic growth, the quality of the institutions that govern the public choice and, therefore, the State - and the stability of such rules - are fundamental elements to explain the economic performance, i.e. efficiency and growth. We can conclude that economic growth depends on institutions, property right and, of course, incentives. To explain absolute convergence we must consider the fact that without the right institutions and without institutional stability and credibility, the economic agent could have not incentives to engage in productive activities as technological and productivity improvements, development of new products and new organisational forms. \textit{Even we can consider the fact that without property rights enforcement there is no incentive to save. This is the case of the absence of a Fiscal State with expirations powers not restrained by the Constitution.}

The NPE and the NIE supply useful tools to analyse some questions concerning growth and development. The property rights paradigm and the consideration of the State as a \textit{locus} of rent seeking activities are important contributions from NPE in general for not just growth theories, but also for development theories (see, for example, North, 1990, Basu, 1997, pp. 319-29, Lal & Myint, 1996, pp.10-6, Hayami, 1997, pp.21-8, Kasper, 1994, and Borner, Brunetti & Weder, 1995). The study of institutions and property rights represent a fundamental toll to understand some growth related phenomena as technological advance, capital accumulation, convergence, and \textit{savings decisions}.

Despite the fact that technological progress is the fundamental key for economic growth, financial markets development and savings are decisive variables to explain, in an open and global economy, capital inflows, investment and growth. This point is fundamental for the subject proposed in this paper and therefore to my main hypothesis, the relationship between private saving and institutional stability. We must apply, It will be argued, NIE and the property rights approach to further understanding about cross-countries differences on savings and growth. Referring to this subject, Ranseyer (1997, p.11) affirms:

“(...) Will people save? The right answer is that it largely depends on the returns they expect, and those returns depend on property rights in place.”
Traditional studies in private savings underestimate the role of the political-institutional instability over the savings decisions. Several choices of the economic agents, as like as between consumption and saving and investment in physical and human capital or in technology involve risk and uncertainty. The institutional instability can generate uncertainty to these decisions. Additionally, it could increase the credibility lack (i) between economic agents concerning the contracts and (ii) between them and the government. In a volatile economic environment the constant changes in the rules of the economic and political game are usual.

The majority of studies about saving are micro founded and empirical. There are a lot of works about the theme, mainly because savings are not just a big issue today in academic circles, but also for governments concerned with growth recovery. However, the recent literature about saving is not concerned about the role of institutional stability. An exception is Edwards (1997). This work is a panel study crossing several developed and undeveloped economies. The article shows that the average saving rate in Latin America was, in the decade of 80 (in fact between 1983 and 1993) just 15%, and in spite of the existence of chronic public deficit in some economies, there was also in this period a considerable decreasing in the private saving. This article shows that the main causes for the existence of high saving rates are the (i) demographic structures where high dependence levels don’t exist (concentrations of seniors and of youths) and (ii) accelerated economic growth.

Additionally, institutional-political instability appears as important variable for the explanation of low saving rates. Considering public saving, the article finds that governments that are confronted with chronic instability, tend to save less. This argument represents a starting point for my main argument in this paper. We sustain that, as like as public saving, private savings can be negatively affected by institutional instability. Political and institutional instability can increase the State’s discretionary power: in such a situation there is a greater risk of property rights violation.

It would be reasonable to suppose the fact that the own actions of governments constituted under unstable political markets can affect (i) the stability of the basic institutional rules, (ii) the agents’ credibility concerning the property rights warranty and the enforcement of the contracts, and (iii) private choices involving savings decisions.

It is important to note that this lack in the literature about private savings is, at least in part, justifiable because the difficulties involving dealing with qualitative index of political and institutional instability. It is very hard task to use data concerning political and institutional instability. Despite this fact, there is the possibility, as we are going to see, to construct models to open the field to new empirical research.

Our main argument is that the mainstream explanations about private savings decisions do not contemplate the main role of institutional and political instability, since savings decisions are choices that involve risk and uncertainty.

The institutional and political instability can be defined as the volatility of the rules of the economic game and of the basic institutional set (and constitutional set) that regulates the discretionary powers of the State. The institutional instability creates uncertainty about property rights enforcement and in radical cases it increases the risk of expropriation. Institutional instability is the situation wherein there is no guarantee of the respect of private

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8 An extremely useful theoretical and empirical review about savings is found in KortliKoff (1989). In the literature there is no consideration about the relationships between institutional and political instability over private savings.

property rights over assets in general. However, there is a kind of institutional instability that it is not so extreme. Macroeconomic instability generates, in many cases (as, for example, Brazil during the Eighties), constant policy changes and increases the possibility of random changes in the economic policy, changes that could affect contracts.

Institutional instability creates institutional uncertainty, as defined by Borner, Brunetti and Weder (1992, p.17):

"We define institutional uncertainty as the risks arising from a highly volatile institutional environment. Institutional uncertainty reflects the permanent danger of expropriation or limitation of property rights. Institutional uncertainty means that there are no clear and irrevocable rules of the game."

Latin America’s economic history does in fact tend to show that much of what was negative for financial development and even economic growth came from the institutional instability (see, for example, Marichal, 1997, Haber, 1997, Haber & Klein, 1997, and Engerman & Sokoloff, 1997). This account, at least it seems to us, contains two basic points. Firstly, institutional instability creates the unpredictability of government policies changes and discretionary interventions. Secondly, and derived from the first point, institutional instability does not guarantee the enforcement of private contracts (Broner, Brunetti & Weder, 1992, p.19).

Institutional instability, when it is endemic and deeply rooted in the political market, can mitigate contracts and can generate informality in the financial markets. However, when we consider the private savings decisions, the main problem associated with institutional instability and uncertainty is the fact that the intertemporal preference discount rate can be affected. Savings decisions are inherently intertemporal choices that require the institutional enforcement over future assets. Supposing the existence of a relatively developed financial market, the act of save can be seen as a intertemporal contract that demands the guarantee and enforcement of property rights in the future. The incentive structure that emerges form the institutional set and form unstable institutions can decisively drive intertemporal choices in the economy. The possibility, for example, of unpredictable and chronically discretionary interventions of the State regulating property rights and contracts can generate uncertainty towards the rights over future financial claims. The economic agents can shorten the time horizons of the decisions and, in the case of savings choices, consume more and save less. It must even be considered the theoretical possibility of no altruism in extremes situations.

One could argue that the influence of institutional instability could be not direct, because there are other factors linked with savings decisions. However, economic agents may evaluate more the present than the future, independently of the interest rate level and a priori altruistic/selfish suppositions. Even in the case of infinite horizons, if there is absolutely no guarantee of property rights enforcement over financial assets in the future, one can argue that consumption could rise permanently.

Savings decisions are, at least theoretically speaking, closely bounded up with incentives. And they may, indeed, be affected by the lack of property rights enforcement. The basic absence in the traditional models used to explain private saving decisions is the simple fact that they do not contain the a priori supposition of property rights enforcement.

This issue could be the heart of the matter for many developing countries. The cross-section and causality evidence derived from some studies using endogenous growth models corroborates the supposition that growth causes saving increases (see, for a debate on the theme, the collection Hausmann & Reisen, 1997). This fact could be linked to the hypothesis that some institutional changes are previous conditions to economic change and growth. Our
supposition is that institutional change must be seriously considered as a previous condition to private savings improvements and this approach is an attempt to bring new light in the debate.

It must be considered the necessity of construct a model linking incentives, which came form the basic institutional set, with save decisions. However, such approach is not compatible with the traditional, neo-classical view about economic agent's decisions.

Consider the consumption behaviour formula (1) bellow:

\[ U = \int_{0}^{\infty} e^{-\rho t} u(C(t)) dt \]

In this case, the greater is \( \rho \) less the agent values saving (or future consumption)\(^{10}\). The main question is: the lack of property rights enforcement could create uncertainty respecting the legally guaranteed benefits from saving. Political and institutional instability could affect \( \rho \): the intertemporal preferences of the economic agents depend on how property rights are enforced by political and economical institutions, despite the consideration of other traditional variables that affect it.

The importance of the property rights approach grows up when we analyse many underdeveloped economies. In many of these economies, institutional design and economic rules are not market friendly or they are fragile. For example, the brief examination of some African economies shows the relevance of endogenising institutions in economic explanations about underdevelopment (Mbaku, 1997, pp. 91-110). Even in the case of saving decisions, considerations about the quality of property rights enforcement institutions are crucial:

"Researches have argued that economic growth in a country is affected by the security of property rights in that society. Those who provide funds for capital formation expect to be able to receive the earnings produced by their savings. Consequently, savers have to be assured, to a reasonable degree, that they will have access to the earning of their savers. Political instability has a negative impact on the security of property rights and, as a result, lowers the level of domestic savings and subsequent capital formation." (Mbaku, 1997, p. 94).

The inclusion of the institutions in economic models represents a hard but necessary task. There are many ways to deal with institutions inside economic models. For example, North (1993) suggests the use of models that include belief and shared mental models (ideology) formation. In some way, many NIE theorists use bounded rationality models (see, about methodological questions concerning NIE, Rutherford, 1996).

The introduction of incentives schemes into the traditional decision theory represents a very hard but necessary task. The literature about saving and incentives is restrict to experimental economics and psychology and basically works with rationality failure models. On the other hand, incentives in this literature are not taken in the same sense as in NIE. However, it is interesting to highlight some aspects from these models.

Ainslie (1975, 1982, 1994), Schelling (1984), Thaler & Shefrin (1981, 1988) are some examples of this literature. Basically, these models deal with the notion of akrasia and self control: the problems facing by the agents when they decide to consume more or less are seen as self-control issues. As a matter of fact, saving decisions would depend on (i) self enforcement rules and (ii) environmental influences.

\(^{10}\) In this case \( h \) is the number of individuals in a household; I am supposing \( h = 1 \).
Thaler & Shefrin (Idem) developed insightful ideas that are relevant to the model that will be developed in this paper. They construct a multiple selves model, supposing that the economic agents have more than one preference ordering. In this sense, an economic agent is supposed to be a set of multiple selves or egos. The selves are conflicting ones and the economic agent has opportunity costs to choose what will be the first one in the meta-ordering of preferences. They conclude that saving decisions depend on the environment: saving incentives could determine which self would be the first one in the selves ordering.

More specifically, Thaler & Shefrin (1988) represents a starting point to the construction of a saving decision model conditioned to incentives structures. Psychology apart, such model supplies an important insight: the introduction of institutions and incentive structures in a saving decision theory demands some consideration about the rationality hypothesis utilised. In our view, considering agents as composed by multiple selves is a fundamental step in the construction of models that try to endogenise institutions and pay-offs systems. For example, if property rights are not sufficiently enforced, the incentive structure can represent an external variable that determines which self will remain as the first one in a saving/consumption decision. The elaboration of a model that deals with this question is the next purpose of this paper.

2. Allais' Paradox and Savings Behaviour.

The economic vision about the determinations of private savings is fundamentally founded in the idea that economic agents take decisions to save considering consumption in future. In this sense, the saving is a kind of hedge on the future, when the income of productive factor is uncertain or non-existent. Generally, the saving choices seek the maximisation of the expected utility, derived of the intertemporal preference and of the expectations, restricted to the present budgetary possibilities.

Theories of saving based on models of decision with uncertainty have, nevertheless, severe limitations. The most famous of them is the case of Allesian preferences. In this situation the transitivity principle or the independence hypothesis are contradicted. In cases like these, the system of axioms of the theory of the expected utility is false. Let us see, with a little more of detail, the famous problem of Allais (1953), which can be synthesised in the following problem:

There are two situations (A and B), which involve choices between lotteries. In the problem A, the economic agent should choose between two lotteries (L1 and L2). The first pays a prize of $200 with probability of 1, and the other a prize of $300 with probability of 0.8 and $0 with probability of 0.2. In the situation B, there are two other lotteries (L3 and L4): L3 pay a prize of $200 with probability of 0.5 and $0 with probability of 0.5; Lottery L4 pays $300 with probability of 0.4 and $0 with probability of 0.6.

Allais’ paradox appears in the case of L1 to be preferred for L2, in the situation A, and L4 to be preferred for L3 in the situation B. However, if L1 is preferred for L2, for the same principle, we should hope L3 went at least as good as L4, otherwise or the transitivity axiom or the independence axiom are not respected. This example reveals us that, in the first situation, economic agents prefer the option of a smaller risk (L1), independently of the fact of its expected value to be smaller than the one of the option L2, while, on the second, the riskiest option L4 is preferred to the situation of smaller risk (L3), because it is larger than its expected value.

If those lotteries are plans of saving to supply the necessary funds to the future consumption, we would say that in situation A the economic agent prefers assets of smaller profitability with right return and, in the other, the economic agent could choose the risky
asset to obtain a little more of financial profitability (situation B). In that case, the change rate between the financial assets is not well defined. In the situation A, the economic agent gives up an additional profitability of $20 in change of a smaller risk and. In the situation B, he changes the smaller risk for a little more of profitability (the same amount that he opened hand in the previous situation).

That example is quite illustrative for the discussion savings decisions in different economies. Supposing the same structure of the economic agents’ preferences and admitting that real assets have nil gains and financial assets are risky, we can say that, in the country in that there is great disparity among the risks of the different assets, the economic agents end up revealing its preference for real assets, even if its profitability is smaller than the financial assets. Nonetheless, in this case the risk differences are small (L3 for L4), the agents end up preferring the most profitable option.

Summing up, the Allais’ paradox reveals that the economic agents’ behaviour towards risk can be menu-dependent, in the sense that differences among many opportunity sets can generate different choices, independently of the economic agents’ preferences. In the next sections of this paper, we will present a basic choice model considering that decisions between assets are guided by a group of irreducible criteria of choice and we will analyse some problems about determination of the private saving, which are highlighted by the model.

3. Savings under Irreducible Values: a Basic Model. \(^{11}\)

In this section we present the Choice by Irreducible Values Model – CIVM, first developed by Moldau (1988, 1993). The problem of choice involves two basic sets: the set of irreducible criteria and the opportunity set. \(J\) denotes the set of irreducible criteria and it is supposed to be formed by \(m\) elements, \(m \geq 1\). The opportunity set is denoted by \(X\) and it is formed by \(n\) elements, \(n \geq 1\). Both sets are supposed to be finite. Every alternative \(x\) in \(X\) is an asset that represents a probability distribution of returns.

The primitive relation in CIVM is the relative importance of the irreducible criteria. Comparisons of any two options from \(X\) are established by the binary relation \(\succeq\) over the product space \(J \times X\) of pairs \((j, x)\), where \(j\) and \(x\) are variables from \(J\) and \(X\), respectively. The proposition \((j, x') \succeq (j, x)\) means that criterion \(j^*\) at option \(x'\) is “at least as important as” criterion \(j^*\) at option \(x\). On the basis of the relative importance relation we can define relations “more important than” and “as important as”.

\[
\forall j^*, j^* \in J \text{ and } \forall x^*, x^* \in X : \quad (j^*, x^*) \succ (j^*, x^*) \iff (j^*, x^*) \succeq (j^*, x^*) \wedge (j^*, x^*) \succeq (j^*, x^*)
\]

\[
(j^*, x^*) \succeq (j^*, x^*) \iff (j^*, x^*) \succeq (j^*, x^*) \wedge (j^*, x^*) \succeq (j^*, x^*)
\]

Based on \(\succeq\) we can define a non-preference relation on \(X\) according criterion \(j\) as follows: for any option and for any criterion, \(x'\) is “at least as good as” \(x^*\) according criterion \(j\), if criterion \(j\) at \(x'\) is as important as it is at \(x^*\). From this notion follow the definitions of preference and indifference relations according \(j\).

\[
\forall j \in J \text{ and } \forall x^*, x^* \in X : \quad x^* P_j x^* \iff (j, x^*) \succ (j, x^*)
\]

\[
x^* I_j x^* \iff (j, x^*) \succeq (j, x^*)
\]

It is convenient to note that any option is preferred to another if, and only if, criterion \(j\) at \(x'\) is less important than it is at \(x^*\). This means that the relative importance of any criterion raises when the necessity behind it is satisfied. In this sense, Moldau (1993, p.358,

\(^{11}\)This text is quite similar to that developed in Garcia & da Silva (1996).
fin.) says: “the preference relation according to a given criterion is defined in terms of an attempted reduction of that criterion’s importance.” So we can read the proposition “criterion \( j’ \) at option \( x’ \) is more important than criterion \( j’ \) at option \( x’’ \)” as follows: at option \( x’ \), criterion \( j’ \) is more satisfied than it is at option \( x’’ \).

Relation \( \preceq \) is supposed to satisfy the following two axioms:

**Axiom 1** (comparability): \( \forall j’, j” \in J \) and \( \forall x’, x” \in X, (j’, x’ \preceq (j”, x”) \lor (j”, x”) \preceq (j’, x’)) \).

**Axiom 2** (transitivity): \( \forall j’, j”, j’’ \in J \) and \( \forall x’, x”, x’’ \in X, (j’, x’) \preceq (j”, x”) \land (j”, x”) \preceq (j’, x’) \Rightarrow (j’, x’) \preceq (j”, x’’). \)

Given Axioms 1 and 2, we can say that \( \preceq \) establishes a weak relative importance ordering and a weak-preference ordering according \( j \) on \( X \). But it is also possible to establish an weak-importance ordering at \( x \) on \( J \). This is the basic issue to introduce the rule which determines the overall preference relation on \( X \). Let \( k(j, x) \) be an integer between 1 and \( m \) which ranks the criteria in order of importance.

\( \forall j’, j” \in J \) and \( \forall x’ \in X: (j’, x’) \preceq (j”, x’’ \Rightarrow k(j’, x’) < k(j”, x’). \)

This means that if criterion \( j’ \) is more important than criterion \( j” \) at option \( x’ \), then the rank number of \( (j’, x’) \) is smaller than the rank number of \( (j”, x’’) \); that is, the greater the relative importance of criterion \( j’ \) at option \( x’ \), smaller its rank number. For the \( k \)th ranked criterion, we can define the relations of non-preference, preference and indifference, as follows:

\( \forall k \leq m \) and \( \forall x’, x” \in X: x’Q_k x” (j(k, x’), x’’) \preceq (j(k, x’), x’, x”) \)

\( x’P_k x” \preceq (j(k, x’), x’’) \preceq (j(k, x’), x’). \)

\( x’I_k x” \preceq (j(k, x’), x’’) \preceq (j(k, x’), x’). \)

Finally, we can define the overall preference relation \( P \) on \( X \) as follows:
\( \forall x’, x” \in X: x’P x” \exists g (k \geq 1 \land x’P_k x”) \land \forall k (k < g \Rightarrow x’I_k x”). \)

This definition says that any option \( x’ \) is preferred to \( x” \) if, and only if, there is some criterion \( k \)th ranked for which \( x’ \) is preferred to \( x” \) and, for any other criterion ranked above \( k \) — that is, any other criterion more important than the \( k \)th —, \( x’ \) is indifferent to \( x” \). In other words, the overall preference \( P \) is determined by the least important criterion for which there is no tie. The least satisfied criterion overcomes those that are more satisfied than it.

The overall indifference relation \( I \) and the weak preference relation \( R \) have the following definitions:

\( \forall x’, x” \in X: x’Ix” \forall k (k = 1, \ldots, m \Rightarrow x’I_k x”). \)

\( x’Rx” \Rightarrow (x’Ix” \lor x’P x”) \)

Moldau (1993, p.359-60) had proven that \( Q_j, Q_k, \) and \( R \) are complete and transitive relations on \( X \). Therefore, from a set of irreducible criteria the individual can order his opportunity set. Although basic properties of preference ordering are the same of any binary choice model; CIVM has two special features, which we discuss next.


The two implications of that model applied to the analysis of the private savings decision are the possibility of Allesian preferences and of menu-dependent choices. Following the argument of Moldau (1993), we are going, in first place, to discuss in which situation a pattern of preferences as the one of Maurice Allass's example is possible, given the axioms of CIVM.
“Consider that at the expected value and standard deviation combination that corresponds to lottery 1 the expected value criterion is of first rank. Suppose that at lottery 2's combination of these parameters the standard deviation criterion is of first order. Assume that the importance of the ex-expected value criterion at lottery 1 is smaller than the importance of the standard deviation criterion at lottery 2. It then follows that lottery 1 is preferred to lottery 2. Assume also that at the expected value and standard deviation combinations that correspond to lotteries 3 and 4, the expected value is the predominant criterion. Since its importance is smaller at lottery 4 than at lottery 3, it follows that lottery 4 is chosen over lottery 3.”

For the example suggested by Moldau (1993), we can conclude that, in fact, Allesian preferences are possible in the scope of the theory CIVM.

Another feature is the possibility of menu-dependence behaviour, which can be defined as the occurrence of internal inconsistency when there is some change on agent's opportunity set. According to Sen (1994), the basic condition for internal consistency of choice fails in a situation like this. Suppose that individual i prefers option x' to x", x',x" ∈ X. Now, assume that we reduce his opportunity set picking up alternative x" from X and then he says that option x" is preferred to x'. So, we can say that his preference is menu-dependent, inasmuch changes on menu imply preference reversals.12

According Garcia (1994) and Garcia & Silva (1996), CIVM does not exclude the possibility of menu-dependence behaviour. If we pay attention on the mathematical structure of the function that determines overall preferences, we can see that it is quite the same of that proposed by Arrow (1963) to social decision functions (also called aggregation devices). First, consider that each criterion is an individual of Arrow’s system. Therefore, the overall preference would be a kind of social preference determined by individual values. Since Weak Paretian Unanimity is satisfied in such a model, its is sufficient to suppose that CIVM satisfies the axiom of non-dominance to prove that CIVM is menu-dependent.13

Axiom 3: ∃j ∈ J, such that ∀t ∈ T and ∀x', x" ∈ X, x'R_jx" ⇒ x'R_jx'.

Therefore, changes on opportunity set could lead to changes on preferences related to options. It means that the same economy can have different preference orderings in two situations, despite the fact of the existence of the same criteria. In the next section we discuss the importance of this result for private savings decision.

5. Private Savings and Institutional Instability.

Let’s consider the same lottery assets example exposed in section 2. We suppose that, in the first economy, $200 is the prize of real assets that costs $200 to the investor. In that case, the rate of return is zero, but there is no risk related with the reservation of value of the assets 1. Imagine that $300 are the prize of a financial assets that costs the same $200 to the investor. As the expected value is $240, we say that the assets 2 pays interests of 20%. We will consider that, in the second economy, the assets 3 and 4 (see previous example) are offered. Let us suppose in that economy the real assets suffers possible devaluation by means of adverse conditions of demand. Let us imagine that the real asset 3 that costs $100 have a prize of $200 (in this case there is a valuation as p = 0.5), and of $0 (in this case there is a

12 This behavior is also known as dependence of irrelevant alternatives in social choice theory. According Arrow (1963), it is a basic requisite for both individual and social rationality. For this issue see also Mackay (1980) and Sen (1993).

13 See Garcia & da Silva (1996) for more detailed proof of this proposition.
devaluation as \( q = 1 - p \). As the expected value is $100, we say that the real assets of that economy has null return and a risk \( (s = 100) \). Imagine that the financial assets 4 costs $100, but it has a prize of $300, with probability of 0.4, and of $0 with probability of 0.6. As the expected value is $120, we say that the financial asset of that economy has return of 20% and a risk \( (s = 146.97) \) superior to the one of the real assets. Supposing the structure of preferences suggested by Moldau (1993), we see in the first economy that investors will prefer real assets, while in the second economy they will acquire financial assets, considering the fact that the financial return of the assets 2 and 4 is the same ones. We say that, in the economy 2, the assets 4 was chosen because the risk difference for the assets 3 is smaller than the risk difference among the assets 1 and 2 of the first economy.

Let us see other interesting example of assets with equal cost ($100), but different returns and risks. One offers a prize of $110 with probability of 90% and of $90 with probability of 10%. The second, $10.800 premium with probability of 1%, and $0,00 with probability of 99%. The last, a premium of $108, with null risk. The expected values of the first two situations are $108,00, but in the first case, the variance of the prices is very smaller. The agent averse to the risk will prefer the first lottery. For the same reason, the economic agents can prefer the real assets, with no risk and return, to the assets 2, because it has high variability of the returns, in spite of paying a larger expected interest rate. Finally, we can suppose that the savers will prefer the financial assets 1 to the real assets, if the additional return of 8% compensates the additional risk.

Therefore, if an economy offers low risk financial assets, but another one is unable to do it, the first would have a larger saving than the second, despite the existence of assets that pay the same 8% interest rate. That is to say, economies that do not offer financial assets with low risk are unable to "capture" private saving. In that case, economies with high institutional instabilities — associated with high inflation, political instability, lack of warranties on property right, etc. — can have smaller private savings rates comparing with another countries, wherein institutional stability is the rule, not the exception, and the agents notice the viability of assets with low profitability and low risk (as in the case of pension funds).

For example, there is a lot of panacea about the impact of pension funds on private and public saving. Firstly, a pension fund reform does not guarantee a priori the increase of the private saving, because it could represent just a portfolio reallocation. Secondly, in the long run there is the possibility of saving increases, because the reductions on the public deficit (or increase in the public surplus) in the end of the transition period and due to new saving decisions - not simple reallocations of financial savings - by the private agents. Even in this case, it must be considered the role of institutions and institutional stability over private decisions involving retirement programmes. For example, Diamond (1997) suggests the necessity of insulating pension funds from political risks as a way to improve pension contracts.


Private saving decisions are not immune to institutional instability. The majority of the works on saving neglects this fact supposing a priori that property right are enforced. In effect, enforcing property rights does not represent a real problem when we consider many developed economies. Probably, for this reason many economists had ignored this problem.

However, saving increasing represents a big challenge to many developing economies, since savings are fundamental to growth. Even if one assumes that for an economic take off technological innovation is more important than previous saving formation - using, for
example, a schumpeterian argument or an endogenous growth theory one— the role of the property rights are not a neglectful fact.

There are many obstacles to economic growth in Latin America, Eastern Europe and Africa. Some “emerging” economies are facing problems associated with low saving rates. To many Latin American countries as like as probably the totality of the African Continent, political and institutional instability represent crucial obstacles to sustainable growth. In Eastern Europe, the problem is not so diverse, as many countries are facing transitions in the property rights system.

This paper intended to argue, at least theoretically, that political and institutional instability has dramatic consequences on private saving decisions. As it was shown, the recent literature on the subject pointed out that these instability factors have impact (negative) on public saving (see, for empirical evidence, Edwards, 1997, p. 147). A lack in saving studies is exactly how to link private savings decisions to institutions and pay-off systems.

The first step to solve this problem in this paper, partially at least, was to reconstruct some basic arguments to explain how the absence of the institutional variable could affect the results and the interpretation of the mainstream models. Secondly, we intend to illuminate some crucial links between private saving decisions and institutional stability.

The next step of this research will be the development of an empirical cross-country test. The basic intention will be to capture the relationships between political and institutional instability and private savings decisions. Let’s consider the two equations below:

\[ (1) \quad s_n = a_0 L_n + a_1 G_n + a_2 M_n + a_3 D_n + a_4 E_n + a_5 POLCRED + a_6 S_n + \mu_n \]

\[ (2) \quad s_n = a_0 L_n - a_1 G_n + a_2 M_n + a_3 D_n + a_4 E_n - a_5 INSTAL + a_6 S_n + \mu_n \]

The \( s_n \) is the private saving in the period \( t \) for the country \( i \); \( L \) is the dependence variable; \( G \) is the group of variables that express the public saving; \( M \) is a group of variables that indicates monetary stability and it includes inflation rates; \( E \) includes data of the external sector, as capital inflow; \( POLCRED \) is the group of indicators of political credibility that is used as proxy of the perception that the private agents have about institutional stability; \( INSTAL \) is an index of political instability derived from the work of Alesina, Ozler, Roubini & Swagel (1996); \( S \) includes the non explicitated variables.

The sample of the first test will contain 28 countries in development with levels of income per it captures varying levels of medium to low in agreement with the classification of the World Bank (Report on the World Development, 1996, pp. 256-7). They are: Argentina, Bolivia, Brazil, Shrimps, Chile, Colombia, Costa Rica, Ecuador, Ghana, Guatemala, India, Indonesia, Jordan, Malaysia, Mexico, Mozambique, Nigeria, Panama, Peru, Rwanda, Senegal, Singapore, Sri Lanka, Sudan, Tanzania, Thailand, Turkey, Venezuela.

The sample of the second test will include 115 economies, developed and underdeveloped. This is the sample of Alesina, Ozler, Roubini & Swagel (1996).

The intention of using such sample, for the first test, is exactly to see, among emergent and underdeveloped countries in general, the impact of each one of the variables above, also considering the impact of the institutional stability on the private saving, measured indirectly by indicative \( POLCRED \). The objective of the estimate is (i) to try to understand why the rates of saving are different among countries and because they are relatively lower in Latin America and (ii) to look for evidences that the institutional stability can be an important variable for the explanation of this subject.
The estimate will be made for the period from 1981 to 1996.

In the case of the second test, the sample includes more heterogeneous economies, with developed countries and underdeveloped, with a big variation of growth rates and of income per it captures. The objective here is to observe the existence or not of a relationship between political stability and private saving using a index defined as INSTAL. This will be the next step of this research.

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