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## Economic policy and institutional change: a contex-specific model for explaining the economic reforms failure in 1970's Colombia

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# ECONOMIC POLICY AND INSTITUTIONAL CHANGE: A CONTEXT-SPECIFIC MODEL FOR EXPLAINING THE ECONOMIC REFORMS FAILURE IN 1970's COLOMBIA

(September 2006)

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## Abstract

This paper develops a context-specific model (Greif, 1997) to analyze the case of failed market-oriented reform in Colombia during 1974-78. The methodology keeps the contextual specificity at a manageable level, which is no more than the institutional structure under consideration, while it tries to maintain a parsimonious model. The theoretical framework is inscribed in the rational choice approach and game theory. This paper raises a standard question in economic reforms literature: why did the reforms fail? More comprehensively, what impeded progressive institutional change in this case? The answer is based on modelling theoretically and historically the strategic dilemmas brought about by the reforms and internacional shocks. Government appears here as an inflexible agenda setter poorly endowed; Coffee as the dominant player whose short-run interests won through, and Industry as the weak player who openly opposed to policies that the G-Cs coalition set out with the 1976 coffee boom. Ultimately the reforms failed because of Government's poor understanding of and limited autonomy for solving the dilemmas "economic reforms vs. coffee boom", "Non-coffee sectors vs. Coffee sector", and "Short-run vs. Long-run economic growth".

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## I. Introduction

Market-oriented reforms in developing and ex-soviet countries have posed several puzzles not only for policymakers but also for theorists. The change from pervasive state economic interventionism to economies driven by economic forces that freely allocate resources has brought a variety of mixed experiences. While successful cases enjoy high economic growth rates and seem well positioned for facing global market challenges, failed cases show economic backwardness to different extents and reinforce their inability to reach higher development. Policymakers have the sense of working with a black box in which they introduce policies and obtain outcomes that are difficult to fully explain.

The existing literature on economic reform has stressed punctual aspects of reform design and implementation in order to identify the elements and procedures that are crucial for a successful economic reform. Economists and political scientists have pointed out both empirical regularities and theoretical insights on the political economy of the reform cases in many countries. At the core of this literature is the idea that the reforms raise essential strategic issues. Because economic reforms aim at changing the status quo, the emergence of opposing interests determines agents' reluctance or willingness to embrace the change (Nelson et al. 1989, Dornbusch 1993, Bates and Krueger 1993, Williamson 1994, Haggard and Web 1994, Krueger 2000, Teichman 2001, Williams 2001). Nonetheless, analytical models that offer parsimonious explanations of reform success are still in their infancy (Sturzenegger and Tommassi 1998).

This literature emphasizes the institutional structure and how agents respond to it. Once the focus is placed on institutions, it is clear that an economic reform is no more than a disruptive and conscious attempt to change the economy's institutional framework. To put it differently, it is social engineering through economic policy. Under this light, a failed reform means the failure to adopt efficient institutions that could stimulate a public good as it is economic growth. The persistence of a status quo dominated by redistributive institutions –institutions that improve the conditions of one group at expenses of the rest of the society, indicates the absence of progressive institutional change for the collectivity. Unsurprisingly, this absence raises questions which are substantial to the diagnosis and design of policies intended to foster progress in less developed countries. Understanding how the regressive factors to institutional change are connected and how they could be modified would be a powerful tool for accurately designing policies and foreseeing desirable policy outcomes. A comprehension of these issues will shed light on the black box that policymakers try to shape and scholars intend to explain.

Although the research has established some policy-implementation lessons and identified certain strong regularities in successful cases, the results are still dispersed and have not yet been systematically integrated. Haggard points out that the literature is "vast, unwieldy, and, in typical academic fashion, increasingly balkanized" (2000, 21). Certainly, the high importance of the context and peculiarities of every case have prevented generalizations. Also, the approaches of political scientists, economists and sociologists differ, making it difficult to integrate insights. On the economic side, the discipline from which I come, the theoretical models, still appealing insofar as key aspects are uncovered, have low explanatory power because they are highly abstract and involve overly restrictive assumptions.

A way to build a bridge between theory and empirical evidence so as to bring about meaningful interpretations and establish well-sounded comparative analysis is through context-specific models (Greif 1997). The methodology keeps the contextual specificity at a manageable

level, which is no more than the institutional structure under consideration, while it tries to maintain a parsimonious model. The theoretical framework is inscribed in the rational choice approach and game theory. Basic macroeconomics and notions from new institutionalism are applied as well. Unlike abstract models, a richer picture of particular actors, their beliefs, sequences and patterns of interaction portray a realistic scenario in an analytic approach. The advantage of following this approach is promising; by reducing the level of abstraction and incorporating restrictions based on an actual scenario, theoretical devices are able to provide a systematic and useful interpretation of reality. As context narrows the set of multiple equilibria, a meaningful concept of solution opens up the possibility of discriminating outcomes and making sense of both theoretical and historical results. Deductive and historical analyses hand in hand play a major role in shedding light on economic and political phenomena. This path has been called "*analytical narratives*", which was borne as the synthesis of political scientists and economists working together in seeking more appropriate methodologies in social sciences. Instead of seeking out universal laws, this methodology aims at grasping the richness of social organizations (Bates, Greif, Levi, Rosenthal and Weingast 1998).

This paper develops a context-specific model to analyze the case of failed market-oriented reform in Colombia during 1974-78. The case called my attention because in the 1970's the country seemed to experience a turning point in its economic performance. High growth rates from years of import-substituting industrialization were left behind, leaving instead a steady and average economic growth rate but amidst a context of constant social turmoil (Garcia and Jayasuriya 1997, vii). Only recently have Colombian economists appreciated the long-term declining trend in the economic growth rate (Cardenas 2002). I decided to explore the role of political and economic decisions made by leading actors in the 1970's for tracking the causes of the sluggish economic dynamic in the country. My choice was to focus on the 1974-78 government, specifically on economic reforms. Other scholars would have to judge whether my insights allow for crafting a more systematic explanation of path dependence thereby Colombia developed an institutional structure that openly hampered long-term economic growth. Also, they must judge whether we are ready to grasp the nature of the relationship between politics and economics in the country.

This paper raises a standard question in economic reforms literature: why did the reforms fail? More comprehensively, what impeded progressive institutional change in this case? I will answer this question based on a simple game theory model that addresses the strategic dilemmas brought about by the reforms. The players are collective actors: Government and two economic sectors: Industry and Coffee. The game reflects the institutional structure that frames players' interaction through two channels; first, by defining the players and their power relationships. The second channel operates through players' decision rules which provide the micro-foundations determining the game's outcomes. Since the exercise is a mixture of economic history and theory, neither an exhaustive picture of the 1970´s Colombian experience will be provided nor a sophisticated game theory model. Instead, the interested reader is invited to examine the references. Other scholars' work, mainly economists and historians, assisted in the labor of building the context; historical information was also extracted from presidential discourses, declarations of high officials, documents of associations, newspapers, and official legislation during the 1974-78 period.

The paper progresses as follows. Section two considers a brief discussion on the problems of modeling economic reforms. This section draws upon the literature on economic reforms, new institutional economics, political economy and game theory. It aims to give a sense of the methodology, its key assumptions and limitations. Section three develops the model by setting out the historical evidence and translating it into theoretical relationships like strategies, preferences, and game outcomes. To conclude, section five summarizes the results and offers insight on the effects of the economic reform, the nature of institutional change and its impact on the economic growth in the Colombian economy.

## II. Modeling Institutional Change Induced by Economic Policies

North –and the Neoinstitutionalism, explains institutional change as the result of continuous interaction between institutions (rules of the game) and organizations (groups of individuals). Institutions provide incentives and frame competition among organizations in an economic setting of scarcity. The institutional arrangement provides a payoff-structure that determines the viability and profitability of organizations. The organizations' perceptions of higher payoffs derived from an alternative institutional structure will shape institutional change. However, the payoffs should exceed the transaction costs that the change entails. Endogenous competition forces or exogenous factors in the external environment alter relative prices and induce institutional innovations. However, the nature of the innovations ultimately hinge on the mental constructs of the organizations insofar as they help individuals to interpret information and guide their actions (North 2005, 59-64).

Shepsle, working in a game theory approach, offers a similar vision on institutional change. Institutions are the result of rational selection and can be described as games whose purpose is to define particular rules to govern players' interaction. The selection of an institution denotes an equilibrium reflecting players' preferences, optimization behavior and specific institutional features. Thus, an institution arises as a structure-induced equilibrium, which will be maintained only if no player desires to alter his strategy given the other players' strategic choices. Conversely, the institution is not robust and is subject to innovation when there is any decisive coalition willing to implement some alteration of the arrangement (Shepsle 1989).

Understanding institutional change can be seen as the study of context-specific strategic interactions. Such an endeavor builds on game theory models as well as on the history of the case under analysis. Game theory provides the analytical guide to identify general interaction possibilities whereas a specific case lays down the players, their mind-set and allowable alternatives. In this way, the set of agents and alternatives is narrowed down from abstract and infinite equilibria to a few concrete and meaningful alternatives (Greif 1997).

Building a bridge between game theory models and case analysis involves the need to overcome two obstacles. First, models are developed in a highly abstract and mathematical manner, using over-simplistic assumptions about political and economic mechanisms which are ruling the interactions[2]. Furthermore, studies on cases in which strategic situations are central find it difficult to explicitly adopt an analytical model; as a result, the assumptions about players' preferences, payoffs, equilibria and stability are somewhat nebulous and not formally specified[3]. Though these works succeed in portraying the game context and explaining the outcomes as strategic moves, the absence of explicit models pose restrictive limits to empirically substantiate hypothesis (Greif 1997). In consequence, the empirical usefulness of game theory remains limited and the

[2] Person and Tabellini (2000) and Drazen (2000) introduce political economic models developed by economists. For a general appraisal of these models see Saint-Paul (2000) and for a critical review of interest-group models see Mitchell and Munger (1991).

[3] Political scientists have a wide range starting from mathematical formalization to traditional narrative. Referring to economic historians working with game theory, Greif (1997) distinguishes between two groups: "general insights" studies and context-specific models. The latter group tries to provide micro-fundamentals to analyze a case. See Kantor and Fishback (1994) and Kantor (1995) for analysis on coalitions and institutional innovation belonging to the general insights group.

understanding of strategic interactions is either non-robust or appears governed by wild, idiosyncratic elements.

## The Literature on Economic Reform

The literature on economic reform is paradigmatic in illustrating the achievements but also the weaknesses at filling the gap between general game theory and study cases in analyzing institutional change[4]. Because of the extension of this research agenda a comment about the studies it comprehends should be made at this point. Market-oriented reform arose as an issue in several countries over the mid 1970's. The welfare state came into crisis and the perspective of a global market encouraged an alternative regime where the free market ideology gained terrain. The initial studies were policy-oriented and intended to shed light on economic policy design and implementation (Dornbusch 1993). The "first generation reforms" involved changes in economic policies for trade liberalization, fiscal adjustment, elimination of exchange controls, deregulation and privatization (Williamson 1994a). Over the 1990's, the "second generation reforms" moved beyond pure economic issues to institutional redesign of the state, labor markets, and social security. While the first generation emphasized macroeconomic stability, the second generation focused on the institutional structure needed to foster economic efficiency and growth (Krueger 2000a). The political and technical difficulties brought about by this generation led scholars to openly tackle the strategic issues of the transitions toward market economies and, in many cases, toward democracy.

The recent research on economic reform has drawn upon game theory to discern how economics and politics interrelate. This direction is not more that the convergence toward what has been called the modern or new political economy; the rational choice approach is at its base along with the notion of strategic interactions taking place in particular settings. The specification of collective actors, their goals and policy's preferences is one of the main components of the analysis. Also, the picture of governmental and economic institutions helps to capture the initial stage, where collective actors are embedded, and the incentives they face to eventually work against that prevailing institutional structure (Sturzenegger and Tommasi 1998, 1-9; Frieden 2000, 37-43). Insofar as a reform entails changes in the rules, it is conceptualized as a change in the political and economic equilibrium. Specifically, a reform brings about distributional conflicts: first because the reform will contingently create and destroy rents thereby defining potential losers and winners, and second because powerful groups might influence public policies (subsidies, tariffs, etc) whereby they protect themselves but also may engage in rent-seeking activities.

This paper focuses on the interplay of economic and political actors deciding the general rules to drive the economy; that is how decisive players jointly choose a developmental strategy. The latter refers to the decision-making of domestic actors and governments aimed at increasing economic growth and improving general social welfare. Therein lays the substantive importance of the question on why the economic reforms are or not adopted. Such adoption of these policies means a choice of policies that will affect the present and future collective welfare. Other important questions about the way to implement reforms or the social benefits and costs they might entail are not addressed here.

[4] Sturzenegger and Tommasi (1998) collect models of economic reforms developed by economists. Efforts led by political scientists remain less formal and varied; see Waterbury (1989), Geddes (1991), and Williams (2001). An appraisal of the literature is provided by Haggard (2000).

## Actors and Strategies

Beyond these general insights, the research on political economy is struggling to deal with the challenges of integrating theoretical models with empirical work in a robust way. A first step to address the complexity of the real world through the abstraction of models is to explicitly identify the complications of the reality and the limits of the researcher. A game theory model is a tool to simplify the choices involved in strategic events that actors face. The goal is to find a coherent and parsimonious explanation of how players' decisions translate into observable outcomes. In doing so, the required assumptions indicate the scope and strength of the model in view of competing models. Modeling entails "what choices we believe the actors see in the design of the game, what they understand about their choices, what consequences they believe can follow from their decisions, and how to evaluate those consequences" (Morrow 1994, 57). Therefore, the explanatory power of a model lies on its ability to capture how players perceive and evaluate a specific strategic situation.

Such evaluations are inscribed on players' own value system, which, in general, is assumed to follow a consistent calculus of benefits and costs given the information that players posses. This is at the very heart of the rational choice approach[5]. What it is not so well understood is that such assessment of profits and losses is historically determined either by formal institutions constraining behavior or by cumulative knowledge and expectations players have about their own society. Judgments on players' motivations and actions are challenging to external observers because the observers carry their own value system and are not able to wholly perceive what the players perceive. While players face an ex-ante situation, observers look at the ex-post results. The gap could be closed by an immersion of the observer into players' scenario. This is the way historians and other social scientists approach historical episodes. Developing knowledge about the institutional structure and the mind-set of actors is labor intensive and time-consuming. The discernment of several informational sources is also needed; Even if statistics speed the process of getting a picture on the dynamic of some variables, the observer has to spend time with qualitative material. The application of theoretical notions sharpens the observer's perception, assisting him/her in discriminating, organizing and making sense of the gathered information. When theory and facts harmonize, causal connections are discovered and the explanation is robust[6].

Having said this, the model that develops in the next section is one possible reading on what the economic reforms could have meant to the actors in 1970's Colombia. It is a game whereby three players, Government, Coffee and Industry, decide on the adoption of economic reforms. This structure, as Mares (1985, 669) suggests, implies a selection of first, "who defines the limits of choice" and second, "who makes decision on those limits." The limit of choices refers to the set of possibilities of specific policies given by the political and economic constraints of the international and domestic scenario. For example, a country like Colombia could not have a communist government because of the ongoing geopolitics amidst the Cold War, nor could it attract foreign investment to sectors where the comparative advantage was null. The set of possibilities is incorporated into the model by players' interpretation of the economic reforms and the extent to which they can be carried over. This set ultimately reflects the underlying institutional structure upon which every player's actions rest. Such structure comprises the economic structure, the political institutions and the available policy instruments. Second, the identity of the players shows

[5] For an insightful discussion on what means and what does not mean the rational choice in political science see Tsebelis (1990) chapter 2 and Calvert (1995).

[6] Riker and Weimer (1995, 88) are particularly concerned about developing a more sophisticated appreciation of the role of institutions. But building theory, given the enormous importance of the context which is shaping institutions, demands specialization and broad training that one single scholar cannot undertake.

a specific relation between the state (or governmental actors) and the society. In this case, it is argued that Government's choices are dominated by the main economic sectors' demands (interest-group approach). Indeed, the Colombian institutional structure reveals the elites' ability to marginalize non-elite actors. Excluding other collective actors as workers or peasants from the game means these actors did not have direct leverage in the decisions on the economic reforms. It does not mean, however, that their actions and reactions related to the reform did not affect the process. In addition, it is observed that the state also had some degree of autonomy to eventually defy the dominant groups. This is pictured by Governments' preference for full reforms over half reforms and its decision of undertaking political openness simultaneously. Likewise, the use of temporary extra-constitutional mechanisms to rule and enact controversial measures signals some degree of state autonomy.

## Multi-dimensionality, Multiple Arenas, Risk and Uncertainty

Modeling a game on the adoption of economic reform poses other challenges. First, an economic reform is a bundle of policies in which every component can be considered as continuous variables whose levels players must decide (e.g. 5% of annual inflation, 3% of budget deficit (% GDP) and 10% increase in income tax). Players have a multidimensional problem in which the nature of their preferences (circular, separable, non-separable) along with the legislature structure (parliamentary and voting procedures) defines how players come to a solution (Johnson 1998, 60-96). Second, because the reforms alter the economic as much as the political equilibrium both changes enter into players' calculations. Players are involved not only in one game where economic benefits are at stake but also in another game on political leverage. This means players are engaged in a net of games in which each issue is played in a particular arena. The principal arena is the one the observer focuses on. In games involving multiple arenas, or nested games, "the situation prevailing in other arenas determines the payoffs of the players in the principal arena." (Tsebelis 1990, 58). This brings about varying payoffs associated with a nested game. For the sake of analytical tractability, one arena has to be chosen, but the presence of nested games forces the observer to pay attention to the context and refer to exogenous factors whereby he/she can identify the source of payoffs' variability[7]. Third, assessing the reform costs and benefits demands that players consider risks (known probabilities) and uncertainties (unknown probabilities). Some of the risks can come from redistributional effects and contingent policies, while the uncertainties could arise from systemic shocks. How players manage these issues and form their expectations determines how they evaluate the outcomes and hence order their preferences.

In dealing with these three complexities, the model explicitly sets some departure points. First, multidimensionality is included through players' distinctions between two levels of reform: full or high and half or low. They also differentiate between two components: the stabilization bundle and the structural reform bundle. These distinctions introduce some combinations in the reform package as well as players' preferences about them. Second, the focus lies on the economic arena, which means that political institutions are not modeled and only relevant economic institutions enter into the account. Consequently, the payoffs are specified by economic variables, although it is wise to keep in mind that games in other arenas might change the payoffs in the economic arena. This context-specific model offers an incomplete picture in this regard[8].

[7] Tsebelis offers an insightful discussion about the existence of subgames like the separability of games from contextual factors (1990, 61).

[8] Haggard (2000, 36) points out that an analysis of how economic decisions are constrained by democratic institutions is still needed. Considering only one policy at time may bring more integrated results, although they would still be partial views relying on the separability of policy components. For example, Geddes

Third, it is assumed that players are able to evaluate the risks such that they have expectations on the benefits and costs from reforms. Though, the model does not provide foundations to show how such expectations are structured; two basic ideas are behind. Firstly, expectations are based on prior beliefs that are updated after receiving new information through subjective conditional probabilities. A prior belief refers to "the subjective probability of each possible state of the world before the consideration of new information" Morrow (1994, 352). This process generates Bayesian expectations that players use to evaluate expected payoffs from reforms. Secondly, subjective evaluation is driven by the observational fact that individuals value gains and losses from a reference point, which is the status quo. Hence, individuals have a limited foresight and are immersed amid incomplete future markets, which lead them to place more weight on present than on future gains. However, here there is no assumption about risk-aversion attitudes[9]. The picture is different as to uncertainties because players are not of the capacity to form such Bayesian expectations. The event is completely unforeseeable. In this case, the players' payoffs change depends on the effect of the shock on players' interests and strategic interaction. The model includes an international shock in the Coffee international prices which redefines the game. Since "the international system could shrink or expand the range of policy options" (Mares 1985, 697), the reference points for players are substantially altered. To what extent players rightly and quickly identify such a change, given their limited foresight, is an issue that future research could answer[10].

## Preferences and rules of decision

The first step to model players' preferences is to define functions indicating their expected net gains. Sectors' net gains functions have as dependent variables real profits, input prices, taxes and subsidies. Government's functions include the expected profits of sectors, workers' income and a parameter for opportunistic gains (e.g. corruption). The central variable linking players' decisions is the level of inflation. In addition, other economic policy instruments such as the nominal exchange rate, income taxes, and capital subsidies are considered. Translating general functions of expected net gains into ordinal payoffs has been possible through the use of rules of decisions. A rule of decision indicates how a player ranks a set of discrete strategies and it is based on a heuristic interpretation of every player's interests[11]. The heuristic interpretation possesses a historical and a theoretical component that work interactively so as to produce a coherent reading of players' behavior. The theoretical components are the two simple one-shot games known as the assurance game and the prisoners' dilemma. These games frame the interaction between economic sectors,

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(1991) develops a game theory model to explain legislative outcomes of the administrative reform in some Latin American Democracies during 1950-1980. Despite of the complexity of social systems, institutions create spheres of social interaction with less or more interdependence whereby the connections among sub-systems are limited.

[9] Some scholars have pointed out that individuals tend to weigh more heavily losses than gains. This observation comes from Prospect Theory which is a much more complicated alternative to the classic utility theory. Morrow (1994, 48), Weimer and Vining (1999, 125).

[10] Consider for example the fatal mistakes policymakers and governments made during the Great Depression (Temin 1989) or during the 1980s debt crisis in Latin America (Bulmer-Thomas 1994). The strong statement of rational expectations as it is understood in economics failed since individuals do not have the right model to understand the economy.

[11] This is an alternative way to approach utility functions. Mares (1988) develops decision rules to explain when a middle country would decide whether or not to challenge the regional hegemon. He provides historical evidence through the Mexican and Brazilian cases during the 1940's and 1960's.

providing a guide to the benefit-cost analysis they must be doing. Another theoretical component is the notion of coalition in which Government plays as an agenda-setter. Government could manipulate the agenda and reformulate its proposals to gather support. Based on this power, Government may change the reference points to players and give room for coalitional behavior. The historical component provides the evidence to validate these theoretical guidelines.

It is also assumed that players reveal their preferences through observable actions. For example, when a player can afford to pay a higher tax but chooses not to, then it is clear that the player prefers a low tax. The extraction of such information requires caution because it demands that the observer judge players' capacities, the truthfulness of their actions and their commitment to their decisions. Although economic theory is a powerful guide to ground initial conjectures, only a rich reading of their context can render an approximate sense of players' constraints and motivations. In conclusion, decision rules encapsulate preferences and risk assessments on multivariable decisions[12].

## Dynamics

Another central feature of a game theory model is time and dynamics. This is about how players' interactions evolve through time and introduce institutional innovations. In the framework of rational choice theory, social interactions, in this case economic reform adoption and implementation, may be seen as repeated games. The initial outcome of the first game determines the next stage and this goes on successively. In turn, players accumulate information and update their beliefs and assessments. An endogenous selection of policies and institutions takes place throughout this iterative process. Haggard and Kaufman, in analyzing transitions to market economies and democratic regimes, point out that "political and economic developments during the first two or three governments constitute the first links in a longer causal chain that connects the initial transition to the elusive "long run" (Haggard and Kauffman 1997, 227-279). Economic reforms are inherently path-dependent because they are "processes in which the long-run character of the system depends critically on the history of the system - that is, on the specific sequence of events, some of which may be random in nature" (Guinnane 2004, 2). Here it is developed a one-period game to capture the initial stage of the iterative sequence of games. Players decide whether or not to undertake the economic reforms in this initial game. While the historical time in which this stage comes about comprises months, the theoretical device reduces this period to one go.

## Coalitions

The ultimate goal is to offer an analytical explanation about the historical result. The basic notion of Nash equilibrium provides an initial insight. However, it lacks explanatory power because it does not coincide with the historical result. Then, the notion of coalition turns out to be useful and the explanation moves from non-cooperative to cooperative games. It is argued that players also have a limited perception of feasible coalitions. Multiple equilibria emerge and a historical assessment indicates which coalitions are more likely. This line of reasoning drives me to finally pinpoint the game's outcome.

[12] The principle of revealed preference builds the bridge between unobservable utility functions and observable demand functions (Nicholson, 2005, 150). I use the same notion for linking unobservable subjective calculations of multiple variables under risk to inferences about players' behavior.

A final comment on the notion of coalitions which pervaded the literature on economic reforms is made now. Scholars have used this notion as part of the picture of institutional change. The basic idea is that individuals need to establish enforceable alliances for none of them acting on his/her own has the strength to transform the status quo. However, most of the study cases use a blurred notion of coalition without specifying actors' preferences, payoffs and supportive institutions. In those studies, the coalition is introduced as the observation of players' acquiescence to a set of actions or through the evidence of side payments. Here game theory is used as a posteriori description of events without analytical predictability that undermines, and in some cases obscures, the analytical power of the concept (Mares 1988, 457). A Coalition at its very heart must have the following components: individual and collective rationality (or to put it simply profitability), enforceability and credible intra-coalitional compensation mechanisms. In the absence of explicit specifications of players' motivations and strategies there will always be several problems of identification. The first problem has to do with discerning when players are truly attracted by the coalition and when they are complying temporally with the coalition because they have hidden agendas (Stiglitz 2000). The second problem refers to the stability of the coalition, which could be fragile or strong depending on players' assessment of prospective net gains and the institutions enforcing these expectations. Ultimately, although profitability and enforcement are at large extent endogenous variables throughout the institutional transformation, the initial setting of the coalition is decisive for its scope. Overcoming theoretical looseness in the analysis of coalitions narrows down these problems and brings back explanatory power to the notion[13]

## III. The Colombian case

### The International Context

Understanding the meaning of the reforms in the 1970's Colombia requires the consideration of two major facts taking place throughout the region. First, the Cold War demanded from third world countries unambiguous political alignments. Many countries in Latin America saw how military regimes took over the governments with the goal of fighting communist threats. U.S. military training programs taught officers from Argentina, Chile, and Brazil among others (Clayton and Conniff 1999, 497). Particularly in Colombia, although there was no dictatorship, the civilian governments also received this help to fight against the existing communist insurgency. But the cooperation between Latin American governments and the U.S. raised internal opposition and was seen as a menace to sovereignty. This sentiment was reinforced after the military coup in 1973 Chile, when the U.S. was involved with the fall of Allende's socialist government. Second, the economic nationalism in the region was rooted since the Second World War as a response to the little trade opportunities the region had with developed countries (Bulmer-Thomas 1994, 263). During the 1960's the trade protection of developed countries to their agricultural and manufactured goods led Latin America to deem regional trade integration as the opportunity to give new life to industrialization.

[13] The hypotheses on the political economy of market oriented reforms illustrate these identification problems. One hypothesis states that since broad coalitions are fragile and may break easily, the reforms must be quickly furthered before the coalition disappears. Another hypothesis states that as time passes, agents regroup as the result of adverse changes in the economy. These hypotheses' usefulness comes down to the nature of the coalition and the effect of shocks. The looseness around the concept obscures the analysis instead of illuminating it. Needless to say, to formally identify a coalition has substantive implications for economic policy. On the hypotheses see Edwards (2001, 23).

These two facts, the tense political relationship with the U.S. as well as economic nationalism, shaped Latin America's attitude toward the global market in the 1970's. On one hand, the region needed to improve its trade balance and foreign investment, but on the other hand, it sought to protect its industrial base and defend its sovereignty. These objectives, sometimes opposing, required careful governmental actions so as to serve national economic interests, comply with international order and control internal political contentions.

## The Colombian Economy

In 1970, Colombia had a population of twenty two million and its per-capita income ranked fourteen among the twenty Latin American Countries. In South America, its GDP per capita economy was placed beneath only Argentina, Venezuela, Chile, Mexico and Peru, and was very close to Brazil. During the 1960´s, the country had displayed an annual growth rate of 5.2% -which was also the regional average- thus reflecting the advance of industrialization (Bulmer-Thomas 1994, 309). The agricultural sector produced 25% of the total GDP while the industry accounted for 21%. By 1978, 35.2% of the population worked in the primary sector while 22% and 42.5% worked in industry and services respectively (Ocampo 1996, 247). Exports accounted for 14% of the GDP, with Coffee being the main product, contributing approximately 65% of the country's total exports (World Bank 2003). However, fluctuations in the Coffee international market induced a cyclical character in the economy. Imports reached 16% of the GDP; intermediate goods were 51% of total imports while capital goods were 38% (Ocampo 1996, 253). The major trading partners were Venezuela and the U.S.

## The Economic Policy Regime

A visible role in the international coffee market and a state-lead developmental strategy shaped the economy by 1970. Since the Second World War, inward-looking development had consolidated through the import-substituting industrialization model (ISI). Under this model the country expanded its industrial base by increasing trade barriers and regulating capital markets so as to provide favorable conditions to domestic industrial firms. The model operated through multiple trade tariffs and exchange rates, import quotas and licenses, differential taxes, banking legislation and investment regulation, among others instruments. Coffee was the main provider of foreign currency, but coffee prices fluctuated according to the swings of the international market, bringing instability. First, the provision of international reserves was irregular, restricting capital goods imports. Second, the exchange rate widely fluctuated, hindering the control of inflation and the balance of payments. The previous decades to 1970 were a period for learning how to deal with the external cycles. The crawling peg regimen adopted in 1967 gave stability to the exchange rate and reduced the volatility of inflation[14]. In addition, new monetary mechanisms to prevent inflation from extraordinary coffee export revenues, such as the issue of special assets (TAC or coffee saving assets), were created. Consequently, Coffee had a dominant role in macroeconomic policymaking.

[14] The crawling peg –a system of small but daily increases in the nominal exchange rate and a foreign exchange market controlled by the government- was a mechanism to reduce monetary instability that came from exchange currency crisis caused by the flexible exchange rate regime. To some degree, the crawling peg lessened the transmission channel between external shocks and the domestic economy. Kalmanovitz (1997, chapter VIII). See Graph 7 in appendix 1.

By 1970, the growth, achieved by substituting nondurable and some durable consumer goods, had exhausted. The manufacturing sector lacked competitiveness in terms of price and quality partly because of the protection from international competition and the price distortions. The trade barriers and capital market restrictions at this stage began to be seen as major obstacles to further industrialization, manufactured exports and sustained economic growth. Also, they were seen as responsible for the macroeconomic instability, which was perceived through volatile inflation, fiscal deficits, and recurrent balance-of-payment problems. Although Colombia had finally come to a solution to the recurrent volatility of the exchange rate with the adoption of a crawling peg system in 1967, major inflationary threats were still stemming from the interweaving of fiscal and monetary policies amid a policy regime prone to developmental credit. Such a regime included international credits borrowed by the government not only for public expenditure on infrastructure but also for private firms, mixed companies and state owned enterprises (SOEs). Soft loans for private firms were central incentives to private investment as well (Bulmer-Thomas 1994, 350)[15]. The following table summarizes the economic policy regime.

Table 1
The 1970´s Economic Policy Regime in Colombia

| Policy Instruments | | Characteristics |
|---|---|---|
| Fiscal | Public Expenditure $(\delta)$, $(\theta)$<br>Taxes $(\tau)$<br>Internal and External Indebtedness | -Public investment in SOEs<br>-Shallow internal capital market for public debt.<br>-Severely constrained in regard to taxes |
| Monetary | Money Issuing (M)<br>Interest rate ( r) | -Monetary board which included the minister of finance and private sectors' representatives.<br>-Developmental credit (monetary policy and credit regulation were tied).<br>-Dependent on fiscal decisions<br>-Responsible for the exchange rate defense<br>- Differential interest rates according to economic activity and forced investments. |
| External | Crawling Peg (e)<br>Trade Protection (Tariffs and quantitative restrictions)<br>Capital flows regulation (r ) | -Fixed exchange rate (continuous microdevaluations)<br>-Pervasive protection to agriculture and main industrial sectors.<br>- Tight financial controls and shallow capital market for firms' stocks. |

## The Political Scenario

Alfonso Lopez M. won the presidential elections based on a wide support from labor and capital. This government gathered such a support by offering a political and economic openness. Lopez had led the MRL (Movimiento Revolucionario Liberal), the extremist wing of the liberal party, which criticized the lack of democracy brought by the coalitional government that had ruled

[15] This trend was present in several Latin American economies. As a result, the size of the state grew in many countries. Ocampo (1996, 302).

since 1958. Lopez declared himself as leading a left-center government, thereby receiving as many votes from privilege classes as from popular sectors (Lopez 1975a, Gomez 1978; Pécaut 1988).

The dual aperture certainly found fertile terrain. If it succeeded the political gains would be enormous. The alliance between liberals and conservatives, the *Frente Nacional*, though useful as a solution to the violence unleashed after 1950, had modest success in addressing social demands. It consolidated a moderate way of making politics, far from the neo-liberal or socialist extremes that severely limited the scope of economic and political reforms (Silva 1989a, 1989b; Hartlyn 1993). Little advance was accomplished as far as the land and tax reform was concerned, which were aimed at improving the income distribution. Governmental actions addressed to distribute land, improve workers' standard of life and fight unemployment were initially undertaken, but after some time were blocked or amended in the political houses.

However, up to that time the Colombian governments had rested on a small state autonomy insofar that the state had a low relative independency for opposing the main interest groups. After 1950, a corporatist nature of the state developed when economic intervention became more pronounced and several associations of producers thrived in order to channel their demands into the state. By 1970 there were 81 associations of producers; however the most important associations amounted to no more than five, representing coffee and agricultural sectors, industry, commerce and banking[16]. Leaders from all these organizations were appointed in official positions as a mechanism to reach consensual policies. Furthermore, a net of official institutions like councils, commissions, and directed boards of decentralized state organizations relied on the participation of these associations' members. In 1981, it was estimated that 54% of the officials working with state organizations were representatives from the private sector. They were in charge of designing global and sector economic policies (Ocampo 1996, 320).

Advancing collective objectives would mainly require extraordinary mechanisms to legislate so as to conceal broad faculties to the executive. Nonetheless, once these special periods ended, the measures could be changed through the usual channels in hands of the interest groups[17]. A sign of such low state autonomy could be found in the tax structure. The tax effort was low and attempts to increase income taxes repeatedly failed. This indicates the reluctance of the economic sectors to substitute external debt revenue and monetary expansion for direct taxes as a main source of government expenditure (Pécaut 1988, 75).

Yet, the 1970's were a period of management innovations to the Colombian state. New formal institutions and technocrats began to integrate the state staff of high officials. This "technocratization" was clearly perceived in Lopez' government, whose rhetoric and policymaking was supported by a technocratic team as well as intense international diplomatic activity. Outstanding and respected economists such as Miguel Urrutia, Ph. D. at Harvard, would lead the technocracy. The campaign and the first year of government included widely-known speeches and legislative actions whose main purpose was to persuade economic groups about the benefits of a

[16] Urrutia (1983, 27). The main associations were: ANDI (Asociacion Nacional de Industriales) for industry; FEDECAFE (Federacion Nacional de Cafeteros) for Coffee; SAC (Sociedad de Agricultores de Colombia) for Rural landowners and producers; FENALCO (Federacion Nacional de Comerciantes) for commerce; ASOBANCARIA (Asociacion Bancaria) for Banks, and ANIF (Asociacion Nacional de Instituciones Financieras for other financial institutions**.**

[17] Saenz Rover (2002), whose analyses of the entrepreneurial groups and the economic policy in the 1940´s, provides evidence of the low autonomy of the Colombian state in that period. Pécaut points out the multiple number of exceptional legislative procedures during Lopez's government as a signal of the state's weakness (1988, 247-326). Lombart (2000, 87-9) comes to similar conclusions through his study on the 1990's trade policy.

Hayecksian conception of the state and the importance of consensual price and income policies. Doubtlessly, this tendency strengthened the government as a political actor[18].

However, the political openness was a delicate task to undertake for there were deleterious elements in the environment: a growing communist insurgency, a powerful association of Peasants (ANUC) asking for land reform, strong unions, civil discontentment due to rural and urban poverty, unemployment, an inefficient and corrupted public administration, and low quality of public utilities.

## The meaning of the Economic Reforms

The first proposal of economic reforms emerged in the scenario abovementioned. The reformist winds were influenced by the criticisms to the welfare state and Keynesian policies coming from the U.S. and England, which experienced stagflation by the early 70's. The new approach to conduct national policies emphasized lesser state intervention, promotion of market efficiency, macroeconomic stability and trade openness (Williamson 1994a). Also, inflationary control was a priority in the new international monetary order in which the dollar became the standard. In Colombia, the presidential candidate Alfonso Lopez M. introduced these ideas to the 1974 elections. Michelsen sought to transform the country into "the Japan of South America" by bringing down inflation and trade barriers as well as by reducing the public transferences to industry. He questioned the ISI strategy by pointing out its shortcomings and highlighting the fact that only by encouraging market mechanisms would economic performance enhance and trade opportunities enlarge. Macroeconomic stability, regional trade integration and financial liberalization were the means to stimulate capital accumulation and exports. The way to achieve higher national income would be paved to extend economic progress and address social demands. By increasing direct tax revenues and lessening exemptions and subsidies granted to private capital, fiscal deficits would be eliminated and competitiveness would be encouraged (Gomez 1978, 90-4).

This rhetoric was appealing in a moment when foreign capital inflow was promising, industrial exports were booming and ISI's bottlenecks were tightening a great deal (Garay 1998). Certainly between 1968 and 1974, the country experienced a boom in manufactured exports and foreign investment. The economic sectors, although at different extents, expressed their enthusiasm for participating in the expansion that the international market was showing. Inflation volatility and fiscal deficits were seen as undesirable features that must be eliminated whereas financial and trade liberalization were seen as advantageous institutions to pursue (Kalmanovitz 1997, 452; Bejarano 1985, 127). Consequently, Lopez M. was elected president in 1974.

Chile was the paradigm to follow, where economic reforms sought to reduce economic state intervention, trade barriers, and capital markets restrictions. The monetarist agenda included tight control in money growth, the reduction of fiscal deficits and close surveillance of real exchange rates to avoid overvaluations. Fiscal deficits and devaluation were important as long as they affected the expansion or contraction of the money stock. Inflation from this perspective is mainly a monetary phenomenon and it is explained primarily by excessive money growth. But Lopez claimed to be structuralist instead of monetarist in fighting inflation signaling that inflation was a not only a matter of monetary expansion but also of excessive subsidies and lack of market competition (Gomez 1978, 90). In Colombia, such an agenda was pursued with a non-independent

[18] Since the 1960's, the U.S. government provided technical and economic assistance to Colombian governments through international missions (Musgrave's, Currie's). These missions were aimed at diagnosing social and economic problems and proposing solutions and policies. This reflected the influence that American policymakers had on their Colombian counterparts. See Berry and Hellman *(1980*).

central bank and a very well entrenched regime of centrally planned public and private investment and price controls. The financial reform did not openly attack the developmental credit system; instead it tried to structure that system such that it would not contradict the monetary policy. Ultimately, the goal was to harmonize monetary discipline with financial freedom. (Bejarano 1985, 135; Cabrera 1980). Thus, the Colombian objectives and methods in this regard were far from the ones implemented in Chile, where neoliberalism was intensively experienced.

The plausibility of the reforms depended on Lopez's ability to reach agreements with the interest groups on the new policies and institutions. Two levels of agreements are proposed in this paper: a high effort in which the reforms are fully pursued and a low effort in which the pain or costs are alleviated by undertaking a half-hearted version. The meaning of full and half reforms is shown in table 2. Stabilization and structural adjustment are treated as two main reform components. The first includes inflation and the budget deficit's targets. The second comprehends measures redefining state intervention and market incentives. It can be seen that under the full version the targeted level of macroeconomic stability and structural change seeks higher macroeconomic discipline and more market mechanisms in operation. Issues such as tax income, direct state investment and price controls, the most controversial variables in the Colombian scenario, move in opposing directions according to the reform version, while the rest of variables move in the same direction. Financial liberalization and the downsizing of state bureaucracy found wide support from the beginning, resulting in no controversy on their adoption but on their implementation[19].

**Table 2**
**Structure of the Economic Reforms**

| Component | Policy Targets | Full | Half |
|---|---|---|---|
| **Stabilization** | Inflation | One digit | Two digit |
| | Budget Deficit (%GDP) | One digit | Two digits |
| **Structural Adjustment** | Financial Liberalization | Commitment to open markets | Suspension of the commitment if needed. |
| | Trade Liberalization | Substantial reduction in trade barriers for all industries | Moderate reduction in trade barriers for main industries and higher reduction for raw materials, capital goods and minor industries. |
| | Income taxes | Higher than the pre-1974 level | Lower than pre-1974 level. |
| | Direct state investment | Lower than the pre-1974 level | At least the pre-1974 level. |
| | Price distortions (control prices, subsidies, tax exemptions) | Reduction and Elimination of most controls. | Moderate reduction and maintenance of the rest of controls. |
| | Downsizing of State Bureaucracy | Maximum cutback | Moderate cutback |

[19] Although the financial liberalization was approved by the previous government, right before Lopez's possession, the liberalization came into practice and was negotiated and implemented under this presidency. For more details see Cabrera (1980;1982), Bejarano (1985a), and Lopez (1995).

The trade reform heavily hinged on regional agreements, which established substantial restrictions to foreign investment; it reflected Latin American governments' economic nationalism. The *Acuerdo de Cartagena*, or Andean Pact, included the nationalization of foreign banks; at least 51% of the capital should be national capital and restricted foreign investment in other sectors as well. Colombia decreed the nationalization of banks on December 12th, 1975 (*Diario Oficial*, No. 34477, p.121). This policy showed that Latin America was particularly suspicious of foreign capital that flowed into the commanding heights of the economies such as oil exploration, which raised domestic disquiets in the country (Ocampo 1996, 256).

Four years after, the country barely resembled a South American version of Japan; inflation permanently increased trade protection for the main industries slightly lessened, manufactured exports diminished and tended to decline, capital investment was paralyzed, public transferences to the private sector enlarged and direct tax revenues shrunk. In the air, there was a bitter taste of what was known as neoliberal policies. The next government would go back protectionist and expansionary policies.

What were the causes of such a reversal? Why was the economy not able to take a step toward higher economic growth? Different accounts of this failed reform episode have highlighted some of the causes. These causes can be grouped in three categories: exogenous shocks, reform implementation, and interest groups[20]. In the first category two international shocks are considered: the 1974 oil price shock and the 1976 coffee boom. The oil shock imposed harsh economic conditions just when the government was engaging in tight fiscal and monetary policy. This fact made it much more difficult to undertake the stabilization plan. In contrast, the 1976 coffee boom brought extra trade income, bringing incentives to relax macroeconomic policies. The second category includes factors such as the scope, order, and timing to carry out specific policies (tax reform and trade liberalization). Along these lines, the reforms could be deemed half-hearted, clumsily carried out and naively formulated. Also, the institutional structure of economic policymaking appeared as an obstacle for consistent and sustained implementation. Finally, the third category refers to the response and interaction of interest groups in the light of these reforms. In this case, potential losers were strong enough to counteract harmful measures whereas the government's actions failed to offset the advance of private interests.

As was explained, economic reforms change the economic and political equilibrium. They seek to alter several elements and critical junctures of the institutional matrix at once, or at least, in a short period of time. This is an ambitious process of intended social change whose effects must be seen as the result of multiple causes. Having said that, this paper's objective clearly arises; it is to provide a systematic view of these main causes in one picture. The analytical device is a simplified game theory model grounded in historical evidence, which establishes a point of reference to discriminate among explanatory variables and their interactions in a process of institutional change.

[20] These following authors refer to either the 1974-78 period or aspects of the reforms. Cabrera (1980), Morawetz (1981), Urrutia (1983), Bejarano (1984; 1985a), Kalmanovitz (1984 1st Ed.), Martinez (1986), Ocampo (1987a 1st Ed.) Pécaut (1987), Bulmer-Thomas (1994), Clavijo (1992), Garcia and Jayasuriya (1997), Garay(1998), Misas (1980, 1999), Edwards (2001).

## The players

They are three players (n=3): the Government (G) and two economic sectors, Coffee (Cs) and Industry (Is). The selection of these sectors as players needs some consideration. To consider a sector as one entity is a simplification since internal disagreements may prevent one from seeing a group of producers as a homogeneous entity. In fact, the heterogeneity involved by agents who have as much interest in industry as in agriculture could weaken the idea that these two sectors are truly independent entities. However, the existence of distinct associations representing each sector's claims indicates that by 1970 they had specific, visible and differentiable interests. As usual, a parsimonious analysis comes at the expense of excluding other potential players as the working class, the commerce or financial sector. However, this simplified setup still captures the key dynamic.

$S_k$ denotes the set of strategies of player k, where $k = \{G, Cs, Is\}$. Government has two pure strategies: to commit to full reforms (F) or to commit to half reforms (H). These strategies reflect the government's compromise. Coffee and Industry have two pure strategies as well: to commit to the reforms proposed by Government, which means to cooperate (C), or to reject them, which means to defect (D). The game is simultaneous and there is symmetric information for common knowledge and observation of others' interests . Consequently, the uncertainty comes from each player's ignorance on other players' degree of commitment to the reforms.

When Government chooses full reforms but both sectors defect, Government is forced to follow half reforms, whereas when Government chooses half reforms and both sectors defect, it is forced to not to undertake reforms at all. Thus, the consequences of mutual defection change according to the reform version. Mutual defection of a full reform signifies that Government, Industry and Coffee end up supporting the half version while a half version's defection indicates that players choose the status quo. The game can be visualized either in the upper or lower side of the tree in Figure 1. Once a player takes into account the actions of the other players, one out of eight possible strategies may be chosen. The strategies for every player are given by the set $S_k$ . Each strategy indicates the combination of strategies chosen by G, Cs and Is respectively. The letters F and H will differentiate Government's pure strategies. For instance, the strategy FCC denotes that G commit to full reforms and Cs and Is choose to uphold their commitment. The set $S_k$ for player k is,

$$S_k = \{FCC, FCD, FDC, FDD, HCC, HCD, HDC, HDD\}$$

These eight strategies are identified by their enumeration from one to eight in the order above listed. The associated function of payoffs for $S_k$ is

$$U_k = \{K_i^1, ...., K_i^8\} \quad i=1,\ldots,8$$

The upper subscript points the strategy so that $K_i^1$ indicates player's payoff from strategy 1 with rank i. The rank refers to the order that a player assigns to each strategy, one being the highest, or the most desirable, and eight the lowest. The payoff function is specified in a ranking that must reflect how the player evaluates each strategy's net benefits. It is clear that for such an evaluation a player keeps in mind the effects of other players' choices on its own payoffs. Therefore, to establish these ranks, it is necessary to identify every player's balance of gains and losses associated with each strategy. Since the impact of the strategies differs across players, the relationship with the reforms is specific to the player. Each player's characteristics are analyzed for depicting his overall preferences and obtaining a ranking of his strategies.

### Government

The basic preference of any government is to stay in office and increase its party's political capital. Since politicians seek reelection in a basic democratic setting, they have to please their electorate throughout institutions mainly structured by the constitution and the political dynamics. Also, politicians are self-interested and may advance their personal interests whenever there is room for it. A general expected gains function like the following captures Government's motivations:

$$E(V^G) = f[\delta_1 E(V_{Cs}), \delta_2 E(V_I), \delta_3 E(V_W), \beta], \quad \sum \delta_1 = 1 \text{ and } \beta \geq 0. \qquad (1)$$

$E(V_{Cs})$ and $E(V_I)$ represent the expected value of Coffee's and Industry's profits, respectively, reflecting that Government's political capital hinges on the economic performance of these sectors. $E(V_W)$ stands for the expected workers' income signaling this group as an electoral force for the ruling political party. Sectors' expected values will be defined later, unlike workers, who do not appear as a player in the game[21]. The constant δ represents the weight each sector has in Government's interests. Here, $\delta_1 > \delta_2 > \delta_3$, meaning that Coffee brings higher political support (not votes) for the ruling party than industry or workers. The parameter β captures potential opportunistic gains from the reforms because of agency problems such as corruption or informational asymmetries[22]. The preferences are outlined by the following decision rule, which indicate Government's actions.

> **Decision Rule for G**: It prefers those strategies in which Cs cooperates over those when Cs defects. If Cs chooses C, it would rather commit to full (F) rather than to half reforms (H) and it prefers that both sectors cooperate instead of only one. If Cs defects, it chooses H over F but it prefers that industry cooperates rather than defects.

The rule points out that Government prefers full to half reforms reflecting its ideological alignment in economic policy. But this player must be responsive to sectors' support. Consequently, it gets a higher payoff for undertaking full reforms when Coffee cooperates. The appeal of full over half reform comes from two sources. First, Government obtains a stronger political position domestically if the main economic sector follows its policies. Second, it increases its political capital abroad if it is in harmony with the international consensus on economic policy. However, the loss of domestic support leads Government to prefer half reforms because international approval is not as critical as internal approval. For the decision rule to be appropriate, it is assumed that Government's commitment to full reform is sincere. Also, it is supposed that Government weighs domestic political support higher than international support and that that support mainly comes from Coffee. As a result, if Coffee defects, G prefers the half version of the reforms, although in that case, it also prefers at least to have the support of industry than not to have any support. The most undesirable payoff is obtained when G chooses a full reform and none of the sectors cooperate because mutual sector defection would severely undermine its capital value.

[21] The question about the specific form of the expected value functions (concave, convex or linear), and hence the player's attitude toward risk, is not addressed here since general forms are used.

[22] However, the opportunistic gains are temporal and could increase ruling politicians' wealth but seriously harm their political capital in the long-run. Assessing the importance of this variable requires a more detailed analysis of the context.

In consequence, the function of payoffs for $S_G$ is[23],

$U_G = \{G_1^1, G_2^2, G_7^3, G_8^4, G_3^5, G_4^6, G_5^7, G_6^8\}$

This picture is grounded in the historical characteristics of Lopez Michelsen's government and the Colombian state. The link between private and public interest was particularly tight with the coffee sector. Between 1910 and 1960 the country became the second largest world producer of coffee. By 1950, 78% of the country's total exports were coffee, consolidating the link between the national economy and the international market. After the Great Depression, coffee producers became a powerful group that dominated the macroeconomic policy and coo-legislated its own regulation policies (Palacios 1983, 504). Indeed this sector structured the Colombian state through its affective collective action (Mares 1993). The National Federation of Coffee Producers (FNC), a *sui generis* institution of mixed character between an interest group and a decentralized state agency, set the channel for this high leverage. Many managers of the FNC served as Ministry of Finance, revealing this figure as an intermediate between this interest group and the state (Palacios 1983, 522). Furthermore, with the National Coffee Fund, established in 1940 to manage public revenues from special coffee taxes, the FNC acquired significant financial power. The Fund had as a main objective the regulation of the coffee supply through crop purchases and price regulation. Also, it was intended to support the short-term financial needs of coffee exporters and facilitate commercialization. In terms of institutional structure, the FNC was a semi-state organism with autonomy and therefore isolated from the political class and the parliament (Ocampo 1987, 288).

Not only was the institutional state structure prone to prioritize the coffee sector's needs, but also Alfonso Lopez M found himself bounded to the sector's interests. He came from one of the elite's prominent families, whose fortune rested on coffee business and whose importance in the Colombian political life had been long-established. Alfonso Lopez Pumajero, his father, was a liberal leader in the 1940's recognized by his achievements in land reform and labor-favorable legislation. Lopez Michelsen openly acknowledged his "dolphin" character, since he was in his father's footsteps addressing the working class demands and promoting prosperity (Gomez 1978, 61). A growing mass of urban workers, absorbed more dynamically by industry than by agriculture, would find Lopez's proposals attractive (see Graphs 3 and 4 in appendix 1).

Along with labor-favorable legislation, Lopez claimed for an industrial adjustment under the light of the comparative advantage and efficiency principles. Lopez's discourse also underlined the urgency for increasing the agriculture's productivity, but by means of more developmental credits that would capitalize farms at a larger scale (Pecáut 1988, 249). In his view, the agricultural sector was considered as the key engine because the country was mainly agrarian. Thus, he advocated the promotion of agriculture and the purging of industry at a time when Industry and agriculture equally contributed to the GDP. While agriculture went from contributing over 27% of the GDP in the 1960's to 23% in the 1970's, Industry increased its aggregate value from 21% to 23% in the same decade. (See Graph 2 in appendix 1).

**Coffee**

This sector aims to obtain higher profits, which depend on the real value of domestic $(Q_c P_c / P)$ and international sales $(Q_c^* E P_c^* / P)$ and real input costs (r,w). The profits are altered by net subsidies to final prices $(\delta_c)$, taxes $(\tau_c)$ and transferences $(\theta_c)$

[23] The ranking of G's strategies can be expressed as FCC>FCD>HCC>HCD>HDC>HDD>FDC>FDD.

from Government. The following general function indicates the main arguments of the expected profits.

$$E(V_{Cs}) = f(\frac{Q_c P_c}{P}, \frac{Q_c^* e P_c^*}{P}, \delta_c, \theta_c, \tau_c, r, w), \text{ where } \frac{Q_c P_c}{P} < \frac{Q_c^* e P_c^*}{P} \quad (2)$$

The first four arguments are positively related to profits. P represents the general level of prices and *e* stands for the nominal exchange rate. The last three arguments in the function are inversely related to profits. Because of the close relationship between the National Coffee Fund and the government and the monetary authorities, the general level of prices, and by this way the real exchange rate, was substantially influenced by the international coffee prices. This fact is captured by the following function, where the expected inflation depends on the growth of money and the gap between the current and the average international coffee prices[24].

$$E(\pi) = f[\Delta M, \lambda(P_c^* - \overline{P}_c^*)], \qquad 0 < \lambda < 1 \quad (3)$$

The parameter $\lambda$ refers to the degree whereby the fluctuations of the international prices are transmitted to the domestic economy. Then, $\lambda$ points the monetization due to the coffee price cycles.

By the beginning of 1970 the coffee sector showed signs of weakness. Coffee exports reduced its participation in the total exports to 50% reflecting changes in the coffee world market as well as in the domestic structure of production. Other domestic sectors questioned the power of the FNC in relation to the state in the light of conflicts around devaluation, inflation and income redistribution goals through fiscal policies (Palacios 1983, 523; Pécaut 1987, 270). At the core of the debate was the high correlation between exchange rate management and the international coffee prices for when the coffee price was high (or low) the real exchange rate appreciated (or devaluated)[25]. Coffee cycles did not contributed to the development of non-coffee sectors despite the stabilization effect on the exchange rate provided by the crawling peg system.

It is reasonable to contend that the sector perceived Lopez's reform agenda as a way to address all these criticisms. Coffee would benefit from lower fiscal deficits, financial openness, and trade liberalization because the pressures on higher taxation and the capital costs would diminish. Coffee was not as sensitive to the trade reform as Industry because it did not have external competitors in the domestic market and its exports hinged on a bargained share of the international market. Furthermore, the relative strength of the National Coffee Fund eased the financial constraints the sector may have experienced. Real devaluations were not crucial to maintain its internal competitiveness, which rested on a high productivity relative to other domestic sectors (Ocampo 1996, 288). An additional appeal of the reforms stemmed from the fact that the reforms did not question price controls, subsidies or tax exceptions enjoyed by Coffee.

[24] The macroeconomic effect of the coffee boom took place through domestic coffee price increases. Over two thirds of the international price fluctuations were transmitted to the domestic prices during the 1970's. Ocampo (1987, 310).

[25] Gomez Buendia and Leibovich,(1987). Echavarria (1999) observes that when the coffee sector did not go well, the rest of the economy did go well.

However, Coffee was particularly sensitive to the tax reform. Historically, the sector had fiercely opposed discriminatory taxes on its exports for it claimed fiscal neutrality among sectors. Between 1963 and 1974 the fiscal revenue from coffee exports declined from 78% to 36.2%, a result of its intense lobbying and the unclear methodology of adjusting taxation according to the external cycles (Pécaut 1987, 260-2; Ocampo 1987, 275-94). The criticisms pointed out the extra income the sector perceived because of the real devaluation introduced by the crawling peg system. According to the criticizers, there must be resource transfers from Coffee to other undeveloped sectors by means of higher taxes. The sector argued that when a boom occurred, the subsequent real appreciation equated to a tax on coffee exports. Later on, Coffee would allege that the boost in the domestic demand would allocate much better the resources all over the domestic sectors than any policy measure (Ocampo 1987, 281 and 325).

### Industry

Like Coffee, Industry seeks higher profits. The following general function fairly captures its main incentives where the symbols stand for the same variables like in the Coffee's function:

$$E(V_I) = f(\frac{Q_I P_I}{P}, \frac{Q_I^* E P_I^*}{P}, \delta_I, \theta_I, \tau_I, r, w) \qquad (4)$$

The Great Depression was the opportunity for the expansion of industry and acceleration of economic growth. From this period on, a dynamic group of entrepreneurs would emerge. They invested in industry but also were linked to agro-exporters involved in coffee production and commercialization. These new industrial agents led the industrial and coffee sector. They had close objectives in which, though there might have transitory disagreements, there was no deep political and economic antagonisms (Palacios 1988, 506). This commonality of interests began to vanish in the 1960's. Industry advanced toward the production of complex goods, leading processes of vertical and horizontal integration. In particular, horizontal integration drove it to incorporate and establish financial institutions that facilitated the transformation of old family firms into limited liability companies. The concentration of the ownership along with new conglomerates redefined new industrial interests by the 1960's, placing these interests closer to the financial sector than coffee producers. Nonetheless, Industry was far from having the same cohesion and strength as Coffee as to openly confront Coffee's interests whenever they would have seen as harmful. Indeed, the support granted by governments under the ISI prevented the sector from structuring an effective collective action (Mares 1993).

Industry concentrated on the production of foods, beverage and textiles. Its production was mainly intended to domestic markets and was more capital than labor intensive. In the period 1950 to 1970, Industry advanced from the production of nondurable goods (foods, beverages, clothes) to the production of intermediate goods (textiles, paper, chemicals, minerals, basic metals), and at lesser extent, toward capital goods production. By 1974, 37% of the industrial aggregate value was concentrated on nondurable goods, 49% on intermediate goods and 14% on capital goods (Ocampo 1996, 274).

At this point, Industry found it convenient to relax trade controls for it had imported 67% of the total imports during the 1960's. Two thirds of these imports were raw materials while the rest was capital goods. The reduction in non-trade and trade barriers began in 1970, targeting raw

materials and capital goods. However, in 1974 sectors such as beverages, textiles, clothes, woods, shoes, and plastics had still nominal trade tariffs higher than 60%, whereas sectors like food, paper and chemicals had tariffs around 25% on average. Taking into account non-trade tariff restrictions such as previous import licenses, quantitative restrictions and money deposits, the effective protection for food, beverages, tobacco, textiles, clothes, furniture, and plastics was beyond 100%. Among the capital goods, transportation equipment had an effective protection around 80% (Garay 1998, 320). All these were industries in which national firms cornered domestic markets.

Trade reform seemed to be a double-edge sword; on one hand, they would mean lower costs of imported raw materials and capital goods and, by these means, eventually higher exports. On the other hand, they would low domestic sales and threaten domestic firms if their competitiveness happen to be poor in comparison to foreign firms. This trade-off was portrayed by the struggles that Lopez's government would have to fight overcome so as to eliminate trade restrictions (Martinez, 1986).

Ultimately, the viability of trade reform hinged on the value of industrial exports, which were determined, in the short-run, by expectations of expanded markets brought by trade agreements, stability of the real exchange rate and export subsidies. On trade agreements, the Andean Pact promised new opportunities and meant a crucial incentive to trade liberalization. It is worth noticing that, despite the economic nationalism, textiles, one of the main domestic industrial sub-sector, considered trade agreements with the U.S[26]. As for the real exchange rate, Industry was aware of Coffee dominance and contended that position. Regarding subsidies, Industry was especially sensitive to reductions in the export subsidy called CAT (Certificado de Ahorro Tributario). On September 1974, Government reduced this subsidy from 15% to 5% arguing that it increased the budget deficit. However, as long as the industrial exports were encouraged by alternative policies this sector was willing to negotiate[27]. Industry's expectations of lower capital costs and higher investment inflows by means of financial liberalization had the potential to initially offset the risks entailed by a higher exposition to international markets.

As to fiscal and trade reforms, Industry was open to consider crucial issues while Lopez's first-year. This sector took an active role in criticizing the measures and pointing out its advantages and disadvantages. The industrial associations, along with other producers' organizations, constantly underscored the need of defining more aggressive strategies to overcome the financial tightness and stimulate trade[28]. In doing so, Industry managed to reach some beneficial agreements with Government like lower capital taxes to limited liability companies[29]. Ultimately, the economic reforms meant policies that addressed Industry's claims, which had been overlooked by past governments. The developmental strategies of preceding governments focused on agriculture and

[26] The official adherence to the "International trade Agreement of Textiles", established on December 20th , 1973, took place on January 1977. See *Diario Oficial* #34714, pages 178-181. Nevertheless, the industrial association, ANDI, pointed out that the agreement must be reconsidered because it was not favorable to national producers. See *El Tiempo*, August 12th , 1975, page 8A.

[27] Industry´s reaction against this measure can be seen at *El Tiempo*, September 22nd , 1974, page 11A. See also *El Tiempo*, September 29th , 1974, page 13A and November 1st , 1974, page 1. ANDI, the industrial association, pointed out that CAT's reductions discouraged exports and emphasized that such reductions had to come along more flexible capital market. Afterward, ANDI and other associations proposed an export plan where other incentives substitute the CAT, *El Tiempo*, December 6th , 1974, page 1.

[28] See *El Tiempo*, Marzo 10, 1975, page 6A.

[29] This turned out one of the amendments to the fiscal reforms enacted at the beginning of the Economic Emergency. *El Tiempo*, October 13, 1974, page 1. Subsequently, at the end of 1974, important industrial businessmen from Antioquia expressed their support to Lopez's government; see *El Tiempo*, December 19th, 1974, page 9A.

urban building development –e.g. Currie's Plan. This fed Industry's sentiment of being neglected and reinforced its perception of incomplete industrial policies. In Industry's eyes, the promotion of industrial exports, implemented since the mid-1960's, was a broad policy that still demanded actual support and complementary policies (Pecaut 1988, 201).

## Interactions between Coffee and Industry

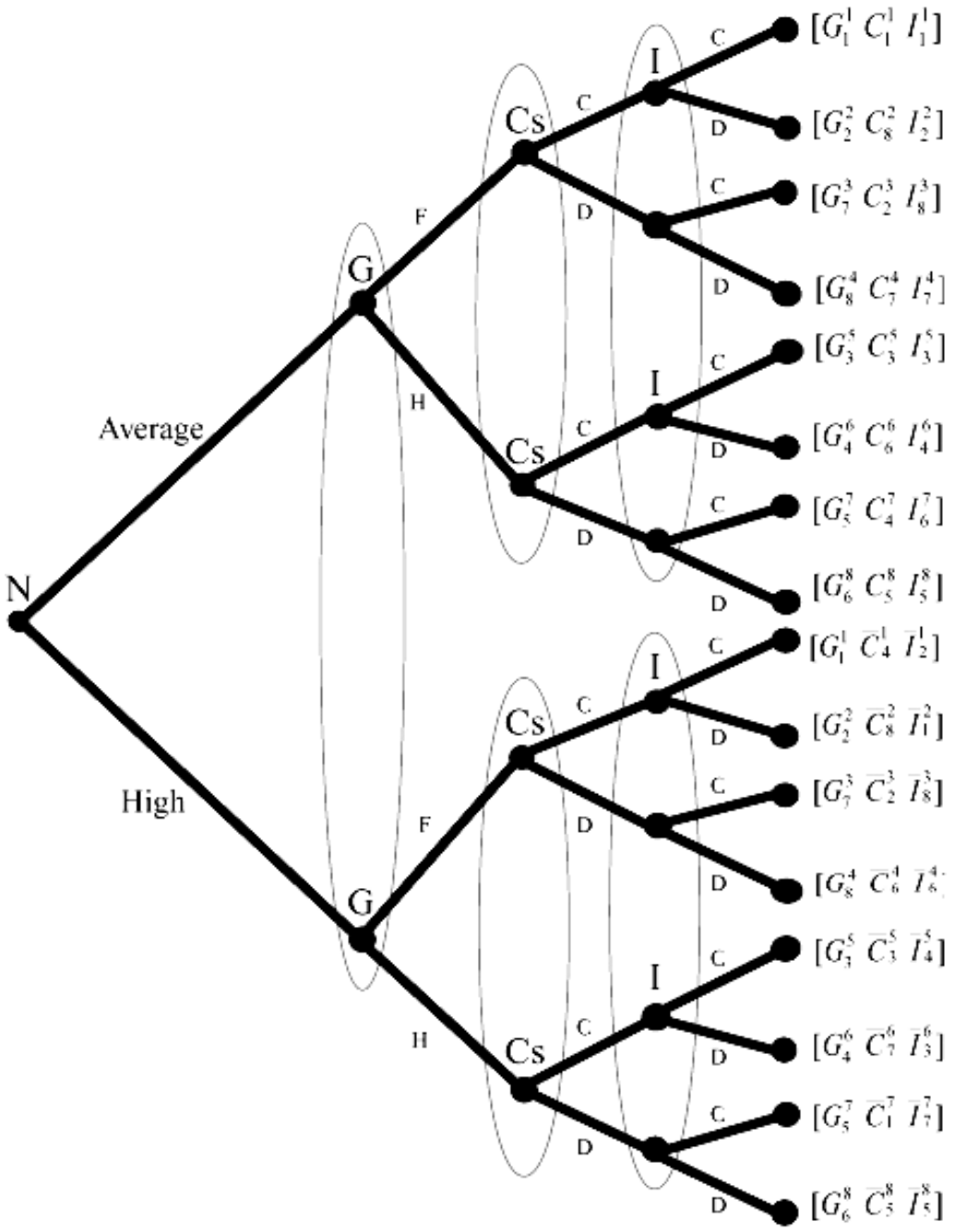
The possibility of a coffee boom introduces uncertainty to the game. The game starts with a move of Nature (N), which decides on a random event outside the control of players such as the level of coffee price. Coffee price could take two levels: it could be either average or high; hence Nature is the player that decides whether or not the economy is going to experience a coffee boom. The game is represented in the Figure 1 below. The vectors at every terminal node correspond to each player's payoffs. Nature's move brings two possible sub-games: one when the prices are average and the other when they are high. Because the players do not have perfect information, they need to estimate probabilities of the occurrence of these sub-games. The information set available before the game starts indicates to all players that the economy was exposed to export cycles due to fluctuations of international coffee prices. This was a main characteristic of the Colombian economy determining its macroeconomic setting. Policymakers and coffee growers were aware of the main role of coffee as a commodity which is subject to trade fluctuations. In response, they designed tools aimed at regulating the domestic coffee market and engaging in international agreements to control the world supply and prices. Thereby, the probability that coffee prices were over the historical average was positive, though some policy tools decreased this probability in the sense that they cushioned oscillations' effects and kept prices away from high or low extremes.

However, the Coffee prices skyrocketed in 1976 bringing about an unexpected situation. First, the international agreement between major producers and the U.S., the main consumer, had not established market shares since 1972, something that was redefined only until 1980. Second, Brazil, the biggest producer, underwent severe frosts at the end of 1975, dramatically decreasing the world supply (Ocampo 1996, 316). As a result, the national supply of coffee, unconstrained by the international market, could expand and capture a great deal of the extraordinary increase in international prices (see Graph 10 and 12 in appendix 1).

These events evidenced the difficulties players faced in drawing correct and precise inferences about the level of coffee prices. Under such circumstances, players are not able to form Bayesian probabilities because something completely unforeseen took place. In terms of the game, it means that they do not have mixed strategies to protect themselves from Nature's move, so they must play at either decision node (high or average) once Nature chooses and they are able to update their informational sets and acknowledge the presence or absence of a coffee boom[30].

[30] As the subjective probabilities players draw do not coincide with the objective probability nature plays with, the notion of Bayesian probabilities lacks of power in guiding player's maximization under uncertainty. Harsanyi (1997, 8-12).

Figure 1




This update occurs differently in Government and sectors. Figure one indicates this characteristic of the game in which the uncertainty is represented by joining the decision nodes of G. Like sectors, Government could not foresee changes in coffee prices, but unlike them, Government did not update its payoffs and ranked them differently once the new scenario emerged. This reflects Government's compromise with the reforms; no matter what special situation could

have happened, Lopez M. was engaged in keeping down the inflation, fiscal deficit and trade tariffs. Alternatively, it may be interpreted like G's inability to respond to a shock. Thus, G's payoff ranking is formed as if this shock were an irrelevant factor; consequently the rank is the same under average and high prices. This feature is grounded on the qualitative analysis of Lopez's government orientation where it was never considered, neither *ex-ante* nor *ex-post,* the incompatibility between full reforms and a coffee boom, as well as potential conflicts arising from their coexistence. Excess of confidence in the extant macroeconomic tools for coffee regulation might explain Government's oversight[31][32].

Coffee and Industry, in contrast to G, did react in the light of the boom and adjust their payoffs. Hence, their decision rules must be changed in view of coffee prices substantially higher. Analyzing these adjustments underscores some basic facts. To begin with, the interaction between Coffee and Industry has some commonality; that is, both wish the benefits from stabilization and structural adjustment and share some common interests, though they have also some opposing goals. These mixed interests might lead them to several types of strategic interactions; in this exercise two of these types, an *assurance game* and a *prisoner's dilemma game,* are chosen. The typology of payoffs for a simultaneous two-player game is now introduced by following Tsebelis (1990). In a simultaneous two-person game there are four possible outcomes: reward (R) for mutual cooperation, penalty (P) for mutual defection, temptation (T) when the player defects and the opponent cooperates, and sucker (S) when the player cooperates and the opponent defects.

The reward payoff occurs when both sectors support the reforms whether the full or half version, and the penalty payoff is obtained when both sectors defect. Thus, the sectors find cooperation desirable and profitable, although the strategic interaction could prevent them from doing this. Here the reward (or penalty) payoff might be either higher or lower under the full than under the half version of the reforms. That a sector finds a full reform more profitable (or harmful) than a half reform mainly depends on its own evaluation of costs/ benefits. In a dynamic perspective, every sector has to weigh net benefits against long-term net benefits as well as find out how much uncertainty it will face in regard to those net benefits for they are contingent. Determining numerically these values and other variables that could affect players' payoffs is beyond the scope of this exercise. Instead, overall preference rankings are established through the typology of the assurance and prisoner's dilemma game, which as will be argued best fit the main historical facts. The next section illustrates how these games capture strategic interactions between Coffee and Industry and reflect basic features of their own rating system[33].

[31] Once the Coffee boom is well recognized, Lopez's government declared that the boom was totally as much unexpected as the way in which it messed up the economic policymaking. *El Tiempo*, July 21st, 1977, page.6.
[32] The continued real revaluation of the exchange rate revealed Government´s attachment to the crawling peg system. See Garcia and Jayasuriya (1997). Indeed, few plans for promoting non-traditional exports would raise positive expectations under real revaluation.
[33] Payoffs must capture everything the player cares about in the outcomes of the game, and in order to do so, he calculates the consequences of his choices by using his own value system (Dixit and Skeath 2004, 30). Whether a player considers full reforms better than half reforms depends on his perception of the current economic performance and his evaluation of alternatives regimes. This perception can differ between sectors and it might also depart from the prescriptions of the extant economic policy. Hence, the payoff rating system of a player hinges on his understanding of the economy, which in turn depends on the information available, his sector or class interests, ideology and beliefs about future.

## Average Coffee prices: an Assurance Game

So far, it was stated that both sectors find the reforms desirable under average coffee prices. The assurance game captures an interaction where mutual cooperation is the preferred outcome and there is no exploitation of the opponent; rather, both players prefer to follow the other's strategy. For example, if Coffee defects full reforms, then it does not benefit from Industry's commitment to full reforms insofar as Coffee understands that its commitment is also necessary for the reform to be profitable in its interest. Industry judges the situation in regard to Coffee in the same way. Thereby, one player's defection and the other player's cooperation do not lead to appealing payoffs. In an assurance game, the order of the strategies' payoffs for both players is given by R>T>P>S. Under average coffee prices, the other sector's exploitation is prevented by the jointly movement of the expected real value of production and price inputs in the expected value functions. Since the reforms would bring down inflation and input costs, and stimulate productivity, the payoffs for both sectors would evolve in the same direction.

The sectors find the full version of the reforms more profitable in this sub-game under average coffee prices. This preference order is based on the declarations of Coffee and Industry in which both made public their willingness for full stabilization, regarded complete financial deregulation as favorable, were willing to negotiate a tax reform and agreed in reducing the state size. Although other aspects, such as eliminating some price controls and reducing all trade tariffs remained controversial, it is reasonable to interpret that the support was for full reforms. Clearly, potential disagreements, likely in a basic democracy, cannot be translated as radical opposition. Instead, what must be highlighted are prospects of progressive negotiations[34].

The decision rules for Cs and Is are specified once the interaction with G is taken into account:

**Decision Rule for Cs and Is (Average coffee price)**: Including a superscript in the payoffs, with f indicating the payoff under full reforms and h under half reforms, the payoff order for every sector is $R^f > T^f > R^h > T^h > P^h > S^h > S^f > P^f$ . A sector chooses the reward (R) or the temptation (T) payoff when G chooses F over the R or T payoffs when G chooses H. However, it prefers the penalty (P) or the sucker (S) payoff when G chooses H rather than the P or S payoffs when G prefers F.

The game establishes that a player prefers cooperation to defection when the other sector cooperates, choosing R, and prefers defection to cooperation when it defects, choosing T. The reward and the temptation payoffs are higher under full reforms than under half reforms because of sectors' perceptions. In the same way, the penalty and the sucker payoff are lower under full reforms than under half reforms reflecting that when only one sector engages with full reforms, it has to endure alone the whole tax burden and the lower level of subsidies. Thus, each player recognizes the full reform's benefits but is not willing to undergo the entire cost on its own, which is heavier under the full than under the half version of the reforms.

The function of payoffs for $S_{Cs}$ and $S_{Is}$ are:

$$U_{Cs} = \left\{C_1^1, C_8^2, C_2^3, C_7^4, C_{3.}^5, C_6^6, C_4^7, C_5^8\right\}$$

[34] Naturally, one must have reserves about the veracity of those declarations and at what extent they were "cheap talk". However, it is assumed that players are sincere to proceed with the analysis at first instance. This means that there is no incentive to hide one's true interests in order to elicit a response from the other player that would bring additional benefits. Here, it underlies the assumption of perfect information in the game.

$$U_{Is} = \left\{ I_1^1, I_2^2, I_8^3, I_7^4, I_{3.}^5, I_4^6, I_6^7, I_5^8 \right\}$$

## High Coffee prices: a Prisoner's Dilemma Game

Under high coffee prices, the set of strategies, denoted by $\overline{S}_k$, has the same eight possibilities for each player, although the payoff functions are different. The interaction between players changes because some of the variables in the expected value functions have opposite effects in Coffee and Industry. Overall, the bone of contention would be inflation, mainly driven by coffee prices as was explained, and whose management would reduce the expected real value of industrial output while it would increase the expected value of coffee production under the boom. Both sectors, aware of their relative strength and the institutional framework, could recognize that Government's response to the coffee boom would lead the economy to experience a Dutch disease. It could occur because Coffee would bring inflationary pressures. The disease would stimulate the nominal demand for non-tradable production and discourage the supply of non-coffee tradable sectors in the short-run. Even though neither Coffee nor Industry could foresee a coffee boom, they could certainly identify the consequences when a boom takes place.

High prices led Coffee to regard the half version of the reforms more advantageous than the full version, whereas industry still preferred the full version. This is because full stabilization would bring about higher costs for Coffee, stemming from a one-digit inflation target and fiscal deficit; under tight monetary policy, much of the extraordinary profits from exports could not get into the economy and coffee businessmen would have to wait to realize their profits in domestic currency. Moreover, disciplining fiscal policies would put more pressures on Coffee's income whereby its short-run profits would diminish. To Industry, full reforms are appealing because the control of inflation would guarantee a stable real exchange rate while the financial liberalization would provide the capital that Industry had longed for. Yet, this positive stance critically depended on broader opportunities in the international market. Industry's strategies would naturally hinge on Coffee choices, which Industry knows would be adjusted in the light of the boom.

A prisoner's dilemma game fairly captures this interaction because in this game the opposition of interests leads to the opponent's exploitation. Taking into account the reform components, defection for Coffee signifies it does not commit to full but to half stabilization; in addition, its defection closes the possibility of attaining full structural adjustment. However, Coffee might benefit from Industry's commitment to full structural adjustment, especially in the view of its attachment to protection. Industry's acceptance of full reforms would break down practices that burdened the fiscal budget and lessened market competition. In the same way, to Industry, defection means to commit not to full but to half structural adjustment. In this case, Industry evidently avoids the accomplishment of full stabilization, but it is aware of potential benefits from Coffee's commitment to full stabilization. Clearly, given Coffee's main role in driving macroeconomic variables, low inflation and fiscal discipline would bring stability that in turn would stimulate economic growth. In consequence, each sector prefers to defect in order to protect itself from exploitation, no matter what the other does.

The decision rule for Coffee is stated as,

**Decision Rule for Cs (High coffee price)**: The preference order of payoffs is $T^h > T^f > R^h > R^f > P^h > P^f > S^h > S^f$. Then, Cs prefers the temptation (T) payoff regardless of whether G chooses F or H, although it prefers the payoff obtained under H. In the same way, after T, it prefers R whether

G chooses F or H, although it prefers that obtained under H. After R, it prefers P regardless of whether G chooses F or H, though it prefers that obtained under H. After P, it prefers the payoff it gets under H.

Coffee has a strong incentive to defect and has a preference for the strategies where government chooses half reform. The function of payoffs for $\overline{S}_{Cs}$ is:

$$\overline{U}_{Cs} = \left\{\overline{C}_4^1, \overline{C}_8^2, \overline{C}_2^3, \overline{C}_6^4, \overline{C}_{3.}^5, \overline{C}_7^6, \overline{C}_1^7, \overline{C}_5^8\right\}$$

The decision rule for Is corresponds to,

**Decision Rule for Is (High coffee price)**: The preference order of payoffs is $T^f > R^f > T^h > R^h > P^h > P^f > S^h > S^f$. Is prefers the temptation (T) and the reward (R) payoff when G chooses F rather than the T and R payoffs obtained when G chooses H. However, it prefers the penalty (P) payoff if G chooses either H or F rather than the sucker (S) payoff. In addition Is prefers the P and the S payoff under H rather than under F.

This rule is not as straightforward as Coffee's due to industry's weaker stance before Government and Coffee. The rule indicates that Industry prefers full to half reforms but it would choose to defect over to cooperate. Industry is better off whenever Coffee cooperates and Government undertakes full reform. However, when Coffee defects Industry finds half reform more advantageous since the payoffs are lower when full reform is supported by only one sector; Industry understands that full reform would turn out much more costly of carrying out by itself[35].

The function of payoffs for $\overline{S}_{Is}$ is:

$$\overline{U}_{Is} = \left\{\overline{I}_2^1, \overline{I}_1^2, \overline{I}_8^3, \overline{I}_6^4, \overline{I}_{4.}^5, \overline{I}_3^6, \overline{I}_7^7, \overline{I}_5^8\right\}$$

The higher payoff for every player corresponds to mutual cooperation as typically occurs in a prisoner's dilemma. Coffee and Industry acknowledge the superiority of the cooperative solution over mutual defection. However, the situation each one considers the best does not coincide; Coffee judges the best situation like the one of half reform whereas Industry finds the best circumstance as that under full reform. The interaction between sectors is still a prisoner's dilemma in which the disparity of focal points takes place due to a third player's presence; that is Government. As was explained, Government's ranking does not change with the coffee price because it fails to recognize the incompatibility between the coffee boom and the reforms. By doing this, Government does not alter its policies keeping the same order of strategies, although its payoffs indirectly change because of the variations in sectors' payoffs.

At this point, the main elements of the game represented in Figure one has been introduced. The initial scenario for the reforms was one of average coffee prices, represented by the first subgame at the upper side of the diagram. The players began to play an assurance game, where the uncertainty came from the simultaneity of actions. In Figure one, the ovals binding the decision nodes of Coffee and Industry indicate that none of the players know in advance which sector would

[35] For Industry's preference for full reform to be valid, the "progressive" faction of this sector has to be taken as representative. Evidently, there were some producers whose antipathy to the reforms was deep, particularly about trade issues. However, these adverse sentiments were manageable and could have diminished if the trade agreements would have opened sound expectations of wider commercial possibilities.

cooperate and what type of reforms Government would commit to. This game was played once Coffee and Industry recognized the high coffee prices; the players placed themselves in the lower decision node after nature's move, turning the game into a prisoner's dilemma between sectors. The second subgame at the bottom side of the diagram conveys this situation. These subgame's payoffs have an upper bar that differentiates them from the assurance game's payoffs. Government perceived the change in sectors' strategic interaction and must also place itself at the lower node. But Government did not change its payoff rankings whereas Coffee and Industry did it. In this interpretation, Government is a passive spectator of sectors' reactions, because it did not update its preferences in order to prevent the most suboptimal outcomes. The next section analyses the possible results from these games. It will illustrate Government's role in driving the strategic interaction between sectors.

**Theoretical Outcomes**

In both sub-games, when all players cooperate, that is the strategy FCC is played, then full reforms are attained, and when all players defect, strategy HDD, the status quo is chosen. The structure of the subgame captures several paths for achieving half reforms since the strategies where at least one player commits either to full or half reform will bring about a change in the status quo; in this sense, a half-hearted reform will take place. The extent in which these half reforms divert from the status quo depends on the cooperative player's power and influence, basically because of asymmetries between players. For example, sectors' mutual defection when Government proposes full reforms, FDD, turns out more costly for everybody because it involves struggles among players undermining Government's political capital and demanding lobby from sectors. In opposition, sectors' mutual cooperation when Government undertakes half reforms, HCC, may result economically and politically more convenient for all players. By considering these paths, possible results from economic reforms are portrayed more realistically.

The simplest notion of solution, the Nash's equilibrium, is applied in order to figure out tentative results. Here players are rational, self-interested and uncooperative. Hence, there are two and one possible Nash's equilibria under average and high coffee prices respectively. In the first scenario, they correspond to the strategies when all players cooperate (FCC or full reform) and all players defect (HDD or status quo) while in the second scenario all players defect (HDD or status quo). The structure of the assurance game and the prisoner's dilemma evidently determined these points. While in the assurance game only one of the equilibria is an optimum, FCC, in the prisoner's dilemma the equilibrium is suboptimal since the players could be better off if they choose any strategy giving higher payoffs for all the players. The Nash's equilibrium sets are[36]:

$$NE_{Avg} = \left\{(G_1^1, C_1^1, I_1^1), (G_6^8, C_5^8, I_5^8)\right\}$$
$$NE_{High} = \left\{(\overline{G_6^8}, \overline{C_5^8}, \overline{I_5^8})\right\}$$

Under average coffee prices, the strategic interaction leads to a coordination problem between sectors, where the attainment of the optimal equilibrium depends on the ability to set a focal point such that all players choose to cooperate rather than to defect. Government could play a critical role in solving the coordination problem by building up its credibility on its commitment and by establishing mechanisms to facilitate the bargaining between sectors entailed by full reforms. Conversely, if Government has no credibility or if it is not able to provide means to elicit mutual cooperation, the outcome will be mutual defection and thus half reform. Corruption and low governability could incline the balance toward this result. The suboptimal equilibrium under high

[36] See Appendix 2 the matrixes of the game and their equilibrium points.

coffee prices suggests that more governmental action is required –beyond either to build its credibility or to facilitate collective negotiation, so as to lead the game toward a better outcome.

These theoretical insights show the outcomes of two possible scenarios. History tells us that nature's move was high coffee prices. That means the assurance game was truncated because the players abandoned it to play a prisoner's dilemma once the coffee boom appeared. The results from the economic reform which began in 1974 Colombia in absence of high coffee prices are not empirically observable. However, provided that the reading of players' preferences and choices are enough accurate, the theoretical results abovementioned could be seen as the basis for a counterfactual analysis where the coffee boom effect is isolated. Thus, in absence of high coffee prices, full economic reforms would have hinged on Government's leadership and tools for eliciting cooperation. Because of the state corruption, among other institutional obstacles, and the low expectations on the Andean Pact, this optimal equilibrium, that is full reforms through mutual cooperation, was highly unlikely. Government's failures– in terms of credibility, reliability and accountability, would have carried most of the responsibility for failed reforms[37].

The prisoner's dilemma equilibrium indicates total rejection of half reforms and the return to the status quo under high coffee prices. The prediction is evidently inaccurate because the factual outcome is better addressed like a scenario of half reforms; here certain policies of the reform agenda were embraced and sustained such as the fiscal deficit reduction, trade barriers decrease in and relaxation of capital market regulation. Nonetheless, the specific conditions of the historical result are still undetermined because half reforms could have been attained through several strategies: mutual cooperation of half reform, mutual defection of full reforms, or unilateral cooperation or defection of either reform. Therefore, an alternative notion of solution is needed so as to identify the game's outcome. The next section will explore the hypothesis that half reforms were reached through a coalition between players whose effect was to place the economy in a less suboptimal result than the one given by $(\overline{G_6^8}, \overline{C_5^8}, \overline{I_5^8})$. Here, basic notions of coalitions from game theory will provide a guide to identify the plausible solutions.

## Coalitions: Theory and History

A coalition may arise when subsets of players have the possibility of cooperating and choosing joint strategies in order to share higher payoffs that non-cooperative strategies would not bring. A coalition entails pre-play negotiation between players as well as binding agreements to enforce the joint strategy. Here, the expected values are transferable so as players can make side-payments whereby they induce cooperation. A coalition is defined by the set of players that conforms it and its characteristic function, which indicates the minimum payoff the coalition can guarantee independently of what the players not in the coalition choose. This payoff is the value,

[37] Though it might be argued that the coffee boom stimulated corruption, several authors found that from the beginning, and before the coffee boom, corruption scandals surrounded the government. Ardila (1978), and Pécaut (1988, 293-296). Not only was the ethic of the presidential family doubtful but also the ethic of the political houses, the traditional parties and the entire political system. Hartlyn (1993) interprets this characteristic as the legacy of the National Front, which often concentrated too much on struggles on the allocation of state bureaucracy. For example, the instability of the presidential staff was shown off by the high turnover of ministers, thirty three ministers during four years, which is an exclusive record of Lopez's government. Posada, Ignacio (1989).

worth or power of a coalition and it is at the same time the security level of the coalition[38]. Why and what coalitions could emerge from a game constitutes basic questions. Once these existential issues are defined, questions on communication, enforceability and distribution of the gains are central for determining coalitions' feasibility and stability, and game's solution.

Consider the prisoner's dilemma and the assurance game. Both sub-games are essential because players gain more by colluding than by acting individually. In each game, there are seven possible coalitions ($2^3$-1=7). Three are the one-element coalitions whose value corresponds to the individual safety level. Other three are the bilateral combinations, and finally there is the grand coalition including all players. Because the analysis rests upon ordinal rakings some criteria are needed to make sense of this information. First, the grand coalition's value is defined here like the payoff associated with the pure strategy that brings the highest payoff to every player in the coalition. The Grand coalition' payoff cannot be determined in the prisoner's dilemma, whereas in the assurance game it is the cooperative solution FCC. The value of the two-element coalitions can be approached by eliminating dominated strategies. A dominant strategy is characterized by unanimity rule in which all individual payoffs' sub-indices must be lower than those of the dominated strategy. This means that all players assign a higher rank to the dominant in comparison to the dominated strategy. A coalition's value is undefined if it is not possible to eliminate at least two dominated strategies. These cases remain undetermined because three out of four strategies – excepting the safety level, must be mixed; it means that the coalition would randomize its dominant strategies. Evidently, without greater specification of player's payoffs, conjectures about such a mixing turn out precarious. Table three shows the results, also detailed in appendix 2.

Table 3

| | Prisoner's dilemma | | Assurance game | |
|---|---|---|---|---|
| Coalitions' Value | Strategy | Payoffs | Strategy | Payoffs |
| Grand Coalition | * | * | FCC | $\{G_1^1, C_1^1, I_1^1\}$ |
| Safety Level | HDD | $\overline{G_6^8}, \overline{C_5^8}, \overline{I_5^8}$ | HDD | $G_6^8, C_5^8, I_5^8$ |
| Government-Coffee | FCD<br>HCD | $\{\overline{G_2^2}, \overline{C_8^2}\}$<br>$\{\overline{G_4^6}, \overline{C_7^6}\}$ | * | * |
| Government – Industry | HCD | $\{\overline{G_5^7}, \overline{I_7^7}\}$ | * | * |
| Coffee-Industry | * | * | FCC | $\{G_1^1, C_1^1, I_1^1\}$ |

*Undetermined.

[38] "The coalitional form of an n-person game is given by the pair (N,v), where N={1,2,…,n} is the set of players and v is a real-valued function, called the characteristic function of the game, defined on the set, $2^N$, of all coalitions (subsets of N), and satisfying

(i) v(Ø)=0, and

(ii) (superadditivity) If S and T are disjoint coalitions (S∩T= Ø), then v(S)+v(T)≤(S ∪ T).

The total of the payoffs to the players in S:

$$v(S)=Val\left(\sum_{i\in S} u_i(x_{1,\ldots,}x_n)\right)$$

The value, v(S), is analogue of the safety level". $u_i(x_{1,\ldots,}x_n)$ is the payoff function to Player 1, given the other players' choices. Ferguson ( pp. IV-2 and IV-3). Cochinard (2002, 90).

Table three contains the *identifiable* strategies each coalition could rationally play. When only one strategy emerges as the only rational one, then the coalition value is defined by this pure strategy. The information this table renders requires two assumptions for providing useful insights. The first assumption, a theoretical one, sustains that the identifiable strategies are substantially more likely than the non-identifiable, basically because players can perceive them more straightforwardly than the others. The second assumption, an empirical one, asserts that these identifiable strategies can be ranked by using historical characteristics of the strategic scenario.

A consideration of such statements is needed. The first assumption is saying that in the prisoner's dilemma the grand coalition and the coalition between the opposing players are low likely. The opposite result arises for the assurance game, where the grand coalition is defined and feasible, and the two sectors are more likely to cooperate. Evidently, in a prisoner's dilemma the sectors may cooperate, however in relation to the other available strategies, this choice is less probable. Also, the grand coalition may not take place in the assurance game, as well as the sectors may not choose the optimal focal point. But, the presence of recognizable common interests makes players aware of the advantages of cooperation. The second assumption is habilitating historical knowledge as a tool to discriminate the set of theoretical results and hence rule out possibilities. Neither the set of identifiable strategies nor a set of historical facts could determine by itself the game result. Both have to be combined.

Theoretically, the assurance game would favor a coalition in which the optimal strategy is played either by the grand coalition or by the sectors' coalition. Historically, the grand coalition was less likely than the sector's coalition because of the limited legitimacy of Government. The coalition between sectors may have taken place as long as the macroeconomic variables would have remained stable. However, the coalition Cs-Is proposes a scenario of institutional change led by constituents instead of rulers, which is a situation not seen before, at least in the modern history of the country. Here, only after both sectors alignments, would have played the official ruler –that is Government, a role in coordinating economic agents toward a new set of rules. This coalitional by-product of the assurance game may have come about for players to undertake the path of full reforms. The probabilities remain unknown though.

In the actual situation, with the coffee boom, two coalitions are likely; Government-Industry or Government-Coffee. The former was much less feasible than the latter given the structure of the Colombian economy and each sector's relationship with power. Since Coffee has an intimate institutional link with Government and its policymaking, the coalition G-Cs has stronger hypothetical and historical bases. There are two possible strategies, FC and HC, this coalition could choose. It is no possible to single out which one would bring higher payoffs based only on the preference ranking. This indeterminacy reflects the fact that Government had been gaining certain degree of autonomy in regard to private interests. Full reform and Coffee's cooperation would be more attractive than half reform and Coffee's cooperation in Government's eyes. Then, as long as Government establishes proper side payments so as to show to Coffee that gains from full reform would be superior, strategy FC would be chosen. Government has to prove that $\{G_2^2 + C_8^2\} > \{C_4^6 + C_7^6\}$, which means that Government's gains from full reforms exceed Coffee's loss from full reforms. Alternatively if $\{G_2^2 - G_4^6\} > \{C_7^6 - C_8^2\}$ then the required side payments from G to Cs are feasible.

However, since Government's payoffs directly depend on Coffee's expected value, it follows that a loss in Coffee's payoffs would lower Government's gains. Moreover, this effect is underscored by the relative high weigh Government attributes to Coffee's gains (parameter $\alpha$ in

equation one). The only way to offset such decrease is by means of higher industry's expected value, higher workers' expected income or higher opportunistic gains (parameter β in equation one). Only the first element will be considered since the other two are proportionally small to afford Coffee's side payments.

Industry's expected value depends on the real value of production (see equation four). In the light of lower or no subsidies like full reforms entail, Industry's payoffs would increase through low input real prices so that production costs diminish. Industry also requires stable domestic prices and real exchange rate for stimulating exports. In addition, it would require positive prospective in external markets through trade agreements.

Unfortunately, Government cannot increase its expected value through a higher industry's expected value without lowering Coffee's expected value by playing with monetary variables. Such a tradeoff comes from the inflationary pressures. Because of the Dutch Disease, the Coffee boom raises pressures on domestic prices and revaluates the real exchange rate. If Government offsets these forces by keeping prices from going up, the domestic coffee price would have to be frozen, thus reducing Coffee's profits (see equation two)[39]. The unambiguous alternatives to increase Government's payoffs through industry is to reduce input real prices, which benefits both sectors, as well as expand international markets for domestic manufactures.

Historically, the two last alternatives were not feasible for Government. During the 1970's there were ongoing struggles among unions, employers' representatives and the government on real wages. Several elements complicated the bargains like the industrial productivity slowdown, Lopez's compromise with working class, increasing inflation, and union's reluctance to make labor legislation much more flexible. In consequence, no clear sign was given to entrepreneurs on this matter[40]. Besides, the bargains on regional trade agreements, the Andean Pact, lacked true members' commitment, and thus credibility. It reached stagnation in 1976 when Chile officially withdrew from negotiations (Garay 1998, 326).

In making a decision about its capacity to offer side payments to Coffee, Government would have to assess Coffee's losses against Industry's gains from full reforms, $\{C_7^6 - C_8^2\} vs \{I_1^2 - I_3^6\}$, in the presence of tough constraints. Coffee's losses must have seemed higher than Industry's gains from full reforms given these poor perspectives. Indeed, not only half reforms turn out economically realistic but also politically feasible because of the institutional mechanisms that Coffee had to protect its interests. These historical facts indicate that in this prisoner's dilemma game played in the 1970's Colombian economy, the solution must have been the strategy HCD, played by a coalition between Government and Coffee against Industry.

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[39] That equates to assign a lower value to the parameter λ in the inflation equation.

[40] Kalmanovitz (1997, 491-501). The controversy about the minimum wage in 1976 showed the degree of uncertainty around labor costs. See *El Tiempo*, August 3rd , 1976, page 6A. In this year, there was also an unsuccessful attempt to modernize the labor Code and reduce labor costs. See *El Tiempo*, August 5th , 1976, page 15A. However, at the outset, Government had established policies favoring union's activity. Also, it enacted mandatory inflationary adjustment in wages, right to indefinite strike and wage payments during strike. Likewise, the application of interest rate on firing payments was approved. This may be interpreted like attempts to keep hold of those constituents encouraged by the promises of social justice and higher standard of livings. Industry alleged that these measures increased its costs, and hindered investment and productivity growth. See graphs 5 and 6 in appendix 1 and *El Tiempo*, December 7th, 1974, page 4. After a general strike in 1977, Lopez's government conceded 27.5% increase in the real minimum wage. On the labor reform and the relationship between unions and associations see Ocampo (1996, 318-332).

Coherently, the facts fit this interpretation of the episode. First, the evidence on the coalition G-Cs is examined, and then the evidence related to the selection of half reforms.

## Government-Coffee Coalition

The formation of the coalition could be tracked by observing Government's economic legislation. Since August 1974 and most of 1975, the legislative activity related to the reforms was intense. But, once the coffee boom was well recognized at the end of 1975, the economic reforms seemed to be congealed. Rather, the economic legislation was going to concentrate on tightening money supply and regulating coffee prices, investments and terms of convertibility of Coffee assets throughout 1976[41]. Despite official declarations of holding back the extraordinary inflow of foreign money, the domestic coffee price and money supply grew at the international coffee price's pace (see Graphs 9 to 12 in appendix 1).

The coalition was openly acknowledged by the change of the Minister of Finance on December 1976 when Lopez's government went from having a technocratic minister, withdrew from the industrial association, to having a minister with a traditional political career derived from the coffee association[42]. While Government and Coffee were evidently aligned, Industry must endure a new policymaking.

The coalition was individually and collectively rational as the previous section showed. Its enforceability was supported through legal agreements in which Government favored Coffee's interests and vice versa. Thus, Lopez announced "the bonanza is for the Coffee growers", signaling that there would not be higher taxes or other redistributive measures on extraordinary profits. According to Pécaut, the state only perceived 11% of the bonanza profits at the same time that the sector managed to reduce its tax burden during 1977-1978 (Pécaut 1988, 260-4). In return, Coffee would share its export income with Government throughout the National Coffee Fund, FNC. This fund would serve as collateral for issuing public debt as well as would invest money in developmental assets *–Pagares semestrales de emergencia Economica, Bonos de desarrollo economico, Bonos cafeteros 1975 among others,* aimed at promoting other sectors[43].

Meanwhile, hostile relationships, motivated by financial repression and trade openness, would grow between Industry and Government. In response, the Coalition established compensatory payments; Government allocated resources toward industrial firms throughout loans partly funded by Coffee's extra profits. Important textiles' producers like Coltejer, benefited from the FNC's savings and Government's financial dispositions. In addition, Government engaged in

[41] See appendix 4: Legislative itinerary of economic reforms and *Diario Oficial* 1974-1978.
[42] The first Minister, Rodrigo Botero Montoya was a well-respected industrial and economist who integrated the team leaded by Miguel Urrutia, the director of National Department of Planning. Botero's resignation is officially accepted at December 23rd , 1976. At the same time Abdon Espinosa Valderrama was appointed in his place. *Diario Oficial*, # 34718, February 7th, 1977, page 257.
[43] See *Diario Oficial*: #34566, June 7th, 1976, page 778: #34568, June 9th 1976, page 811;#34600, July 29th, 1976, page 393;#34643, September 28th 1976, page 1082;#34720, February 9th, 1977, page 292;#34792, May 25th, 1977, pages 627-628;#34843,August 10th, 1977, page 465;#34884, October 7th, 1977, page 66;#34931, December 19th, 1977page 1082.

several loans with the BIRF for addressing Industry's capital needs[44]. Probably these "reparation payments" gained the political support of Industry just when Government's legitimacy fell apart on September of 1974 with the Great National Strike[45].

## Half-hearted Economic Reforms

Government's reaction to the coffee boom was to carry over half reforms with Coffee's support and Industry's opposition. Half reforms would promote a soft version of macroeconomic stabilization and structural adjustment, holding down inflation and fiscal deficit from reaching excessive high levels, and selectively lowering trade barriers and subsidies. Fulfilling these goals demanded Government's compromise with Coffee's interests and Government's struggle with Industry. In doing so, the key tool for protecting Coffee was monetary policy, which allowed the transmission of high international coffee prices to domestic coffee prices. While policymakers let domestic coffee prices rise, they contracted other sources of expansionary demand like public spending, bank operations and nominal devaluation in order to bring inflation down (Bejarano 1985a, 140; Ocampo 1987, 318). This means that the parameter $\lambda$ in equation three was high. As a result, average inflation in the period 1974-76 was over 22.5%; it peaked 40% in 1977 –the year with the highest international prices. See graphs 9 to 10 in appendix 1.

Policymakers' response to the bonanza can be analyzed with an OLS regression for explaining quarterly inflation during 1968-1982. The results indicate a positive and statistically significant relation to international coffee prices, money supply (M2) and international reserves. Variables like fiscal deficit and nominal devaluation are not statistically significant; among significant variables, money supply's coefficient is much smaller than those of international coffee price and reserves. Hence, this result suggest that inflationary pressures came mainly from coffee international prices[46].

Consequently, real exchange rate appreciated –see graphs 13 ad 14 in appendix 1, while financial sector shrunk its activity hurting Industry and lowering expectations on economic performance. Financial sector had warned the negative effects of tight monetary policies on the provision of credit and capital to firms as well as on financial intermediation (Cabrera, 1982). These contractive measures –e.g higher banking required reserves, were perceived as a financial counter-reform[47]. Subsequently, perceptions of high capital costs due to financial repression prevailed.

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[44] *El Tiempo*, August 9th, 1977, page 9A. *El Tiempo*, September 9th, 1977, page 15A. See also *Diario Oficial*: #34536, April 23rd, 1976 page 233; #34613, August 17th, 1976, page 614;#34855, October 10th, 1977, page 98.

[45] *El Tiempo*, September 13th, 1977, page 8c. Less than one month after this historic strike, Coffee lost his Ministry of finance signaling a decline in Coffee's dominance. At the same time, Government enacted reductions in income and capital taxes. Clearly, this tax reform became a tool for recovering sectors' support. See appendix 4.

[46] See in appendix 3 the estimations. Previous and posterior years to the period 1974-78 were included for an OLS to make sense. Serial correlation between the growth of coffee prices and money supply or international reserves does not affect the result.

[47] *El Tiempo*, August 4th, 1976, Page 8A. The repression to bank's loans was high. The rate of required reserves for banks was raised from 35% to 46.5% between 1974 and 1977. Moreover by 1977, this rate for additional deposits was 100%. Pécaut (1988, 278). In some authors' view the financial liberalization would have been sustainable if the exchange rate would have been floating instead of fixed, and imports would have been more responsive to the excessive accumulation of foreign reserves and lower trade tariffs. Bejarano (1985a, 145). It may be evident, that Colombian policymakers in the 1970's could not rely on a free market of

Also, pressures from excessive accumulation of international reserves were relieved by rapidly eliminating controls and barriers in the import regime. Import liberalization was accelerated and applied to products that did not raise harsh political struggles, while main industrial producers had to lobby in order to keep their protection up. The lobby was especially intense for the textile industry because this sub-sector went through a harsh crisis aggravated by the emergence of Asian competitors (Misas, 1980). In this way, trade policy was used to control inflation rather than to encourage competitiveness of industrial firms (Martinez 1986, Garay 1998).

Lopez's achievements as for fiscal surplus and lesser public spending were short-lived –see graph 7 in appendix 1. Moreover, they were offset by substantial reductions in income taxes, which went from 36% of current revenues in 1974 to 28% in 1978 –see graph 8 in the same appendix. 1977 onwards, half reforms meant concessions on direct taxation; Also public spending expanded through higher subsidies, developmental credit and expenditure in infrastructure.

## Further Considerations: non-modeled variables

Let us consider, although briefly and outside of this framework, other aspects influencing the historical result and simultaneously setting out the dynamics of institutional change. Hopefully, further work could integrate them in proper way.

## Policy implementation

Low state autonomy was characteristic of Colombian governments and Lopez was well aware of this. He knew the tax reform was going to be a main obstacle because sectors were highly reluctant to pay higher income taxes. Previous governments' failures in bargaining with capital owners and workers had drawn a clear picture of the pitfalls. Initially, Government declared its commitment to stand for national interests rather than the interest of a single class or a political party (Lopez Michelsen 1974a). It created a committee called "*Comision Tripartita*" on September 14th, 1974, in which the interests of Government, producers and workers would be neutrally represented to discuss income and price control policies (Lopez Michelsen 1974b). However, the honeymoon of the concerted economy was unexpectedly diluted by the declaration of the economic emergency (EE), just one month after the presidential possession. The EE allowed the president to legislate during forty five days without Congress' ratification. The executive used this mechanism arguing that the budget deficit and inflation was extremely high and required immediate actions. Having identified the crucial role of tax reform and failures of past experiences, Government chose to legislate on its own over to negotiate with the Commission[48].

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foreign money given their pre-crawling peg's experiences. Besides, the economy was by no means able to increase its demand for imports so as to offset the bonanza.

[48] Although the justification was "to intensify the fight against inflation to preserve the income and wages", the legislative activity derived from the EE mainly focused on the tax reform and the administrative reform. The former included lesser tax cuts, increases in tariffs according to the income level as well as increases in land taxes, luxury items and occasional profits. The administrative reform provided wide faculties to modify or suppress decentralized institutions. *Diario Oficial* No. 34170, Legislative decree 1970, September 17th, 1974, p.645. The period extended from August 7th until September 17th, 1974. See the itinerary of the reforms in the appendix four.

At the outset, the EE was welcomed by the sectors as part of the macroeconomic stabilization. It was seen as a way of isolating Government's decisions from bargaining on prices and wages with firms' owners and workers [49]. However, once the measures targeted the tax structure, resistance from associations came into stage. Main economic sectors such as industry, commerce and agriculture, rejected the measures and effectively invested resources so as to change the emergency's legislature once the special period ended[50]. The next government would have to concede much more on tax issues –see Law 20 of 1979. Clearly, Government's strategy of "isolation" based on temporary legislative mechanisms and technocratic authority was illusory, ineffective, wasted its political capital and reinforced traditional power of private agents. Moreover, tax legislation became entangled because of particular negotiations made with every economic actor.

## The sustainability of the reforms

The oil shock's effects showed up in the middle of a tense environment between private sectors and Government because of the tax reform. In the light of the subsequent recession, Government abandoned its radical position in regard to taxes (see economic cycle in graph 1, appendix 1). Meanwhile, private sectors were given policies and promises of relief in behalf of the economic recovery. This action sustained associations' willingness to cooperate with Government's plans[51]. However, the costs of the recession and fiscal adjustment fell on the shoulders of state bureaucracy and workers in both formal and informal sector. Certainly, considerations to workers would take place but only at the beginning of Lopez's government; By the end of 1974, the textile industry asked for workers' collective vacations and a shorter working day because of the recession. Some months later, Government denied the request[52]. The Coffee boom onwards, this sort of measures would have been less frequent. State downsize, cuts in public spending and wage adjustments lower than inflation heated social hostility toward Lopez's reforms. Once inflation went up beyond historical records, a myriad of civil protests and strikes burst out. Government's expected value went down along with worker's expected income. The period 1975-77 registered the highest number of strikes along with civil protests that ended violently. Here, protesters radicalization could not always be controlled by unions themselves[53].

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[49] Some associations and unions expressed their support to the Economic Emergency before it went on to modify the tax structure. *El Tiempo,* September 15th, 1974, page 1. Nonetheless, claims of participation in the decision-making of the economic policy were made. See *El tiempo,* October 3rd, 1974, page 1 and 6A.

[50] (Pecáut 1988, 253). Changes in tax legislation are shown in appendix four. The 1974 tax reform is cogently portrayed by Urrutia (1983, 175-232), but from his technocratic position in Lopez's government. Unfortunately, his efforts to demonstrate that associations had little leverage to modify the definitive tax reform fell down under the light of the tax structure that emerged in the 1980's as a response of the counter-reforms of 1977 and 1979. See tax reforms evolution throughout 1974,1977, 1979 and 1983 legislation on Garay (1998, 298-300).

[51] The main associations of industry and commerce declared that there was a recession despite the positive official statistics and government's perception of high economic growth. Nonetheless, they acknowledged the reforms as necessary and stated their willingness to negotiate rules. *El Tiempo*, December 19th, 1974, p. 9A, and December 20th, 1974, p. 1. For example, because of the difficulties experienced by textile producers, Government offered a soft loan to four major companies in the country. *El Tiempo*, August 6th , 1975, page 2. Later on, Government deferred payments these companies must do. *El Tiempo*, July 30th, 1976, Page 15A.

[52] *El Tiempo*, March 4 th , 1975, Last page of section A.

[53] Pécaut, (1987, 301-313) see statistics about strikes in page. 307. Ocampo (1996, 327). The most memorable strike, in terms of its intensity, was the national civil protest in September 14th, 1977. It occurred in the middle of the Coffee boom showing how sudden prosperity and social harmony clashed.

In contrast to the *Frente Nacional*, Lopez's government raised expectations of a true return to democracy. Political openness was stated in terms of both governmental structure and political participation. The wide electoral support that Lopez gained unleashed political demands he could not address; even more fatally, that he could not adequately channel and control. Thus, Lopez did not break the tradition of military repression because of a latent threat of instability entailed by leftish forces, ruling under a constant state of siege since 1975 for maintaining public order. Yet, the stage of siege did not help Government reach agreements with unions and sustain favorable business environment[54]. Meanwhile, tensions among the executive, traditional political class and military forces augmented. At the outset of 1978, Government had lost the support of workers, peasants, and most of economic sectors. The next government would have to bargain upon modest Lopez's achievements like fiscal discipline, trade liberalization and tax reform.

## The emergence of new players

Corruption and atrophied democracy were obstacles for a sound government. Further, social injustice feeding growing guerrillas, increasing crime rate –mainly kidnapping, rising unemployment, a justice system in crisis and an extensive practice of smuggling conformed a situation where illegal economy thrived. Clandestine exports of coffee, cattle, emeralds, and manufactures brought an important income to the country. Clearly, governance was limited and easily broken (Pécaut 1987, 313).

The appearance of drugs trafficking started with the Marihuana Bonanza and went on with coca production. Since 1974 cultivated areas increased, and the country specialized in refinement of coca paste coming from other Andean neighbors. Drugs exports would have peaked in 1977, introducing additional inflationary pressures. The central bank through the so-called "*ventanilla siniestra*", allowed this inflow by changing dollars to pesos through clandestine transactions. The black market of dollars pushed down even more the exchange rate. To make up the inflow, official statistics reported a farfetched export boom of manufactures that was corrected by posterior studies (Morawetz 1981, 11-38; Pécaut 1987, 278; Steiner 1997, 54).

How does this new player –drug traffickers, fit in this picture of 1970's Colombia? The new player was noticed by other players, although it did not have a defined identity or direct channels to get into the game yet. The other players would have thought about how this presence could affect their payoffs as well as open new strategies. Drugs trafficking would have meant an attractive alternative of capital investment. Moreover, it could pay off politicians. However, it would complicate so much a scenario of extant corruption, violence and social disorder. These perspectives must have decreased expected returns of operating in the legal economy. Indeed, taking the path of reforming institutions so as to foster economic growth and political stability would have meant to politicians and economic agents to overcome serious obstacles. Visibly, the dual transition toward a real democracy and a well-built market economy was grounded on quick sand.

[54] In 1976, Lopez proposed a Constitutional Assembly initially aimed to reform local and regional administration and the justice system. However, Lopez sought to modify electoral rules as well. Pécaut (1987, 290). The role of military forces and its internal division in the advent of a generalized "moral crisis" in the Colombian society is particularly intriguing. Pécaut (1987, 299-301).

## IV. Conclusions

The answer to why the economic reforms failed in 1974 Colombia involved several elements. The point of departure was the emergence of a favorable context toward progressive institutional change. 1970 onwards, the economic and political dynamic drove the leading economic sectors and Government to question the ISI model and redefine the rules of the game. Coffee lost some of its relatively dominant position and Industry experienced expansionist incentives from the external and internal market, whereas Government strengthened its position by widening its electoral base and technocratic support. This change in forces could be read it as an episode of elite's rupture in which the scope of the economic and political rights needed to be extended. Therein lays the inclusion of social demands as well as the claims for the expansion of industrial activity.

The evidence suggests that the sectors were initially willing to undertake full reforms –above defined, while Government stated a strict compromise in this regard, especially as for macroeconomic stabilization. Historically, Government had well-built institutional links with Coffee's interests and its policymaking had few degrees of freedom; Economic policy tools as higher taxation, more flexible exchange rate management, significant trade agreements and truly competitive schemes for private investment were far from Government's scope. In this sense, as many authors have pointed it out, Government lacked autonomy and private agents had well entrenched interests into the state machinery.

The 1976 coffee boom introduced a deep confrontation between the sectors –a prisoner's dilemma. They came into a strategic interaction that led them to half reforms. Here, Coffee and Government collude while Industry bore a great deal of the costs. In that interaction, Government had a rigid compromise with macroeconomic stabilization–no matter the coffee boom, and Coffee's interests prevailed over Industry's. A coalition between Government and Coffee took place for guarantying Coffee's enjoyment of its extraordinary profits and Government's implementation of half-hearted reforms. Industry must endure financial repression and lesser trade protection. Government appears here as an inflexible agenda setter poorly endowed; Coffee as the dominant player whose short-run interests won through; and Industry as the weak player who openly opposed to policies that the G-Cs coalition set out with the coffee boom. No surprise comes by hearing that, in Government's eyes, the coffee boom was the main obstacle to full reforms and that Industry was the villain who backwardly opposed to progressive economic policies. Certainly, Government failed to recognize the change in players' interests, thereby burying the little state autonomy previously gained.

Once the coffee boom effect is isolated–that is by considering the assurance game, the economic reforms were likely to fail for Government lacked tools for negotiating with Coffee more consensual institutions on macroeconomic policies as well as with Industry appealing mechanisms for promoting competitiveness. Moreover, Government did not have accountability and endured limited governability so as to drive players toward positive expectations on a new economic and political equilibrium. However, this assessment must be seen cautiously as all counterfactuals. Although the boom modified and tangled players' strategies, its absence would not have guaranteed that full reforms would have been successful.

In this light, institutional change is a path built on a progression of games. That is strategic interactions among decisive players whose results or equilibria decide the next game. Specific institutions establish the initial constraints and incentives; also players face power relationships expressed through a policy regime. Shocks introduce innovations thus opening and closing

alternatives and raising expectations, which in turn modify players' interaction. The ability of players to react and comprehend the effects from those shocks is fundamental because it updates the set of information and strategies all players have. As a result, coordination poses lesser problems and focal points arise more straightforwardly.

Economic reforms can be seen as a game where Government plays as an agenda setter who provides –either concedes, grants or negotiates, incentives and greatly defines specific measures on policy implementation. Consequently, on the agenda setter's characteristics rests great responsibility for determining the direction of the institutional change mainly driven by economic policies. In the analyzed case, Government's poor understanding of and limited autonomy for solving the dilemmas "economic reforms vs. coffee boom", "Non-coffee sectors vs. Coffee sector", "Short-run vs. Long-run economic growth led to half reforms. Again, no surprise comes by acknowledging that one of the regressive factors to positive institutional change in 1970's Colombia lays on non-neutrality of state actors. Those actors faced deep limitations so as to include and represent the interests of great variety of groups so that they would be truly taken into account and politically bargained. In this reform episode, Coffee's and Government's interests prevailed over Industry's and workers'. Consequently, Industry and workers sought to protect themselves. The emphasis should be moved from the mechanisms that incumbent players have in order to care about their payoffs –like traditionally has been pointed out, to the agenda setter's ability to take advantage of changes in incentives and power relationships.

The fundamental question then is how to find the path that leads societies from weak to strong state actors –those who act in behalf of the majority of citizens?. We know from this analysis that such an endeavor necessarily involves a succession of strategic interactions. The initial condition is generally a situation of limited access to the state and a reduced number of decisive players (North, Wallis and Weingast, 2005). In those games, two factors as important as the existing institutional structure must be included. First, it is the role of specific individuals who grasp game's nature and provide meaningful leadership. Second, it is the role of shocks, which bring about new balances in power relationships and economic opportunities. Undoubtedly, the best games are played by players that better understand their constraints and possibilities, identifying how to modify them.

Some comments on the history of Colombia follow. 1977 was the worst year for Lopez' government: inflation skyrocketed, drug exports were high, workers furiously protested, public order was out of control, and Industry and other economic sectors were deeply discontent. Many voices claimed Lopez's renounce. The entire crisis unleashed while Lopez's government reinforced investors and politicians' perception of a not-so bright and promising future in the country, at least, through orthodox channels. Lopez, nonetheless, managed to modestly finish his period leaving a bitter taste of what was called "neoliberal policies" and making clear its inability in overcoming prisoner's dilemmas. The following presidential election in 1978, placed into office a government that compensated main players by reducing taxes, raising key trade tariffs, and overall expanding spending. The game played from this point on is one of protectionism –although lesser in relation to preceding governments. Also, it was a game of low private investment and relative macroeconomic stability. This reversal was framed by Latin America's return to protectionism amidst the 1980's debt crisis. Clearly, the incomplete achievements of Lopez's initiative, along with other international circumstances, crafted a subsequent policymaking which moved in opposite direction from free markets. In explaining this result, any sort of irrationality was required since all the players were rational; still they were limited-foresighted and faced uncertainty like it is usually the case.

The dominance of the financial sector and the downward break of investment, savings and output growth in the legal economy since 1980's (Bejarano 1985a; Cardenas 2002) could be placed in the political and economic dynamic consolidated throughout 1970's. In the strategic interaction of the reforms, not only did the coffee boom but also the drug boom, both unexpected events, modify players' payoffs. These shocks transformed a potential, while flawed, scenario of progressive institutional change into a scenario with opposing players and deficient coordination mechanisms. These actors were led by politicians trapped in a fragile institutional framework –e.g. corruption, legislative instability, and beckoned by hazardous alternatives for making profits. The extraordinary profits of the coffee bonanza built financial wealth that had little incentives, comparatively speaking, to get into traditional productive sectors. What the country would come through since 1980 was the consolidation and entrenchment of new domestic players as well as the accommodation of the incumbent ones[55]. Certainly, there would be institutional innovation and economic growth but not the type that spread jobs and investment opportunities democratically, nor social welfare –including law and order, for more groups in the society.

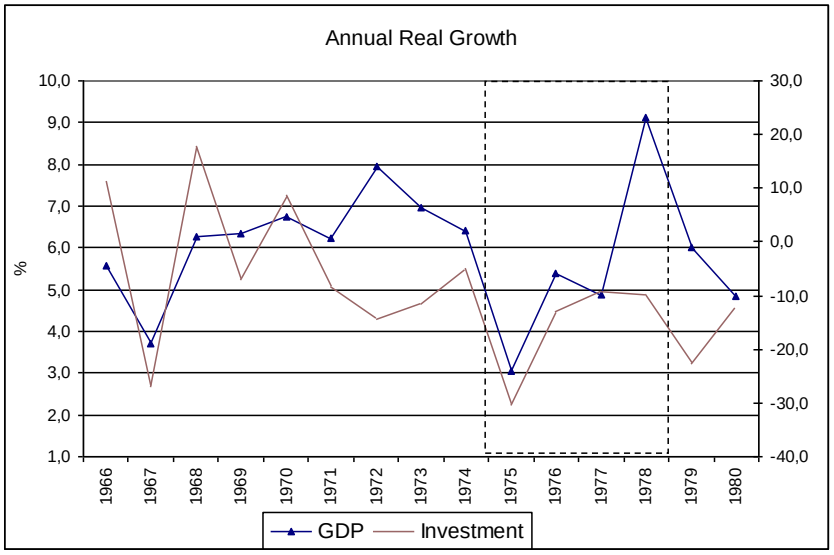
Comparing economic reforms in Colombia with those implemented in Chile or Korea needs to take into account idiosyncratic elements introducing crucial differences. Overall, outcomes out of economic reforms signal states' ability to coherently and convincingly establish new political and economic equilibria. Here, innovating forces could stem from either endogenous forces or exogenous shocks. Investors make a complete reading of possibilities, giving a negative or positive evaluation, and setting the path to follow. However, channels and tools for pro-economic growth equilibrium to happen are varied and extremely versatile as these three cases illustrate it.

Finally, it remains a comment on the role that macroeconomic stability has played since 1970's in the country. Colombian Policymakers have strived to stimulate investment and growth. They have been proud of keeping the country far from extremes that other Latin American counterparts have experienced. This stability is part of the puzzle that this economy poses to analysts because in spite of this stability, the economy's productive base has modestly expanded and unemployment is persistently high as well as poverty. After the glorious years of Coffee, Colombian productive pattern seems nebulous. Thus, there are actors who have nastily regarded these technocratic achievements since stabilization policies have eventually been antagonistic toward what productive sectors and social welfare have required –e.g. exchange rate management, interest rates, social expenditure. As a result, this stability may be perceived as a bad instead of a good; a painful constraint intended to please international actors at expenses of domestic actors. Though this negative sentiment against economic reforms carries some truth as Stiglitz has pointed it out, it is flawed to conclude that macroeconomic stability must be thrown away and that competition does not need to be stimulated. In the same way, it is equally flawed to insist that there is only one way –the unfair one, for carrying the costs entailed by macroeconomic stabilization and structural adjustment. Macroeconomic stability is a necessary but not sufficient condition for economic growth. Therefore, the emphasis must be on how to bring into policymakers' toolbox the actions that they need to overcome prisoner's dilemmas and approach to truly democratic situations. Ultimately, toolboxes' richness reflects the kind of game that every society has decided to play.

[55] Rocha identifies several stages in the relationship of the drug traffic with the Colombian society: the opportunistic phase (1980-1980), the catalytic phase (1986-1990), the confrontation phase (1991-1995) and the mimetization phase (1996-1998). Rocha (2000, 151 and ss).

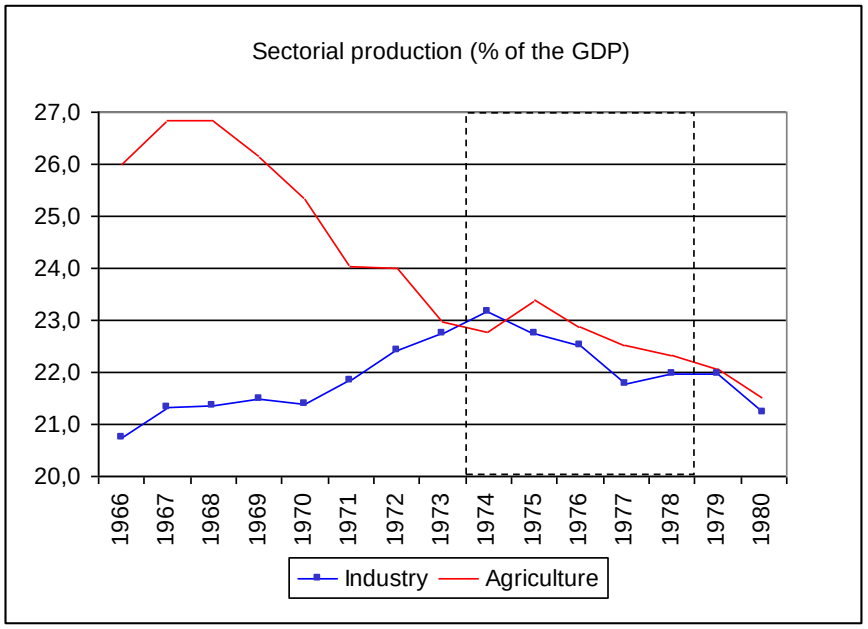
## Appendix 1: Graphs of main macroeconomic variables

Graph 1



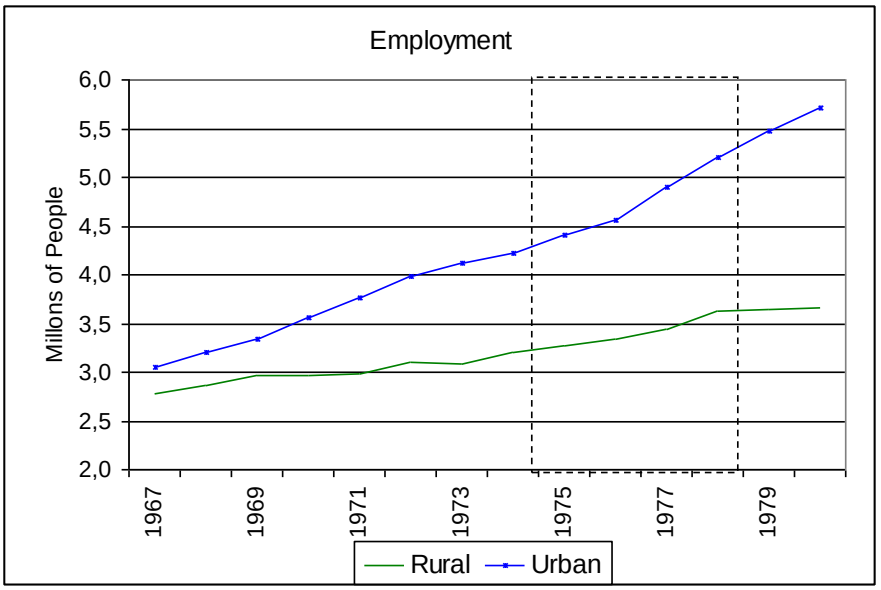

GRECO (2002), Barrios et all (1993). Author´s calculations.

Graph 2



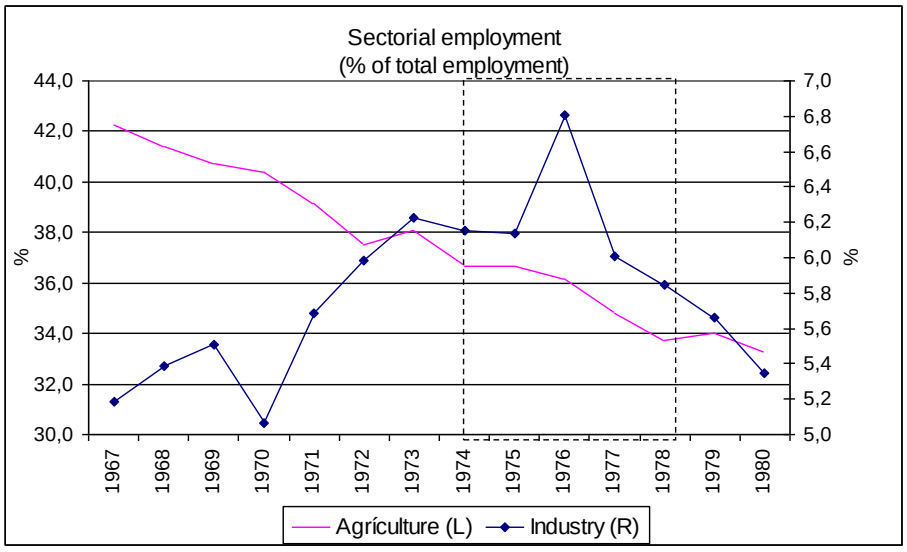

Sanchez et all (1996), GRECO (2002). Author´s calculations.

Graph 3



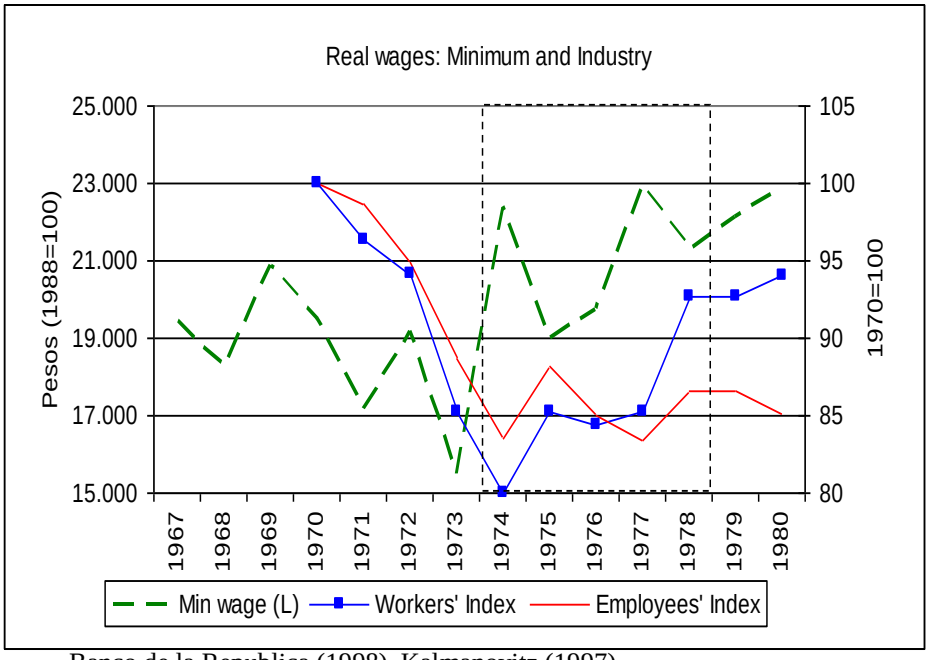

Barrios et all (1993).

Graph 4



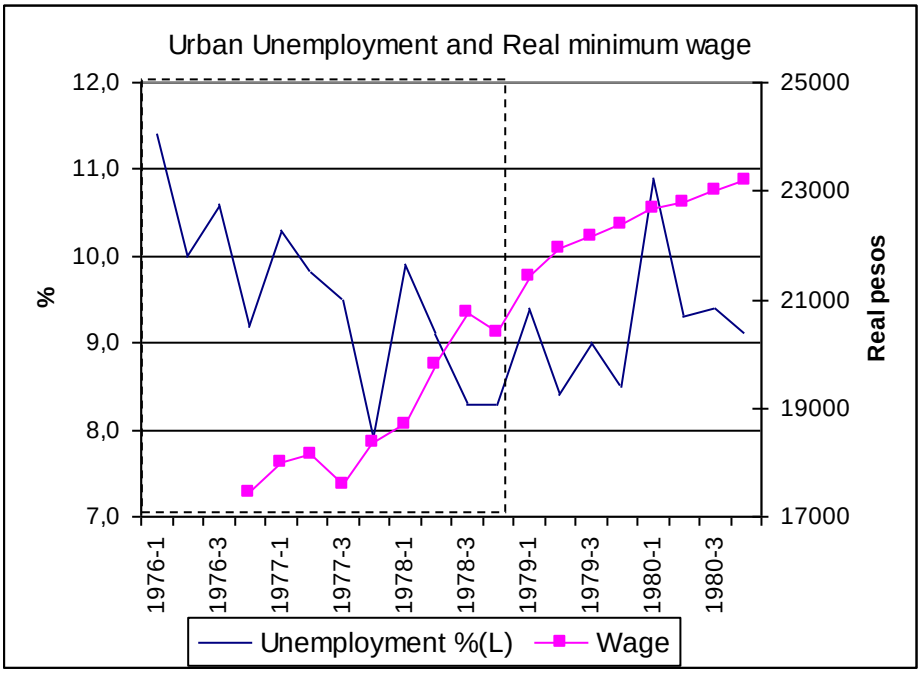

Barrios et all (1993), Sanchez et. All (1996). Author´s calculations.

Graph 5



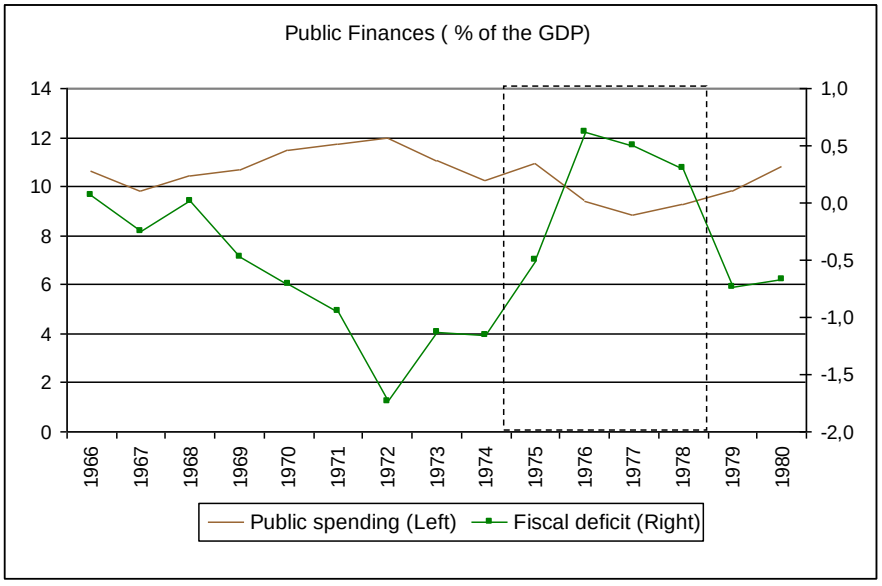

Banco de la Republica (1998), Kalmanovitz (1997).

Graph 6



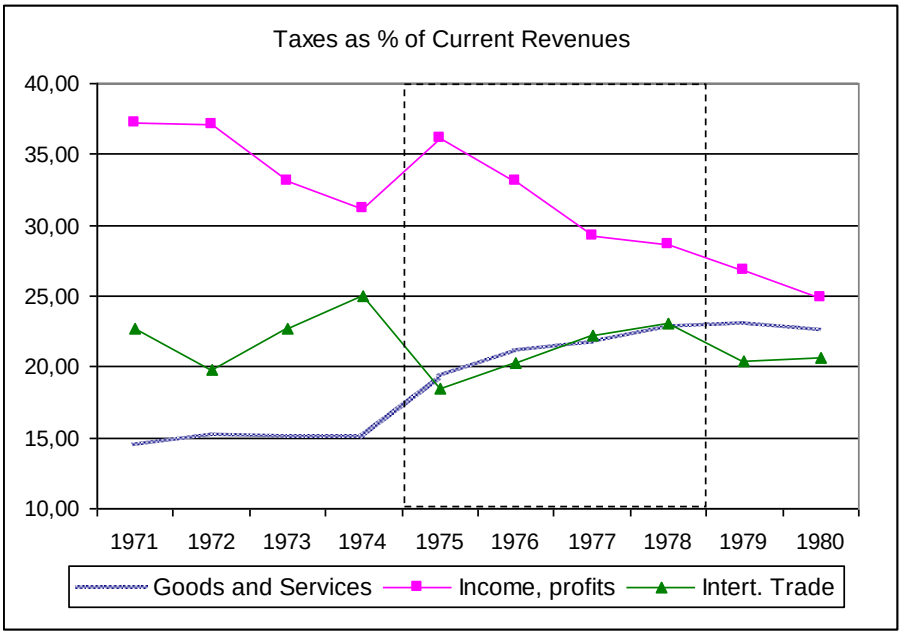

Lopez (1996).

Graph 7



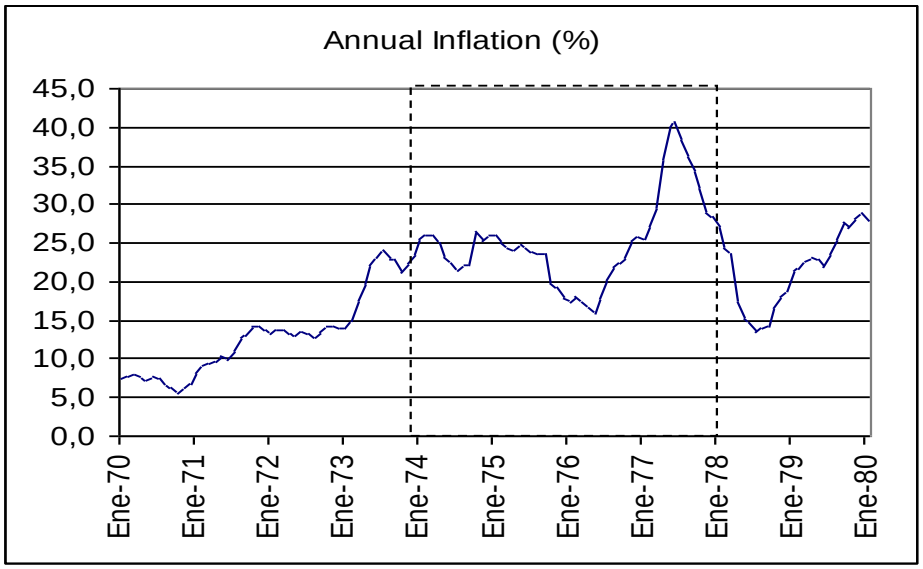

GRECO (2002), Banco de la Republica (1998). Author´s calculations

Graph 8



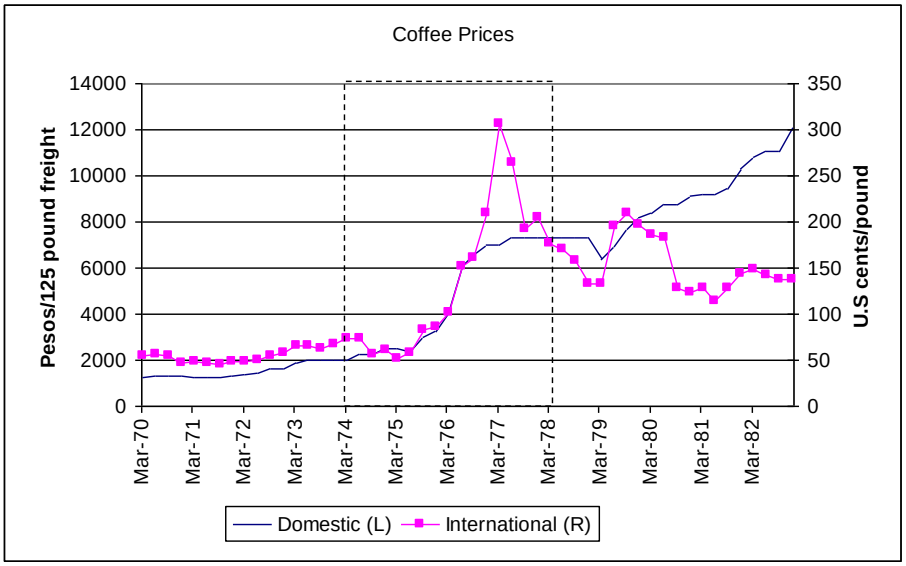

World Bank Statistics (2003).

Graph 9



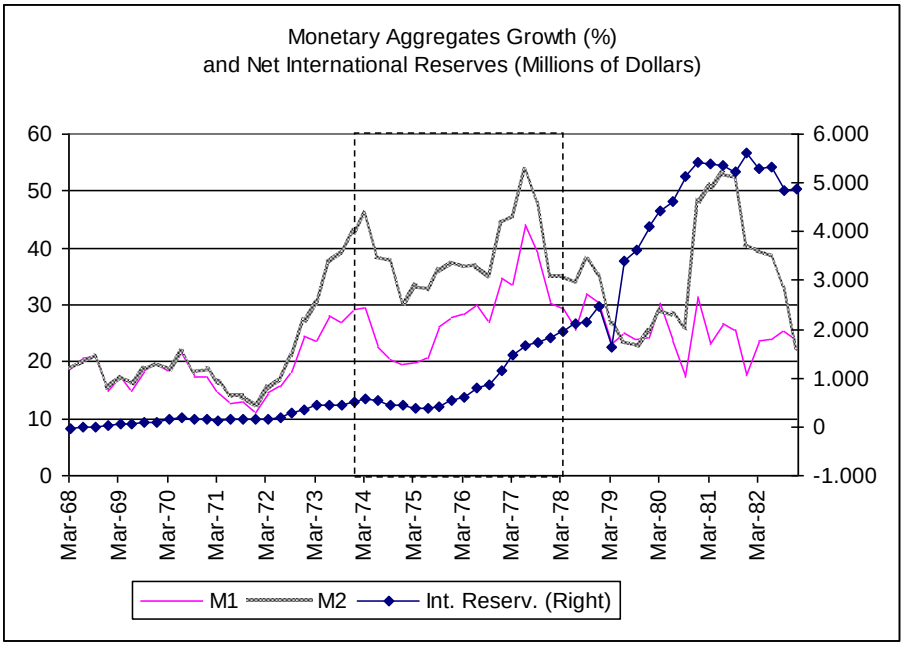

DANE, Banco de la Republica. http://www.banrep.gov.co/estad/dsbb/ctanal1sr.htm#indice

Graph 10



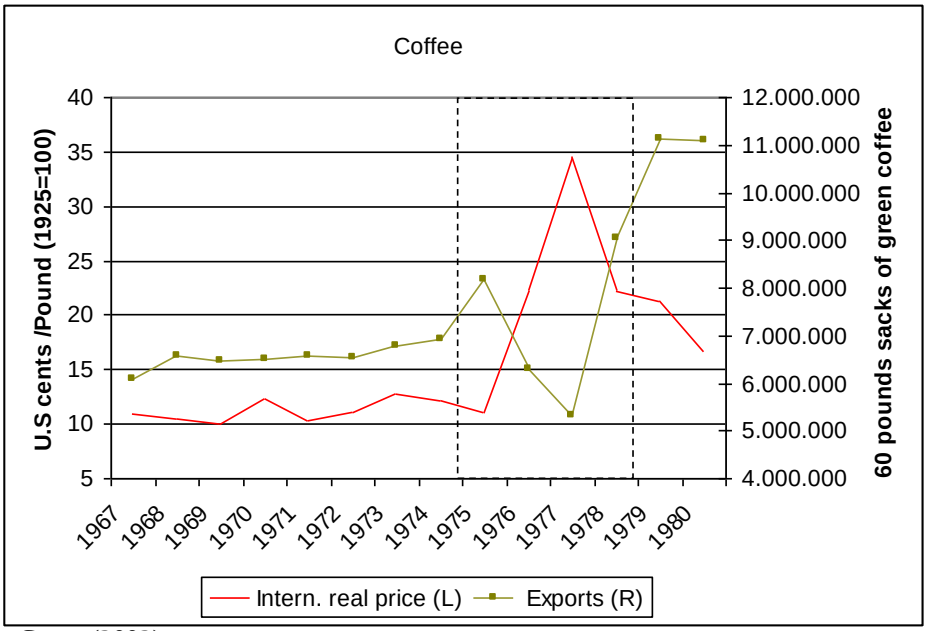

FEDECAFE.
http://www.cafedecolombia.com/economiacafetera/estadisticas.html

Graph 11



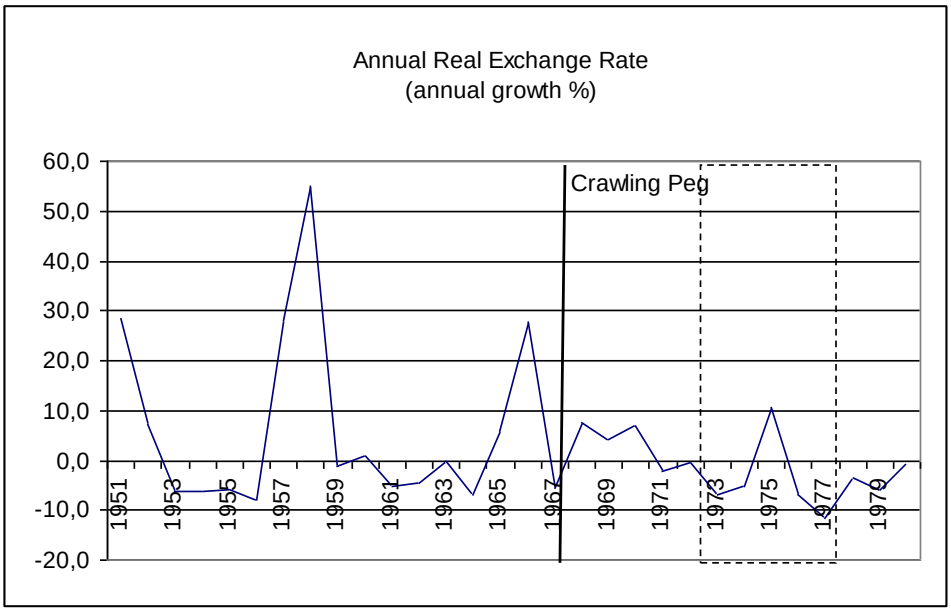

Banco de la Republica (1998).
http://www.banrep.gov.co/economia/ctanal1sec_ext.htm#tasa

Graph 12



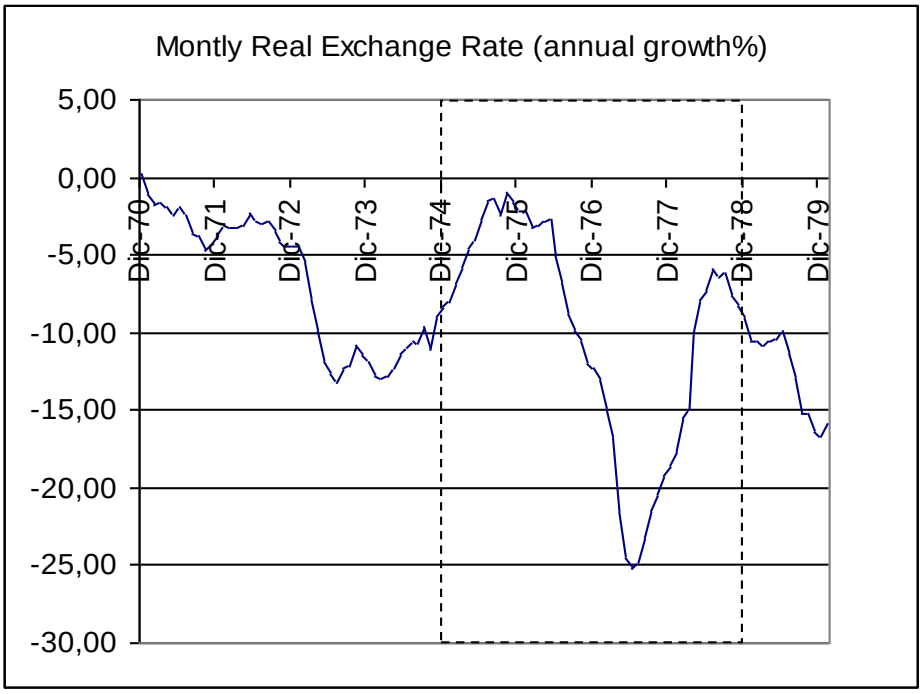

Greco (2002).

Graph 13




Greco (2002).

Graph 14




DANE, Banco de la Republica
http://www.banrep.gov.co/estad/dsbb/ctanal1sr.htm#indice
http://www.banrep.gov.co/economia/ctanal1sec_ext.htm#tasa

**Appendix 2: Games in strategic form and their equilibria**

The shadowed rows and columns are dominated strategies

High Coffee Prices: The Prisoner's Dilemma

| If G chooses F | | Is | |
|---|---|---|---|
| | | C | D |
| Cs | C | $\overline{G_1^1}, \overline{C_4^1}, \overline{I_2^1}$ | $\overline{G_2^2}, \overline{C_8^2}, \overline{I_1^2}$ |
| | D | $\overline{G_7^3}, \overline{C_2^3}, \overline{I_8^3}$ | $\overline{G_8^4}, \overline{C_6^4}, \overline{I_6^4}$ |

| If G chooses H | | Is | |
|---|---|---|---|
| | | C | D |
| Cs | C | $\overline{G_3^5}, \overline{C_3^5}, \overline{I_4^5}$ | $\overline{G_4^6}, \overline{C_7^6}, \overline{I_3^6}$ |
| | D | $\overline{G_5^7}, \overline{C_1^7}, \overline{I_7^7}$ | $\overline{G_6^8}, \overline{C_5^8}, \overline{I_5^8}$ |

1. Coalition G-C

| Player/ Strategy | | I | |
|---|---|---|---|
| | | C | D |
| G-C | FC | $\{\overline{G_1^1}, \overline{C_4^1}\}, \overline{I_2^1}$ | $\{\overline{G_2^2}, \overline{C_8^2}\}, \overline{I_1^2}$ |
| | FD | $\{\overline{G_7^3}, \overline{C_2^3}\}, \overline{I_8^3}$ | $\{\overline{G_8^4}, \overline{C_6^4}\}, \overline{I_6^4}$ |
| | HC | $\{\overline{G_3^5}, \overline{C_3^5}\}, \overline{I_4^5}$ | $\{\overline{G_4^6}, \overline{C_7^6}\}, \overline{I_3^6}$ |
| | HD | $\{\overline{G_5^7}, \overline{C_1^7}\}, \overline{I_7^7}$ | $\{\overline{G_6^8}, \overline{C_5^8}\}, \overline{I_5^8}$ |

Industry: C is a dominated strategy

Coalition G-C: Taking into account that D is a dominant strategy for I, then FD is a dominated strategy by HD because of $\{\overline{G_8^4}, \overline{C_6^4}\} < \{\overline{G_6^8}, \overline{C_5^8}\}$.

2. Coalition G-I

| Player/ Strategy | | C | |
|---|---|---|---|
| | | C | D |
| G-I | FC | $\{\overline{G_1^1}, \overline{I_2^1}\}, \overline{C_4^1}$ | $\{\overline{G_7^3}, \overline{I_8^3}\}, \overline{C_2^3}$ |
| | FD | $\{\overline{G_2^2}, \overline{I_1^2}\}, \overline{C_8^2}$ | $\{\overline{G_8^4}, \overline{I_6^4}\}, \overline{C_6^4}$ |
| | HC | $\{\overline{G_3^5}, \overline{I_4^5}\}, \overline{C_3^5}$ | $\{\overline{G_5^7}, \overline{I_7^7}\}, \overline{C_1^7}$ |
| | HD | $\{\overline{G_4^6}, \overline{I_3^6}\}, \overline{C_7^6}$ | $\{\overline{G_6^8}, \overline{I_5^8}\}, \overline{C_5^8}$ |

Coffee: C is a dominated strategy

Coalition G-I: Taking into account that D is a dominant strategy for I, then FD is dominated by HD because of $\{\overline{G_8^4}, \overline{I_6^4}\} < \{\overline{G_6^8}, \overline{I_5^8}\}$.

FC is dominated by HC because of $\{\overline{G_7^3}, \overline{I_8^3}\} < \{\overline{G_5^7}, \overline{I_7^7}\}$. FC is also dominated by HD.

3. Coalition C-I

| Player/ Strategy | | G | |
|---|---|---|---|
| | | F | H |
| C-I | CC | $\{\overline{C_4^1}, \overline{I_2^1}\}, \overline{G_1^1}$ | $\{\overline{C_3^5}, \overline{I_4^5}\}, \overline{G_3^5}$ |
| | CD | $\{\overline{C_8^2}, \overline{I_1^2}\}, \overline{G_2^2}$ | $\{\overline{C_7^6}, \overline{I_3^6}\}, \overline{G_4^6}$ |
| | DC | $\{\overline{C_2^3}, \overline{I_8^3}\}, \overline{G_7^3}$ | $\{\overline{C_1^7}, \overline{I_7^7}\}, \overline{G_5^7}$ |
| | DD | $\{\overline{C_6^4}, \overline{I_6^4}\}, \overline{G_8^4}$ | $\{\overline{C_5^8}, \overline{I_5^8}\}, \overline{G_6^8}$ |

Government: No dominant strategy

Coalition C-I: DD is dominated by CC because of $\{\overline{C_6^4}, \overline{I_6^4}\} < \{\overline{C_4^1}, \overline{I_2^1}\}$ and $\{\overline{C_5^8}, \overline{I_5^8}\} < \{\overline{C_3^5}, \overline{I_4^5}\}$

Low Coffee Prices: The Assurance Game

| If G chooses F | | Is | |
|---|---|---|---|
| | | C | D |
| Cs | C | $\underline{G_1^1}, \underline{C_1^1}, \underline{I_1^1}$ | $\underline{G_2^2}, C_8^2, I_2^2$ |
| | D | $G_7^3, C_2^3, I_8^3$ | $G_8^4, \underline{C_7^4}, \underline{I_7^4}$ |

| If G chooses H | | Is | |
|---|---|---|---|
| | | C | D |
| Cs | C | $G_3^5, \underline{C_3^5}, \underline{I_3^5}$ | $G_4^6, C_6^6, I_4^6$ |
| | D | $\underline{G_5^7}, C_4^7, I_6^7$ | $\underline{G_6^8}, \underline{C_5^8}, \underline{I_5^8}$ |

B. Assurance Game

1. Coalition G-C

| Player/ Strategy | | I | |
|---|---|---|---|
| | | C | D |
| G-C | FC | $\{G_1^1, C_1^1\}, I_1^1$ | $\{G_2^2, C_8^2\}, I_2^2$ |
| | FD | $\{G_7^3, C_2^3,\}, I_8^3$ | $\{G_8^4, C_7^4\}, I_7^4$ |
| | HC | $\{G_3^5, C_3^5\}, I_3^5$ | $\{G_4^6, C_6^6\}, I_4^6$ |
| | HD | $\{G_5^7, C_4^7\}, I_6^7$ | $\{G_6^8, C_5^8\}, I_5^8$ |

Industry: No dominant strategy
Coalition G-C: No dominated strategy

2. Coalition G-I

| Player/ Strategy | | C | |
|---|---|---|---|
| | | C | D |
| G-I | FC | $\{G_1^1, I_1^1\}, C_1^1$ | $\{G_7^3, I_8^3\}, C_2^3$ |
| | FD | $\{G_2^2, I_2^2\}, C_8^2$ | $\{G_8^4, I_7^4\}, C_7^4$ |
| | HC | $\{G_3^5, I_3^5\}, C_3^5$ | $\{G_5^7, I_6^7\}, C_4^7$ |
| | HD | $\{G_4^6, I_4^6\}, C_6^6$ | $\{G_6^8, I_5^8\}, C_5^8$ |

Coffee: No dominant strategy
Coalition G-I: No dominated strategy

3. Coalition C-I

| Player/ Strategy | | G | |
|---|---|---|---|
| | | F | H |
| C-I | CC | $\{C_1^1, I_1^1\}, G_1^1$ | $\{C_3^5, I_3^5\}, G_3^5$ |
| | CD | $\{C_8^2, I_2^2\}, G_2^2$ | $\{C_6^6, I_4^6\}, G_4^6$ |
| | DC | $\{C_2^3, I_8^3\}, G_7^3$ | $\{C_4^7, I_6^7\}, G_5^7$ |
| | DD | $\{C_7^4, I_7^4\}, G_8^4$ | $\{C_5^8, I_5^8\}, G_6^8$ |

Government: No dominant strategy
Coalition C-I: CC is a dominant strategy

**Appendix 3: OLS estimations of inflation**

| Dependent variable: Inflation | | | | | | | |
|---|---|---|---|---|---|---|---|
| Independent variable | (1) | (2) | (3) | (4) | (5) | (6) | (6)Robust White |
| gm2 | .4835*<br>.0627 | .3215*<br>.0641 | .3092*<br>.0609 | .2983*<br>.0601 | .3153*<br>.0621 | .2754*<br>.0608 | .2754*<br>.0563 |
| GDP | -1.0727*<br>.3495 | -4842*<br>.3257 | -.8266*<br>.2908 | .-8746*<br>.2866 | -.6863<br>.4609 | -1.0291*<br>.3529 | -1.0291*<br>.4023 |
| lcoffeep | | 4.0856*<br>.8827 | | | | | |
| lcoffeeip | | | 6.0153*<br>1.127 | -.5168<br>3.6273 | 6.1069*<br>1.2222 | 5.0072*<br>1.7085 | 5.0072*<br>1.7211 |
| lcoffeeip_1 | | | | 6.6263**<br>3.5507 | | | |
| def | | | | | -.5367<br>.527 | | |
| Dev | | | | | -.0388<br>.1942 | | |
| Lir | | | | | | 4.2511*<br>1.9964 | 4.2511**<br>2.2286 |
| lm2lir | | | | | | -.2435**<br>.1399 | -.2435<br>.1510 |
| Intercept | 10.1043*<br>3.2311 | -<br>21.0801*<br>7.2857 | -<br>12.879*<br>5.0584 | -<br>12.5345*<br>5.0149 | -<br>14.3331**<br>7.6302 | -<br>15.1728*<br>6.0594 | -<br>15.1728*<br>6.2375 |
| Observations | 60 | 60 | 60 | 59 | 60 | 58 | 58 |
| R-square | .6613 | .7550 | .7755 | .7834 | 0.7797 | 0.7865 | 0.7865 |

*Significant at 5%, ** Significant at 10%.

gm2 = Annual growth rate of means of payments at the quarter end (percentage)
GDP = Annual real GDP growth rate

$lcoffeeip_t$ = Logarithm of international coffee price for Colombian quality at the end of the quarter (US cents/pound)
$lcoffeep_t$ = Logarithm of the minimum internal coffee price at the end of the quarter (pesos/125 pounds)

$dev_t$ = Annual nominal exchange rate growth at the quarter end (percentage)
$def_t$ = Annual central government fiscal deficit as a GDP share (percentage)

Lir = Logarithm of the net international reserves at the quarter end (millions of dollars)
lm2lir = logarithm of means of payments at the end of the quarter by Lir

**Data Sources**

The dependent variable is measured monthly, the means of payments are measured quarterly and the real GDP as well as the fiscal deficit are measured yearly. The other variables as price coffee, devaluation, international reserves are measured monthly.

The number of observations is 60 corresponding to the period 1968-1982 (four quarters by fifteen years).

Consumer Price Index:
DANE (The National Department of Statistic) and Banco de la Republica (The Central Bank of Colombia).
http://www.banrep.gov.co/estad/dsbb/ctanal1sr.htm#indice

Means of payments:
Central Bank of Colombia
Principales indicadores económicos 1923-1927, Banco de la Republica, 1993, Bogota.

Real GDP:
DANE (The National Department of Statistic) and Banco de la Republica (The Central Bank of Colombia).
El crecimiento económico Colombiano en el siglo XX, grupo GRECO, Banco de la Republica, Fondo de Cultura Económica, 2002, Bogota.

Coffee Prices:
FEDECAFE. National Federation of Coffee Producers
http://www.cafedecolombia.com/economiacafetera/estadisticas.html

## Appendix 4: Legislative itinerary of the reforms

| ***Reform*** | ***Date*** | ***Comments*** |
|---|---|---|
| Trade Reform | Law 6th of 1971 and Law 8th of 1973 | Presidential faculties for modifying trade tariffs and thus furthering Latin American trade integration[56]. |
| Financial Reform | 1974 | Officially approved under M. Pastrana's presidency |
| A.L. Michelsen's Presidency began on August 7th , 1974 | | |
| National Commission (Comisión nacional tripatrita) | September 14th, 1974 | Capital owners, unions and government meet in order to diagnose economic problems and devise a stabilization plan. |
| Economic Emergency | September 17th, 1974. | Extraordinary executive faculties aimed at bringing down the inflation and budget deficit for 45 days. |
| Tax Reform | September 18th , 1974 | Elimination of tax exemptions for SOEs and mix enterprises.<br>The goal was to increase revenues and expand the taxable base. |
| | September 24th, 1974. | Reduction in subsidies to exports (CAT). |
| | September 20th , 1974 | Increases in sale taxes. |
| | September 19th , 1974 and October 21st , 1974 | Changes in income taxes |
| Economic Emergency ended on October 31st 1974[57]. | | |
| Tax Reform | December 20th, 1974. | Modification of the tax legislation recently enacted.<br>Extraordinary faculties for 15 days.<br>It defined who and which activities are obliged to pay and established exemptions[58]. |

[56] Ocampo (1996, 267).

[57] Once the Economic Emergency ended, the Supreme Court declared unconstitutional several dispositions. Subsequent amendments to the tax reform took place; see *El Tiempo*, October 13th, 1974 page 1. The modifications included a reduction in taxes on coffee sales (*El Tiempo*, November 3rd, 1974 Page 1), and tax amnesty to defaulters (*El Tiempo*, November 20th, 1974, page 1 and December 5th, 1974, page 1). Finally, the government was able to annul tax exemptions to specific sectors but conceded subsidies to exports and weak sectors such as agriculture (*El Tiempo*, November 28th, 1974, Page 9A).

| | | |
|---|---|---|
| Administrative Reform | December 20th, 1974. | Extraordinary faculties for 12 months. It conferred broad faculties to regulate, merge and suppress state institutions. |
| Trade Reform | December 26th ,1974<br>March 6th , 1975<br>April 1st , 1975<br>April 30th , 1975<br>2nd May 1975 | Decrease in trade tariffs.<br>Measures based on the Law 6th of 1971.<br>The reductions complied with the Cartagena's Agreement. |
| State of Siege June, 1975 | | |
| Coffee prices skyrocketed on September, 1975 | | |
| Trade Reform | August 11th , 1975<br>September 8th , 1975<br>October 21st , 1975<br>December 5th , 1975. | Decreases in trade tariffs that were aimed at fostering regional trade integration. |
| Financial Reform | December 12th, 1975. | It prohibited new foreign investment in financial sector and forced existing investment to become mix enterprises. It exempted members of the Cartagena's Agreement. |
| Extraordinary faculties for the administrative reform ended on December 1975 | | |
| Administrative Reform | 27th January 1976 | Suppression of public jobs and redistribution of functions inside some public institutions. |
| High officials of the Ministry of Finance renounced on December 23rd, 1976[59]. | | |
| Trade Reform | January 11th , 1977 | Official adherence to the "International trade Agreement of Textiles", which was established on December 20th , 1973. |
| International coffee prices began stopped increasing and descended over July 1977[60]. | | |
| The Largest National Strike on September 14th, 1977 | | |
| Tax Reform | September 24th, 1977 | Increases in the subsidy to exports (CAT). The subsidy changes from 1%, 5% and |

[58] The subsequent modifications on the income tax were enacted through the decrees # 2821 (Dec/20/74) and #2848 (Dec/26/74). As for the sale tax, the modifications were introduced by the decrees # 2815 (Dec/20/74), and # 2810 (Dic/18/74).

[59] The minister, Rodrigo Botero, the viceminister, Joaquin Bohorquez, and the general secretary, Jorge Cook, renounced. Decrees #2748, #2754 and #2755.

[60] At this time Coffee producers expressed their concern despite the fact that the prices were as least twice as those one year ago. *El Tiempo*, July 26th, 1977, page 2A.

| | | |
|---|---|---|
| | | 12%, to 5%,8% and 12% respectively.[61] |
| The Minister of Finance renounced on October 3rd, 1977.<br>New high officials in the Ministry of Mines and Development were appointed[62]. | | |
| Tax Reform | October 26th, 1977[63] | The executive introduced a project on tax reductions and exceptions that modify the regime for occasional profits. The changes in tariffs were motivated by the high inflation but also they were aimed at stimulating firms. |
| | December 23rd, 1977 | Modifications to the income tax regime[64]. |
| Administrative Reform | April 7th , 1978. | Extraordinary faculties so as to modify payments for and allocation of public employees. |
| Trade Reform | July 14th and 26th , 1978 | It reestablished previous import licenses for products like polyethylene, synthetic textiles, and glasses, among others. |
| | July 31st , 1978 | It established tariffs for regional trade partners. |
| Presidency of J. C. Turbay started on August 7th , 1978 | | |
| Tax Reform | September 21st , 1978 | It established subsidies to exports (CAT) according to each product. |
| Trade Reform | September 28th, 1978 | Reduced tariffs for Cartagena's agreement members. |
| | November 11th 1978. | It levied a 50% import tax on some capital goods permanently. |

Source: *Diario Oficial* 1974-78, *El Tiempo* 1974-78.

[61] *El Tiempo*, September 24th, 1977, Page 1A.
[62] *El Tiempo*, October 3rd, 1977, page 1ª and October 5th, 1977, page 1ª.
[63] *El Tiempo*, October 26, 1977, page 1A.
[64] This Law #54 in 1977 was implemented throughout the decrees #2997 (Dec/30/77), #0089 (Jan,23/78), #0250 (Feb/10/78), #0825 (May/3/78), and #21 (Sep/21/78).

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