

**THREE ESSAYS ON THE POLITICAL ECONOMY
OF REFORM**

by

Bogdan Catalin Buduru
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APPROVAL

Name: Bogdan Catalin Buduru
Degree: Doctor of Philosophy in Economics
Title of Thesis: Three Essays on the Political Economy of Reform

Examining Committee:

Chair: **Gordon Myers**
Professor, Department of Economics

Gregory Dow
Senior Supervisor
Professor, Department of Economics

Clyde Reed
Supervisor
Professor, Department of Economics

Douglas Allen
Supervisor
Professor, Department of Economics

Peter Kennedy
Supervisor
Professor, Department of Economics

Daniel Shapiro
Internal Examiner
Professor, Faculty of Business Administration

James Gaisford
External Examiner
Professor, Department of Economics, University of Calgary

Date Defended/Approved: Monday, June 11, 2007

ABSTRACT

The purpose of this thesis is to investigate the transition toward a market economy from a political economy perspective. The goal is to trace the link between the polity-formation process and successful economic reform by identifying the factors that favour or hinder the adjustment efforts.

The first essay, entitled “Determinants of Success in Transition”, accounts for the dissimilar economic trajectories of transition countries. The aim is to show why the ability to implement reforms is different across countries. A bargaining framework is used to model the political sector. The key endogenous variables are the size of the asset transfer to the private sector and the magnitude of the compensation payments. The main exogenous variables are the relative bargaining power, the magnitude of the threat points, and the transaction costs of providing compensation. The most important theoretical result shows that the higher the opposition’s threat point and bargaining power, the larger the asset transfer.

The second essay, entitled “Initial Conditions and Economic Reform”, is an empirical study exploring the impact of a comprehensive set of factors on the ability to initiate and implement economic reforms by countries in transition. The variables measuring these factors belong to three groups, characterizing the macroeconomic and structural distortions inherited at the start of transition, the competitiveness of the political markets at the polity-defining stage, and the elements affecting the ability to solve coordination and collective action

problems. While the regression analysis finds that variables from all groups influenced the capacity for reform, the factors characterizing the behaviour of the political market at the onset of transition played a central role.

The third essay, entitled “Transaction Costs, Strategic Interaction, and Farm Restructuring”, offers a transaction cost explanation for the different paths of organizational adjustment in the case of the former state and collective farms in Czech Republic. The focus is on the strategic interaction among the stakeholders in large-scale agricultural organizations. In the presence of a neutral institutional environment, the number of players involved in the intra-organizational process, their ability to make collective decisions, and their perceived payoffs in alternative farming structures determine the restructuring outcome.

Keywords: economic reform; transition; Central and Eastern Europe; political economy; property rights; initial conditions

Subject Terms: transaction costs; institutional economics; right of property, comparative economics, organizational change, post-communism – economic aspects

DEDICATION

Dedic aceasta teza de doctorat parintilor mei, Gina si Grigore Buduru. Suportul lor de-a lungul timpului s-a dovedit a fi esential pentru implinirea mea atat ca persoana, cit si profesionala.

I dedicate this thesis to my parents. They have always maintained that education is paramount.

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INTRODUCTION

This dissertation consists of three essays focusing on the transition to a market economy in the former communist countries of Central and Eastern Europe and the successor countries of the former USSR. The perspective used here is a political economy one, placing a critical emphasis on the role played by the political institutions and the factors affecting governance at the country level, in the case of the first two essays, and at the firm level in the case of essay 3. Political economy here denotes the intrinsic link between the political and economic realms that is particularly relevant for polities and economies undergoing systemic changes.

The emphasis on governance, broadly understood, is very much warranted for a discussion centred on the factors underlying structural adjustment. In moving from an authoritarian state to democracy and from a highly-centralized command economy to a market economy, these countries are in the process of changing the rules of the political and economic game and, hence, redefining governance. The analysis is constructed from the point of view of the New Institutional Economics (NIE).

A central question addressed here is that of the determinants of success in transition. If success is defined as a rapid movement away from the inherited state of affairs, the role of the factors affecting success is to facilitate or hinder such a change. Again, the focal point remains the identification of factors in the

two realms, economic and political, as well as showcasing the interaction between the two. Additional questions include the relative importance of the factors being identified and whether their role changes over time. All these questions are addressed by using both theoretical modelling and empirical analysis.

Economic reform is regarded as the implementation of a new structure of property rights over assets (i.e. governance). Moving away from the status quo is desirable, most likely leading to a significant increase in productivity and investment, and therefore wealth. However, there are largely two obstacles to reform: distributional issues and transaction costs. Contrary to popular belief, the assets had de-facto owners at the onset of transition. To the extent they have a say in it, these initial owners will oppose changes in the inherited structure of property rights that are not accompanied by proper compensation.

Transaction costs are the cost of establishing and maintaining property rights. As such, real resources need to be assigned to economic reform over and above the more common production costs (acquiring materials, machines, hiring labour, etc.). To the extent that transaction costs are relatively large, less restructuring will be undertaken. Transaction costs are manifest at the country level, referring to the resources needed for governance at the “macro” scale (e.g. the functioning of government, devising and enforcing laws, etc.), and at the micro level (e.g. the resources invested by individuals and firms to insure effective ownership). The topic of the determinants of the level of transaction costs at the macro level is addressed in Essay 1 (theoretically) and Essay 2

(empirically). Determinants of the micro-level transaction costs form the subject of Essay 3.

What is the source of transaction costs? In a nutshell, it is about imperfect information. To the extent to which the goods and services being traded have characteristics that are not directly observable, resources need to be allocated in order to monitor this vector of desirable characteristics. To the extent to which economic agents have different incentives at different points in time, resources need to be put in place to make sure incentives exist for agents to stick to agreements spanning longer periods. In addition, resources are required to solve coordination (i.e. zeroing in on a certain desirable equilibrium among many) and collective action problems (i.e. free riding). For countries in transition, the last two mechanisms are likely to require the largest amount of attention, both in the political and economic arenas.

The notion of credible commitment may be able to summarize the sources of transaction costs in transition. Given the uncertainty brought about by the huge amount of rapid change, coupled with the fact that most economic actors operate in uncharted territories, a significant amount of resources is needed to deal with the time inconsistency, coordination, and collective action problems arising in this environment. At the macro level, the political friends and foes need guarantees that the constitutional order, for example, which constitutes the basis for the basic political and economic activity will remain relatively stable and be enforced appropriately. At the micro level, joint-venture partners, or employers and

employees, have to be assured somehow that the agreements will most likely materialize more or less as they were envisioned initially by the parties.

If the factors affecting transaction costs are such that low level costs result, the commitment can be made more credible, and a leap forward takes place. Alternatively, if credible commitments are hard to put in place, the status quo, while inferior to other possible outcomes, is the best feasible option. Both theoretical considerations and empirical findings tend to support the hypothesis that a strong initial reform tends to put a certain transition economy on a superior path, while poor initial showing on the reform front will likely keep that economy in the vicinity of the status quo point. This scenario points to evidence that path dependence characterizes economic reform in transition countries.

Another salient theme of this dissertation involves the initial conditions, also regarded in a broad sense. As such, I am looking at initial conditions characterizing the political markets, such as the level of competition early on, the presence of a strong civil society, but also the cultural factors influencing participation in the public affairs and how informed the voters are. Economic initial conditions include the level of distortions inherited from the command economy, from obsolete technology, to skewed trade patterns favouring exchanges with other former communist countries, to deficient work habits. Another important factor for both the political and economic sectors, affecting directly the likelihood of a credible commitment, is the degree of honesty characterizing impersonal exchanges. Initial conditions define both the status quo

point and the inherent capacity for reform and growth through the levels of transaction costs.

The first essay, entitled "Determinants of Success in Transition", accounts for the dissimilar economic trajectories of transition countries. The aim is to show why the ability to implement reforms is different across countries. A bargaining framework is used to model the political sector. The key endogenous variables are the size of the asset transfer to the private sector and the magnitude of the compensation payments. The main exogenous variables are the relative bargaining power, the magnitude of the threat points, and the transaction costs of providing compensation. The most important theoretical result shows that the higher the opposition's threat point and bargaining power, the larger the asset transfer.

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ESSAY 1:

DETERMINANTS OF SUCCESS IN TRANSITION

1.1 Introduction

One of the most popular questions in literature addressing the economic transition in Central and Eastern Europe (CEE) and the Former Soviet Union (FSU) countries concerns the uneven economic performance across the region after 1989. One might have expected these countries to perform roughly equally well after emerging from totalitarian regimes that seemingly exhibited few nuances. However, the evolution of GDP over the last decade is strikingly different for countries across the region. While consistent reformers like Poland and Hungary surpassed the expected initial slump in output much faster than others in the group did,¹ laggards like Moldova managed to halve their GDP during the same period and have since failed to rebound (see Figure 1.1). What determined this state of affairs? Was it inevitable, given the social, political, and economic heritage of communism, or was it the outcome of misguided and/or wrongly implemented post-1989 policies? Disparities in performance are so dramatic they warrant an in-depth search for explanations.

The economic decline of the transition countries as a group for the first five years surpasses the one recorded by the capitalist economies during the

¹ Initially, output was expected to fall due to macroeconomic stabilization and sectoral reallocation. For a discussion on the extent and causes of this downturn, see Mundell (1997) and Blanchard and Kremer (1997).

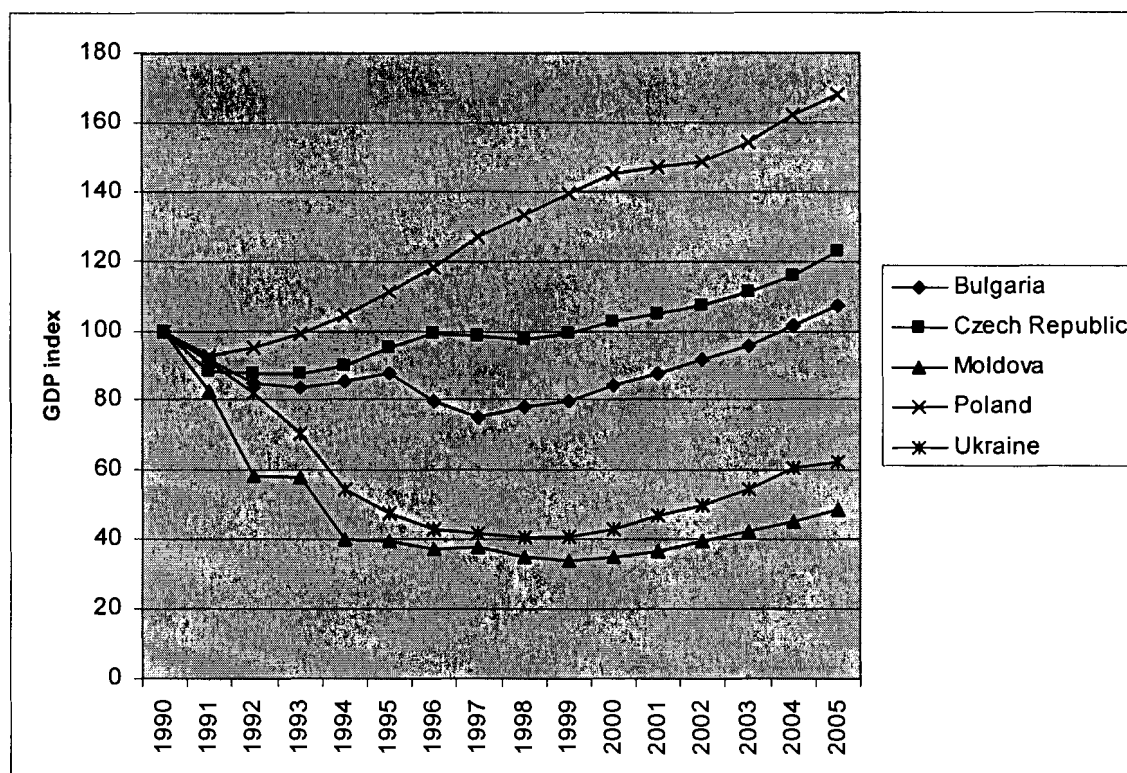
Great Depression (Mundell, 1997). The expected U-shaped pattern of GDP over time is revealed, due to stabilization and sectoral reallocation, although the fall was much more dramatic than anticipated. However, early reformers like Poland and Slovenia saw their outputs bottoming out in 1992, the Baltic countries and late reformers like Bulgaria two years later, and other FSU countries by 1995 and later.²

Transition in Central and Eastern European (CEE) and Former Soviet Union (FSU) countries³ is a large-scale, systemic transformation. The changes entailed by this process occur along many dimensions. The difficulty in analyzing this process stems not only from the sheer number of elements, but also from the elusive and ever-evolving nature of the relationships between them. As such, the challenge is not only to specify those dimensions that define the evolution of the system, but also to decide which are endogenously determined.

² A warning is required here: the GDP estimates are likely understated due to the existence of a sizeable informal sector. These errors are likely to vary across countries, with a seemingly larger mean and variance for OFSU countries. That being said, the puzzle considered in this paper is still intact.

³ The eleven CEE countries are Albania, Bulgaria, Croatia, Czech Republic, Hungary, FYR Macedonia, Poland, Romania, Slovak Republic, Slovenia, and Yugoslavia. FSU countries are divided into the Baltics: Estonia, Latvia, and Lithuania; and the other FSU countries (OFSU): Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

Figure 1.1 Real GDP over time (1990=100)



A predominant approach in the transition literature is to explain the discrepancies in economic outcomes by dissimilar initial conditions across countries (de Melo et al., 1997). Another important methodology uses policy choice and implementation as determinants of success in transition.⁴ In this paper, the emphasis is on the initial conditions because one can trace the choice of at least some policies back to the initial conditions.⁵ More specifically, this paper looks at the nature of the political sector at the beginning of the transition, since the polity adopts the economically relevant “rules of the game” – a New

⁴ This second approach is by far the preferred one in the transition literature, especially during the first half of the last decade. However, it may not be very useful to “discover” that early liberalization or well-functioning markets help growth. More interesting is to find out why some countries were able to liberalize early and create functional markets faster than others.

⁵ See Sokoloff and Engerman (2000) for a description of long-run institutional impact of factor endowments.

Institutional Economics core insight.⁶ In turn, the rules determine the economic outcomes via incentives.

The starting point of the present argument is that transition is institutional in nature.⁷ Institutions are systems of formal and informal rules that, together with their associated enforcement mechanisms, shape the behaviour of individuals and organizations. It is not enough to “take the state out of the economy” in order for everything else to fall into place.⁸ Devising a new institutional infrastructure - a new array of property rights over productive assets – with special emphasis on the enforcement dimension is essential for a successful economic (and political) transition. In this context, the task is to present the main ingredients of an efficient political sector - one that promotes growth-inducing institutions.⁹

This paper argues that an early and credible transfer of productive assets from the oversized state sector to the newborn private sector would greatly facilitate significant advancements on the transition path to a market economy. Such a transfer would soon allow these assets to become more productive and, at the same time, would signal the new government’s commitment to reform. This transfer will directly boost the private sector, while subsequently providing further positive feedback for reform through a higher demand for institutional change

⁶ North (1990) is the classical reference for the definition of institutions, organizations and their interplay. See also North (1995). For a discussion of the relative importance of formal and informal rules in transition, see Olson (2000) and Pejovich (1998).

⁷ For a superb account of this stance, see Norgaard (2000). See also Beyer et al. (2001), and Burki and Perry (1998).

⁸ For a passionate debate on this theme, see Stiglitz (1999) and Dabrowski et al (2000).

⁹ The difficulty of quantifying the characteristics of the political system stems also from the fact that only five transitional states existed in their current form during the communist period (Albania, Bulgaria, Hungary, Poland, and Romania), all the others being newly formed states.

coming from the newest stakeholders of the nascent market economy. In this context, an “efficient” political sector would initiate and consistently reinforce the rules implementing such a transfer, as opposed to introducing rules with little chance of being effective, or worse, favouring rules that further cloud the structure of property rights and encourage redistribution over production.

In this study, a bargaining framework models the political sector in transition. It consists of two main actors: the incumbent communist elite (also dubbed *nomenklatura*), the *de facto* initial owner of the productive assets, and the opposition, an umbrella concept designating an alternative centre of political power at the beginning of transition. In this setting, the willingness and ability of the newly created polity to engineer a sizeable transfer of assets to the private sector would bring about a successful reform. Alternatively, a nearly *status quo* set of policies (i.e. preserving an economic system that proved disastrous) would constitute a failed reform.

The interaction of economic actors is governed by the structure offered by social institutions (rules of the game), but the rules themselves are an equilibrium outcome (a result of a rule-defining game).¹⁰ The latter type of game is the focus of this paper: the polity-generating game. The changes in the political markets take place initially in the absence of written rules. Once this first stage is finished and the polity is redefined, a new set of rules is set in place that will govern both

¹⁰ In the same vein, Knight (1992) regards institutional change, applied to both (decentralized) informal rules and (intentional) formal rules, as a by-product of strategic conflict over substantive social outcomes.

the future process of changing the polity-defining rules, and the process of devising the economically relevant rules.

Both types of rules emerge as a by-product of a conflict over substantive outcomes. In the case of the transition process, these outcomes include both the conditions under which the communist elite would lose their political hegemony, and the fate of the bulk of state assets controlled *de facto* by this elite at the onset of transition. As a result, more often than not, the former communists would feel motivated to resist reform on all fronts. Only a balanced political market or, ideally, one dominated by the opposition would have a chance to push the reform forward in a significant fashion.

An essential characteristic of the political markets is the ability of (civil) society to create a viable political alternative to the incumbent communists at the dawn of transition. This ability relies on the set of pre-1989 social, political, or economic organizations evolving outside of the communist party apparatus. More generally, it refers to the existence and significance of various embedded social networks that managed to exist relatively independently of the state apparatus. This presence, which was definitely no mean feat in a totalitarian society, represents a quite intuitive illustration of the concept of bargaining power in the context of the current setting.

An example might clarify this concept. Czechoslovakia had a widely-read public prior to World War II. Of course, once communism took hold of the country in 1948 a free press ceased to exist (Albright, 1976). However, as public pressure started to build, the communist press evolved into a more permissive

one, with censors ignoring more daring articles. In turn, this lax policy fuelled support for reforms and culminated with the Prague Spring of 1968. The newspapers shaped the public opinion that led to the popular revolt crushed by Russian tanks. However, this important event helped create a palpable resentment towards foreign occupation, which was associated in people's minds with the communist regime. As a result, once the communist regime collapsed, it was easier for the Czechoslovak people to rally behind the Civic Forum, an opposition movement. The Prague Spring memory acted as a coordination device, making possible the emergence of a strong opposition.

The 1989 revolutions were more rhetorical in nature than their name suggests. Nomenklatura, as a relatively compact, powerful, well-motivated group of people, survived the hiatus almost intact (Ash, 2000). Since this group of individuals was in charge of virtually all the areas of economic and political life before 1989, these privileges imply direct access to real resources, including information (Pejovich, 1998). In turn, this would confer a strong strategic advantage to this group in any type of game they might subsequently enter.

Who are the other players? First, there are the political parties that arose after 1989. Political dissidents, who led the anti-communist protests before 1989, joined these parties, granting them legitimacy. Second, civil society coagulated around civic groups that played an indirect yet essential role in the political transformation in these countries. Finally, given that the new economic game is played in a democratic environment, the public at large is a player, albeit one with a relatively weak strategic position (Soulet, 1996). In part because no

politically and economically motivated group alone is a match for the incumbent nomenklatura, but also for modelling convenience, all these players are lumped together under the name of “the opposition”.

What drives the opposition is still a matter of debate.¹¹ The obvious hypothesis is that vested interests would galvanize the opposition in fighting for a new order. However, the uncertainty of the fruits of reform and the heterogeneity of the class structure other than nomenklatura make this hypothesis hard to defend. In order for the opposition to win a political mandate, especially in 1989 in the context of the countries in the Soviet bloc, a more encompassing interest is needed. A coalition pushing for reforms can be built around many ideas, from the national/nationalistic one to the more elusive one of public interest.¹² The more coalescing actors push for reform, the more probable is the sustainability and completion of reforms in each country. Conversely, whenever these integrating factors are missing, vested interests are going to prevail, specifically the strongest one – nomenklatura’s, and no systemic change will occur.¹³ There is a vast range in between, with many countries exhibiting a relatively balanced political field that mostly led to few reforms.

An observable event that could provide information on the competitiveness of the political environment in each country is the result of the first round of free elections. Fish (1998) presents empirical evidence showing

¹¹ For an interesting discussion regarding the nature of the political opposition at the beginning of transition across the region, see Bunce (2000).

¹² It seems that in practice the nationalistic idea proved fitter to rally antireform coalitions.

¹³ Olson (1965) made a general argument along these lines that also applies to the political markets in transition countries today.

strong correlation between the outcome of the first elections and the introduction and effective implementation of economic reforms. In Hungary and Czechoslovakia, for example, where the opposition contested hard, the Democratic Forum and the Civic Forum, respectively, won the elections against the incumbent communists and introduced fast-paced and sustainable reforms. On the other hand, in Romania, against a weak opposition, the National Salvation Front, a direct heir of the communist party, comfortably won the first two rounds of elections in 1990 and 1992, and introduced partial reforms that were subsequently undermined. In some other cases, like most FSU countries in Central Asia, former communists remained easily in power and reforms never materialized.

The rule-making process is intrinsically linked to the ability to enforce these rules, both at the stage of polity formation and later, during the “regular” legislative process. Therefore, for both stages it is useful to consider a joint decision process, regarding both the actual stipulations of the laws creating the new property structure, and the enforcement mechanisms that would render such arrangements effective.

Section 2 presents a literature review covering determinants of success in transition as well as economic reform in general. Section 3 sets out the bargaining model while Section 4 unveils the results of the optimization problem. Section 5 introduces extensions of the bargaining model by considering the concept of social capital. Section 6 presents some implications of the model for

the political and economic transition in CEE countries, and sketches a possible empirical investigation of this view. Section 7 concludes.

1.2 Literature Review

The dramatic economic crisis of the early 1990s has been considered to be a “painful side effect of the healthy process of changing the system” (Kornai, 1993), or a transformational recession caused by the “shift from the sellers’ to a buyers’ market” (Buchanan, 1997). As such, it would be associated with a temporary contraction of investment and employment, but it would accomplish the much-needed structural change (e.g. reallocation of resources from agriculture and industry towards services, adjustment of foreign trade, etc.).

The prevailing view during the early years of transition was that the fastest way out of the “valley of tears”¹⁴ would be a rapid implementation of the market reforms summarized in the collection of principles dubbed “The Washington Consensus”. This consensus is increasingly under attack, not least from the former chief economist of the World Bank and Nobel Prize winner, Joseph Stiglitz, who blamed the disappointing performance of transitional economies on the unfitting blanket policies promoted by the international financial institutions, with no regard for the specifics of the countries’ (economic and political) heritage.

What exactly prompted the cross-country differences in economic growth? If heritage matters, what are the relevant dimensions? A glance at the picture of economic growth for these countries over the last century would establish a

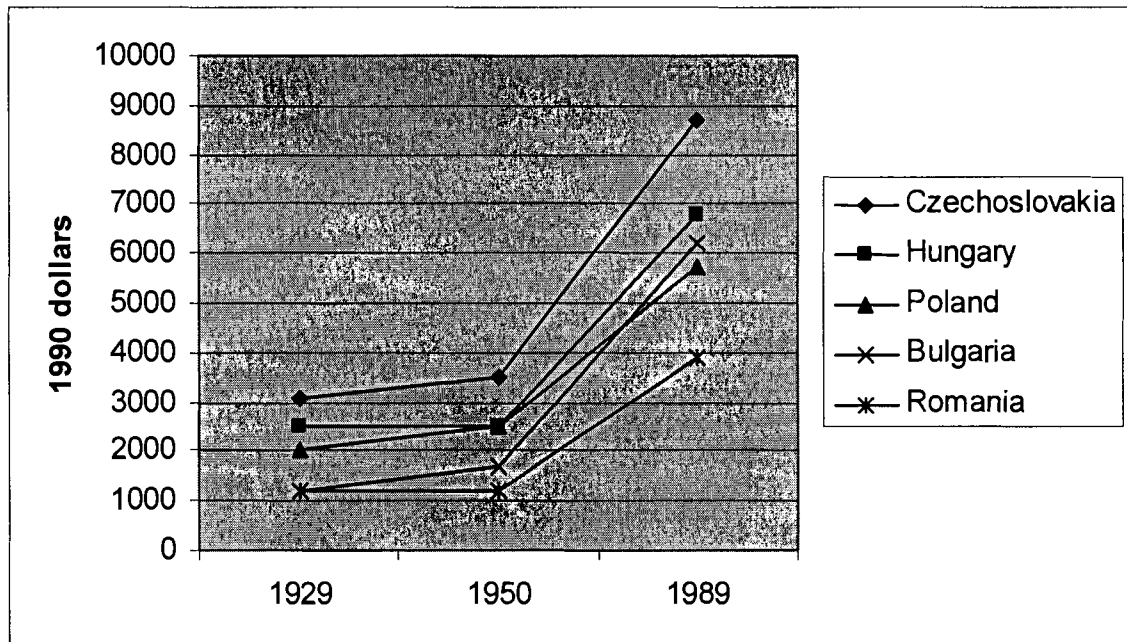
¹⁴ Sachs (1991).

hierarchy that is strikingly similar to the post-1989 one (see Figure 1.2).¹⁵ Czechoslovakia is at the top in 1989, as it was in 1929, as it remained in 1995. Hungary, Poland, Bulgaria, and Romania remain in this order at all checkpoints: 1929, 1950, 1989, and 1995. Not surprisingly, this picture is similar to the one ranking the achievers and the dawdlers in transition ranked by the speed of institutional reform as measured by the EBRD reform indexes (EBRD, 1994). Moreover, one cannot help but notice that the ranking is roughly the same as the ordering of those countries starting from the west and moving east. Is this the end of the story? Are those two factors, historical economic performance, and proximity to the western world, sufficient for predicting future prosperity?

One of the main hypotheses put forward in the literature has a “neo-classical” flavour. How can one elucidate the slow rhythm of reforms (and growth) in some countries? One could vaguely blame the “backwardness” associated with the lack of infrastructure that, in turn, can be held responsible for the puny foreign direct investment levels in these countries after 1989. Lankes and Venables (1996) cite market potential, cheap labour and geographical position (proximity to EU) as FDI determinants.

¹⁵ The data source is Maddison (1995).

Figure 1.2 GDP per capita over time



Another explanation for slow reforms/growth is the existence of significant costs in shifting the export focus towards market economies. These costs would prevent ill-prepared economies from redirecting their exports after the collapse of CMEA (the socialist countries' common market) in 1991. A glance at the region's export structure in 1989 might prompt one to reject this theory since there is not much variation between the countries, and one of today's forerunners, Czechoslovakia, directed 54 percent of its exports to the countries within the communist bloc in 1989 (Lavigne, 1999).

There are some attempts in the literature to shed light on reasons why some countries that have similar human and natural resources endowments implement sizeable changes "when needed", while others fail to do so. Allio et al. (1997) test three broad theories of institutional change against data on privatization in CEE countries. The distributional theory of institutional change

best survives the refutation process the authors set up.¹⁶ The engine of change is the bargaining among actors with asymmetric resources seeking distributional gains. While still crude, this theory concurs in placing the emphasis on the rule makers in explaining transition outcomes.

Williamson and Haggard (1994) searched for factors that facilitate economic change, without specifying a methodological framework. Their data came from a sample of countries from around the world, including Poland. A list of the most relevant factors includes: the position of the ruling party on the political spectrum; the presence of a crisis acting as a catalyst for change; the presence of a visionary leader; the presence of a coherent economic team (the case in Poland); the presence of a social consensus; and the presence of some form of compensation for economic losers. Note that each of these factors is a hypothesis, a theory of change in itself. However, it is unlikely that only one factor or a short list of factors plays an essential role at any one time in a given country. In other words, the problem with this approach stems from the fact that none of these factors is either sufficient or necessary for a successful transformation.

What is the effect of formal rules on the success of economic reform? Hellman (1997) assesses the impact of several factors related to adoption of a constitution by the transitional countries, such as the moment of adoption and the concentration of political power conferred by it, on a country's ability to implement reforms. Hellman considers the two main theories circulated in the political-

¹⁶ In a comment to this article, Knight and North (1997) argue that it is a good idea to renounce the search for a broad theory of change and instead focus on finding the conditions or factors in the presence of which a certain theory has high explanatory power.

economic literature on transition. The dominant view sees the constitution as the principal mechanism that establishes credibility of commitments in transitional economies, hence allowing actors to enter into long-run contracts that are critical for the adoption of successful reforms and the subsequent economic growth. According to this theory, an early adoption of a constitution provides the essential checks and balances by placing much-needed constraints on the government, and insures optimal investment by mitigating the time inconsistency problem that usually mars policymaking.

The alternative theory considered by Hellman places a premium on centralized executive power and institutional flexibility. In this vein, transition is a time of rapid, tremendous social change that cannot be implemented through liberal-democratic means. A constitutionally constrained executive cannot adequately deal with the challenges of the reform process, and it is not desirable in the short-run since it hampers the capacity to intervene in the economy. This approach recommends postponing constitution making until after essential economic reforms are implemented.

Hellman tests these two theories by employing data on 24 transitional countries at the end of 1995. His conclusions include the following: constitutions seem to contribute to the success of economic reform, but they are not a prerequisite for the adoption of successful reform (e.g. Poland); and stronger

executives appear to be linked to less economic reform.¹⁷ One inherent problem with Hellman's study is the paucity of data. However, its main caveat lies with the disregard for the effectiveness of formal laws in shaping the actions of economic agents. Laws are meaningless unless they are enforced. The degree of lawlessness in post-communist countries varies widely. One important point the present paper makes is that the key to economic success in transition is the ability to enforce to a reasonable degree a newly created property rights structure.¹⁸

Shleifer and Treisman (2000) place responsibility for the lack of significant successes in some countries on political constraints. In shifting ownership from "government" to individuals, and building institutions that support markets, reformers have to go against influential and rich groups of interests able to fight reform. Those interests, although extremely heterogeneous, could collude in blocking reform, forming a tremendous adversary to reckon with. Shleifer and Treisman find four main groups of interests that dominated Russian politics in the 1990s. The proponents of reforms are constrained by these groups' actions. Strategies to weaken the anti-reform alliance by playing one stakeholder against

¹⁷ This paper supports the latter conclusion in certain cases albeit for different reasons. Hellman (1998) shows how early economic winners in transition might find in their interest to halt the reform midway since this provides them with better opportunities to extract rents than if reform is finalized. This phenomenon, while important, is not the concern of this paper.

¹⁸ The lawlessness in the transition countries is dismal after 1989. One could claim that the source is the dreary heritage of a few decades of arbitrariness and illegitimacy, and the inherent uncertainty brought by transition. This paper regards these factors as crucial in explaining the variety of transition outcomes.

another, or by co-opting some of them by awarding them temporary rents, can successfully push the reform forward.¹⁹

While economists studied thoroughly the efficiency aspects of markets, less emphasis was placed on how markets come into existence. Olson (2000) shows that markets providing tremendous gains from trade and/or exhibiting self-enforcement will naturally spring to life. This is the reason why markets exist everywhere, even in communist economies that ban them outright. However, the bulk of transactions in rich economies occur in “socially contrived” markets, which allow for multi-party and multi-period arrangements. These markets require sophisticated, rights-intensive institutions. Informal rules aside, political markets determine the efficiency of the economic markets (North, 1997). As a result, assessing the government role (e.g., coordination, enforcement) is essential for any analysis of economic change. In the case of transition countries, this argument is even more powerful given the requirement for a *systemic*, comprehensive change.

In the next section, a formal bargaining model is developed along the lines of the framework presented in the introduction. The idea is to model the round table talks between the incumbent communists and the opposition that took place in the former communist countries at the onset of transition, and set the tone for all the subsequent developments. This setting allows the modelling of the polity-generating stage of transition, an important one if path dependence characterizes

¹⁹ The infamous “loans for shares” scheme in Russia could be an example of interests being bought out in order to advance reforms. A majority of observers now considers that either the price was too high or the scheme somehow ended up hindering reform (Fisher and Sahay – 1999).

this process. It is at this point that the economically relevant rules of the game are set. Chief among them are the size of the newly created market sector and the guarantees put in place to ensure stability of the new property rights scheme.

1.3 The Model

The interaction between the incumbent and the opposition is modeled using the (static) axiomatic theory of bargaining. As Binmore, Rubinstein and Wolinsky (1986) have shown, under certain conditions the axiomatic and the (dynamic) strategic approaches to bargaining are equivalent. This allows for the use of the simpler axiomatic modelling technique while employing the equivalence to interpret the results. In addition, the cooperative bargaining framework is used to highlight the importance of the roundtable talks for the overall process of reform.

As opposed to the dynamic approach, the Nash bargaining framework does not require incentives for parties to reach an agreement, as long as the possibilities set is properly defined. Standard examples of these incentive mechanisms are time preference and risk aversion. The latter is more appropriate in interpreting the results of this paper since one can envision a framework that takes into consideration, for example, the likelihood of the opposition setting up a general strike that can translate into economic losses and/or harmed legitimacy for the incumbent, and the possibility of avoiding it through deal making.

There is little gain from devising several interaction stages, since the focus is the polity-defining stage of the game, unfolding over a relatively short period during early transition. The assumption is that the factors driving this interaction are stable over the relevant period, and the bargaining outcome provides a framework that guides economic and political exchanges in the foreseeable future. While a dynamic approach would offer a richer setting by, for example, allowing for policy reversals, this paper's emphasis is the impact of the very first political exchange.

There are two agents in this economy: the incumbent communists (S) and the democratic opposition (M). They negotiate over the fraction of productive assets θ_M shifted from the state sector to the emerging private sector in the early stages of transition. Since the incumbent communists are the *de facto* owners of those assets, they will require compensation in the form of a transfer t .²⁰ This transfer is enforceable and there is a (transaction) cost associated with it, $C(t)$. This is a commitment cost, comprising all resources used to set up the institutional details needed to enforce the payment transfer following the initial shift of resources to the private sector. The two players engage in a process of cooperative bargaining that establishes simultaneously the equilibrium shift of assets θ_M^* and the transfer t^* .

There are two sectors in the economy: the state sector and the (private) market sector. The production functions for the two sectors are $Y_S = f_S(\theta_S)$ and

²⁰ See Section 6 for an in-depth discussion on the interpretation of the transfer t . Specifically, the need for such a transfer is analyzed, together with a broader view of this asset transfer.

$Y_M = f_M(\theta_M)$, respectively, with $\theta_S + \theta_M = 1$, where θ_S is the fraction of the productive assets left in the state sector as a result of the bargaining process. Both functions are strictly concave and increasing in their arguments, with the market sector being more productive on the whole range $[0, 1]$:²¹

Assumption 1.1: $f'_S > 0$, $f''_S < 0$, $f'_M > 0$, $f''_M < 0$, $f'_S(0) < f'_M(1)$

The last part of assumption 1.1 ensures that the marginal product of the market sector dominates over the entire range of values for θ . Even when all assets are located in the market sector, the marginal product of the state sector remains below the one of the market sector.

Since the institutional arrangements needed to enforce larger transfers of assets are necessarily more complex, it is natural to assume that the transaction costs function exhibits the following properties:

Assumption 1.2: $C(0) = 0$, $C'(0) = 0$, $C'(t) > 0$ for $t > 0$, $C'' > 0$ for $t \geq 0$.

The disagreement point is (Π_S^0, Π_M^0) . The set of possible agreements X is such that there are pairs (Π_S, Π_M) strictly above the disagreement point. The interpretation of the disagreement point is that of the resulting outcome in the event of a breakdown in the bargaining process. The “outside” payoffs for the two players depend on the nature of the environment. More specifically, these

²¹ The assumption concerning the relationship between slopes of the production functions implies that $f'_S(0) < f'_M(1)$. In other words, in the absence of any constraints, the optimal size of the state sector is zero. This assumption is hard to justify in the context of a “regular” economy: the optimal mix of state and markets is usually thought to have an interior solution. However, in the context of the early stages of transition, the state sector is the repository of economic assets beset by tremendous distortions, and the reallocation to new uses in the nascent private sector would eliminate them by definition.

payoffs are conditional on the players' ability to impose costs on each other after leaving the bargaining table empty handed.

It is interesting to investigate the link between the disagreement point (Π_S^0, Π_M^0) as thought of in the bargaining setup and the point of no reform, where both the asset transfer and the payment transfer remain zero. The disagreement point is a hypothetical result that materializes if it turns out that negotiations fail. The point of no reform defines the state of the economy prior to the start of the negotiations. It was enforced prior to 1989 by the likely military intervention of USSR and other communist countries in order to preserve the communist regimes throughout the communist block.

It is natural to assume that the collapse of communism yields a disagreement point that reflects less relative clout by the incumbent communists as compared to the situation preceding the revolution. The anti-communist revolution, made possible by the removal of the possibility of the Russian tanks propping up the regime as they did in 1968's Czechoslovakia, is the exogenous shock that allows now the bargaining to take place. The strikes and violence the opposition can exert if negotiations fail, and the potentially repressive reply by incumbent communist, define this disagreement point.

As opposed to the case of dynamic models where asymmetry may stem from differences in preferences or the sequence of moves, the Nash bargaining solution introduces asymmetry as differences in "bargaining power." There are several sources of disparity in bargaining power. Plausible sources for this

asymmetry, as indicated by Binmore, Rubinstein, and Wolinsky, are differences in time preferences and risk aversion, the nature of the bargaining procedures (i.e. the advantage of making the first move), and differences in parties' beliefs about some determinants of the environment (e.g. likelihood of a breakdown). The different weights α and $(1 - \alpha)$ attached to the appropriate surpluses in the maximization process reflect the bargaining power of actors.

The incumbent faces a tradeoff between the proceeds coming from state sector production, and the gains from putting the assets into the more productive private sector. The latter choice involves positive transaction costs incurred in the process of transferring back part of the extra surplus at the end of the production cycle. Note that here the "process" refers to a period of several years representing the planning horizon the parties would consider at the time the deal is negotiated. One could envisage a situation in which the incumbent might choose not to transfer assets to the private sector beyond the amount warranted by the opposition's bargaining power if the transaction costs were prohibitive. This case is analyzed separately at a later stage.

The S player has the agreement utility $\Pi_S = f_S(\theta_S) + t$, the proceeds of the state sector that it still owns plus the received transfers, while the M player's utility is $\Pi_M = f_M(\theta_M) - t - C(t)$.²² The Nash bargaining solution solves the following problem:

²² Whenever an asset transfer is made, there is corresponding payment transfer t and its cost $C(t)$. It is natural to make the M player responsible for covering this cost of the payment transfer since, in some sense, M "took over" the economy and the market sector would soon dominate the economy. Attaching $C(t)$ to the M's payoff is not critical for the results.

$$\max_{\theta_M, t} \left(f_S(\theta_S) + t - \Pi_S^0 \right)^\alpha \left(f_M(\theta_M) - t - C(t) - \Pi_M^0 \right)^{1-\alpha} \quad (1.1)$$

The payment transfer t can be proved to be positive in equilibrium, which is tantamount to the incumbent (agent S) never making a payment transfer to the opposition (agent M) in equilibrium, following an asset transfer. The intuition is that when S makes payment transfers to M, the same payoff vector can be implemented at lower cost by setting the asset transfer θ_M larger, given the constraints built in the bargaining process, in order to avoid a costly payment transfer. In the proof of Proposition 1.1 below a more general model is considered where a simultaneous transfer from S to M is allowed.

Proposition 1.1: *In equilibrium, the payment transfer will occur from the market sector M to the state sector S only.*

Proof: See Appendix 1.

In order for the maximization process to be properly defined and the feasible set to be convex, the Pareto frontier has to be strictly concave.

Proposition 1.2: *The Pareto frontier for the maximization process described by equation (1.1) is strictly concave under assumptions 1.1 and 1.2.*

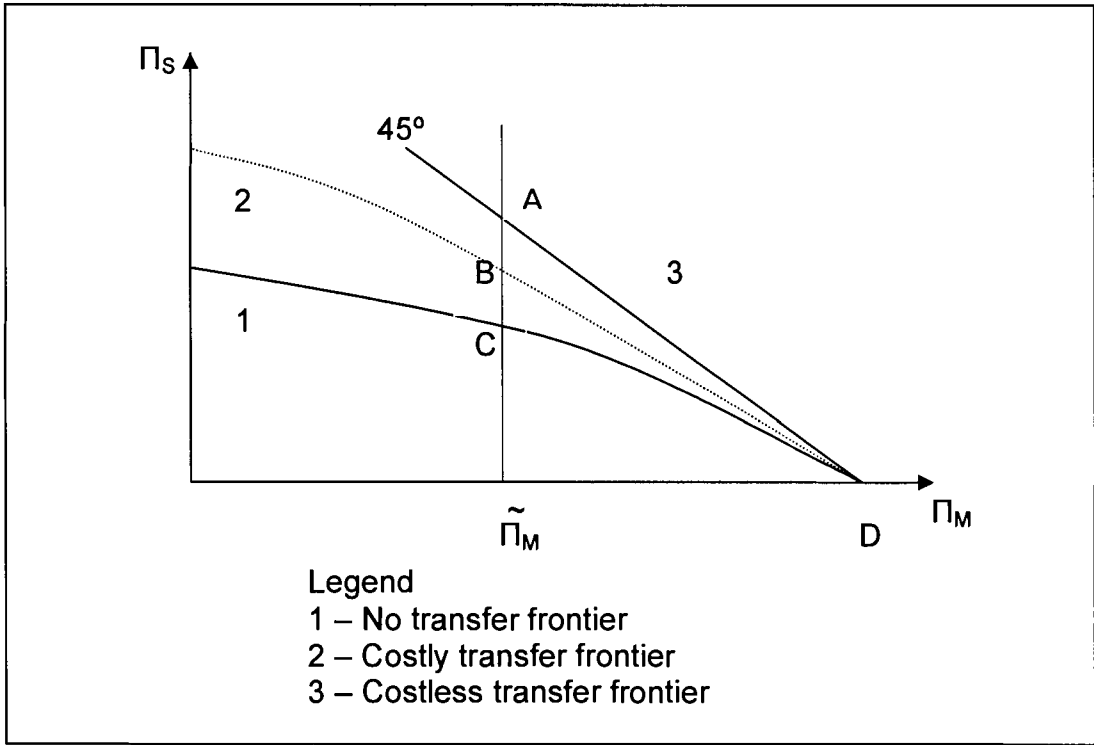
Proof: See Appendix 1.

The case of costly transfer yields a different possibility set and Pareto frontier than the two special cases of no transfer and costless transfer. Intuitively, the Pareto frontier would lie between those for the two extreme cases: zero transaction costs and prohibitive transaction costs. This can be proven formally.

Proposition 1.3: *Both players engaged in the bargaining process are potentially better off in the presence of transfers, provided the marginal cost of transfers does not exceed the marginal product ratio for the two sectors.*

Proof: In order to trace the locus of the Pareto frontier with costly transfers, the utility of player M is kept fixed at $\tilde{\Pi}_M$ and the corresponding optimal allocations are sought in the three cases: zero costs, positive costs, and prohibitive costs (see Figure 1.3). Note that points A, B, and C in Figure 3 are not Nash solutions in the three cases. Rather, for the purpose of this proof, these three points are simply used to compare the outcomes in the no transfer, costly transfer, and costless transfer cases, respectively.

Figure 1.3 The Three Pareto Frontiers



By definition, the Pareto frontier is obtained by solving the following problem:

$$\max_{\theta_M, t} \Pi_S \text{ subject to } \Pi_M \geq \tilde{\Pi}_M$$

As shown in Figure 1.3, for the case of costless transfers, point A on the 45-degree line gives the highest achievable payoff Π_S corresponding to $\tilde{\Pi}_M$. Similarly, for the case of no transfers, point C gives the highest achievable payoff Π_S corresponding to $\tilde{\Pi}_M$. The proof will show that the maximum feasible Π_S for the case of costly transfers occurs at a point B located between A and C along the vertical line determined by the given $\tilde{\Pi}_M$.

First, let us show that point B cannot possibly be above point A. If that were the case, the following inequality would necessarily hold:

$$(\Pi_M + \Pi_S)_B \geq f_M(1) \text{ or}$$

$$f_M^B(\theta_M) + f_S^B(\theta_S) - C(t) \geq f_M(1)$$

However, this cannot be the case if θ_M is strictly less than one and the cost of transfer is strictly positive, since the 45-degree line corresponding to this transfer would lie below the one cutting the horizontal axis at D. Intuitively, the economy is less productive overall because the state sector is partially used, and simultaneously there is a "leakage" of magnitude $C(t) > 0$. Hence, in equilibrium, point B lies below point A.

Now let us show that if the transaction costs are not prohibitively large, as measured by the value of the marginal cost at zero transfer, point B is situated above point C, the no transfer allocation. Let us assume that we are at point C ($t = 0$) and the two players contemplate the possibility of a transfer. As player S agrees to transfer an extra $d\theta_M > 0$ to the market sector, it experiences a drop in utility to the extent of $-f'_S d\theta_M$. In turn, this represents the minimum transfer required by the rational player S in order to agree to the asset transfer $d\theta_M$. Player M gains $f'_M d\theta_M$ and has to pay the transfer cost $dC(t)$. As a result, the two transfers would occur if:

$$f'_S d\theta_M > f'_M d\theta_M - dC(t)$$

If $d\theta_M$ tends to zero, the above inequality results in:

$$\frac{f'_M}{f'_S} > 1 + C'(0) \tag{1.2}$$

This implies that, at the limit, if player M is receiving the reservation utility $\tilde{\Pi}_M$ and inequality (1.2) holds, player S receives a payoff larger than with no transfers: in equilibrium, point B is above point C. ■

The next section carries out the optimization and discusses the results.

1.4 The Results

We are now ready to introduce the main results of the bargaining problem expressed by equation (1.1), by considering an interior solutions for θ and t . In

order to obtain the solution to the problem in equation (1.1), the first order conditions with respect to θ and t are needed:

$$-\alpha f'_S (f_S + t - \Pi_S^0)^{\alpha-1} (f_M - t - C - \Pi_M^0)^{1-\alpha} + (1-\alpha) f'_M (f_S + t - \Pi_S^0)^\alpha (f_M - t - C - \Pi_M^0)^{-\alpha} = 0$$

$$\alpha (f_S + t - \Pi_S^0)^{\alpha-1} (f_M - t - C - \Pi_M^0)^{1-\alpha} - (1-\alpha)(1+C') (f_S + t - \Pi_S^0)^\alpha (f_M - t - C - \Pi_M^0)^{-\alpha} = 0$$

Rearranging these equations as implicit functions yields:

$$G_1(\theta_M, t, \Pi_S, \Pi_M) = -(1+C') f'_S + f'_M = 0 \quad (1.3)$$

$$G_2(\theta_M, t, \Pi_S, \Pi_M) = \alpha (f_M - t - C - \Pi_M^0)^{1-\alpha} - (1-\alpha)(1+C') (f_S + t - \Pi_S^0)^\alpha = 0 \quad (1.4)$$

In order to assess the impact of parameters on the choice variables at the Nash solution, specifically the size of the newly created market sector, a new set of comparative static results is required.

Proposition 1.4: *The equilibrium asset transfer towards the market sector is larger if the opposition's threat point is higher, or if the incumbent's threat point or bargaining strength is lower, ceteris paribus. At the same time, the payment transfer from the market sector to the state sector is higher if the opposition's or the incumbent's threat points are lower, or if the incumbent's bargaining strength is higher, ceteris paribus.*

Proof: This proposition establishes relations between the two endogenous variables of interest, the assets transfer and the payment transfer, and some exogenous parameters. The purpose is to use these links to explain the different economic outcomes across countries, as measured, say, by the size and robustness of the private sector, and the existence (or lack thereof) of some

factors that would facilitate the creation of such a sector. The implicit function theorem, the equations (1.3) and (1.4), and the assumptions 1.1 and 1.2 are used to assess these relations.

$$\frac{\partial \theta_M}{\partial \Pi_M^0} = \frac{\alpha f_S' C''}{\left((1+C') f_S'' + f_M'' \right) \left(1+C' + (1-\alpha) C' (f_S + t - \Pi_S^0) \right) - f_S' C'' \left(\alpha f_M' + (1-\alpha) (1+C') f_S' \right)} > 0$$

The above equation indicates a positive relationship between the opposition's disagreement point and the size of the market sector arising from the asset transfer. One possible interpretation is that a stronger (political) opposition during early transition could impose a rapid change in the economic landscape and this would insure a successful transformation.

$$\frac{\partial \theta_M}{\partial \Pi_S^0} = \frac{(1-\alpha) (1+C') f_S' C''}{\left((1+C') f_S'' + f_M'' \right) \left(1+C' + (1-\alpha) C' (f_S + t - \Pi_S^0) \right) - f_S' C'' \left(\alpha f_M' + (1-\alpha) (1+C') f_S' \right)} < 0$$

Similarly, a higher disagreement point for the incumbent would warrant a smaller initial asset transfers towards the market sector, diminishing the impetus for change.

$$\frac{\partial \theta_M}{\partial \alpha} = \frac{f_S' C'' (f_M - t - C - \Pi_M^0 + (1+C') (f_S + t - \Pi_S^0))}{\left((1+C') f_S'' + f_M'' \right) \left(1+C' + (1-\alpha) C' (f_S + t - \Pi_S^0) \right) - f_S' C'' \left(\alpha f_M' + (1-\alpha) (1+C') f_S' \right)} < 0$$

The higher the incumbent's bargaining power, the lower the initial transfer of assets towards the market sector, *ceteris paribus*. This implies that the incumbency advantage stemming from the pre-transition period might prevent a rapid transition to a market economy. Similarly, the payment transfer becomes larger if the incumbent's bargaining power increases:

$$\frac{\partial \alpha}{\partial \alpha} = \frac{\left((1+C')f_S'' + f_M'' \right) \left(f_M - t - C - \Pi_M^0 + (1+C')(f_S + t - \Pi_S^0) \right)}{\left((1+C')f_S'' + f_M'' \right) \left(1+C' + (1-\alpha)C''(f_S + t - \Pi_S^0) \right) - f_S' C'' \left(\alpha f_M' + (1-\alpha)(1+C')f_S' \right)} > 0$$

The two inequalities below suggest that the compensation payment to the state sector is higher, if the incumbent's or opposition's threat point is lower.

$$\frac{\partial t}{\partial \Pi_S^0} = - \frac{(1-\alpha)(1+C') \left((1+C')f_S'' + f_M'' \right)}{\left((1+C')f_S'' + f_M'' \right) \left(1+C' + (1-\alpha)C''(f_S + t - \Pi_S^0) \right) - f_S' C'' \left(\alpha f_M' - (1-\alpha)(1+C')f_S' \right)} < 0$$

$$\frac{\partial t}{\partial \Pi_M^0} = - \frac{\alpha \left((1+C')f_S'' + f_M'' \right)}{\left((1+C')f_S'' + f_M'' \right) \left(1+C' + (1-\alpha)C''(f_S + t - \Pi_S^0) \right) - f_S' C'' \left(\alpha f_M' - (1-\alpha)(1+C')f_S' \right)} < 0$$

This concludes the proof of proposition 1.4 ■

The preceding analysis dealt with the situation in which compensation is costly and there are interior solutions for both the asset transfer and payment transfer. I will now consider two special cases: first, the case in which compensation payments are impossible or prohibitively costly ($t = 0$), and second, the case in which compensation payments can be made costlessly ($C(t) = 0$ for all $t > 0$).

1.4.1 The Case of No Payment Transfer

If the transaction costs of a payment transfer from player M to player S are prohibitively large, no payment transfer is taking place. In this simple case, the bargaining power and the outside options determine the split of the productive assets and therefore the initial size of the private sector. The utilities are given by the outputs of the two sectors: $\Pi_S = f_S(\theta_S)$ and $\Pi_M = f_M(\theta_M)$. The second equation yields $\theta_M = f_M^{-1}(\Pi_M)$. Substituting in the first equation yields:

$$\Pi_S(\Pi_M) = f_S(1 - f_M^{-1}(\Pi_M)) = h(\Pi_M)$$

$$\frac{dh}{d\Pi_M} = -f_S' \frac{df_M^{-1}}{d\Pi_M} = -\frac{f_S'}{f_M'} \in (-1, 0)$$

Using assumption 1.1, the above equation indicates that the slope of the Pareto frontier is less than one in absolute value for the whole range of payoffs.

$$\frac{d^2h}{d(\Pi_M)^2} = f_S'' \left(\frac{df_M^{-1}}{d\Pi_M} \right)^2 < 0$$

The concavity of both production functions (assumption 1.1) renders the Pareto frontier strictly concave (see Figure 1.3). This implies that the set of the feasible utility pairs is convex and bounded. By assumption, the disagreement point belongs to the feasible set and there is some agreement preferred by both players to the disagreement outcome.²³ Further, the slope of the Pareto frontier is lower than one in absolute value everywhere.

If the payment costs are prohibitive, the Nash bargaining problem is given by:

$$\max_{0 \leq \theta_M \leq 1} (f_S(\theta_S) - \Pi_S^0)^\alpha (f_M(\theta_M) - \Pi_M^0)^{1-\alpha}$$

The first order condition²⁴ yields:

$$-\alpha f_S'(f_M - \Pi_M^0) + (1-\alpha) f_M'(f_S - \Pi_S^0) = 0 \quad (1.5)$$

Rearranging (1.5) yields:

²³ See Osborn and Rubinstein (1990), p. 10 and following.

²⁴ The second order condition holds in this case, given the assumption 1.1.

$$\frac{f_M - \Pi_M^0}{f_S - \Pi_S^0} = \frac{1-\alpha}{\alpha} \frac{f'_M}{f'_S}$$

This relationship indicates that the relative bargaining power of the two contenders and the relative marginal product of the technologies in the two sectors determine the equilibrium surplus ratio. While the impact of the relative bargaining power is not surprising, the above equation unveils an interesting result regarding the marginal product ratio. The larger the relative productivity of the market sector, the larger the opposition's share of the total surplus in the case of no transfers, *ceteris paribus*.

Since a significant transfer of assets to the private sector during early transition is tantamount to a successful transformation, it is useful to assess the impact of the exogenous variables on the size of the asset transfer.²⁵ Let $G(\theta_M, \Pi_S^0, \Pi_M^0, \alpha)$ denote the left hand side of equation (1.5). Using the implicit function theorem, some comparative static results follow:

$$\frac{d\theta_M}{d\Pi_S^0} = \frac{(1-\alpha)f'_M}{\alpha f''_S(f_M - \Pi_M^0) + (1-\alpha)f''_M(f_S - \Pi_S^0) - f'_S f'_M} < 0$$

The above result indicates that, given the assumptions on the nature of the two productive sectors, a higher disagreement point for the incumbent elite would lead to a smaller quantity of productive assets being shifted to the market sector because of negotiations. The disagreement or threat point gives the fall back position in case the negotiations break down. In this case, the strong ability

²⁵ The asset transfer can be thought of as the initial size of the market sector. This model has no dynamics, and therefore the temporal reference here indicates just the potential build in through the negotiation mechanism this paper analyzes.

of the incumbent to weather the storm associated with a break down, due, for example, to low cost of continuing production in the unreformed state sector, leads to a smaller market sector, which signifies unsuccessful transition.

Similarly, a larger market sector will result initially if the disagreement point for the opposition is higher, since the opposition is able to push for more reform.

$$\frac{d\theta_M}{d\Pi_M^0} = -\frac{\alpha f_S'}{\alpha f_S''(f_M - \Pi_M^0) + (1-\alpha)f_M''(f_S - \Pi_S^0) - f_S'f_M'} > 0$$

Lastly, the higher the bargaining power of the incumbent, the fewer assets will be shifted to the market sector:

$$\frac{d\theta_M}{d\alpha} = \frac{f_S'(f_M - \Pi_M^0) + f_M'(f_S - \Pi_S^0)}{\alpha f_S''(f_M - \Pi_M^0) + (1-\alpha)f_M''(f_S - \Pi_S^0) - f_S'f_M'} < 0$$

1.4.2 The Case of Costless Payment Transfers

Another special case is the one involving costless payment transfers. As shown in proposition 1.1 above, in equilibrium, the payment transfer will occur from M to S only. As a result, the Nash solution in this case is obtained by solving the following bargaining problem:

$$\max_{\{\theta_M, t\}} (f_S(\theta_S) + t - \Pi_S^0)^\alpha (f_M(\theta_M) - t - \Pi_M^0)^{1-\alpha}$$

Simplifying the first order conditions yields:

$$-\alpha f_S'(f_M - t - \Pi_M^0) + (1-\alpha)f_M'(f_S + t - \Pi_S^0) = 0 \quad (1.6)$$

$$\alpha(f_M - t - \Pi_M^0) - (1-\alpha)(f_S + t - \Pi_S^0) = 0 \quad (1.7)$$

Substituting equation (1.7) in (1.6) yields:

$$f'_S = f'_M$$

The solution of this equation would give the optimal value for the asset transfer θ_M in this economy. However, due to the assumption 1.1, this equality cannot hold and, as a result, a corner solution is obtained: θ_M is unitary. Because transfers are costless in this case, θ_M is chosen so that it maximizes total GNP, which is $f_S + f_M$, and then the transfer t is selected to achieve the distribution of income warranted by the relative bargaining power.²⁶ Equation (1.7) yields the magnitude of the transfer, which represents the net result of sharing the production proceeds in the two sectors according to the relative bargaining power²⁷:

$$t^* = \alpha(f_M - \Pi_M^0) - (1 - \alpha)(f_S - \Pi_S^0)$$

In this case, the Pareto frontier is linear and has a slope of minus one. This is a limiting case of the earlier result that the frontier is strictly concave. Point A in Figure 1.3 illustrates a solution to the bargaining problem in the case of costless payment transfers.

To summarize the discussion in section 4, the first best equilibrium occurs in the case of costless transfers. The productive assets are transferred entirely to the private sector and the economic pie is as large as it can be. The distribution of proceeds is totally governed by the relative bargaining power of the parties and the relative productivity of the two sectors. The asset transfer is positively

²⁶ This production outcome is the same as the utilitarian solution to the bargaining problem, in which the sum of payoffs is maximized.

²⁷ Built into this relationship are the participation constraints: each player is assured of getting at least the reservation utility.

related to the magnitude of the opposition's outside payoff, and negatively linked to the incumbent's bargaining power and disagreement point.

1.5 Costly Transfers in the Presence of Social Capital

Transition starts with a power hiatus: the communist state collapses and a new polity replaces it. In all cases, the new state is necessarily weaker than the moribund totalitarian regime.²⁸ The enforcement of rules, new and old, becomes a chief concern in the new environment. When formal rules become costlier to use, informal rules come to the fore to supplement them.

The concept of social capital is an important ingredient in the literature looking at the causes and consequences of social interaction (e.g. Narayan, 2002; Woolcock, 1999; and Collier, 2002). Introduced in 1993 by Robert Putnam, refers to "features of social organization such as networks, norms and trust that facilitate co-ordination and co-operation for mutual benefit" (Putnam, 1993, 35-36). More recently, the concept has become more sophisticated and differentiated and its use is plagued by a lack of conceptual precision. In a recent study done under the auspices of World Bank, social capital subsumes no less than six components, such as trust, adherence norms, solidarity, social cohesion an inclusion, and empowerment and political action (Grootaert et al, 2003). Some of these issues are discussed in more detail in essay 2 of this thesis. However,

²⁸ Some critics of the CEE and FSU transitional policies point to the more gradual nature of China's economic reforms as a better approach. The essential feature of the Chinese example in this case is the preservation of the communist state's tremendous enforcement ability, which contrasts sharply with the cases in which democratization overlapped with building a market economy. There may be something to this idea. However, these critics should remember Chairman Mao's reply when asked about the importance of the 1789 French Revolution: "It's too early to tell."

for the discussion at hand social capital is understood as the degree of interpersonal trust existent in the population at large.

Any political or economic exchange made during the initial stage of transition, which is characterized by uncertainty and confusion, is bound to depend on the level of interpersonal trust among the actors involved. The existence of such high interpersonal trust lowers transaction costs and uncertainty and allows for more exchanges than otherwise.²⁹ In general, trust points to the actors' capacity to cooperate and coordinate, to the habit of contributing to a common effort even if no one is watching, and to the willingness and ability to reciprocate in the absence of a third-party enforcer. The presence of trust provides strong incentives for creation of new wealth by encouraging innovation, investment, specialization and exchange.³⁰ At the other end of the spectrum, lack of responsibility, the lost ability to trust other individuals and build organizations together, bad work habits, the incessant search for short cuts and redistribution, lawlessness, xenophobia, nationalism, all part of the communist inheritance would lead to fewer exchanges in the political and economic sectors after 1989. This, in turn, would result in dismal economic performance.

The bargaining problem presented in equation (1.1) is recast by allowing for the cost of payment transfers to be a function of another parameter: s , the

²⁹ Robert Putnam (1993), in a groundbreaking study explaining the dissimilar social and economic conditions found across regions in today's Italy, uses the participation in civic clubs for the last few centuries, which in turn entails evolving networks of reciprocity and cultural norms, as a measure of social capital.

³⁰ It may be that there are "good" and "bad" types of trust, or social capital, as some authors call it. For example, the trust that allows people to associate in order to insulate themselves from markets or other organizations of the state is a "bad" one (e.g. the mafia or a cartel).

stock of social capital. The entire discussion in this section is based on the assumption of positive transaction costs and interior solutions for both endogenous variables: asset and transfer payments. Since the presence of trust and civic norms would reduce transaction costs by reducing enforcement costs, it is natural to assume that:

Assumption 1.3: $C_s(t, s) < 0, C_{ts}(t, s) < 0$

The impact of social capital on the shift of assets to the private sector and the transfer payments is of interest in this case, with trust negatively affecting the levels of transaction costs.

Proposition 1.5: *A higher level of trust in the transitional society would allow for a larger magnitude of the asset transfer to the private sector, provided the effect of trust on the marginal cost of payment transfers is sufficiently large. Additionally, higher trust increases the payment transfers towards the state sector.*

Proof: Using, once again, the implicit function theorem, the equations (1.3) and (1.4), and allowing the cost of transfer function to depend on both the size of transfer and the level of trust, yields:

$$\frac{\partial \theta_M}{\partial s} = \frac{f'_S \left((1+C')C_{ts} - \alpha C_S C_{tt} \right)}{\left((1+C_t) f''_S + f''_M \right) \left(1+C_t + (1-\alpha) C_{tt} (f'_S + t - \Pi^0_S) \right) - f'_S C_{tt} \left(\alpha f'_M + (1-\alpha)(1+C_t) f'_S \right)}$$

In order for the impact of trust on the initial private sector to be unambiguously positive in the last equation, the following condition needs to hold: $C_{ts} - \alpha \frac{C_{tt}}{1+C_t} C_S < 0$, in addition to assumption 1.3. This condition amounts to

the effect of trust on the marginal cost of transfers being stronger than a weighted marginal cost with respect to trust.

Similarly, the impact of trust on the payment transfer is given by:

$$\frac{\partial t}{\partial s} = \frac{-\left((1+C_t)f_S'' + f_M''\right)\left(\alpha C_s + C_{is}(1-\alpha)(f_S + t - \Pi_S^0)\right) + \alpha C_{is}f_S' f_M' + f_S'(1-\alpha)(1+C_t)C_{is}}{\left((1+C_t)f_S'' + f_M''\right)\left(1+C_t + (1-\alpha)C_{it}(f_S + t - \Pi_S^0)\right) - f_S' C_{it}(\alpha f_M' + (1-\alpha)(1+C_t)f_S')} > 0$$

The higher the stock of social capital, the larger the payments to the incumbent will be, since now the transaction costs are lower. As shown in proposition 1.3, a larger pie will be created since now the incumbent has even more incentives to transfer the productive assets to the market sector, part of which return to the incumbent in the form of larger transfer payments. ■

The second best equilibrium emerges in the case of costly transfers. If transaction costs are low enough, the incumbent will choose to take advantage of the relatively more productive private sector by transferring part of the productive assets to that sector. The payment that compensates the incumbent allows for a superior payoff compared to the case of prohibitive costs: the incumbent is better off with an extra instrument available. Whenever transaction costs are prohibitive, the asset transfer does not take place and the incumbent's high bargaining power will further reduce the total surplus, given the lower productivity of the state sector.

In the case of trust affecting the magnitude of transaction costs, larger asset transfers and payment transfers, and therefore a larger economic pie, will ensue for higher levels of trust. This will guarantee greater payoffs for both

players, *ceteris paribus*. A similar result is obtained if trust negatively influences the incumbent's disagreement point.

1.6 Implications for the Transition Process

The gist of this model described in sections 3 to 5 above is related to the nature of the ownership of the productive assets and the change in this ownership structure at the beginning of transition. The members of the incumbent communist elite were the de facto owners of these assets during the communist regime and therefore at the outset of transition. While no attempt will be made here to investigate the cases of the collapse of the communist system, it is safe to assume that a chief reason for this collapse was the patent inefficiency of the centrally planned economy.

In this context, two related questions come to mind. First, why did the communist rulers fail to inject more efficiency into the economy before it collapsed by, for example, leasing out or selling at least some of the assets they owned? Second, once the communist regime collapsed, why did they attempt to transform the ownership structure in a seemingly complicated manner instead of declaring themselves the de-jure owners and start building the market economy on this basis?

Concerning the first question, the simple answer is that they tried to do so under the double constraint of the ideology and preservation of the authoritarian grip on the country. The Marxist orthodoxy would not allow too much wiggle room in terms of moving away from state ownership as the dominant ownership form.

Some countries went farther than others in implementing decentralization of decision in selected economic domains (e.g. former Yugoslavia). However, the second constraint was both overriding and quite strict. In fact, while ideology can be subject to various interpretations, the solid grip on power was never considered in need of fine-tuning. The result was that decentralization was severely limited in terms of both scope and depth.

The second question outlined above goes at the core of the modelling approach used in this essay. Since the collapse of communism translated into the communists losing hegemony, both the property rights allocation and the associated enforcement mechanism are potentially subject to change. The communist elite remained dominant in the political life of many transition countries, and a significant number of members of the elite preserved their high status in the social and economic life virtually everywhere. However, most of the time these de-facto owners of assets had to devise a new enforcement mechanism to make their property rights effective under the new rules of the game. Hence, the choice of cooperative bargaining as a modelling vehicle to jointly determine both the assets allocation and the associated rules of the game should not come as a surprise in this context.

In states where the incumbents retained a monopoly on power, or close to it, after the “revolution”, both the initial allocation of rights and the existent enforcement mechanism were preserved almost intact. In particular, creating western-style, private property rights over the state assets, even when these rights were awarded to nomenklatura themselves, would inevitably have led in

the long run to decentralization of political power. As such, the incumbents chose not to implement this particular reform, preferring to continue enjoying the ownership of state assets through the existing (bureaucratically defined) property rights, even though this involved some inefficiency.

On the other hand, in countries where the revolution was less rhetorical in nature and opposition movements had significant bargaining power at the outset, the opposition was instrumental not only to put in place a new property rights structure (new rules of the game), but also to insist in assigning some of the new property rights to non-incumbents. There was no possibility of the incumbent appropriating all the wealth from existing state assets by becoming the de jure owners, because the opposition had sufficient bargaining power to prevent that outcome. While the resources needed to put in place the new system of property rights were significant, it is likely that the efficiency gains stemming from the creation of a new, dynamic private sector operating closer to a western-type market sector characterized by competition more than outweighed this outlay.

Theoretically, the incumbent could have gotten a big wealth endowment and then be required to make a large transfer to the rest of the society as warranted by the opposition's bargaining power. As a practical matter, this was not feasible for a variety of reasons: the necessary capital markets were not in place, any promises about future compensation payments would have lacked credibility, there would have been too much market power if state assets were left in existing hands, etc. The solution was thus to distribute ownership more widely throughout the society instead.

In a nutshell, transaction costs of credibly compensating incumbents for the loss of their state assets were smaller than the transaction costs of credibly compensating the rest of society in a world where the incumbents got to keep the assets.

One corollary of the above discussion is that liberalizations in political and economic realms go hand in hand. Once political transformation is allowed, the economic transformation will somehow match those developments. The reform path adopted by China is quite interesting in the light of the above model of transition. On the one hand, it diverges from it because China liberalized significantly the economic life without performing any major changes to the Communist monopoly of power. On the other hand, it validates the model in that the political status quo allowed the preservation of almost intact property rights by communist and, necessarily, the enforcement mechanism existent before transition started. While this might seem like the best of both worlds (undertaking serious economic reform without building of a totally new – and costly - enforcement mechanism), there is no telling what will be the impact of economic liberalization on political liberalization at some point in the future.

Returning to the impact of social capital, some countries were able to build this sort of asset before 1989, while other countries missed those opportunities. What determines the level of social capital in 1989? The pre-communist level of social capital is considered as given at the start of transition. From then onwards social capital becomes endogenous. As a result, the stock of social capital at the onset of the communist winter, plus the idiosyncrasies of the communist regimes

(like the presence of a Stalin or a Ceausescu, or a Havel or a Walesa), which are exogenous, determined the 1989 level of social capital.

If these inherited characteristics vary across countries, what is the source of the variation? One explanation could come from the economically relevant idiosyncrasies of the communist regimes. For example, all Central and Eastern European countries except Poland and Yugoslavia implemented mass collectivization of the agricultural land, which implied social ownership. One would expect this fact to make a difference in terms of the relative prominence of the peasantry in the post-1989 political process. Sure enough, a small landowners' party emerged in Poland after 1989 that had a non-negligible impact in the political arena. Its members praised themselves for preserving the "capitalist spirit" throughout the communist era.

There is no scarcity of potential factors that could have facilitated the creation of interpersonal trust before 1989. The list includes: the presence of a sizeable non-state economic sector; the structure of this sector (e.g. the weight of the services sector in the overall economy); the presence and extent of foreign travel before 1989; the access to western media and the extent of cultural contacts in general.³¹

The endowment of social capital at the end of the communist period, in turn, would determine how fit those countries were for a swift change of direction. This is akin to the "match" hypothesis: the closer are the informal rules of a

³¹ Dasgupta and Serageldin(1999) is a good survey on the current status of social capital in the literature.

community to the adopted formal institutions that foster growth (market economy rules in this case), the more successful that economy will be in the short run after the change in formal rules.³²

An illustration of this argument is offered in essay 3 of this thesis, albeit at a micro level. It will be shown empirically how variations in the pre-existing social networks mattered for the post 1989 organizational structure of the Czech agriculture. In the context of a neutral legal environment, the degree of farm restructuring is highly dependent upon the characteristics of the original socialist farms.

How did the inherited level of social capital affect the post-1989 environment? This question goes to the core of the present argument. Concisely, social capital was painstakingly built during the communist period through a learning process that involved both the opposition and people inside the regime. In some countries, there had been massive protests against the communist regimes (e.g. Hungary in 1956, Czechoslovakia in 1968, Croatia in 1971-1972, Poland in 1980-1981, and Baltic States in 1988-1990). These events created not only the consensual perception that communism should be challenged and could be challenged with some degree of success, but also the opposition elites who were able to embody this spirit in 1989.

³² Cornell and Kalt (1995) present a similar view with respect to the impact of cultural norms on the relative success of the federally imposed constitutions in the case of US Indian reservations. The relatively successful Apaches benefit from pre-existing political norms that (serendipitously) match the structure of their formal constitution, whereas the impoverished Sioux lack suitable "rules of the game" that would favor effective self-government.

These very elites sat down at the famous round-table talks and negotiated the terms of transition with the incumbent communists. These talks did not take place or were inconsequential in countries not yet “ready” for the transition. In these cases, a viable opposition had to arise after the collapse of communism, when the “common enemy” acting as a coordinating device was gone while pork-barrel politics had started to dominate policy-making. This weaker opposition, even when it had managed to win elections after a few years of rule by former communists, was not able to muster enough support to carry on important reforms except maybe during crises (e.g. Bulgaria in 1997, Romania in 1999).³³

The roundtable talks can be thought of as a bargaining process between the representatives of the communist regime and those of the civil society. These talks represent a cornerstone of the transition process not only because they mark its starting point, but also because they represent a fundamental change in the political landscape. The move from an autocratic society, where the regime does not overtly negotiate with its subjects, to an incipient democracy, where input from other forces in the polity is considered, has brought about important changes for the transitional countries far beyond the political realm.

The roundtable talks between the incumbent regime and oppositional groups shaped the emerging polity by defining the conditions under which “free”

³³ Acting Romanian president Constantinescu, leading a government that toppled the reformed communists, declared in 1997, “We won the elections but not the power”. Similarly, the Iranian reformists led by President Khatami may have held a majority of seats in parliament after the 1999 elections, but the real power lay with the conservatives dominating the judiciary, law enforcement, and the Assembly of Experts that can veto legislation passed by parliament. (The Economist, 2000).

elections will be held, and a new constitution will be written.³⁴ These new rules governing the early transitional period will turn out to have a substantial impact on subsequent developments, including those of economic relevance.

The reason for the existence of the talks has everything to do with the dismal performance of the communist economies. The regimes entered the talks hoping they would get some support for their economic reforms and gain access to western aid, while preserving the social peace. In return, some democratic reforms would be introduced, stopping short of relinquishing power. However, given the uncertainty of the bargaining outcome and its dynamic nature, no party could predict the extent of the changes resulting from it.

The characteristics of the bargaining process would naturally influence the outcome. There were differences among the Eastern European countries. In Poland, Solidarity had modest claims initially and got comparatively less out of the compromise with communists. The Hungarian opposition had far-reaching political goals and got a better deal. Talks in German Democratic Republic, Bulgaria, and Czechoslovakia envisioned broader changes but the different outcomes reflected the variation in relative bargaining power of the actors. There no formal talks per se in Romania, due in part to the overwhelming strength of the incumbent communists. However, there were some consultations regarding the election schedule and access to media.

³⁴ Since democratic mechanisms such as a free press are yet to emerge, a genuinely free polling process is unlikely to concretize at the outset of transition. Moreover, inherited attitudes towards political participation and the inherent lack of democratic experience might prevent the materialization of public interest through elections.

For their part, some communist regimes went through a learning process of their own before 1989. Partly triggered by public pressure, partly prompted by abysmal economic results, some countries embarked on hesitant reforms by trying to relax the over-centralization of the economy (Lavigne – 1999, chap. 3). These attempts were bound to fail as long as the Communist Party did not relinquish the firm grip on the economy. However, these efforts made the party bosses more likely to agree to round-table talks in 1989. It is no fluke that the countries at the forefront of the communist-led reform process of the 1960s and 1970s, remain at the forefront today.

A telling case study is that of Hungary, for which the democratic quality and the advanced reforms of today are the fruits of the “handshake tradition”. According to Haraszti (2000), this success is due to the negotiated, contractual democratization that took place in 1989 and 1990. Both the former communist elite and the opposition elite showed enough self-restraint so that the round-table talks were possible. Moreover, after communists lost the elections in March 1990, a compromise was possible between the two main factions in the opposition. More importantly, after the reformed communists returned to power in 1994, policy reversion was not feasible due to the same contractual bindings. How was this contract enforced? It turns out that the institution that was instrumental in giving substance to the actual handshake of 1989 was Hungary's Constitutional Court. Originally created to alleviate fears from both sides, this

Court succeeded in preserving the original consensus needed to build successfully on the communist ashes.³⁵

1.7 Concluding Remarks

This paper attempts to answer one of the main puzzles in the transition literature, namely why there are such significant discrepancies in economic performance across countries in Central and Eastern Europe after 1989. The emphasis is on explaining ability of these countries to undertake the large changes required in transition. In doing so, it considers the factors that influence the political market interactions, which, in turn, sets the stage for economic interactions.

There were no transition theories in 1989 describing the optimal steps to transform the “real existing socialism”, as opposed to the “ideal” one, into a stable market economy and a pluralistic political system.³⁶ The boisterous collapse of the system in 1989 surprised the overwhelming majority of researchers. The ensuing lack of *a priori* design led to ad hoc reform policies that, more often than not, resulted in destruction without much creativity, in shock but not enough therapy.³⁷ The task is to distinguish the factors that helped some countries to implement market reforms effectively.

There seems to be a strong positive correlation between the economic reforms, as measured by EBRD indicators of reform, and the economic

³⁵ For a similar account of the Polish “Velvet Revolution” see Michnik (2000).

³⁶ See Lavigne (1999), p. 3 on this distinction.

³⁷ For an optimistic view on transition, see Aslund (1994); for a less rosy one see Berend (2000).

performance reflected in the evolution of GDP after 1989.³⁸ Both the length and the depth of recession were drastically reduced whenever significant and lasting reforms were implemented early during transition. In other words, reform pays. However, it is not so clear why some countries did not succeed in carrying out early and sustainable reforms or, if attempted, reforms were not effective. This is the focus of this paper.

A theory seeking to explain the ability to undertake changes of the magnitude of those required in the former communist countries is offered. Economic variability will then stem from this different ability to implement reform. Strategic interaction has great potential in explaining the social and economic outcomes of the transformation process that started in Central and Eastern Europe in 1989. A bargaining model that mirrors the round-table talks that preceded the political and social changes in the former communist countries is proposed. The outcome is either a significant departure from the “old ways”, which would correspond to a successful transition, or a superficial change, which led to economic and social crises unusual during peacetime. The former requires a smart use of the window of opportunity following the collapse of communism, which allows easier implementation of painful reforms.

In turn, what determines the bargaining process? Countries embarked on transition from very different starting points. For example, prices had been partially adjusted in Poland and largely freed in the former Yugoslavia and Hungary before the end of 1980s. Non-economic factors - politics, history,

³⁸ EBRD (1999).

culture, and geography - also differ significantly across these countries. The focus here is on tracing back the choice of policies, which has varied greatly across nations, to the relevant factors that characterized these countries at the onset of transition. The concept of social capital is instrumental in this analysis.

Social capital is two-pronged here. One dimension of social capital is represented by the presence and relative prominence of social groups in the communist society other than nomenklatura (e.g. intellectuals' forum Charta 77 in Czech Republic, Solidarity labour union in Poland, nothing in Romania). The other dimension characterizes the level of interpersonal trust and social cohesion among individuals, allowing for low cost solution to prisoner dilemma and principal-agent types of interaction. These two dimensions would determine the manner in which political and economic markets work.

More research effort is warranted along these lines. While economic reform is highly desirable, less emphasis seems to be placed by the transition literature on its feasibility aspects. Specifically, further studies of a country's ability to implement reform have to consider the characteristics of the political sector as determinants of the likelihood of success.

1.8 Appendix

Proof of proposition 1.1

The goal is to show that $t > 0$ at every point along the frontier while the payment transfer in the opposite direction z is always zero if both transfers are costly. In order to set up a proof by contradiction, positive costly transfers from the state sector to the market sector are allowed ($z \geq 0$), together with the associated transfer costs ($D(z) \geq 0$). Since the institutional arrangements needed to enforce larger transfers are costlier, it is natural to assume that:

$$C(0) = D(0) = 0, C'(0) = D'(0) = 0, C' > 0, D' > 0 \text{ for } t, z > 0, C'' > 0, D'' > 0 \text{ for } t, z \geq 0 \quad (1.A1)$$

The solution to the following problem provides a point on the Pareto frontier:

$$\max_{\{\theta, t, z\}} f_S(1 - \theta) + t - z - D(z) \text{ subject to } f_M(\theta) - t + z - C(t) \geq \Pi_M^0, t \geq 0, z \geq 0$$

The Lagrangian³⁹ is $\tilde{L} = f_S(1 - \theta) + t - z - D(z) - \lambda(\Pi_M^0 - f_M(\theta) + t - z + C(t))$. The complete first-order conditions follow:

$$\frac{\partial \tilde{L}}{\partial \theta_M} = -f'_S + \lambda f'_M \leq 0 \quad (1.A2)$$

$$\frac{\partial \tilde{L}}{\partial t} = 1 - \lambda(1 + C') \leq 0 \quad (1.A3)$$

³⁹ I use an equivalent type of Kuhn-Tucker Lagrangian that does not require explicit non-negativity constraints for t and z (see Simon and Blume – 1994, p. 440).

$$\frac{\partial \tilde{L}}{\partial z} = -1 - D' + \lambda \leq 0 \quad (1.A4)$$

$$\frac{\partial \tilde{L}}{\partial \lambda} = \Pi_M^0 - f_M + t - z + C \geq 0 \quad (1.A5)$$

$$\theta \frac{\partial \tilde{L}}{\partial \theta} = \theta (-f_S' + \lambda f_M') = 0 \quad (1.A6)$$

$$t \frac{\partial \tilde{L}}{\partial t} = t (1 - \lambda (1 + C')) = 0 \quad (1.A7)$$

$$z \frac{\partial \tilde{L}}{\partial z} = z (-1 - D' + \lambda) = 0 \quad (1.A8)$$

$$\lambda \frac{\partial \tilde{L}}{\partial \lambda} = \lambda (\Pi_M^0 - f_M + t - z + C) = 0 \quad (1.A9)$$

Let us take the case of $t > 0$ and $z > 0$. From equations A1 and A8 we get that $\lambda = 1 + D' > 1$ whenever $z > 0$. On the other hand, equation A7 implies

$$\lambda = \frac{1}{1 + C'} < 1 \text{ when } t \text{ is positive. This contradiction establishes that both transfers}$$

cannot be strictly positive simultaneously in equilibrium.

Let us now consider the case of $t = 0$ and $z > 0$. Equations A1 and A2

require $\lambda \leq \frac{f_S'}{f_M'} < 1$. However, according to equation A8, $\lambda = 1 + D' > 1$. This

contradiction rules out the case of zero transfers to the incumbent coupled with positive transfers from the incumbent.

The two cases considered above prove that it is impossible to have $z > 0$ as long as t is available as an option. The only remaining possibility is that of $t \geq 0$ and $z = 0$. As a result, the possibility of positive payment transfers from the incumbent to the opposition will be disregarded. ■

Proof of Proposition 1.2

In order to obtain a point on the Pareto frontier, θ_M and t are chosen so that they maximize the expression

$$f_S(\theta_S) + t \quad \text{subject to} \quad f_M(\theta_M) - t - C(t) \geq \tilde{\Pi}_M, 0 \leq \theta_M \leq 1, t \geq 0$$

where the first constraint places a lower bound on the utility of the M player. The constraints can be re-written so that they amount to two inequality constraints and two standard non-negativity constraints (). Using the setting advocated by Simon and Blume (1994) on page 441, the modified Lagrangian becomes $L = f_S(1 - \theta_M) + t - \lambda_1 \left(\tilde{\Pi}_M - f_M(\theta_M) + t + C(t) \right) - \lambda_2(-1 + \theta_M)$. The first order conditions follow:

$$\frac{\partial L}{\partial \theta} = -f'_S + \lambda_1 f'_M - \lambda_2 \leq 0 \quad (1.A10)$$

$$\frac{\partial L}{\partial t} = 1 - \lambda_1 (1 + C') \leq 0 \quad (1.A11)$$

$$\frac{\partial L}{\partial \lambda_1} = -\tilde{\Pi}_M + f_M - t - C \geq 0 \quad (1.A12)$$

$$\frac{\partial L}{\partial \lambda_2} = 1 - \theta_M \geq 0 \quad (1.A13)$$

$$\theta_M (-f'_S + \lambda_1 f'_M + \lambda_2) = 0 \quad (1.A14)$$

$$t(1 - \lambda_1 - \lambda_1 C') = 0 \quad (1.A15)$$

$$\lambda_1 (\tilde{\Pi}_M - f_M + t + C) = 0 \quad (1.A16)$$

$$\lambda_2 (1 - \theta_M) = 0 \quad (1.A17)$$

There are six cases of interest with respect to the nature of the solutions (i.e. interior or not): $0 < \theta_M < 1$ and $t > 0$, $0 < \theta_M < 1$ and $t = 0$, $\theta_M = 1$ and $t > 0$, $\theta_M = 1$ and $t = 0$, $\theta_M = 0$ and $t > 0$, and $\theta_M = 0$ and $t = 0$. The last three cases are ruled out by assuming that the disagreement points are non-negative, so we will analyze the remaining three cases below.

The endogenous variables are θ_M and t , while $\tilde{\Pi}_M$ is exogenous. Let us consider the two cases in which θ_M belongs to $(0, 1)$ first. The Pareto frontier – the locus of efficient points in the (Π_M, Π_S) space – is given by the following expression:

$$\Pi_S = f_S(\theta_S) + t + \lambda_1 \left(f_M(\theta_M) - t - C(t) - \tilde{\Pi}_M \right)$$

Note that regardless of the value for t in equilibrium, as long as $0 < \theta_M < 1$, the last first order condition requires λ_2 to be zero. In the (Π_M, Π_S) space, this frontier becomes:

$$\Pi_S(\Pi_M) = f_S(\theta^*(\Pi_M)) + t^*(\Pi_M) + \lambda^*(\Pi_M) (f_M(\theta^*(\Pi_M)) - t^*(\Pi_M) - C(t^*(\Pi_M)) - \Pi_M) \quad (1.A18)$$

Let us consider first the case of $0 < \theta_M < 1$ and $t > 0$. Since t is larger than zero, relationship (1.A11) holds with equality. Using the equation (1.A11) and applying envelope theorem on (1.A18) results in:

$$\frac{d\Pi_S}{d\Pi_M} = -\lambda(\Pi_M) = -\frac{1}{1 + C'(t^*(\Pi_M))} < 0$$

$$\frac{d^2\Pi_S}{d\Pi_M^2} = \frac{C''(t^*(\Pi_M)) \frac{dt}{d\Pi_M}}{(1 + C'(t^*(\Pi_M)))^2}$$

In order for the Pareto frontier to be strictly concave, $\frac{dt}{d\Pi_M}$ is required to be strictly negative in the last equation. Since λ_2 is zero and (1.A10) holds with equality, λ_1 is strictly positive. Rearranging what are now equations (1.A10) – (1.A12) as implicit functions gives:

$$F_1(\theta_M, t, \Pi_M) = f_M(\theta_M) - t - C(t) - \tilde{\Pi}_M = 0$$

$$F_2(\theta_M, t, \Pi_M) = f_S'(1 - \theta_M)(1 + C'(t)) - f_M'(\theta_M) = 0$$

Using the implicit function theorem with θ_M and t as endogenous variables, and assumptions 1.1 and 1.2, results in:

$$\frac{dt}{d\Pi_M} = \frac{f_S''(1 + C') + f_M''}{f_S' f_M' C'' - (1 + C')^2 f_S'' - (1 + C') f_M''} < 0$$

This completes the proof that the Pareto frontier is strictly concave in the case of $0 < \theta_M < 1$ and $t > 0$.

Let us now consider the case of $0 < \theta_M < 1$ and $t = 0$. Since $0 < \theta_M$, relationship (1.A11) holds with equality and, according to assumption 1.1, λ_1 is larger than 0. This, in turn, requires (1.A4) to hold with equality. As such, $\tilde{\Pi}_M = f_M$. Let us define the following implicit function: $G(\theta_M, \Pi_M) = f_M(\theta_M) - \Pi_M = 0$. The first and second derivative of the Pareto frontier (1.A18) with respect to Π_M are:

$$\frac{d\Pi_S}{d\Pi_M} = -\lambda(\Pi_M) = -\frac{f'_S}{f'_M} < 0$$

$$\frac{d^2\Pi_S}{d\Pi_M^2} = (f'_M)^{-2} (f''_S f'_M + f'_S f''_M) \frac{d\theta_M}{d\Pi_M}$$

The concavity is secured if $\frac{d\theta_M}{d\Pi_M}$ is positive. Using the implicit function G defined above, we obtain $\frac{d\theta_M}{d\Pi_M} = \frac{1}{f'_M} > 0$. This completes the proof that the Pareto frontier is strictly concave in the case of $0 < \theta_M < 1$ and $t = 0$.

The last case to analyze is $\theta_M = 1$ and $t > 0$. The Pareto frontier now becomes:

$$\Pi_S(\Pi_M) = f_S(\theta^*(\Pi_M)) + t^*(\Pi_M) + \lambda_1^*(\Pi_M) (f_M(\theta^*(\Pi_M)) - t^*(\Pi_M) - C(t^*(\Pi_M)) - \Pi_M) + \lambda_2^*(1 - \theta_M)$$

Since $\theta_M = 1$ and $t > 0$, (1.A14) and (1.A15) imply that (1.A10) and (1.A11) hold with equality. (1.A15) yields $\lambda_1 = \frac{1}{1+C}$. The Pareto frontier results in:

$$\frac{d\Pi_S}{d\Pi_M} = -\lambda(\Pi_M) = -\frac{1}{1+C(t^*(\Pi_M))} < 0$$

$$\frac{d^2 \Pi_S}{d\Pi_M^2} = \frac{C''(t^*(\Pi_M)) \frac{dt}{d\Pi_M}}{(1 + C'(t^*(\Pi_M)))^2}$$

Rearranging (1.A16) yields $H(\theta_M, t, \Pi_M) = f_M(\theta_M) - t - C(t) - \tilde{\Pi}_M = 0$. In turn, the implicit function theorem assures us that $\frac{dt}{d\Pi_M} = -\frac{1}{1+C'} < 0$. Hence, the Pareto

Frontier is strictly concave in the case of $\theta_M = 1$ and $t > 0$. ■

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ESSAY 2:

INITIAL CONDITIONS AND ECONOMIC REFORM

2.1 Introduction

In the period from 1989 to 1991, communist regimes throughout Central and Eastern Europe, as well as the former Soviet Union collapsed. Considered by many as the most important world event of the second half of the twentieth century, the fall of communism ushered in a new geopolitical era and prompted some observers to characterize it as “the end of history” (Fukuyama – 1992). Social scientists should find the study of post-communism fascinating given the unparalleled scope and pace of the social, economic, and political transformations under way. A lab of systemic proportions has opened up in the real world, creating a wealth of data that can be used to inform policy in established market economies as well. One can only hope this experiment will be a lot less trying on its subjects than the one prior to 1989 was.

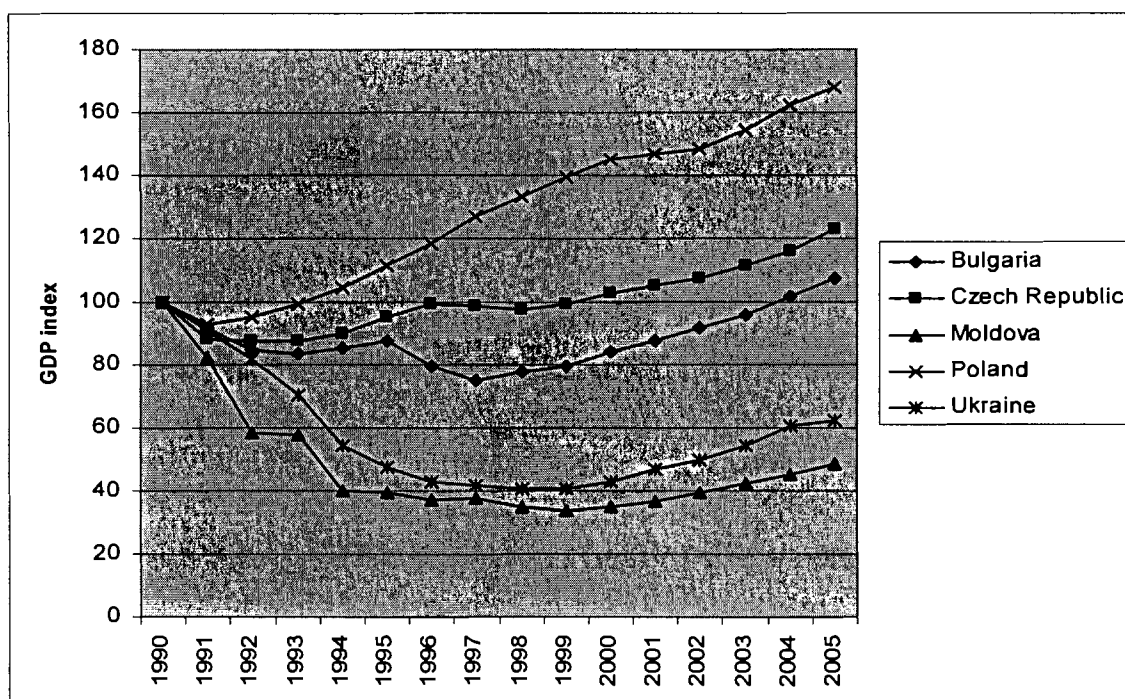
There is a large body of literature investigating the impact of policy variables and initial conditions prevailing in 1989 on economic growth in the transition countries: de Melo et al. (2001), Fisher, Sahay, and Vegh (1996), Berg et al, (1999), etc. These studies address questions relating the economic performance after 1989 to characteristics of the macroeconomic environment, the depth of the structural reforms, including measures of institutional quality, and a wide variety of initial conditions characterizing the starting point of transition.

One of the central puzzles addressed by this literature is the enormous differences in economic outcomes characterizing the transition economies (see Figure 2.1 for a glimpse of this diversity).⁴⁰

Some countries, such as Poland, Hungary, and Estonia, rebounded well after the unavoidable transitional recession, almost doubling their 1989 GDP by 2007. Laggards such as Moldova and Ukraine still struggle with GDP levels well below the 1989 mark. The rest are located somewhere in between. Well-documented studies have shown that the magnitude of the recession for the region as a whole has surpassed both in relative and in absolute terms that of the Great Depression for the Western economies. As such, an inquiry into the causes of this lingering recession is warranted.

⁴⁰ The source for the data used to create Figure 1 is the official web site of United Nations Economic Commission for Europe, www.unece.org (last accessed: April 11, 2007).

Figure 2.1 Real GDP over time (1990=100)



Most of the above-mentioned studies are empirical and focus on finding explanations for the economic outcome disparity. The explained variables were growth rates or output levels, while the main explanatory variables included measures of reform, such as the price liberalization and privatization indexes created by World Bank or the European Bank for Reconstruction and Development (EBRD), and occasionally variables gauging a wide range of initial conditions. However, few studies allow variables describing the political and cultural heritage of these countries to play a central role in the inquiry. Since the political sector is the area where policies are, to a large degree, initiated, debated, decided upon, and implemented, these variables could play a potentially important role in explaining policy choices. In turn, as virtually all

studies have shown, policy variables have a strong influence on economic growth.

If reform pays, why has not it been implemented widely and deeply? This paper accounts indirectly for the cross-country differences in economic performance by investigating the ability to implement structural reforms effectively, which, after all, represents the essence of the transition process. As Steven Cheung put it, “the problem of reforming a communist economy is to move at least cost from a system where rights are defined in terms of hierarchy, to a system where rights are defined in terms of property” (Cheung, 1998). Since the workings of the political markets govern this metamorphosis to a large extent, the focus of this paper is on the characteristics of the political system early in the transition process.

Once the polity-defining choices are made early in the transition, it is difficult if not impossible to change course and re-open discussions on rules defining how “the rules of the game” change.⁴¹ As time goes by, the process of change wanes to ordinary levels, as opposed to revolutionary levels, and the rules of the game change at a slower pace than in the initial phase of transition.

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⁴¹ A country's constitution embodies the fundamental rules of the (political and economic) game. However, in the context of this paper it is useful to adopt a broader definition for “rules of the game”, including informal yet binding agreements among important economic and political actors emerged in CEE countries after 1989. Haraszti (2000) illustrates how informal agreements improved the quality of transition in Hungary.

⁴² Political developments in Romania, a European Union member, and Ukraine, in the spring of 2007 show that significant constitutional issues can emerge almost two decades of the start of transition.

The costs attached to collective decision making, especially in the case of constitutional provisions, are significant. The double scope of transition, democratization and marketization, also adds to the complexity of this transformation. The presence of these high coordination costs leads to path dependence. Consequently, a "good start" will project a country on a favorable trajectory that otherwise would be inaccessible in the medium run. Hence, the factors governing the initial policy choices gain tremendously in significance.

One crucial factor is the relative strength of the pro-reform and the anti-reform coalitions. For example, oligarchs and members of the *nomenklatura de facto* own the state assets and are likely to oppose reform. State workers may also join the anti-reform coalition as they most likely lack skills that would allow them to succeed in a competitive market. On the other hand, new entrants, both in the labour and political market, are likely to do better if reforms are implemented. The interplay of these constituencies will determine the equilibrium outcome.

The theory developed in Essay 1 of this thesis claims that success in transition is tantamount to a significant transfer of assets to the private sector. This transfer is a function of three factors: (i) the relative bargaining power of the pro- and anti-reform coalitions; (ii) the disagreement points for each side (i.e. what happens if they fail to strike a deal); and (iii) how costly it is for the pro-reform coalition to compensate the anti-reform coalition for their losses. The last point (iii), in particular, is affected by the pre-existing social capital because this

helps to determine whether the anti-reform coalition can trust the pro-reform one to deliver on their promises of compensation.

This study uses data on 25 transition countries to shed light on the impact of the initial conditions, especially those characterizing the emerging political sector, on subsequent policy choices⁴³. The relevant period is 1991-2005. A wide range of explanatory variables gauging reform will be used, from reform indexes published annually by EBRD (e.g. covering price liberalization, privatization, enterprise reform, banking reform, etc.), to the contribution of the private sector to GDP, and to Freedom House indexes characterizing economic and political environments in these countries. Explanatory variables will focus on the characteristics of the political markets, such as the outcome of the founding elections or the existence of pre-conditions that will facilitate the emergence of a pro-reform, alternative political pole. In addition, variables measuring the extent of the initial macroeconomic and structural distortions, as well as variables measuring social capital (e.g. interpersonal trust or confidence in the state institutions) will be used.

Using a testing-down procedure to get to a parsimonious specification, the ordinary least squares regression method will be used throughout to estimate the proposed cross-sectional models. Extensive robustness checks will be implemented by employing alternative regressands and regressors for the key

⁴³ The Central and Eastern European and former Soviet Union countries considered here are Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Macedonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

variables. The problem of the small sample size of 25 is bound to play some role in this case. However, exogeneity will not be a concern since all explanatory variables are either pre-determined or exogenous.

The main empirical findings include strong evidence of a core group of variables affecting the ability of implementing reform. This group includes the outcome of the founding elections, experience with political or economic reform prior to 1989, and the existence of an informed public. These variables are robust with respect to various measures of reform. In addition, specifications seem to be quite stable over time, even though more factors seem to play a role in the earlier periods. In general, I conclude that the hypothesis of a causal effect running from initial conditions, especially those related to the political sector, to the depth of reform has solid support in the data. These results are consistent with the theory developed in Essay 1 of this thesis. Moreover, other factors affecting reform that were deemed important by the literature also perform well in the proposed framework.

This essay differs from other studies in two respects. First, the focus is on the determinants of reform ability, rather than the determinants of economic growth. Second, the emphasis falls on the characteristics and behaviour of the political markets at the beginning of transition. Specifically, the question is whether the political market is competitive enough to allow for a clear break from the old economic order, which represents a necessary condition for success in transition.

The rest of the paper is organized as follows. Section 2 will offer a review of the existing literature and will develop specific hypotheses, including ones that are based on my own theoretical work in Essay 1. Section 3 will present the data while Section 4 will discuss estimation methods and present the statistical results. Finally, Section 5 will provide some remarks on the political economy of transition.

2.2 Literature Review and the Resulting Hypotheses

Market-oriented policy reforms target several areas. Moving away from a centrally planned economy requires hardening the budget constraints, encouraging competition in markets by making entry and exit easier, and setting up an incentive scheme targeting the state sector that leads to production and innovation rather than asset stripping. Not unrelated, the investment climate has to become friendlier for both the incumbent state enterprises and the new private ones, facilitating re-allocation of assets to more efficient uses and their augmentation, as well as establishing new production capacity. Once those assets are in place, the economic environment has to provide incentives for wealth creation rather than wealth distribution.

The transition laggards, as measured by the recovery following the transformational recession, no longer have socialist economies, but seem to be suspended somewhere between the departing point and a genuine market economy. This state of affairs is explained, somewhat tautologically, by the lack of reforms that would have achieved a successful transformation. Alternatively,

adverse initial conditions such as over-industrialization, a distorted trade structure, differing prospects for EU accession, civil wars, etc. hampered the ability of some countries to reform their economy. If these initial conditions played a role in transition, both directly and by influencing policy formation, how important was this role? Does the impact of initial conditions peter out over time or does it persist via path dependence? ⁴⁴

The empirical literature on transitional economies generally describes the intricate connection between four groups of explanatory variables ranging across countries and time. The first group of variables describes the economic performance of these countries and includes standard measures of output such as GDP levels or growth rates. The second group includes variables measuring the advances along various dimensions of reform, such as the extent and quality of privatization, the degree of hardening of budget constraints for enterprises, or the degree of competition present in markets. Since the essence of transition is moving toward a market economy, a sound measurement of the progress along this path is *sine qua non*. The tie to the first group is straightforward: the more reform is implemented, the better the output performance will be.

The third group comprises structural variables. They describe some aspects of the macroeconomic environment, such as employment structure or fiscal balance, the composition of output, such as the share of the industrial sector in total output or the contribution of private sector to GDP, the structure,

⁴⁴ It is challenging to discern empirically the two causal channels. For example, in the case of a war, economic growth can be hampered directly by slower spending on consumption and investment, as a wait-and-see attitude prevails, and indirectly, as the focus moves away from reform toward more pressing issues.

and size of the trade sector, or the relative importance of foreign direct investment in total investment. This group describes the makeup of the economy in a more standard, neoclassical fashion, while the second group of variables targets the institutional quality of the emerging economic environment.⁴⁵

The fourth group of variables describes the initial conditions characterizing the economies at the start of transition. They are stock measures of certain variables in the first three groups, plus a set of characteristics of the political sector at the onset of transition. This wide array of initial conditions potentially affects the economic performance directly (e.g. the amount of capital existent in 1989), but also indirectly by influencing the ability of the economy to implement and absorb reform (e.g. the presence of an oversized, inefficient agricultural sector in 1989).

Certainly there are cross-determinations characterizing variables in the above groups. For example, it is conceivable that more reform brings a country closer to a market economy that in turn leads to better economic performance over time. At the same time, strong growth necessarily entails more exchanges and, therefore, creates the need for more diverse and better functioning market institutions and the demand for further reforms. As a result, endogeneity usually mars estimations comprising the above variables. This issue is tackled by using pre-determined and/or instrumental variables.

⁴⁵ It can be argued that the characteristics of the competition law and its enforcement characteristics, or the nature of the regulatory environment targeting the financial sector, for example, are also describing the "structure" of the economy. However, in the context of transitional economies the distinction between the second and the third groups of variables becomes important.

In their most general form, the empirical models are set up in the following fashion:

$$Y_{i,t} = F(S_{i,t}, S_{i,t-1}, \dots, Q_{i,t}, Q_{i,t-1}, \dots; X_i) + \varepsilon_{t,i} \quad (2.1)$$

$$Q_{i,t} = G(Q_{i,t-1}, \dots, Y_{i,t-1}, \dots, S_{i,t-1}, \dots; X_i) + \eta_{t,i} \quad (2.2)$$

$Y_{i,t}$ is a measure of output performance for country i in year t , $Q_{i,t}$ is an institutional variable measuring advances toward a market economy throughout the transition period, $S_{i,t}$ is a vector of structural variables, and X_i is a vector of observable, country-specific initial conditions. Good candidates for $Q_{i,t}$ include the EBRD reform indices or measures of the quality of institutions such as Freedom House's corruption and political rights indices.

A plethora of empirical studies focuses on models described by equation (1.1). A substantial portion of the empirical literature dealing with transitional issues focuses on explaining the quite divergent growth spectrum of CEE countries as described in Fig. 1. While important in justifying the need for reform and in understanding how reforms propagate throughout the economy, this link brings up more questions. If market reforms pay big dividends in terms of subsequent high economic growth, why is it that some countries fail to implement them even years after the transition started? Further, what were the factors that allowed some countries to stay within a virtuous circle of reforms, sustaining and even accelerating reforms, while others hovered around the starting point for over a decade, halving their GDP in the process?

These questions, lying in the realm of political economy, are the subject of this essay. In terms of the empirical models introduced above, this inquiry concerns itself with equations such as (2.2), tying variables tracking reform to structural variables and a comprehensive set of initial conditions, including those characterizing political markets. In terms of the variable list introduced previously, the explained variables will come from the second group, while the bulk of the explanatory variables will originate within the fourth group. Before turning to the literature closer to this investigation, a brief review of the existing research on the causal link running from economic reform to economic performance is warranted.

The theoretical literature on growth in transition can be divided into two large areas. One focuses on the initial fall in output, the other on medium-term aspects of growth. No long-run issues can be analyzed. Transition started less than two decades ago and was since characterized by tremendous upheaval. Several explanations for the initial fall in output were offered. They range from a Keynesian-type recession (Blanchard et al – 1991), to “trade implosion” (Calvo and Coricelli – 1992), to “transformational” recession, specific to the change of the economic system (Kornai – 1994). Further, missing institutional factors that directly prompted the output fall include credit market imperfections and “disorganization”, related to the breakdown of economic relations making up the old regime.

Another common issue tackled by the transition literature considered the sectoral reallocation of resources, both across industries but also, much more important, from the state sector to the private sector. The Schumpeterian process

of “creative destruction” was invoked to predict an increase in productivity flowing from the expansion of a more efficient private sector. This leads to the implication that a fast transition process is required in order to shorten the period of output decline. In turn, a large strand of literature emerged focusing on the optimal speed of reform. Aghion and Blanchard (1994), one of the most influential papers in this area, uses a two-sector search model that endogenizes the speed of transition as a function of labour market frictions and the capacity of the state to tackle unemployment in short run.

Most transition economies inherited severe macroeconomic distortions, such as the existence of a large black market premium for foreign exchange, the existence of repressed inflation coupled with huge budget deficits, by generally high levels of external debt, and a centrally administered pricing system. Does the presence of significant distortions hinder or favour reform?

A case can be made for the former: the losses stemming from tackling these distortions are concentrated, hurting economic interests built on the very existence of these distortions, while the benefits are quite diffuse. Hence, vested interests will successfully trounce reform in this area, creating a culture that avoids rule of law as a by-product. However, we incline toward the latter: macroeconomic reforms have lower costs than those pertaining to, for example, industrial restructuring, have a broad appeal with voters, and are likely to constitute the focus of the international institutions with a state in the reform process.

H₁: The presence of severe initial macroeconomic distortions, while hindering growth early on, can constitute a catalyst of reform, *ceteris paribus*.

In addition to macroeconomic distortions, centrally planned economies inherited significant structural distortions. Labour was allocated poorly across sectors: some countries were plagued by an oversized agricultural sector, while others had an artificially large industrial sector. A severely underdeveloped service sector characterized all economies. Trade was geared toward fellow communist economies in an administrative scheme exhibiting very little economic rationale. Capital stocks were generally high across the board, yet inefficiently used.

H₂: The presence of severe initial structural distortions, is both affecting growth early on and adds to the cost of implementing economic reform.

Before I turn to the literature on the causal link from initial condition to reform and introduce further hypotheses to be tested empirically below, I will provide a lens to be employed in assessing the factors affecting reform. This lens is useful in providing a unifying framework concerning economic reform and represents one of the contributions of this essay.

As mentioned in the introduction, the transition process can be thought of as a move from a certain highly centralized system of property rights over assets, mainly characterized by common property lacking appropriate formal definition,

to a much more decentralized one where private property rights are properly spelled out and enforced. Since defining and enforcing a new set of property rights over productive assets compatible with a market economy is itself an important aspect of economic activity (i.e. it consumes resources), understanding the determinants of success in transition requires the study of the “production function” of this particular activity. Let us denote these special production costs by transaction costs (Wallis and North, 1986). If these costs are large, less of this activity will be undertaken. On the other hand, if a series of factors concur in creating an environment allowing for low costs of transacting, more production will take place and will lead to a successful transition process.⁴⁶

Henceforth, this framework will be used to search for factors that facilitate success in transition. The focus is on determinants of the level of transaction costs as defined above. Further support for this framework will be provided by the overlap with Essay 1 of this thesis, as shown below. While it is true that economic environments in transition countries change tremendously and, therefore, the “general level” of transaction costs will vary over time, for the purpose of the question at hand it is useful to employ a static framework. In order to make the research question manageable, this study attempts to characterize the level of transaction costs at the onset of transition. Initial conditions then become crucial in explaining the movement along the reform path. To the degree

⁴⁶ The use of the concept of transaction costs is consistent with the definition used in essay 1 and 3 of this thesis, as provided by Allen (1991). The only twist is a macro view of these costs. However, this perspective is a natural extension of the concept when applied to a systemic change in property rights, rather than being applied to property rights over a simple asset.

to which path dependence is present, initial conditions influence economic performance beyond the first few years of reform (North – 1997).

There are, broadly, two mechanisms underlining the level of transaction costs in a transitional economy. The first mechanism that underpins the ease of transacting as defined above is represented by the political sector. This realm is paramount for the developments pertaining to the collapse of the communist regime and the formation of the successor polity. The new rules of the game in the political sector will be instrumental for the nature of the new economic system. The second mechanism refers to factors affecting the ability of the economic agents in these economies to solve collective action and coordination problems. It refers to issues related to trust and trustworthiness, heterogeneity with respect to ethnicity and religion, the nature of the informational infrastructure of the society (e.g. schooling, media), the existence of a clear and commonly agreed upon target (i.e. building democracy, market economy), and so on.⁴⁷

I now turn to the first mechanism for a detailed analysis and the derivation of the relevant hypotheses. The political economy of reform has to consider the positioning of the main constituencies in transition vis-à-vis reform. State sector workers, by and large, lacked skills that are necessary to do well in a competitive market and, hence, associated reform with a sharp drop in income. As a result, they were likely to oppose reforms. New entrants, such as entrepreneurs and state sector workers with skills and confidence, were likely to do well if significant

⁴⁷ A well-functioning government is instrumental in enhancing the society's ability to deal with collective action and coordination problems. However, for reasons germane to this approach, this paper separates the characteristics of the political sector from other factors affecting the capacity of solving these problems.

reforms were implemented. As a result, they tended to support policies that promoted competitive markets. Oligarchs and insiders, originating mostly from within nomenklatura, constituted the group that owned *de facto* the state assets at the beginning of transition or soon thereafter. Reform, to some degree, was tantamount with wresting the productive assets from their hands and/or minimizing rent seeking and outright theft. As such, they had a stake in opposing, stalling, or even reversing reforms.⁴⁸

The three main constituencies described above each have a different preferred level of reform. The political game played by those three main actors, of which two naturally oppose reform and one favours it, yields the reform equilibrium outcome. It is very likely that a majority favouring partial reforms would emerge. This particular outcome is called a “reform trap”: the state is the prisoner of this *ad hoc* group that, while heterogeneous, can become quite effective in stalling reforms.

The oligarchs and insiders have benefited from initial reforms such as liberalization and privatization, which bring about the creation of *de jure* property rights over assets. However, to the degree to which members of this group lack skills needed to operate successfully in competitive markets, and/or are prisoners of the habit of engaging in rent seeking and tunnelling⁴⁹, they would support partial reforms that stop short of, for example, putting effective corporate

⁴⁸ Beck and Laeven (2005) show that this process was much more prevalent in countries based on natural resources since the latter offer more rent seeking opportunities. Not coincidentally, these are the very economies where state capture by interest groups is also widespread.

⁴⁹ Johnson et al (2000) define tunneling as the transfer of resources out of a company by the controlling shareholder. In the context of transition economies, tunneling can be thought of in broader terms as including asset stripping and theft.

governance and efficient public sector management in place. Vested interests have a lot to gain by keeping the economy halfway between central planning and a functional market economy, muddling reform and extract rents using the lingering distortions (Hellman, 1998, Havrylyshyn and Odling-Smee, 2000).⁵⁰ Hellman concludes that wherever the rent seekers of the previous era remained in power, they subverted change, leading to piecemeal reforms and even reform reversals. This might explain the dreaded “stop and go” process observed in the economies of laggard reformers such as Romania and Bulgaria.

How exactly were these distortions leveraged into lucrative activities? In countries where the incumbent political and economic elite were not removed from power by an alternative political force early in transition, they used their privileged status and connections to retain the *de facto* control of the new economy. The new owners of capital stalled reforms mainly by preserving the highly monopolized economic structure inherited from the previous regime. Since the state barely retreated from the economy, the oligarchs and insiders managed to capitalize on the still-existing subsidies (e.g. subsidized loans, price subsidies for energy and agricultural products, etc.) and the new regulatory structure they designed (e.g. preferential tax treatment, trade licenses, etc.). Often newly created private firms existed only as a vehicle used to siphon funds from state

⁵⁰ Hellman (1998) concludes that wherever the rent seekers of the previous era remained in power, they subverted change, leading to piecemeal reforms and even reform reversals. This might explain the dreaded “stop and go” process observed in the economies of laggard reformers.

enterprises and, as such, represent living proof of a captive state⁵¹, and are key actors in its creation (Hellman, Jones, and Kaufmann - 2000).

What are the factors that would prevent the formation of an anti-reform coalition? Alternatively, what are the factors that facilitate the pro-reform coalition? I will explicitly present below a series of hypotheses involving variables influencing the relative strength of the pro- and anti-reform coalitions, which, in turn, determine the existence or absence of significant reforms.

A “window of opportunity” is available at the very beginning of transition when “extraordinary politics” allows a determined and knowledgeable government to advance reforms swiftly to the point where winners become numerous enough to outvote and/or compensate the losers.⁵² This proved to be a tall order in most cases. Note the implications of the terms “determined”, “knowledgeable”, and “swiftly”. A reformist government, having a clear and effective plan in mind and the logistic capacity to implement it, is needed. Once the critical threshold of reform is surpassed and the reform trap is avoided, the pro-reform constituency takes over and grows steadily over time alongside the economy.

Balcerowicz (1995) notes that the window is short lived since the costs of reforms – “the bitter pill”, another metaphor originating with Mr. Balcerowicz,

⁵¹ For detailed accounts of these illicit mechanisms see, for example, Banaian, 1999, Shleifer and Treisman, 2000, and Serbanescu, 2002.

⁵² This metaphor was offered by Balcerowicz (1995). The lack of ordinariness comes from the unusual enthusiasm characterizing the population at large during the moments following the surprising collapse of the communist regime coupled with the insulation from competition that benefited a reformist government early on, not unlike the “honeymoon” period enjoyed by any new government in the first weeks of its mandate during “ordinary” times.

Poland's finance minister during the first two years of transition – are significant and quick to emerge. Hence, speed in putting a reform-minded executive in power is essential not only to kick start reform, but also to create a momentum that will take the economy far along the reform path. Poland is a case that validates this scenario.

Fish (1998) explains the broad spectrum of reform outcomes in transition⁵³ by a fortuitous combination of several factors: political choices at the outset of transition, the level of foreign assistance, the initial level of economic development, and a contextual factor reflecting culture, religion, and geography. However, inaugural elections are the only robust factor in the empirical analysis. Countries where communists were defeated in the first round of elections tend to pursue reforms more vigorously even after the succeeding government is itself replaced (usually by a reformed, democratic party of communist heritage).

Fish uses World Bank liberalization and privatization scores as dependent variables, and GDP per capita, the extent of indebtedness as of the beginning of transition, foreign economic assistance, and investment, and, a dummy variable coded according the country's dominant religious tradition as independent variables. In addition, Fish consider the nature of the constitutional regime (parliamentary versus presidential), and measures of the outcome of the founding elections as explanatory variables.

⁵³ Reform indexes introduced by EBRD in its Transition Reports issued annually since 1993 are used to measure success in transition.

Univariate regressions using each of the above independent variables show that, while all factors seem to affect reform, initial elections is by far the most prominent one as measured by the adjusted- R^2 of each model. Initial elections remains the most robust variable as well when employed in multivariate regression models with up to five regressors. Further, Fish looks into how initial elections exerted such strong impact on cross-national variation of economic reform. He concludes that elite turnover, the existence of independent loci of economic power in society, the short run versus long run of the political elites' time horizon, and the openness of the political system are key factors for successful reform.

In the light of the above analysis, the outcome of the founding elections looks appears to be a pivotal factor affecting the chances of significant reform. Hence, the first hypothesis to be tested concerns the following causal link:

H₃: electoral success of a reformist-minded party or coalition in the first round of elections brings about significant advances of reform, ceteris paribus.

It is important to recognize that a credible government is required for successful reform, regardless of how soon a pro-reform coalition is in place. On the one hand, this agent of reform signals to the new entrants a clear commitment to reform and hence invites them to join the pro-reform coalition, and, on the other hand, signals to oligarchs and insiders that reform does not need to be a zero-sum game and it is entirely possible for the government to play a mediator/enforcer role. For example, a reformist government could threaten the

anti-reform coalition with imposing constraints by increasing discipline (the stick approach), or to propose a compensation package in exchange for support for reforms (the carrot approach).⁵⁴

To summarize, credibility is two-pronged here: the government declares itself pro-reform and means it (this is credibility as a bona fide agent of reform, most likely referring to the executive branch of the government). At the same time, the government is able to play a convincing and effective role of mediator/enforcer in the game played by the pro- and anti-reform camps (this is credibility as third-party enforcer, most likely referring to the judicial system and bureaucracy in general).

How does the important ingredient, credibility, become the agent of reform? The cultural and historical dimensions characterizing the society emerging from communism are highly relevant here. Clearly, the choices about the structure of the polity determine the incentives politicians have to favor certain policies over others. In turn, reform choices determine the constellation of constituencies further affecting the workings of the polity. This double feedback implies complexity. In the case of the transition countries, the choices regarding the structure of the political system were made quite early, in the large majority of

⁵⁴ Discipline here requires a series of strategies encouraging accountability and more secure property rights. For example, eliminating tax exemptions or fiscal subsidies, improving corporate governance by strengthening the rights of minority shareholders, or enforcing competition laws are just a few avenues strengthening market discipline.

cases before the focus shifted to economic reform.⁵⁵ Since economic reforms have not led to a change in the course of the political transition, with very few exceptions, the causation seems to run from political choices to economic choices.

If transition is about putting in place a new, more efficient, set of property rights, and this transformation is costly, trust is central to the process of consolidating change by affecting directly the level of transaction costs. Trust is a multifaceted concept. On the one hand, it underlies the legitimacy of the government in general and of certain policies with strong economic content in particular. Since the rules of the game (laws, regulations, etc.) are critical for the well-functioning economy and they originate in the state area, confidence in the political institutions undergirds the economic exchanges in a significant fashion.⁵⁶

H₄: The existence of trust (confidence) in the institutions of the state (e.g. the central government, police, political parties, the legal system, bureaucracy in general, etc.) provides credibility for the most likely agent of reform, the government, and therefore facilitates the successful formation of a pro-reform coalition.

Trust also underlies the effectiveness of contracts and agreements in the economic realm not directly sanctioned by the state, as it provides cheaper

⁵⁵ Choosing the shape of the new polity was made deliberately or by default, depending on the nature of the political markets. Countries with a competitive political market use ample consultations to design the rules of the new polity, while the reverse is true for countries with more concentrated political markets at the outset of transition.

⁵⁶ Lovell (2001) has a good overview of trust in the context of post-communist societies.

enforcement mechanisms. Trust is a precondition for cooperation between individuals because it includes specific expectations about the behavior of others. John Lock calls trust the glue that keeps the society together, Kenneth Arrow sees it as a positive “externality” if present (Arrow, 1974). The fact remains that, by its very nature, the communist regime itself created deep mistrust both in the state institutions through a lack of genuine participation in the public affairs, and among individuals through the use of secret police to stifle dissent. While this mechanism worked in a similar fashion across the region, some countries were able to benefit from higher levels of this capital at the beginning of transition than others were.

The evidence shows that the dynamics of the political market did not prove very rich: political markets that were competitive early on stayed competitive while political markets that were monopolized to start with became at best concentrated. This allows us to focus on the status of the political market at the moment zero of transition, investigate the initial degree of competition, find good measures for it, and, if possible, uncover certain sources for this state of affairs.

Closely related, yet distinct from competition, the depth of the political markets refers to the degree of representability. In the context of transition countries, a spectrum along this dimension was defined by two polar cases. In some countries, the political contest included mostly parties representing the incumbent communist elites, which would necessarily fail to represent economic interests outside this small group. While some competition among various

factions of the elite existed everywhere, this arrangement led to a superficial debate of political and economic issues since there were no channels to draw on an encompassing social input.

A more comprehensive participation, which would naturally bring about representability (i.e. the existence of parties crystallizing various economic interests), leads to decisions closer to public interest, which necessarily includes comprehensive reforms. From the absence of representability flows a lack of legitimacy and of credibility. In turn, concentrated political markets witness their actors being busy consolidating their power even more. Weak opposition would further reduce the hopes of a change, which in turn would strengthen the incumbent further, and so on. This vicious circle would make far-reaching reforms quite unlikely.

In other countries, a more competitive political environment prevailed early on. Here, political institutions emerged as a result of a negotiation process between the incumbent communists and representatives of several popular fronts. In addition, the civic life was rich enough to allow for the existence of other organized interests in the society at large, indirectly influencing the outcomes of the roundtable talks. This type of political markets is characterized by a high competition and significant depth, as explained above. These characteristics, wherever they existed early on, were preserved throughout the transition and were more often than not associated with fast and in-depth economic reforms. They were more prevalent in Central European countries.

The characteristics of the communist regime in each country can also be of interest in another respect. By definition, a totalitarian regime is characterized by a political elite having substantial control over every aspect of life, especially mass media and potential political competitors. However, there were differences across countries in terms of how far the state control reached within society. Relatively looser control led to the existence of alternative centres of political power, such as independent labor unions and well-known dissidents.

The presence and the relative strength of these centres lead to different reform paths after the collapse of the communist regimes. In terms of explaining the “why of the why” (Kopstein and Reilly – 1999), that is, why exactly the outcome of the initial elections is such an important factor of reform, availability of alternative leadership is a chief hypothesis. In addition, countries that experienced significant attempts to reform their communist economies, mainly by decentralization, may be in better position to start decisive reforms on the path to a market economy.⁵⁷

The Solidarity movement in Poland played a decisive role in leading the early reform process in Poland, while the revived pre-WWII political parties in post-1989 Romania had a marginal, albeit positive, contribution. Vaclav Havel, a dissident playwright who was imprisoned by the Czechoslovakian communist

⁵⁷ According to Hayek (1935), the key difference between a centrally planned economy and a market economy is not the presence/absence of planning, but the degree of centralization of the decision-making process. The economically relevant information is necessarily available locally in both types of economies. The decision-making is decentralized in economies employing markets, by definition, and therefore economic actors have access to cheap and accurate information. Conversely, the decision makers in centrally planned economies will find it harder to access up-to-date and accurate economic data. Hence, central planning is a costlier coordination device than markets, and therefore less efficient.

regime, but survived it to become the first post-communist president, was instrumental in leading the Civic Forum to victory in the first round of elections. In turn, this reform-minded party played a central role in making Czech Republic a successful reformer.

The presence of an alternative centre of power at the outset of transition, such as independent labor unions, re-surfacing pre-WWII political parties, well-known personalities whose prestige helps gather followers, crystallization of independent media outlets, etc. would create a more competitive political market. "Pluralism in the past helps ensure political pluralism in the present" (Zakaria, 1997). In turn, a true pluralistic society would bring about a more competitive economic environment, which sets the stage for a genuine restructuring of the economy.

This building of support for an alternative political was not a one-time event. Rather, opposition to the communist regime was present from the very beginning in the case of most Central and Eastern European countries. Whenever the anti-communist dissent was strong throughout the communist period (e.g. culminating with an anti-communist revolution in 1956's Hungary), it has led to the coagulation of a legitimate alternative political pole that was highly instrumental in spearheading political and economic reform after 1989.

H₅: The existence of significant protest demonstrations and political strikes before transition started acted as a coagulant for the oppositional forces at the onset of transition, signaled the existence of alternative political poles, and facilitated the emergence of a credible agent of reform.

In addition to the presence of strong and credible alternative leadership that could guide the country on the road of reform, the readiness of voters to support radical/significant change is also paramount. A clear public mandate in favor of change provides incentives for the government to advance reform and reflects the existing determination to shoulder the short-term costs (e.g. putting up with the uncertainty brought about by change). For example, early on in transition the existence of a widespread realization of the necessity to move forcefully away from the old system would facilitate a successful reform.

H₆: The existence of an unambiguous preference for radical reform early on in transition greatly facilitates the emergence of a pro-reform coalition.

Kim and Pirttilä (2006) use panel data on 14 transition countries between 1990 and 1997 to examine the linkages between political constraints and economic reform. Their results show that progress in reforming these economies is positively associated with public support for reforms while controlling for income inequality and inflation as ex post political constraints. Measures of support come from the Central and Eastern Eurobarometer.

Support for reforms can be fleeting, as perceptions shift over time. However, broad participation in public affairs is instrumental in injecting representativeness into the political markets that, in turn, will lead to the materialization of policies embodying the public interest. As such, following the political developments, being interested in politics, and going to the polls are all useful habits for transitional societies.

The more inclined individuals are to act independently, in the sense of not relying on the state for guidance and help in their economic endeavours, the more successful will be the transition from a centrally-planned economy towards a market economy. This type of individual, if present in significant numbers, is also likely to push for changes in the nature of the state, from a paternalistic one that owns most assets and runs the economy with a heavy hand, to one that is busy creating and improving the underpinning institutions of a market economy. This constitutes the essence of the transition process.

The second broad area of inquiry regarding the factors bearing on the ability to reform the transitional economies concerns the coordination and collective action problems. There is a large degree of overlap between the variables and mechanisms described here and the workings of the political markets introduced above. The distinction is introduced for analytical purposes.

Bardhan (2005) stresses the importance of institutions with a significant role in solving coordination problems, as opposed to institutions that define and protect property rights. In particular, he finds that coordination failures are best addressed with a certain mix of mechanisms embodied by the state, the market, and community-level institutions. Bardhan singles out distributive conflicts as a key factor in hindering collective action when it comes to the provision of public goods, an area of crucial importance for development.

Ahrend (2005) performs a study on the growth performance of 77 Russian regions during the first decade of transition. The paper concludes that institutional characteristics such as political orientation of the leaders or political

preferences of the population, and economic reform as measured by the share of regulated prices, the share of private or privatized economic activity, or the extent of subsidies, seem to explain very little of the economic growth differentials for these regions. In turn, initial conditions such as industrial structure and natural resource endowment have a significant impact on performance.

The purpose of reforming the emerging command economies is certainly to increase their efficiency in terms of their ability to create wealth. Large agricultural sectors need to be reorganized and modernized, mostly in terms of moving away from labor-intensive practices. The industrial sector everywhere needs re-technologizing and re-orientation toward the consumer. These reforms are painful and can be postponed if wealth creation can be done in the realm of natural resources, especially oil and gas.⁵⁸

H₇: The presence of a significant natural resource endowment will lead to a lack of sustained reform, *ceteris paribus*.

Turkmenistan is a case in point. Very little economic reform was implemented, even in core areas such as price liberalization or small privatization. In turn, the main feature of the political sector is the existence of a “president for life”. Kyrgyzstan Republic, which has no significant natural resources, is the leading reformer among the former Soviet Union republics in Asia.

⁵⁸ The gains to reform are significant too, but they are made possible only by significant upfront investment. Heavy time discounting and imperfect functioning of the political markets insure that reform is not an attractive option. Oil-rich Middle Eastern countries validate this reasoning by failing to both introduce democratic reforms and diversify their economies.

Central to the existence of a strong drive toward reform is a clear understanding by the relevant actors of the starting and ending points of the transition process. What societies would be more inclined to consider market economy and democracy as viable and desirable alternatives to the centrally-planned economy and totalitarianism, respectively? Those countries benefiting from market and democratic memory, which were able to experience these institutional settings before the communist period, are likelier to have a clearer view of the reform path.

H₈: The shorter the life span of the communist regime in given country, the better the understanding of the direction and dimensions of reform, *ceteris paribus* (i.e. market and democratic memory matters).

Similarly, a better knowledge of the starting and target points of transition is likely to exist in a population with superior education levels. Higher average schooling is likely to make a difference with respect to both understanding the rationale and nature of reform and, most importantly, lowering the individual adjustment costs in a period characterized by tremendous change. Highly correlated with education, fast learning and openness to novel ways are two useful characteristics for individual and countries in transition. Not unrelated, the existence of a rich, balanced, and pervasive media environment would go a long way to facilitate information exchange and policies embodying public interest.

H₉: High education levels and the presence of a multilayered and unbiased media are factors that facilitate reform.

The significance of internal or external conflicts for the health of an economy cannot be overestimated. In the context of transition economies, there was a virtual unanimity among empirical studies concerned with determinants of growth that the presence of war or internal strife plays a huge role.

H₁₀: The existing of an open or a potential conflict or war does not bode well for the prospects of economic reform in a transition country.

The previous existence of a state within the current borders of a country undergoing transition is a tremendous factor facilitating reform. The current polity and economy can draw heavily on at least some of the institutions emerging from the communist past. Stability in this area and the preserved learning attached to it pays dividends at a time when change is prevalent. More importantly, there is no need for significant resources to be assigned to the effort of state formation, leaving economic reform a distant second on the priority list. Bockstette, Chanda, and Putterman (2002) show that, in a sample containing a large set of developing countries, "state antiquity", which is correlated with institutional quality, explains fifty percent of the growth differential.

H₁₁: A country that existed independently within the same borders before the transition started has a better chance to implement successful reforms, ceteris paribus.

Kopstein and Reilly (1999) emphasize the need to explain "the why of the why". What exactly is the avenue through which a sweeping political change translates into a superior capacity to implement reform? They propose several

mechanisms linking the replacement of the communist elites to increased chances of successful reform. Radical initial reform creates independent loci of economic power, which in turn create a demand for a stable macroeconomic environment, a key condition for sustained economic growth.⁵⁹

Secondly, and somewhat paradoxically, an early alternation of political power creates a more stable and open political system than if the incumbent communists remain in power.⁶⁰ The rotation breeds a democratic spirit that is missing in an unreformed polity. Thirdly, a clean break with the past allows for a speedier privatization and liberalization: dismantling the old order is easier if the representatives of the past have less say in the matter.⁶¹

Kopstein and Reilly demonstrate the need to devise better measures for the theoretical variables used to explain the engines of change than those used by Fish. For example, the religion dummy (Catholic/Protestant versus Orthodox/Muslim) is too crude to account for cultural differences and public attitudes. They propose a new measure to describe the spatial context: the

⁵⁹ The source of inflation is not the lack of knowledge regarding implementing sound monetary policy but rather the need to fund significant transfers in the form of direct subsidies or indirect ones (e.g. tax arrears, etc.) in an environment where tax collection is problematic. With a growing private sector in place, the cost of inflation is less diffuse and the shift in the structure of constituencies leads to more demand for a stable level of prices.

⁶⁰ Stability here comes from the change in expectations of all political actors involved. Once the power succession takes place back and forth in a peaceful manner, the incumbent communists move away from the habit of hanging on to power at all costs, while the democratic opposition learns to govern. These adjustments lead to smooth political transitions, and therefore to a stable policy environment. Quite often pro-reform policies introduced by one government are carried on by the next one early on in transition.

⁶¹ The key assumption here is that, once the incumbent is out of the way, the new caretaker will necessarily introduce efficiency-enhancing reforms. Ordinarily, this does not necessarily have to be the case. However, early on in transition the economic distortions are so pervasive that almost any policy other than the status quo will imply liberalization and therefore would likely improve efficiency.

average reform scores of neighbouring countries. They also consider the effect of the European Union's own integration effort across countries, foreign trade, and foreign direct investment on the ability to implement reform. The European Union's pull effect⁶² and the corresponding structure of interests in the aspiring countries determine the impact of the process of European integration on the nature of reform in CEE countries.

The rationale for emphasizing the influence of the regional environment on reform ability is manifold. At the core of this influence is the diffusion process taking place along cultural, institutional, and economic dimensions. The flow of information, goods and services, as well as labor migration, will provide the avenues through which links are forged and knowledge is shared, creating the regional effect: countries surrounded by well-performing economies and vibrant democracies tend to be successful reformers. This effect is probably stronger for countries neighbouring democracies with established market economies.

H₁₂: The larger the distance between a transition country's capital to an established centre of political and economic power (e.g. European Union), the lower the "pull effect", and therefore the lower the support for reform, *ceteris paribus*.

The spread of a certain set of norms can lead to the creation of a virtuous circle. A common system of beliefs leads to low cost economic exchanges, which encourage further cultural exchanges, which fuel further economic exchanges,

⁶² Western countries have a vested interest in co-opting CEE countries in their economic and security structures.

etc. Values, thought of as natural propensities, are key elements in determining attitudes toward reforms. At a stage where formal rules are in a process of radical change and, therefore, are ineffective, informal rules are the device people fall back to for guidance⁶³. Among those, attitudes toward authority and the state are crucial for the economic and, more importantly, political choices made early in transition.

A successful reform requires the largest possible transfer of assets toward the private sector, an essential aspect of a market economy that is especially lacking early on in transition. The existence of competition between economic and political actors in their respective markets is essential in order for this goal to be feasible and deliver on its promises. Both economic and political dimensions of transition represent a move away from monopolistic structures. The creation of a strong private sector of the economy will necessarily create new loci of economic power, bolstering the pro-reform coalition, and in effect accomplishing the passage towards a genuine market economy.

The next section present the data used in the empirical estimation.

2.3 The Data

Data covers the period 1989 to 2005 for 25 transition countries: 10 CEE countries (Albania, Bulgaria, Croatia, Czech Republic, Hungary, FYR Macedonia, Poland, Romania, Slovak Republic, Slovenia); 3 Baltic countries (Estonia, Latvia, and Lithuania); and 12 other FSU countries (Armenia, Azerbaijan, Belarus,

⁶³ Pejovich (1998) has a good account of the role of informal institutions in transition.

Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan). If not specified otherwise, the data source is the series of Transition Reports that EBRD has published annually since 1994 (EBRD – 1994). Descriptive statistics of all the variables, including a brief definition, are provided in Table 2.1.

In order to present a richer picture with respect to the impact of the initial conditions on the ability to implement reform and to check if the empirical results are sensitive to different regressands, I use several dependent variables. The first set of variables is represented by the reform indexes used by most of the literature devoted to the link between reform and economic growth (Babetskii and Campos – 2007). The European Bank for Reconstruction and Development (EBRD) publishes them in its Transition Report every November. This comprehensive set of indexes covers several areas of interest.

The large-scale privatization index (LARGE_P) measures both the extent to which the large state-owned enterprises were transferred into private ownership and the progress with corporate governance. The small-scale privatization index (SMALL_P) is similar to LARGE_P but refers to small enterprises. The enterprise reform index (ENTREPRISE) assesses the degree of the hardening of the budget constraint by looking at the tightness of credit and subsidy policies in terms of loans and subsidies provided to businesses, and the quality and effectiveness of corporate governance by gauging the enforcement of competition and bankruptcy laws.

The price liberalization index (PRICE_LIB) measures the extent of state involvement in administering prices outside areas such as natural monopolies, for example. The trade and foreign exchange system index (TRADE_FX) measures the extent of import and export administrative restrictions, and the degree of current account convertibility. The competition policy index (COMPETITION) measures the effort by the authorities to promote a competitive environment, such as undertaking action on dominant firms and to reduce substantially entry restrictions.

The banking reform and interest rate liberalization index (BANK) measures the presence and effectiveness of the prudential supervision and regulation, the extent of significant lending to private enterprises, the presence of private banks, as well as the degree of interest rate liberalization. The securities markets and non-bank financial institutions index (INSTITUTIONS) assesses the market liquidity and capitalization, how well non-bank financial institutions such as investment funds and insurance companies function, and the associated regulatory framework.

In the interest of parsimony, but also to economize on degrees of freedom in the light of a sample size of 25, I have devised a comprehensive measure of reform by calculating a weighted index of all the above reform indexes. I have used two sets of weights. The first one consists of the following weights, given in the order in which the indexes were introduced above: 0.2, 0.2, 0.2, 0.1, 0.05, .0.05, 0.1, and 0.1. The second set of weights is given by 0.15, 0.1, 0.15, 0.2, 0.05, 0.05, 0.15, and 0.15. The first set favours the dimensions of enterprise

reform, while the second emphasizes the degree and the scope of a broader institutional reform.

The reason for employing two sets of weights is two-fold: to explore the relative impact of the chosen explanatory variables on the various dimensions of reform, and to test the models for robustness. Further, I also use the SMALL_P and ENTERPRISE indexes individually in order to highlight the impact of initial conditions on two of the most important dimensions of reform. SMALL_P measures progress in a key reform area. More privatization at this level produces more demand for institutional reform, creating a virtuous circle that preserves the reform momentum. ENTERPRISE gauges progress in reforming the firms inherited from central planning but also in creating an effective governance structure for the newly emerged ones. Averages of all these variables over various periods of the first fifteen years of transition are used to uncover the impact of initial conditions over time.

As discussed above, this essay also sets out to test some implications emerging from the theory introduced by Essay 1 of this thesis. There are two prominent endogenous variables in that model: the asset transfer to the private sector and the transfer payment acting as compensation for the former. The compensation could be measured by the subsidies to the state enterprises, either direct or indirect through tax arrears or tax breaks. Such data is both scarce and unreliable.⁶⁴ Alternatively, the compensation could be measured by the facilities

⁶⁴ EBRD's annual reports do offer some data on subsidies as a percentage of GDP for various years but the data is marred by inconsistencies.

obtained by the individual members of the nomenklatura in terms of preferential loans obtained from state banks, the benefits stemming from monopolized import licenses, or the benefits from preferential privatization schemes, etc.

As expected, data of this sort is not available. In turn, I use annual inflation rates (INFLATION) as a measure of this compensation. Consider the simple two-sector framework introduced in Essay 1. Higher inflation would benefit the state sector and the nomenklatura since, for example, nominal loans and tax arrears are paid in devalued currency, while inflation costs are diffuse. Further, the concentrated banking sector, still state-owned in the early stages of transition, is not hurt by inflation since it pays negative interest rates for deposits and extends highly lucrative loans to the government. At the same time, inflation clearly hurts the nascent private sector via standard avenues such as disrupting business planning through uncertainty and corrupting the price mechanism.

Inflation should not be seen as a simple, albeit important, macroeconomic indicator that reflects various degrees of mismanagement of the currency. Rather, high inflation should be regarded as a clear sign that the government has not put yet in place an efficient system of tax collection, has not given up on heavily subsidizing the state sector, or that creating a solid banking sector geared toward private lending is not a priority. In other words, high inflation shows that comprehensive reform is lacking.

The transfers to the private sector, as defined in the context of Essay 1, can be measured along several dimensions. The most direct measure of such transfers would be the extent of privatization, either in terms of the share of units

being privatized out of the total initial number or in terms of revenue from privatization. However, such data is not widely available and it may be marred by inconsistencies across countries. EBRD's SMALL_P and LARGE_P indexes attempt to measure the extent of privatization along several dimensions, including the quality of corporate governance.

The quality of the business environment, discussed further below, is another important aspect of reform. Several specialized EBRD indexes, such as COMPETITION or INSTITUTIONS, are good measures of various dimensions of the business environment. The number of firms that are part of the private sector together with the nature of their interaction (e.g. regulatory environment, competitiveness, governance, etc.) are the defining dimensions of a vibrant market economy. While good comprehensive measures of the private sector are hard to find, one of the most obvious measure of a successful reform is the private sector's contribution to GDP. In the context of transition economies, an increase of this level from single digits to three quarters of GDP is tantamount to success.⁶⁵

All EBRD indexes range between 1.00 (total lack of reform, no essential characteristic of a market economy is in place) and 4.33 (standards and performance typical of advanced industrialized economies). Some indexes, such as PRICE_LIB, SMALL_P, or TRADE_FX, usually shoot up rapidly during the first years of transition, revealing dimensions along which reform is relatively

⁶⁵ Of course, the overall economy has to grow as well. There is very little benefit to having a relatively large private sector in an economy that was halved in the process.

easier to implement. Other indexes, like ENTERPRISE, LARGE_P, and INSTITUTIONS, are slow to rise and stay in the lower range even today for medium and slow reformers.

The purpose of this investigation is to assess the change in the measures of reform. Since all EBRD indexes start from one for all countries at the beginning of transition, working with levels is legitimate. Further, averages over various periods are used as regressands. The reason for this is that the averaging process reduces measurement error. For example, averaging the reform index from 1991 to 1995 yields a reform measure for 1993 that is likely to be more accurate than the actual 1993 reform index. The average measure of reform obtain in such a fashion will be called thereafter “the 1993 horizon”. 1998 and 2003 horizons are obtained in a similar way.

In addition to these “horizons”, I have also used two more approaches to elicit answers with respect to the impact of the regressors over time. The first approach uses the raw annual data for the reform index over 1991-2005, while the second approach uses a moving window with a span of 5 years to calculate a series of 11 annual values by averaging the reform index covering the 1993-2003 period. While these results are not reported, there is further discussion of the findings in Section 4.

I also average of the size of private sector as a percentage of GDP (PRIVATE) to obtain the corresponding measures for the three horizons. The annual data is expressed as an increase over the 1990 levels. In a broader sense, a rapid increase of this contribution would imply both a physical transfer of

productive assets to the private sector through privatization and the creation of an environment that is friendly toward the private sector (e.g. low taxation, reduced red tape, effective implementation of good corporate governance laws, provision of incentives for the banking sector to extend loans to the emerging private sector). The latter would invite further investment and continuous augmentation of the assets, which is the ultimate goal of reform.

There is yet another measure assessing the quality of the business environment and, therefore, of the private sector. Since the competition for investment funds is global in nature, large net foreign direct investment inflows would signal that foreigners value the profit opportunities available in the economy drawing such funds. These profit opportunities arise mostly in high quality environments characterized by sound macroeconomic policies, low taxation, and stable regulatory environment. Hence, foreign direct investment (FDI) is a measure of reform quality. Specifically, I use average net per capita foreign direct investment inflows (FDI) over the period 1991-2005 in US dollars. It is safe to assume that the level of FDI in 1990 was zero and, therefore, the use of average levels is legitimate in order to measure reform advancements.

Another indirect measure of reform that considers the characteristics of the business environment is the annually released series of indexes offered by Freedom House.⁶⁶ I use two series that are available for the first ten years of transition: the civil liberties index (CIVIL) and the political rights index

⁶⁶ Data is available at www.freedomhouse.org as well as in various publications. The series 'Nations in Transit' targets transition countries. These indexes are widely used in cross-country studies as measures of freedom and democracy.

(POL_RIGHTS). CIVIL focuses on the existence of associational and organizational rights, rule of law, and personal autonomy and individual rights. Note how all these dimensions are highly critical for an emerging market economy. To the degree to which these rights are in place, (economic) reform was successfully implemented. POL_RIGHTS focuses on the quality of the electoral process, political participation and the functioning of the government. All these characteristics of the political markets, if present, are tantamount to an accomplished reform representing a boon for the economy. Both indexes range from 1 (high quality environment along the above criteria) to 7 (low quality). Note the inverted scale.

All the above variables measure various aspect of economic and political reform and will be used as regressands. It is now time to turn to the explanatory variables. Data on initial conditions comes from a variety of sources. As mentioned above, the paper by De Melo et al (1997) is the first to focus on the role of initial conditions in a systematic fashion. The authors put together a set of 11 variables divided into four groups that were employed by a significant share of subsequent studies focusing on initial conditions. Only a fraction of these variables will be used here.

The presence of abundant natural resources is bound to play a role in affecting reform. Unlike economic growth, which is greatly helped by the presence of marketable natural resources, reform is likely to be adversely affected by the existence of rich resources. The availability of exportable resources might allow governments to delay costly reforms. The presence of

natural resources is measured by a dummy variable (RESOURCES), equal to one for countries with rich natural resources, zero otherwise.

The proximity to European Union common market (DISTANCE) is measured by the distance in kilometers between the capital of the country and Düsseldorf, Germany. This proximity is bound to matter in at least three ways. On security grounds, the European Union would offer stronger support politically and financially to the countries closer to its borders. In addition, geographically close countries are likely to share values and beliefs that would help transition countries to have a clear picture of the endpoint of reform. Lastly, proximity to markets is likely to augment the potential benefits of reform through richer trade opportunities. All mechanisms point toward a negative relationship between DISTANCE and reform.

Repressed inflation during 1987-1990 in the form of monetary overhang (REPRESSED) and the black market exchange rate premium of the domestic currency (BLACK) in 1990, both expressed in percentage, illustrate the levels of initial macroeconomic distortions inherited from the communist regime. Repressed inflation is the increase in deflated wages minus the change in real GDP from 1987 through 1990. The first principal component of REPRESSED and BLACK is called MACRO and accounts for 93 percent of the variability in the sample.

MACRO is expected to influence reform positively since these types of distortions are highly visible and elicit significant attention from the public and international financial institutions. In addition, the economic and political

resources required to tackle reform in this area are small compared to, say, privatization, or enterprise reform. The rapid upward movement of EBRD's TRADE_FX index for most transition countries and the evolution of inflation over time supports this assertion.

Trade dependence, measured by the CMEA⁶⁷ share of imports and exports in GDP in 1990 (TRADE_DEP), is assessing an aspect of the inherited structural distortions that are likely to play a significant role in the early stages of transition. Trade within CMEA, the communist trade club, was informed by administrative decisions as opposed to market considerations. A shift away from the existed trade structure in 1989 ensued when markets took over the coordinating role. Reorienting trade toward world markets requires attention at a time when governments need to tackle several other urgent issues including privatization, law reform, and in some cases state formation. As such, significant trade dependence as defined here is likely to affect reform negatively.

The life span of the communist regime in each country expressed in years (MEMORY) is another variable likely to matter for reform. It measures relative familiarity with markets and democracy for countries other than the non-Baltic former Soviet Union countries, which experienced fewer decades under communist rule. MEMORY proxies the degree of change required and a negative relationship with reform is expected. The other variable reflecting an inherited

⁶⁷ CMEA stands for the Council for Mutual Economic Assistance, also called Comecon, and represented the trade club of the former communist economies that disbanded in 1991. CMEA introduced another layer of centralization superimposed over a large group of centrally-planned economies. As such, it embodied a significant set of administrative decisions inducing a highly artificial (and therefore inefficient) specialization pattern.

institutional dimension is STATE, a dummy variable indicating whether a particular state existed independent within the current boundaries before 1989. STATE is expected to have a positive impact on reform since state formation efforts are likely to draw attention away from economic reform efforts.

Another aspect of social life that is bound to affect the reform outcome is the presence of a war or civil strife in transition countries after 1990. Hostilities are likely to monopolize the attention of the respective governments as they supersede reform in terms of urgency. In addition, the uncertainty flowing from the hostilities hurts the economy significantly with the wait-and-see strategy being the optimal one for the would-be investor. As a result, a WAR dummy that is equal to one if such frictions are present and zero otherwise, is expected to affect reform negatively.⁶⁸

To account for the characteristics of the initial interaction in the political markets, which, as outlined in Section 2, determines the ability to reform of the transition countries, I employ data from the Wave 2 of the World Values Survey (1990).⁶⁹ This survey contains data on a multitude of questions addressed by thousands of respondents from 29 economies, including 12 transition countries: Belarus, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation, Slovak Republic, and Slovenia. I have created three variables using data from this survey.

⁶⁸ While the events defining the WAR variable take place during the period over which the evolution of reform is analyzed, no endogeneity issue is present since the assumption that war is independent of reform can be easily defended. The causality runs one way only, from war to the state of the economy.

⁶⁹ Details can be found at <http://www.worldvaluessurvey.org>. The data used here was obtained courtesy of Carleton University's library.

Confidence in state institutions is gauged by the BUREAUCRACY, POL_PARTIES, and PRESS variables, measuring the percentage of people in each country trusting the legal system, the political parties, and the press at the time of the survey. As explained above, the presence of such confidence, which has to be validated by the behavior of these social actors, is highly beneficial for the functioning of the economy in transition, representing one central dimension of social capital. The three percentages are collapsed into a principal component (CONFIDENCE) accounting for 73% of the variability.⁷⁰

PROMARKET, also coming from the World Values Survey is an index measuring the pro-market stance of voters in those countries, with the minimum and maximum values of 4 and 40, respectively. This variable is obtained by adding the average answer (on a scale from one to ten) to the following four questions. 1. "Do you think that the government ownership should be decreased or increased?" 2. "Do you think that the competition is good or harmful?" 3. "Do you think that hard work brings a better life or not?" 4. "Do you think that people get rich at the expense of others or not?"

To characterize the political market in terms of its competitiveness, I use the Freedom House civil liberties (CIVIL) and political rights (POL_RIGHTS) indexes, obtained as averages of annual data between 1972 and 1989 (Freedom House, 1997). I collapse the two indexes into a principal component (EXPERIENCE) which accounts for 94% of their variability. Departures from the

⁷⁰ There is a tradeoff between the variable reduction and loss of variability. The rule of thumb is that using any principal component that accounts for more than two thirds in variability is a good idea.

worst scores, corresponding to an index of seven, which was the norm for communist countries at the time, would reflect liberties and rights gained by a budding civil society. At the start of transition, that departure from the communist orthodoxy would translate into political capital to build on by the opposition/reformist camp. The implication is that EXPERIENCE, given the inverted scale, is expected to affect reforms negatively.

In the same vein, data on the total number of protest demonstrations (POL_DEM), political strikes (POL_STRIKES), and government sanctions (SANCTIONS) between 1948 and 1977 in countries in the region is likely to highlight the “readiness” of these societies to move away from totalitarianism and command economy (Taylor, 1983). I use the principal component technique to extract a component accounting for 75% of the variability present in these three variables. The resulting explanatory variable, dubbed DISSENT is a good measure of the likelihood of an alternative centre of power emerging at the beginning of transition.⁷¹

Education levels are measured by the mean years of schooling for population over 25 (SCHOOL). The quality of the informational environment is captured by book titles published per 100,000 people (BOOKS), copies of daily newspapers per 100 people (NEWS), the number of main phone lines per 100

⁷¹ I was not able to obtain more recent data on dissent that would cover the whole sample. However, the data used here is quite relevant for the matter at hand. First, to the degree it was present in each country, dissent proved much stronger at the onset of the communist period as these societies struggled to absorb the rules imposed by the new regimes. Second, the formation of alternative centres of power requires a long time to crystallize.

people (PHONES), and television sets per 100 people (TVS).⁷² I collapse the last four variables into a single one called INFO using principal component analysis. INFO accounts for 66% of the variability in the sample. It measures both the ease with which information circulates in the economy and society, and the accuracy with which the economic agent, also wearing the hat of a voter, can identify the targets of reform (a market economy and a democratic society).

Fish (1989) offers a host of variables characterizing the outcome of the first round of elections, also called the founding elections, for the countries in transition. ELECTIONS is an elaborate index comprising information on whether the reformists/non-communists clearly won the initial elections, on whether the elections “stuck” (i.e. not being annulled by illegitimate means), on their completeness (i.e. held nationally, locally, etc.), and on their openness/competitiveness. An alternative measure of the founding elections’ outcome is TURN, a binary dummy variable proposed by EBRD (2000) that equals one if a clear break with the past emerged as the result of the founding elections, and zero otherwise. A positive relationship between ELECTIONS and reform is expected

To summarize, in the estimations reported in the next section I use eight different regressands measuring different facets of reform: REFORM, INFLATION, PRIVATE, SMALL_P, ENTERPRISE, FDI, CIVIL, and POL_RIGHTS. All regressands except FDI are calculated over the three-year, eight-year, and thirteen-year horizons in order to reveal the varying impact of

⁷² Human Development Report (1990).

reform factors over time. The resulting time horizons are used to gauge how well the explanatory power of the initial conditions is preserved over the years.

Fifteen independent variables are believed to determine reform. Six are regular variables (TRADE_DEP, PROMARKET, SCHOOL, DISTANCE, ELECTIONS, and MEMORY), five are obtained by collapsing several variables via principal components analysis (MACRO, EXPERIENCE, DISSENT, CONFIDENCE, and INFO), and four are categorical variables (WAR, STATE, RESOURCES, and TURN).

Alternatively, the regressors can be grouped with respect to the mechanism through which they affect reform. The first group includes variables characterizing the inherited macroeconomic and structural distortions (MACRO, TRADE_DEP), the second includes variables characterizing the political markets (EXPERIENCE, DISSENT, ELECTIONS, PROMARKET, TURN), and the third comprises variables measuring the ability of those societies to solve coordination and collective action problems (CONFIDENCE, WAR, STATE, RESOURCES, INFO, SCHOOL, DISTANCE, and MEMORY).⁷³

2.4 Estimation and Results

The focus of this empirical endeavour is on tying various reform measures to factors determining the ability to implement economic reforms, as outline

⁷³ This division is not as clear-cut as one would like. For example, one could argue that INFO also belongs to the category reflecting the characteristics of the political market since it measures both the easiness with which information circulates in the economy after 1989 but also knowledge of history that might prompt people to favor the reformists over the communist incumbent.

above. The bulk of explanatory variables are initial conditions observed at one point in time: the beginning of transition.⁷⁴ There are two components of transition: the economic and the political one. While economic reform is pursued for the most part, effort is extended toward revealing the intrinsic connection between the two components.

A testing-down procedure is employed to obtain all the reported models below. Ordinary Least Squares is used throughout. For each model, I start with a maximal specification including eleven regressors: MACRO, TRADE_DEP, EXPERIENCE, DISSENT, ELLECTIONS, WAR, STATE, RESOURCES, INFO, DISTANCE, and MEMORY. The only exception is for models that include variables having data covering twelve observations only, where I am forced to start from a smaller number of variables, as explained below. After the full model is estimated, I use a Likelihood Ratio (LR) test with an α value of 1% to see if I can eliminate, as a group, those variables having the t-statistic less than one in absolute value.⁷⁵ The LR represents a redundant variable test and allows me to drop the included variables altogether and obtain a more parsimonious specification.

The next step, not always necessary, is to perform a second LR test for those variables having the p-value of the individual t-test larger than 0.1. The final specification is reported in the tables below. To avoid repetition, henceforth I

⁷⁴ As such, all variables are predetermined and endogeneity is not an issue.

⁷⁵ This rule of thumb is employed by some practitioners. In a few instance here, I have included in the first group tested by LR variables having t-statistics a little bit over one in absolute value (e.g. 1.2).

will use “first-step LR test” and “second-step LR test” to refer to the testing-down procedure described above.

For the models M1, M2, and M3 in Table 2.2, the testing down methodology described above is used to investigate the determinants of reform as measured by the comprehensive reform index REFORM, measured over the three-, eight-, and thirteen-year horizons, respectively. The eleven regressors in the most general specification were reduced to the reported results in the first three columns in Table 2.2 with the help of the first-step LR test only, with p-values of 0.24, 0.23, and 0.57, respectively.

While the specifications obtained in this fashion vary slightly across the three periods, there are several lessons to be learned here. First, DISSENT, ELECTIONS, and INFO represent a core group of variables that survived the testing-down procedure across the board. As expected, the presence of significant social and political conflict before 1989, the opposition winning the founding elections, and the existence of an informed population, are all factors favouring the implementation of reform. Second, a richer set of initial conditions plays a role early on in transition as compared to the subsequent periods. In other words, the influence of the initial conditions peters out over time to some degree.

In addition to the core variables, WAR, RESOURCES, MEMORY, STATE, and TRADE_DEP also influence reform over the three-year horizon. As predicted, the presence of conflict and of a rich endowment of natural resources negatively affect reform, a longer-lived communist regime does not bode well for

the prospect of reform in transition, while the existence of an established state provides a non-negligible head start. Third, structural distortions negatively affect reform.

As indicated in Section 3, the reform index REFORM is calculated averaging the eight EBRD categorized reform indexes using two sets of weights. The first one, which is used to obtain the results in Table 2.2, has relatively bigger weights for the two privatization indexes and the enterprise reform, while the second set favours the price liberalization and the institutional indexes. Results obtained with the second set of weights, not reported here, are remarkably similar to the ones reported. Hence, the results are not sensitive to the way the comprehensive reform index was constructed.

In order to extend the sensitivity analysis with respect to the use of the EBRD indexes as a measure of reform, regression results with individual reform indexes ENTERPRISE and SMALL_P as regressands are reported in Table 2.3. The same testing-down procedure is used, the first-step LR test being usually sufficient to pare down the models to the reported variants. It is reassuring to find the core variables, DISSENT, ELECTIONS, and INFO, performing equally well for the ENTERPRISE index across the three periods. EXPERIENCE and MEMORY also turned out to be significant and with the right signs for the first three models reported in Table 2.3. The other pattern that remains in place is the existence of relatively less factors playing a role over the two longer time horizons as compared to the three-year one for both ENTERPRISE and SMALL_P indexes.

In the case of the small privatization index (see models M4-M6 in Table 2.3), while ELECTIONS stays a dominant factor, the rest of the variables bow out to leave WAR, TRADE_DEP, and RESOURCES in the limelight. The presence of conflicts and rich natural resources plays its usual role of attracting attention and/or efforts away from economic reform. Unlike the results obtained for ENTERPRISE, SMALL_P seems to depend heavily on the degree of structural distortions.

If INFO and ELECTIONS are replaced with SCHOOL and TURN, respectively, all the models reported so far hold fairly well qualitatively. This shows that the results are not sensitive to alternative measures of these two key variables. ELECTIONS does performs better in terms of goodness of fit when compared to TURN, a simple dummy equal to one if the reformist won the founding elections. However, this is expected since ELECTIONS also contains information concerning the completeness and openness of this crucial round of elections.

It is now time to turn to other dependent variables measuring yet other facets of reform. The goal of transition is to create a market economy that has a vibrant private sector at its core. Hence, the evolution of the size of the private sector over time is a good indicator of success in transition. The contribution of the private sector to GDP in percentage terms (PRIVATE) is used as a regressand. The results shown in Table 2.4 are obtained using a simple average of the private sector size as a percentage of GDP over the three time horizons. Estimated results not reported here show that there are no significant qualitative

changes if the 1990 private sector size is subtracted in order to measure the actual increase in each considered period.⁷⁶

In addition, averages of natural logarithm of annual inflation rates over various periods are also used as measures of reform. The models M4-M6 in Table 2.2 show the regression results for the determinants of reform when INFLATION is used to gauge reform. The first-step LR test eliminates MACRO, TRADE_DEP, ELECTIONS, INFO, STATE, and RESOURCES, with a p-value of 0.46. The second-step LR test topples EXPERIENCE and DISTANCE with a p-value of 0.20. DISSENT, WAR, and MEMORY are left to explain around 85% of the variability in the sample. A similar process yields model M5.

What do these results tell us? First, a competitive political market, as indicated by DISSENT being large, will force the policy makers to curb inflation rapidly and materialize the public interest in the process. Second, the presence of war delays reform and hampers tax collection, which is likely to lead to higher inflation. Third, as MEMORY indicates, countries with more decades of central planning, mainly former Soviet Union countries other than the Baltic States, had a harder time tackling inflation when compared with the rest of the transition countries.⁷⁷

⁷⁶ The decision to employ the simple averaging without accounting for the initial private sector size is based on the lack of confidence for the 1990 data.

⁷⁷ Model 6 reflects the inflation pictures after a decade of transition. By then, most countries got to single digit inflation rates one way or another. As such, there is little variation in the data. The variable tournament of the two-step testing-down procedure leaves ELECTIONS to explain 28% of the variability.

The regression models shown in Table 2.4 reflect the performance of various determinants of the size of the private sector over the three time horizons. All models resulted after only the first-step LR test was applied.⁷⁸ The pattern of a richer set of factors affecting reform over shorter time horizons versus longer ones is preserved in this case as well. Over all three horizons, a core set of regressors consisting of DISSENT and ELECTIONS. This set is identical to the one explaining reform as measured by the comprehensive EBRD reform index REFORM, as well as ENTERPRISE, which shows that this specification obtained through the testing-down method is not sensitive to various reform measures. In other words, a clear set of factors was identified that is solidly validated across the board.

In addition to a core set of factors, a series of other variables play a role in determining the size of the private sector. STATE is a solid presence, with the existence of established state institutions helping the emergence of the private sector. Over the three-year time horizon, EXPERIENCE also affects the development of the private sector. Overall, the absence of any role played by the macroeconomic and structural distortions is conspicuous.

Besides the direct measures of economic reform used so far, such as the EBRD indexes or the size of the private sector, one could turn to somewhat indirect measures of reform: the ones that assess the quality of the business environment. The political rights index (POL_RIGHTS) and civil liberties index

⁷⁸ The p-values are 0.17, 0.11, 0.12, 0.30, and 0.34, respectively.

(CIVIL) provided by Freedom House are used here.⁷⁹ They cover a wide range of societal characteristics, such as rule of law, associational rights, and functioning of the government, that collectively provide the basis for a successful economic activity.

Again, the result reported are obtained by averaging POL_RIGHTS and CIVIL over the three time horizons as indicated above. An alternative set of results, not reported here, was calculated by subtracting the 1990 corresponding value for each series so that the actual variations over the respective periods were evaluated. This second set of results is remarkably close to the one reported. The preference for the latter was dictated by the lack of confidence in the 1990 data, which covers a point in time when measurement was particularly difficult due to complex and rapidly unfolding changes.

The models M1-M4 in Table 2.5 are obtained using the first-step LR test only, with the p- values of 0.17, 0.57, 0.62, and 0.30, respectively. All models explain three quarters or more of the variability in the sample. Note the inverted scale of the regressands. One more time, DISSENT, ELECTIONS, and INFO play a significant role in determining the quality of the business environment and therefore reform in general. In addition, a strong performance by DISTANCE shows that proximity to the European Union acts as a powerful catalyst for social, political, and economic change. WAR and RESOURCES also influence reform as measured by the Freedom House's indexes.

⁷⁹ These measures, while quite relevant, are rather general in nature. Freedom House publishes more specific indexes tackling macroeconomic and microeconomic reform, as well as corruption indexes. However, I was not able to obtain all the necessary data for the appropriate period and sample of the present analysis.

Model 5 in Table 2.5 illustrates the determinants of a successful reform in transition countries as seen by the investors around the world. The dependent variable is the average per capita net foreign investment inflows over the first fifteen years of transition. It is refreshing to find that a first-step LR test leaves DISSENT and INFO, two of the three core factors affecting reform as identified above, explaining a full two thirds of the variability in average FDI inflows. In other words, the existence of a competitive political market early on in transition and the presence of a highly informed population represent key factors that translate into attracting significant FDI funds.

Lastly, evidence regarding the role played by attitudes toward reforms and state institutions early on in transition in shaping reform is offered. The data used here comes from the World Values Survey. Data limitation is somewhat severe since only 12 countries in the sample were part of the 1990 wave of the survey which is the only one providing predetermined variables. The small sample problem should prompt caution in assessing these results. Two independent variables are the focus of this analysis: PROMARKET, assessing the attitude toward market reforms in general, and CONFIDENCE, gauging people's confidence in fundamental state institutions such as parliament, political parties, government bureaucracy, and the press.

The regression models presented in Table 2.6 assess the role of the two variables in affecting reform. Given the small number of degrees of freedom, I start the investigation from a restricted set of regressors. Namely, to a core group of three independent variables that were previously identified as consistent

determinants of the particular regressand at hand, as shown above, I added either PROMARKET or CONFIDENCE and applied the first-step LR test. First, the results show that there is no support of these variables for reform as measured by the EBRD indexes. However, limited support is observed for the other measures of reform averaged over the early years of transition: PRIVATE, CIVIL, POL_RIGHTS, and FDI. Clearly, the small sample issues affected the results. The purpose of the investigation is to signal the potential importance of such factors.

As indicated previously, it is possible to look at all these results through the lens offered by the theory in Essay 1 of this thesis. REFORM, ENTERPRISE, SMALL_P, PRIVATE, CIVIL, POL_RIGHTS, and FDI are all good candidates for measures of " θ ", the asset transfer to the public sector. PRIVATE is a straightforward measure for this transfer, even though it lumps together a large variety of underlying mechanisms. The rationale for considering the others as *bona fide* measures of a transfer toward the private sector is that reform could not possibly take hold without the initial de facto owners of these assets, the nomenklatura, being part of the pro-reform coalition. The other endogenous variable considered by the theoretical model is the transfer payment acting as compensation for the asset transfer. For the purpose at hand, INFLATION will act as a measure for the transfer payment " t ".

According to the theory developed in essay one there are four exogenous variables determining θ and t : the bargaining power of the opposition, the threat point or disagreement point of the two actors, the communist (S) and the

opposition (M), and the level of social capital. Obvious candidates for the bargaining power of the opposition are EXPERIENCE, PROMARKET, and DISSENT. Should the two players at the beginning of the transition hold round-table talks, the opposition's payoff would be bolstered if previous experience with reform is available, if voters at large tend to favor market reforms, or if significant dissent prior to 1989 identified an alternative political pole. These variables strongly and consistently affect reform positively, as indicated by theory, regardless of which actual measure of reform is used.

The disagreement points can be interpreted as being the payoffs of the two players in the case of a breakdown in negotiations. In the case of no agreement being reached, what variables would proxy the disagreement points? Good candidates in the case of the opposition are INFO and MEMORY. The idea is that an informed public that is familiar with the workings of democracy and markets will have an attractive outside option and, as a result, will obtain a significant slice of the pie (i.e. reform being implemented) in the Nash bargaining setting as shown in Essay 1. Comparative statics results predict that the disagreement point of the opposition should positively affect θ , the asset transfer (or reform), and negatively affect t , the payment transfer. Empirical results are highly consistent with this prediction (for example, see models M1-M5 in Table 2.1).

The disagreement point for the communists can be proxied by two variables in the present set: RESOURCES and WAR. Both instances allow for some "negative" coordination. Resources and efforts flow away from economic

reform and toward obvious destinations: to exploit a clearly marketable product and to support an urgent matter, respectively. Comparative statics results in Essay 1 predict that the disagreement point of communists should influence negatively the asset transfer. This is precisely what data seems to indicate in this case (see models M1 in Table 2.1 and model M3 in Table 2.5, among others).

The fourth exogenous variable of interest is social capital “s”. The theory in Essay 1 predicts that higher social capital will reduce transaction costs and in turn enhance the asset transfer (or reform). As explained in Section 2, social capital has many dimensions. For example, one dimension of social capital is related to the presence of a good societal information and communication infrastructure. This will keep the society together and enhance the ability to identify the public interest easier (social capital as cohesion). Hence, INFO and SCHOOL are good candidates for measures of social capital.

Another component of social capital is the ability to coalesce support for badly needed reform through political action. DISSENT is a good candidate for a measure of this aspect of social capital since it enhances the emergence of a coalition for reform by identifying an alternative political pole. Much more commonly, social capital is associated with interpersonal trust and confidence in state institutions such as the legal system and government bureaucracy. CONFIDENCE is an appropriate measure of this dimension. In all instances, data provide strong support for the hypothesis at hand: social capital, in its various incarnations, reduces the level of transaction costs by making it easier to solve coordination and collective action problems.

As mentioned in Section 3, in addition to the three time horizons, I have investigated alternative methods to account for the impact of the independent variables over time. Firstly, I have used the raw annual data for REFORM to estimate 15 regression models using the “first-step LR test” and “second-step LR test”. Second, I have used a moving five-year window to average REFORM over time, obtaining a new dependent variable for the reform index that now covers 1993-2003. Next, I estimated 11 regression models using the same two-step method. Although I do not report the statistical results here, the behaviour of the key regressors over time shows no obvious pattern other than the general tendency of finding fewer factors affecting reform as time passes. As expected, the use of the raw annual data leads to more imprecise estimates (i.e. higher variances, lower goodness of fit in general).

So far, I have discussed the results by reviewing them under the headings of the various measures of reform used as dependent variables. At this point, I would like to return to the hypotheses introduced in Section 2 and present the results in the light of the specific variables that were used to measure the theoretical variables in these hypotheses. For this purpose, I have prepared Table 2.7 where, for each hypothesis, I indicated the empirical variable used for testing, the expected sign, the obtained sign, whether statistical significance was attained, and references to specific models where these results were obtained. Overall, the data and the methodology used here failed to reject all hypotheses but one.

To summarize the main findings, the results indicate throughout that there is overwhelming evidence in favour of the outcome of the founding elections, the existence of pre-1989 experience with political and economic reform, and the presence of an informed voter, consumer, and worker, playing a significant role in boosting reform. In addition, considerable distance from established democracies and market economies, the presence of wars, or the need for state-formation efforts hinder economic reform. Moreover, the core explanatory variables, DISSENT, ELECTIONS, and INFO, are not sensitive to alternative measure of reform. Lastly, the specification seems to be relatively stable over time, albeit models focusing on shorter time horizons tend to allow for more factors playing a role in explaining reform.

2.5 Concluding Remarks

One needs to consider the political realm in order to spell out the mechanisms through which initial conditions prevailing in 1989 inform policy formation. This process of uncovering the links between the state of the economy and of the political markets at the outset of transformation and subsequent economic reform is key for explaining success in transition. Simply decrying the lack of reform is unsatisfactory. Much more important is to reveal the roles played by political and/or economic actors in carrying out the required changes.

The initial conditions determined the various choices made by countries in defining the new polity at the outset of transition, which in turn led to a variety of economic outcomes. These different outcomes allow dividing the transition

countries into two groups. One comprises countries that were able to set up functional markets and vibrant and stable democracies, and the other includes countries where a market economy has yet to emerge and malaise characterizes political life. A certain set of favorable initial conditions may have prevented anti-reform coalitions gaining tremendous influence over policymaking and stalling reforms in the first case. Alternatively, whenever pro-reform coalitions had a hard time emerging, reform was mismanaged and a successful transition failed to materialize.

An additional puzzle emerges. Why did reforms continue at a significant pace in some countries even after the “window of opportunity” was gone, while other countries failed to take full advantage of it and, once the entrenched interests become manifest, the change petered out rapidly? A possible answer lies in the dynamics responsible for the creation of an anti-reform constituency. Countries that undertook significant steps and effectively implemented changes early reached a “good” outcome that could not be easily undone later on. The momentum of change carried reform well beyond the “window of opportunity”. On the other hand, scant early reforms failed to move the economy to the point where a demand for further reform was created, missing the opportunity to give rise to a virtuous circle.

In unsuccessful countries that failed to implement comprehensive reforms, the oligarchs, the insiders and the state workers managed to form coalitions that stopped reform in its tracks or, more commonly, at a point that favouring rent seeking and asset stripping. The only way out of this stalemate is for the

government to try to manoeuvre around it by putting together a new, pro-reform coalition. This goal could be accomplished by both using compensation to lure in some of the members of the anti-reform group and by imposing further market discipline through competition and new entry. This would make further inroads toward implementing a new property regime that in turn reduces rent seeking and tunnelling.

This scenario is presently unfolding in various degrees in most transition countries. However, analyzing these developments is not the focus of this paper, as it would require a dynamic approach. Most clearly, it represents an avenue for further research. This paper provides evidence that key factors characterizing political markets continue to influence reforms well into the second decade of transition. It is interesting to spell out the mechanism through which such influences materialize in the process of policy formation at later stages of transition.

More and better data is always desirable. There are a number of variables that not employed in the present study that hold some promise to shed light on the developments characterizing political markets but also on the impact of structural economic factors. The latter include the degree of industrialization, which imply the absence of a much needed service sector, the size and strength of the 1989 private sector, which might be essential for the chances of reform, specific data on the impact of experience with economic reform before 1989, and, not unrelated, data on the usable features of the old system. While a significant set of articles in the literature decry shock therapy as yielding a strong

shock and not much therapy, very little debate focuses on measuring the exact benefits of keeping in place old features of the communist economic order.

There are many avenues worth considering when it comes to expanding the set of variables describing the interaction in the political sector. In terms of having a good grasp of the end-point of reform, data on the percent of population that travelled abroad to western countries prior to 1989, the extent of access to western media, and the degree of censorship of the local media is potentially useful. In terms of factors affecting the chances of a pro-reform coalition to form successfully, of interest is data on political culture, specifically on interest and participation in public affairs, share of population living in urban areas, and the discipline imposed by the promise of entry into the European Union.

While gaining tremendously in terms of degrees of freedom, panel data estimation is somewhat problematic when the emphasis is on initial conditions as factors affecting reform. The fixed effect approach cannot yield coefficients for the specific initial conditions since they all are lumped in the overall country effects. Random effect approach is a way out, but it may not be warranted on statistical grounds. One possible avenue would require the introduction of a time trend to the initial condition.

A successful reform requires the largest possible transfer of assets toward the private sector, since, by definition, transition is about building a market economy and a liberal democracy. Those two goals share one important feature: the existence of competition between economic and political actors in their respective markets. Both economic and political dimensions of transition

represent a move away from monopoly-like structures. The creation of a strong private sector of the economy will necessarily create new loci of economic power, accomplishing the passage towards a genuine market economy.

In countries where the opposition managed to win the first round of free elections, the role of the state in the economy diminished rapidly, the new economic institutions needed to support markets were built relatively quickly, and a much more competitive economic environment emerged. This scenario, requiring a sweeping change in the political realm early on in transition, indicates a much more competitive political environment, which in turn will bring about a more competitive economic environment: comprehensive price liberalization, significant market entry, and competition from imports. Subsequently, the emerging demand for market-enhancing institutions facilitating wealth-creating, multi-period exchanges would cement the transition to a full-fledged market economy.

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Table 2.1 Descriptive statistics for all variables

Variable	Description	Period	Mean	Max.	Min.	Std. Dev.	Obs.
BLACK	Black market exchange rate premium in percent	1990	1211.1	1828.0	27.0	795.0	25
BOOKS	Book titles published per 100,000 people	1990	41.8	152.0	4.0	44.5	25
BUREAUCRACY	Percentage of people having confidence in bureaucracy	1990	40.4	78.8	19.7	15.3	12
CIVIL	Average Freedom House civil liberties index	1972-1989	6.1	7.0	5.1	0.5	25
CIVIL	Idem	1991-2000	3.7	6.4	2.0	1.3	25
CIVIL	Idem	1991-1995	3.7	6.4	2.0	1.4	25
CONFIDENCE	First principal component of PRESS, POL_PARTIES, and BUREAUCRACY						12
DISSENT	First principal component of POL_DEM, POL_STRIKES, and SANCTIONS						25
DISTANCE	Distance in km from the capital to Düsseldorf	1990	2249.0	5312.0	559.0	1524.0	25
ELECTIONS	Index variable measuring the outcome, openness, stability, and completeness of the founding elections	1990-	3.2	5.0	0.0	1.7	25
ENTERPRISE	EBRD enterprise reform index	2001-2005	2.3	3.4	1.0	0.7	25
ENTERPRISE	Idem	1991-1995	1.6	2.8	1.0	0.6	25
ENTERPRISE	Idem	1991-2000	1.9	3.0	1.0	0.5	25
ENTERPRISE	Idem	1996-2000	2.2	3.2	1.1	0.6	25
EXPERIENCE	First principal component of CIVIL and POL_RIGHTS over 1972-1989						25
FDI	Average net FDI inflow	1991-2005	1387.0	5061.0	51.0	1440.9	25
INFLATION	Logarithm of average annual inflation rate	2001-2005	0.8	1.5	0.0	0.4	25

INFLATION	Idem	1991-2000	2.4	3.2	1.2	0.6	25
INFLATION	Idem	1991-1995	2.6	3.5	1.3	0.7	25
INFLATION	Idem	1996-2000	1.2	2.4	-0.5	0.7	25
INFO	First principal component of BOOKS, NEWS, PHONES, and TVS						25
MACRO	First principal component of BLACK and REPRESSED						25
MEMORY	Years of central planning	1989	58.2	75.0	41.0	14.9	25
NEWS	Daily newspaper copies per 100 people	1990	14.3	58.0	1.0	13.6	25
PHONES	Main phone lines per 100 people	1990	13.5	24.7	1.3	6.3	25
POL_DEM	Total number of protest demonstrations	1948-1977	34.4	141.0	1.0	36.6	25
POL_PARTIES	Percentage of people having confidence in political parties	1990	49.3	78.9	20.8	18.4	12
POL_STRIKES	Total number of political strikes	1948-1977	3.8	24.0	0.0	7.6	25
POL_RIGHTS	Average Freedom House political rights index	1972-1989	6.4	7.0	5.7	0.4	25
POL_RIGHTS	Idem	1991-2000	3.6	6.7	1.3	1.7	25
POL_RIGHTS	Idem	1991-1995	3.6	6.8	1.4	1.7	25
PRESS	Percentage of people having confidence in the press	1990	7.0	15.8	1.4	4.3	12
PRIVATE	Average contributions of the private sector to GDP in percentage	2001-2005	62.8	80.0	23.1	14.9	25
PRIVATE	Idem	1991-2000	42.1	61.8	15.5	13.1	25
PRIVATE	Idem	1991-2005	50.4	68.8	18.4	13.5	25
PRIVATE	Idem	1991-1995	28.8	50.0	11.0	11.7	25
PRIVATE	Idem	1996-2000	55.7	77.0	19.0	15.8	25
PROMARKET	Index measuring pro-market stance	1990	27.5	29.0	26.0	1.0	12
REFORM	Reform index calculated as a weighted	2001-2005	3.1	3.9	1.4	0.6	25

	average of 8 EBRD indexes						
REFORM	Idem	1991-1995	1.9	2.9	1.1	0.5	25
REFORM	Idem	1991-2000	2.3	3.2	1.3	0.5	25
REFORM	Idem	1996-2000	2.8	3.7	1.5	0.6	25
REPRESSED	Repressed inflation as monetary overhang	1990	0.2	0.3	-0.1	0.1	25
RESOURCES	Dummy measuring richness in natural resources	1990	0.5	2.0	0.0	0.8	25
SANCTIONS	Total impositions of sanctions by the government	1948-1977	227.1	2258.0	66.0	454.6	25
SCHOOL	Mean years of schooling for population over 25	1990	7.0	9.0	5.0	1.7	25
SMALL_PRIV	EBRD small privatization index	2001-2005	3.8	4.3	2.0	0.6	25
SMALL_PRIV	Idem	1991-1995	2.5	3.8	1.0	0.9	25
SMALL_PRIV	Idem	1996-2000	3.0	4.0	1.5	0.8	25
SMALL_PRIV	Idem	1991-2000	3.6	4.3	1.9	0.7	25
STATE	Dummy differentiating among countries with established vs. new states	1990-	0.4	2.0	0.0	0.6	25
TRADE_DEP	Ratio of CMEA exports and imports to GDP	1990	20.3	41.0	3.7	12.3	25
TURN	Dummy equal to one if the opposition clearly won the founding elections	1990-	0.44	1.0	0.0	0.50	25
TVS	TV sets per 100 people	1991	27.2	52.0	9.0	9.6	25
WAR	Dummy equal to 1 for countries experiencing war or civil strife	1990-	0.2	1.0	0.0	0.4	25

Table 2.2 Determinants of reform

<i>Horizon</i>	M1 REFORM Three-year	M2 REFORM Eight-year	M3 REFORM Thirteen - year	M4 INFLATION Three-year	M5 INFLATION Eight-year	M6 INFLATION Thirteen-year
DISSENT	0.22 (0.02) ^{***}	0.13 (0.02) ^{***}	0.15 (0.04) ^{***}	-0.18 (0.03) ^{***}	-0.17 (0.03) ^{***}	
ELECTIONS	0.08 (0.02) ^{***}	0.11 (0.02) ^{**}	0.18 (0.04) ^{***}			-0.12 (0.03) ^{***}
WAR	-0.24 (0.08) ^{***}			0.33 (0.12) ^{**}	0.30 (0.12) ^{**}	
RESOURCES	-0.27 (0.07) [*]					
MEMORY	-0.013 (0.003) ^{***}	-0.011 (0.003) ^{***}		0.027 (0.003) ^{***}	0.025 (0.003) ^{***}	
INFO		0.10 (0.04) ^{**}	0.30 (0.08) ^{***}			
STATE	-0.49 (0.12) ^{***}					
TRADE_DEP	-0.006 (0.003) [*]					
N	25	25	25	25	25	25
Adj. R ²	0.92	0.78	0.74	0.87	0.85	0.28

*, **, and *** indicate statistical significance at 10%, 5%, and 1% respectively. Robust standard errors are indicated in parentheses. All equations were estimated using ordinary least squares with an intercept term not reported in the table.

Table 2.3 Enterprise and small privatization reform

	M1	M2	M3	M4	M5	M6
<i>Horizon</i>	ENTERPRISE	ENTERPRISE	ENTERPRISE	SMALL_P	SMALL_P	SMALL_P
	Three-year	Eight-year	Thirteen-year	Three-year	Eight-year	Thirteen-year
DISSENT	0.24 (0.03) ^{***}	0.12 (0.03) ^{***}	0.17 (0.04) ^{***}	0.25 (0.06) ^{***}		
ELECTIONS	0.06 (0.02) ^{***}	0.10 (0.03) ^{***}	0.16 (0.04) ^{***}	0.19 (0.04) ^{***}	0.31 (0.04) ^{***}	0.24 (0.04) ^{***}
MEMORY	-0.012 (0.003) ^{***}	-0.010 (0.004) ^{**}				
INFO		0.11 (0.03) ^{***}	0.18 (0.04) ^{***}			
EXPERIENCE	-0.26 (0.08) ^{***}	-0.12 (0.07) ^{***}				
WAR				-0.51 (0.16) ^{***}		
TRADE_DEP				-0.034 (0.007) ^{***}	-0.017 (0.007) ^{**}	
RESOURCES				-0.75 (0.17) ^{***}		
N	25	25	25	25	25	25
Adj. R ²	0.84	0.82	0.76	0.85	0.65	0.46

•, **, and *** indicate statistical significance at 10%, 5%, and 1% respectively. Robust standard errors are indicated in parentheses. All equations were estimated using ordinary least squares with an intercept term not reported in the table.

Table 2.4 Determinants of private sector size

<i>Horizon</i>	M1 PRIVATE Three-year	M2 PRIVATE Eight-year	M3 PRIVATE Thirteen-year
DISSENT	3.06 (1.08) ^{***}	3.76 (1.19) ^{**}	3.95 (1.38) ^{***}
ELECTIONS	3.40 (0.75) ^{***}	5.58 (1.04) ^{***}	4.99 (1.25) ^{***}
STATE	7.91 (2.67) ^{***}		
EXPERIENCE	-2.98 (1.30) ^{**}		
N	25	25	25
Adj. R ²	0.70	0.65	0.57

*, **, and *** indicate statistical significance at 10%, 5%, and 1% respectively. Robust standard errors are indicated in parentheses. All equations were estimated using ordinary least squares with an intercept term not reported in the table.

Table 2.5 Determinants of the business environment

<i>Horizon</i>	M1	M2	M3	M4	M5
	POL_RIGHTS Three-year	POL_RIGHTS Five-year	CIVIL Three-year	CIVIL Five-year	FDI Eight-year
ELECTIONS	-0.28 (0.10)**	-0.28 (0.09)***	-0.25 (0.08)***	-0.23 (0.09)***	
DISTANCE	0.00073 (0.00011)***	0.0005 (0.0001)***	0.0003 (0.0001)***	0.0003 (0.0001)**	
WAR	0.82 (0.39)***		0.95 (0.31)***		
DISSENT		-0.26 (0.10)**	-0.15 (0.09)	-0.21 (0.09)**	462.2 (117.3)***
INFO		-0.25 (0.12)*		-0.22 (0.11)	490.2 (108.7)***
RESOURCES			0.41 (0.19)**		
N	25	25	25	25	25
Adj. R ²	0.75	0.82	0.77	0.76	0.67

*, **, and *** indicate statistical significance at 10%, 5%, and 1% respectively. Robust standard errors are indicated in parentheses. All equations were estimated using ordinary least squares with an intercept term not reported in the table.

Table 2.6 Other factors affecting reform

<i>Horizon</i>	M1 PRIVATE Three- year	M2 FDI Eight- year	M3 CIVIL Three- year	M4 CIVIL Three- year	M5 POL_RIGHTS Three-year
DISSENT	3.80 (1.32)**	531.49 (110.22)***			
INFO		657.73 (221.63)**			
DISTANCE			0.0010 (0.0003)**	0.0011 (0.0003)***	0.0019 (0.0004)**
PROMARKET		671.67 (229.74)**	-0.29 (0.14)*		
CONFIDENCE	6.36 (2.60)**			-0.34 (0.13)**	-0.52 (0.21)**
N	12	12	12	12	12
Adj. R ²	0.53	0.81	0.58	0.65	0.55

*, **, and *** indicate statistical significance at 10%, 5%, and 1% respectively. Robust standard errors are indicated in parentheses. All equations were estimated using ordinary least squares with an intercept term not reported in the table.

Table 2.7 How have the hypotheses fared?

Hypothesis	Variable	Expected Sign	Obtained Sign	Statistical significance at 5%	Model(s)
H ₁	MACRO	-	Not applicable	NO	All
H ₂	TRADE_DEP	-	-	YES	M 1 in Table 2.2, M1-5 in Table 2.3
H ₃	ELECTIONS	+	+	YES	M1-3 in Table 2.2, M1-6 in Table 2.3, M1-3 in Table 2.4
H ₄	CONFIDENCE	+	+	YES	M1 in Table 2.6
H ₅	DISSENT	+	+	YES	M1-3 in Table 2.2, M1-4 in Table 2.3, M1-3 in Table 2.4, M1-2 in Table 2.6
H ₆	PROMARKET	+	+	YES	M2 in Table 2.6
H ₇	RESOURCES	-	-	YES	M4 in Table 2.3
H ₈	MEMORY	-	-	YES	M1-2 in Table 2.2, M1-2 in Table 2.3
H ₉	INFO	+	+	YES	M2-3 in Table 2.2, M2-3 in Table 2.3, M2 in Table 2.6
H ₁₀	WAR	-	-	YES	M1 in Table 2.2, M4 in Table 2.3
H ₁₁	STATE	+	+	YES	M1 in Table 2.4

ESSAY 3: TRANSACTION COSTS, STRATEGIC INTERACTION, AND FARM RESTRUCTURING

3.1 Introduction⁸⁰

As in other transition countries, the collapse of the communist system at the end of the 1980s triggered a sweeping structural change of the economy in Czechoslovakia and the Czech Republic, respectively.⁸¹ The crisis of the socialist economy required deep institutional changes, such as liberalization and privatization, which, in turn, have induced organizational instability (Lerman, 1999; Macours and Swinnen, 2000). Although the goal of agricultural transition was to transform all farms into market-oriented, viable economic organizations, some organizations seem to have fully adapted to the new institutional framework of the 1990s, while others only marginally changed their ways of doing things.

The main puzzle addressed by this paper concerns the determinants of organizational choice by large-scale farms in transition. Many studies now show that the outcome of organizational change is highly dependent upon the characteristics of the original socialist farms. Agricultural cooperatives primarily

⁸⁰ A slightly different version of this essay was accepted for publication by *Agricultural Economics* in March 2007. I would like to thank my co-author, Markus Brem, for his significant contribution to this essay.

⁸¹ Czechoslovakia split up into the Czech Republic and the Slovak Republic on January 1, 1993. Although the agricultural restructuring process in the Czech Republic is the focus, all issues before January 1, 1993 refer to the former Czechoslovak Republic and Czechoslovak Socialist Republic, respectively.

emerged from former collective farms, while other farm types mainly surfaced from the privatized state farms (Mathijs and Swinnen, 1998; Csaki and Lerman, 1997). Often, collective farms went through a superficial transformation, while the restructuring of state farms resulted in significant redeployment of assets.

This paper proposes a game-theoretical model to investigate the impact of factors such as group size, the quality of intra-organizational networks, and the magnitude of alternative payoffs on the choice of organizational type. Given the fluid process of re-deploying assets from the inherited state and collective farms into private successor farms, there is a need for an appropriate framework to model agents' interaction within the bounds of the laws guiding restructuring. In order to understand farm restructuring and organizational change one needs to understand the origin and evolution of the internal structure of the incumbent organizations.

In addition, this paper also empirically tests the assumptions and hypotheses characterizing the game-theoretical model. Drawing on the insights provided by the model and using a binary logit analysis, this paper estimates the probability of observing a cooperative versus another organizational choice as a function of three factors: the probability of workers versus managers gaining control over the farm, the perceived payoffs to workers in alternative farming structures, and the perceived payoffs to managers in alternative farming structures.

In order to undertake the estimation of the main model, all three explanatory variables need to be estimated. Following theoretical analysis, the

probability of workers gaining control is obtained by estimating a logit with two explanatory variables: the number of workers involved in the intra-organizational process and their ability to make collective decisions. Further, the payoffs to workers and managers in alternative farming structures are estimated with the help of several ordered logit models, using predictors such as the quality and quantity of the assets present on the farm, as well as personal characteristics of workers and managers.

The cooperative farm, as an organizational successor of the collective farm (CF), has two distinct types of actors: the ordinary members and the managers. Here, the managers' decision-making power to redeploy assets can be overruled by the members' vote. Since a high portion of members are employed by the cooperative, they are better able to control the behavior of the manager. In the case of state farms (SFs), the coalition of stakeholders is weaker, allowing for an accelerated redeployment of assets by individual agents. This leads to relatively more reshaping taking place in the farms emerging from SFs than from CFs.⁸²

Transaction costs and property rights theory are the key lenses needed to make sense of a firm's development in an environment characterized by breakneck technological, organizational, and institutional change, as in the case of transition economies. The present paper draws on this literature by putting

⁸² Reshaping does not necessarily translate into efficiency gains. For example, significant rent dissipation might take place. However, the aim of reform is, to a large extent, increasing the efficiency of the agricultural sector.

transaction costs at the heart of the explanation regarding the speed and depth of farm reform in the Czech Republic.

Offering an overall description of farm restructuring during the 1990s in the Czech Republic, Table 3.1 presents the number of farms, the percentage of total agricultural land, and the average farm size at two points in time for each type of farm. In 1989, CFs cultivated 61.4 percent of total agricultural land, SFs cultivated 38.2 percent, and individual farmers farmed the rest. By 1997 the picture has changed dramatically: *cooperatives* still farm on the largest portion of agricultural land (38.7 percent), and their average size is the largest (measured in hectares per farm), but *individual farms* are far more important numerically, and they farm 23.1 percent of total land. Moreover, there are new significant additions to the list: *corporations, partnerships, and joint-stock companies*.⁸³ In general, the average farm size decreased for all types, but less so for *cooperatives*. Agricultural land farmed by SFs was reduced from 38 percent in 1989 to less than 1 percent in 1997 (Ratinger and Rabinowicz, 1997).

In the case of the Czech Republic, the laws ruling restitution, privatization and transformation prescribed neither a break-up into many farms, nor a continuation of the operation in the current form for the former SFs and CFs. Except in a few cases, the decision was left to the stakeholders: workers, managers, landowners, and capital owners. Within the given institutional

⁸³ For the purpose of the present analysis, partnerships and corporations on the one hand, and joint-stock companies and cooperatives on the other, are grouped together. This is justified by the similarities in terms of key variables in the data sample at hand. For example, members of each group look similar to each other in terms of average employment and land holdings (see Table 1). Henceforth, the discussion will focus on two possible organizational choices only: corporation and cooperative.

framework provided by three main laws, the intra-organizational dynamics seem to have been responsible for the structural change in the agricultural sector.

In terms of its contribution to the literature, this paper puts transaction costs at the core of the argument explaining organizational choice. If farm restructuring is about defining a new set of property rights over productive assets, the size of transaction costs – the resources needed to establish and maintain property rights – is crucial to explain successful restructuring or lack thereof. This paper does not address the determinants of the decision for individual farming. Rather, the focus is on the relative stability of large-scale farms, something which is currently missing from the literature. Lastly, the current paper explicitly uses the nature of the links between the stakeholders on the farm to explain their ability to make collective decisions, which is essential in understanding the organizational choices in the first years of transition.

The paper is structured as follows. Section 2 contains a brief discussion of the relevant literature. Section 3 presents a characterization of the incumbent CFs and SFs, and an assessment of the legal framework governing restructuring of Czech agriculture. Section 4 motivates the use of transaction costs as the central concept of the argument. Subsequently, in section 5 a game-theoretical model is used to analyze the interaction between the main actors of the process of delineating further the property rights over farm assets. A formal testing of the ensuing hypotheses is attempted in section 6, using farm-level data on the Czech agriculture in the 1990s. Final remarks conclude the paper.

3.2 Literature Review

After more than a decade of research, a large literature dealing with farm restructuring in Central and Eastern European countries (CEEC) has emerged. The development of markets for both agricultural inputs and products was deemed a necessary condition to improve economic performance and efficiency in this sector. The presence of competition and the advent of privatization are two factors that could potentially spur efficiency enhancements via deep farm restructuring. However, restructuring, as much as it occurred in post-socialist transition, has resulted in little production or efficiency increase, in contrast to early expectations. Some observers blamed a superficial restructuring for this phenomenon, especially in the case of large farms (Macours and Swinnen, 2000).

Lerman (1999) describes the current state of affairs in the transitional agriculture: "... large-scale collective or corporate farms account for about 50 percent of agricultural production. However, the diversity of farm structures today is much greater than it was prior to 1990, when the Soviet kolkhoz was the universal template for farms. On the surface, the diversity is reflected in the new names under which restructured farms are registering: joint-stock societies, limited-liability partnerships, agricultural cooperatives, and of course collective enterprises. But the new market-sounding names more often than not hide an internal structure which is basically unchanged since the Soviet times." Hence, there is a need to explain this perceived lack of significant restructuring.

Csaki and Lerman (1997) find several reasons explaining why “the majority of members opted to remain under the umbrella of cooperation and large-scale farming”: legislative uncertainty generating insecurity about land tenure, lack of well-functioning markets for inputs and products, and lack of instruments for risk management. In the framework proposed in this paper, all these factors translate into transaction costs and are bound to influence organizational choices.

Mathijs and Swinnen (1998) use aggregate data and Rizov et al. (2001) use household-level data to investigate the shift to *individual farming* as influenced by the costs for individuals to leave the CF and start up an individual farm. Farmers seek a more efficient use of their resources by trying to make them more productive, but a shift from one type of farming to the other is costly. These authors analyze the trade-off between the advantages of farming individually versus pooling assets in a CF. They discuss a multitude of factors determining the relative magnitude of these costs, such as privatization and transformation policies; farmer’s human capital; presence of capital constraints; the relative prominence of entrepreneurship within the local culture; existing infrastructure; and the presence of well-functioning input markets.

Based on empirical studies throughout Central and Eastern European Countries (CEEC) and the Commonwealth of Independent States (CIS), Csaki and Lerman (1994) suggest that the majority of individuals remained in the CFs and, simultaneously, engaged into some additional form of private farming, using the CFs as a safeguarding mechanism during the uncertain period of early

transition. If the property rights over the farm had to be individualized, individuals re-grouped into 'combined farming' for certain tasks (e.g., using consulting services, marketing, machinery pools, processing), while the legal form of their businesses remained individual farming.

Sarris et al. (1999) address the question whether the current dual production structure in Central and Eastern European countries is efficient and stable in the medium term. Their analysis, based on Allen and Lueck's (1998) insight into the role of moral hazard in farm organization, shows that arable land production has been restructured to a larger extent into individual farms than livestock production. The authors use efficiency arguments to predict that farms will decrease in size and change gradually into individual farms.

Leonard (2000) focuses on Russian agricultural transition but the mechanisms he unveils apply to countries throughout the region. He traces rational resistance to land privatization to the practices during the Soviet era, and goes as far back as Imperial Russia to analyze the impact of the Land Code on farmers' incentives to establish private property rights on land. The author shows that when property rights are unclear, opposition to land reform can be individually rational. Given the uncertainty about the transaction costs the actors are likely to incur, they will avoid the risks associated with the entrepreneurial activity and resist the implementation of reform.

Laschewski (1998) analyzes the context in which farm members make their decisions regarding restructuring within East Germany's farms. Among the factors affecting the decision-making process he cites the urgency of making a

decision, the condition and market value of the assets, the external structure the farm is part of, and the decision-making patterns of cooperative members. Laschewski identifies “the collective identity” as a chief factor shaping the organizational choices of farmers: the decisions are mostly group-based, as opposed to individualistic.

Generally, the problem of slow economic reforms and the difficulties in adapting the entrepreneurial organizations to changing market conditions is analyzed by considering both the high costs of establishing property rights over assets (e.g., land identification problems, indivisibility of assets), and intra-organizational issues, such as managerial hold-ups caused by the inherited hierarchical structure (Divila and Sokol, 1994). Taking assets and land out of an existing farm was a very fluid process, whose outcome was not enforceable at low costs, both because legal property rights were not accurately defined and the judicial system did not function properly in the early stage of transition (Hlavacek, 1992; Gow et al., 2000).

3.3 Background Information on Czech Agriculture

This paper argues that history matters. In order to have a meaningful explanation of the outcomes of the restructuring process, the characteristics of the incumbent socialist farms warrant scrutiny (subsection 3.1). Further, the rules of the game define the playing field where actors interact. As a result, subsection 3.2 considers the essential elements of the laws governing the changes in Czech agriculture after 1989.

3.3.1 Socialist Farming

In this subsection the internal structure of the large-scale, socialist farms is examined. The purpose is to highlight the main differences and similarities of the two types of incumbent farms: CFs and SFs. The focus is on the workers' participation in the decision-making process and the latter's impact on their ability to reach collective decisions after 1989.

CFs illustrate the two basic principles of socialist agricultural policy: group ownership and collective work (Kirschbaum, 1980). In the 1950s and 1960s, the communist regime forced peasants to provide their land and agricultural assets to the village-based CF. As a result of these changes, farmers lost their original way of life (family farming), and the farming population was reduced to hired workers. This resulted in loss of responsibility and motivation, which in turn led to lower productivity and lack of incentives for innovation (Divila and Sokol, 1994). Even though the peasants retained formal private ownership throughout the communist period, they did not have a significant say in the development of their organizations. Rather, the all-powerful state apparatus superseded the intra-organizational decision-making process (Ratinger and Rabinowicz, 1997).

After several phases of amalgamation between 1960 and 1975, the average size of a CF increased to 2,500 hectares and included several villages (Stryjan, 1994). However, the internal life of the CFs continued mainly at the village level. People working on CFs were able to develop closer personal ties with other members and the management than was possible in SFs. The reasons for this include the fact that CFs emerged gradually through

collectivization and were community-based. The workers forced to join CFs rarely left the village, while the workers' turnover in SFs was significantly higher. Among CF members, these ties were enhanced through the regular membership meetings where they exerted their limited right to vote by virtue of their membership status. These networks evolved over the four decades of socialism. In the early 1990s, when decisions regarding restructuring were needed, the village-based networks within CFs translated into a higher ability of their members to exchange information and organize themselves.

SFs, the equivalent of the Soviet *sovkhozy*, were mainly situated in the northern and western areas of the Czechoslovakia (Sarris et al., 1999; Miller, 1994). There were several reasons for this. First, after the World War II, the Sudeten-Germans living on the Czech side of the border were expelled, giving the communist regime the opportunity to nationalize that land. Second, non-profitable CFs were merged with existing SFs during the last two decades of the socialist era, which increased the size of SFs in this area. Third, due to sparse population in this region after WW II, the communist regime re-settled people to these less populated areas in order to increase agricultural production. SF employees generally did not bring land or assets to the farm and had no membership status, which, in turn, did not allow for tight horizontal networks similar to those in CFs.

Although some authors emphasize the entrepreneurial freedom in CFs, particularly for non-agricultural production, the influence of socialist bureaucracy on the hierarchy and decision-making process inside the farm was similar in both

CFs and SFs. However, the scale of SFs was substantially larger on average than that of CFs, both in terms of people and cultivated land as SFs usually extended over many villages.

In the early 1990s, most of the CFs that were part of the last wave of amalgamation that ended in 1976, decided to split up from the inter-village level back to the pre-1976 village boundaries (Stryjan, 1994). This return of CFs to their pre-1976 boundaries, but not back to the pre-communist level of 1948, is consistent with the claim that strong intra-organizational and social networks were present at the village level. Even though a break-up is costly for the organization, the pre-1976 boundaries seemed more appealing to the CFs' members than the post-1976 or pre-1948 ones. The reason for this outcome rests on the fact that social life in village-based communities helped create those networks over time: the longer the time, the more consolidated those networks became. In contrast, SFs did not restructure before the new institutional framework was launched.

The hierarchical structure of both SFs and CFs was the same because it served the same purpose: taking orders from party officials and/or the Ministry of Agriculture, and relaying those orders to various branches of the farm. SFs and CFs did not use market signals to organize production. Instead, the five-year plan laid out the tasks for them, which, in turn, led to similar incentives regarding product variety, processing, distribution, and innovation for both types of organizations. A formal test of whether these potential factors account for the strikingly different restructuring outcomes of SFs and CFs is undertaken in

section 6. The data supports the contention that such dimensions of the farm as diversification and vertical integration were virtually the same for SFs and CFs in 1989.

3.3.2 The Early Legal Framework

The new agricultural policies promoted in the Czech Republic in the early 1990s were meant to accurately define formal private property rights over assets by restituting assets expropriated throughout socialism, privatizing most of the state-owned assets, and transforming CFs. The transition of the agricultural sector focused on remedying the injustices inflicted by collectivization and nationalization, as well as eliminating the distortions imposed by collective and state ownership on the incentives in agricultural sector (Divila and Sokol, 1994).

These goals were pursued by policies set down in three main laws governing the restructuring of Czech agriculture: the restitution law, the transformation law, and the privatization law (Ratinger and Rabinowicz, 1997). These laws were amended several times, but the basic idea remained the same: they are supposed to stimulate and guide the transfer of property rights over assets from collective or state organizations to individuals. A brief discussion of the three laws follows.

Property rights over expropriated land and assets, regardless of the current deployment, were reestablished according to the *Restitution Law*, also called the *Land Law*. In order to safeguard agricultural production, the law stipulated that the owner was allowed to withdraw land from the existing

organization only if further cultivation was secured. In case of non-withdrawal, the usufruct rights remain with the current farm. The implementation of the law was marred by poor title records, numerous false claims, unreliable courts, and ever-changing legal dispositions.

The *Transformation Law* provided the legal framework for the distribution of property rights over the CFs' remaining land and non-land assets after restitution was implemented. The non-restituted value was distributed as shares to those who owned land and non-land assets before collectivization, and to those who worked or are currently working on the farm, according to the number of years they worked. These shares could be used as starting capital for new individual farms or as membership investment in a transformed enterprise.⁸⁴

The *Privatization Law* governed the establishment of property rights over the remaining land and non-land assets of SFs after the Restitution Law was implemented. Two methods were employed: small-scale privatization via auctions, and large-scale privatization via vouchers. In practice, the latter played a bigger role. This law required a SFs' management to submit a so-called *Basic Privatization Project*, to serve as a benchmark for any other submitted privatization proposal. Additionally, any Czech citizen⁸⁵ living in the Czech

⁸⁴ The shares could not be sold on the market and were almost never converted into cash. The regulations required the manager to facilitate either the retention of the corresponding „capital“ if the new owner is not inclined to take up farming, or the departure of this capital if the owner intends to set up a family farm. In the latter case, the shares would be transformed into land and/or other assets according to a prescribed formula.

⁸⁵ Before Jan 1, 1993, every citizen of Czechoslovakia was able to submit a privatization proposal.

Republic was allowed to submit a *Partial Privatization Project*, referring either to a whole SF or to parts of it. However, only rarely did many individuals get together and submitted a common privatization proposal over the whole, or at least a large piece, of a former SF. The decision about the type of the new organization rested to a large extent on the entrepreneurial ability of the managers.

Most restituted assets were expropriated during socialism from people who later left the village/region and moved to the cities. As restitution was implemented four decades later, they and their inheritors were reluctant to resume farming. Most of them regarded these assets as windfall and chose to leave them in the care of the incumbent farm. As such, these outsiders were more likely to support the manager's restructuring solution.

Three types of approaches with respect to de-collectivization can be distinguished across transition countries in the 1990s: 'preserving large-scale farming', 'structural neutrality to the farm type', and 'breaking up the large-scale farm' (Swinnen, 1997). It is the second approach that characterizes the transition of the Czech agricultural sector. As opposed to the Bulgarian or Albanian case, "every one interested in the privatized/transformed assets was allowed to come with his/her own project" in the Czech Republic (Ratinger and Rabinowicz, 1997).

Inherent conflicts among different stakeholders arose, especially because of time pressure⁸⁶ and indivisibility of physical assets. The governing laws

⁸⁶ The law prescribed a time limit of one year for the transformation of CFs, and three years for SFs. However, due to the intensive competition for the most valuable units of the state farm, the crucial period of internal organizational change within SFs was the first year of transformation.

granted significant decision-making powers to farm managers in order to sort out those conflicts. They were called to balance the interests of claimants wishing to farm independently, as well as those of the other owners, while continuing the production process. Apparently, government at all levels in the Czech Republic remained rather neutral in these conflicts. The laws allowed the stakeholders involved in the farm's restructuring process to determine the outcome of restructuring with respect to size and property structure of the new farms.

Given the backdrop depicted above, the conclusion points to the fact that the institutional framework created by the restitution, privatization, and transformation laws, while providing the basis for agricultural restructuring, cannot explain by itself the different restructuring paths of CFs and SFs. Individuals who were granted property rights over assets coming from SFs or CFs had to decide for themselves what new organizational form they wanted to place their assets into. The laws governing restructuring in the Czech Republic were relatively neutral in that they offered only a menu, but did not prescribe the organizational form in each case. The constraints for the individuals deciding on the legal form consisted mainly of the existing frictions within the group of stakeholders of the original farm.

3.4 Transaction Costs in the Restructuring Process

This paper regards farm restructuring as an outcome of strategic interaction among the stakeholders. In order to model the restructuring decision, the relative magnitude of transaction costs of breaking up the existing farm

versus continuing that inherited type of farming is assessed. The concept of transaction costs used here is the one proposed by Allen (1991). By definition, transaction costs are the amount of resources used to establish and maintain property rights over assets.

Why the need for transaction costs? Simply because during the early stages of transition these types of cost are quite significant as compared to production costs. If the economic transition to a market economy has the establishment of a new property regime at its core, which amounts to delineating property rights over assets to individuals, then transaction costs come to the fore. Assigning property rights is not done by fiat: significant amounts of resources flow into securing those assets, making those rights effective, allowing the economic actors access to the fruits of these assets. Secure property rights, in turn, provide the new owners with incentives to invest in these assets and, as a result, increase efficiency – the main goal of restructuring. Note the possibility of the absence of new property rights, and therefore the lack of real restructuring, if transaction costs are prohibitive.

All players are thought to be rational and to exhibit maximizing behavior. The twist here is that economic agents maximize gains from trade net of transaction costs. An actor would, in most cases, try to break up the farm and establish a new one on his/her own behalf by deploying the best possible assets from the old farm. The incumbent manager of the farm is likely to be in a good position to do so. Other stakeholders have also chosen to take out their assets and farm individually (e.g., see the tremendous increase of individual farms

between 1989 and 1997 in Table 3.1). However, the emphasis in this analysis is on the emergence of *large legal entities*, which inherited the bulk of the assets from the original SFs or CFs.

There are two types of players or agents within each original farm type. They are called generically the 'manager' (M_{SF} and M_{CF} , respectively), and 'the workers' (W_{SF} and W_{CF} , respectively). The workers are the mass of agricultural workers employed on the farm. All references to workers are understood to also include other stakeholders who are not part of the management team. Likewise, all of the references to managers as individuals will be understood to include cases in which there is a tightly knit management team that functions in a cohesive way. Henceforth, the discussion will be couched in terms of the strategic interaction of these two players: the manager and the workers.

While managers have roughly the same characteristics in both environments, workers are different in one essential respect: those populating CFs have developed over time collective action skills that are lacking in W_{SF} , as documented in section 3.1.⁸⁷

In this setting, organizational change is an outcome of strategic interaction between players. They have to design individual and/or collective strategies and then implement them in a standard maximization process. *Ceteris paribus*, members of small groups are more successful in solving the collective action problem than members of large groups since free riders are easier to identify

⁸⁷ The concept of collective action skills used here is not very different from what is called elsewhere social capital or private enforcement capital, e.g. Gow et al. (2000).

within small groups. The payoff of additional effort for an individual in a large group is much smaller than the payoff of the same effort in a small group. Moreover, differences of opinions and strategies among group members are more costly to settle if the group is large, while small groups have lower bargaining costs in reaching common decisions (Ben-Ner et al., 2000). Given the average sizes of farms in the initial stage of the restructuring process, the collective action problem seems much more significant in SFs.

Next, the main dimensions along which transaction costs are measured during the early transition period are identified. The discussion below shows how the manager is likely to exhibit lower transaction costs than the workers in all the categories. As such, the relative cost of breaking up the farm for agents of both types with regard to the two institutional environments is strikingly different.

First, the cost of acquiring information about the ever-changing external environment is assessed. Given the nature of their job, managers of SFs and CFs have easy access to the myriad new laws and regulations that come into existence in the first years of transition. Over time, they have established contacts within the Ministry of Agriculture and the guild associations that can keep them up-to-date with the latest developments in restructuring. Also, they have good knowledge about the farm's network of suppliers and processors. Moreover, there is a close relationship between managers and the *Land Fund* – the institution that oversees the privatization of state-owned land and non-land assets and supervises restitution. All these advantages allow managers to enjoy relatively low costs of acquiring information that can be used to successfully

break up the farm through a privatization or transformation project. That puts them in a good position to leave with the most valuable assets. This is not the case for W_{SF} and W_{CF} players.

Second, the cost of land identification is analyzed. In both CFs and SFs, the manager has better information about differences in productivity of various land plots. In the case of CFs, the Transformation Law required that Transformation Boards be established to coordinate the activity of reassessing the land. Often, managers were members of these Boards and they had access to cadastral records. As a result, it was easier for them than for the workers to amass land for themselves when transformation processes were completed. In the case of SF, easier access to cadastral records allowed the managers to submit well-documented, and therefore successful, privatization projects.

Third, the cost of identification of non-land assets is considered. The identification cost is low for the manager because he has access to the books of the farm, as well as information about the productivity of these assets. Moreover, the manager had access to information provided by the guild associations regarding the market value of those capital assets, as opposed to the book value.

Fourth, the cost of capital is an important issue. Usually, access to capital is needed for a successful farm restructuring. In the early stages of transition capital markets are poorly developed. The banking system is itself in the middle of the privatization process and does not yet respond to market signals. Instead, what matters are the informal links between former members of the nomenclature that survived the collapse of the old regime in key posts in the

banks and in CFs and SFs. These links lower significantly the cost of capital for managers, and give them a better chance of successfully re-deploying assets from old organizations into new, privately owned farms.

To summarize, the manager faces relatively low transaction cost of re-deploying the bulk of the quality assets of the original farm to a new farm, compared with the workers. The latter, in an attempt to prevent such a move, might choose to assemble as a group player dubbed 'the workers'. It is likely that the individual payoffs of these individual workers are higher this way. Members of this group cannot afford the high individual transaction costs of re-deploying land and non-land assets that so far were owned in common.

The manager will try to break up the farm whenever the workers are not likely to overcome the collective action problem inherent in groups. As such, the restructuring process can be thought of as the outcome of the fight between the manager and the workers. For the purpose of this analysis, both at the theoretical and empirical levels, only two types of outcomes are considered: the one preferred by the manager, called generically 'corporation' (outcome r), and the one preferred by the workers, denoted generically as 'cooperative' (outcome k).

Organizations with the legal form *Cooperative*, characterized by a large number of owners, may be considered those in which the workers won the fight. A large number of employees and shareholders characterize this organizational type, in stark contrast to *Corporations*. The latter emerged whenever the manager won the fight. In this case the enterprise is governed by a small

number of owners. See Appendix 2 for three case studies that exemplify the issues discussed in this section.

3.5 The Model

This section describes the structure of a modified version of a hawk–dove game (see Figure 3.1). It is assumed that the manager either tries to break up the farm (strategy *b*), or cooperates with the workers (strategy *c*). The workers themselves have two alternatives: either to fight the manager (strategy *f*), or to accommodate him (strategy *a*).⁸⁸

Table 3.1 The game in normal form

		Workers	
		Fight (<i>f</i>)	Accommodate (<i>a</i>)
Manager	Break up (<i>b</i>)	$p M_k + (1-p) M_r - z, p W_k + (1-p) W_r - z$	M_r, W_r
	Cooperate (<i>c</i>)	M_k, W_k	M_0, W_0

Whenever both players decide to behave like hawks, nature will play a role: with probability *p* the workers will be successful and with probability (1-*p*) the manager will be successful. This probability *p* is a function of the number of people in ‘the workers’ group, and the quality of their network. As the number *n* of people in the group increases, it is more difficult for the workers to fight the

⁸⁸ Essay 1 of this thesis used cooperative bargaining to model the interaction of the incumbent and the opposition. Essay 3 uses non-cooperative interaction both for expositional efficiency and because the focus is on discrete choices.

manager. A measure for the workers' ability to organize themselves in horizontal networks is denoted by \mathbf{s} . As such, $\mathbf{p} = \mathbf{p}(\mathbf{n}, \mathbf{s})$. This definition suggests a tradeoff: a larger number of individuals making up 'the workers' would make it harder for this player to act, but the quality of the network within this group can partially compensate for it.

There is a cost to fighting, \mathbf{z} . In order to simplify the analysis, it is assumed that \mathbf{z} is the same for both players.⁸⁹ The payoffs depend on the legal form that is chosen, and on the particulars of the farm (e.g. types of production, average land holdings, performance before 1989, etc.). M_r , M_k , W_r , and W_k are the income levels of the manager and workers, respectively, in the case of the two outcomes.

Nature's move indicates the winner of the fight which, in turn, will decide the organizational type of the successor farm. Out of all possible types of farms, the manager would prefer a corporation (outcome r), while the workers would choose a cooperative (outcome k). These preferences over outcomes imply $M_r > M_k$, $M_r > M_0$, $W_k > W_r$, and $W_k > W_0$, where outcome 0 denotes a benign cooperation between the two players. These assumptions are justified by the discussion presented in the previous section regarding the relative magnitude of transaction costs for the two types of agents.

The dependence of various equilibria on \mathbf{p} and \mathbf{z} is of interest. There are four possible cases. In order for both players to behave like hawks, it requires:

⁸⁹ In practice, this assumption does not necessarily hold. However, this fact is not restricting the model's generality.

$$M_k < pM_k + (1-p)M_r - z \quad (3.1)$$

and

$$W_r < pW_k + (1-p)W_r - z \quad (3.2)$$

If (3.1) holds, **b** is a dominant strategy for the manager. If (3.2) holds, **f** is a dominant strategy for the workers. In this case, (**b**, **f**) is the only Nash equilibrium. In order for relations (3.1) and (3.2) to hold simultaneously, it is required that $z < \min\{(1-p)(M_r - M_k), p(W_k - W_r)\}$. Can this happen? Yes, if the cost of fighting is not too big, each player has a lot to gain by switching to his/her favorite legal form, and **p** does not have extreme values.

Now, let us suppose that (3.1) does not hold. In this case **b** is not a dominant strategy for the manager anymore. If (3.2) still holds, **f** is a dominant strategy for the workers. The best reply to **f** is **c** (cooperate). Again, there is a unique Nash equilibrium, (**c**, **f**). The necessary condition for attaining this equilibrium is $z \in [(1-p)(M_r - M_k), p(W_k - W_r)]$. Conversely, when (3.1) holds but (3.2) doesn't, **b** is a dominant strategy for the manager, while **a** (accommodate) is the best reply to **b**. Outcome (**b**, **a**) is a unique Nash equilibrium if

$$z \in [p(W_k - W_r), (1-p)(M_r - M_k)].$$

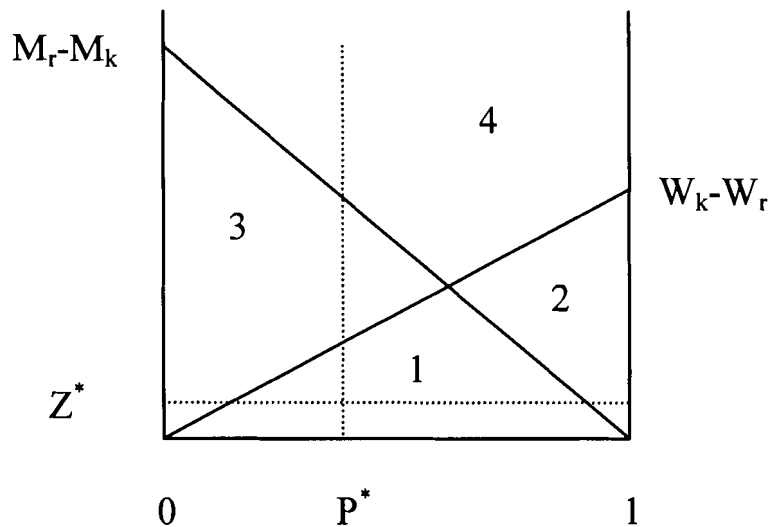
When both players behave like doves, there is no dominant strategy: the best reply to **c** is **f**, and the best reply to **b** is **a**. If

$z > \max\{(1-p)(M_r - M_k), p(W_k - W_r)\}$, there are two Nash equilibria in pure strategies and a mixed strategy equilibrium.

The various equilibria of the game depend on the relative sizes of the payoffs, which in turn are functions of \mathbf{p} and \mathbf{z} . There are four possible outcomes, corresponding to the availability of a pair of strategies for each player. With \mathbf{z} as a parameter, the equilibria depend naturally on the characteristics of the farm, \mathbf{n} and \mathbf{s} , and the perceived payoffs of the two players in alternative farming structures.

Figure 3.2 illustrates the predictions of the model. The probability \mathbf{p} of the workers winning the fight is represented on the horizontal axis: $\mathbf{p} \in (0, 1)$. The cost of fighting \mathbf{z} is represented on the vertical axis, together with the two boundaries delimiting the dominant strategies spaces for the two players: $\mathbf{z} = (1 - \mathbf{p})(M_r - M_k)$ for the manager, and $\mathbf{z} = \mathbf{p}(W_k - W_r)$ for the workers.

Figure 3.2 Predictions of the model



There are four areas in Figure 3.2, corresponding to the four analyzed cases. For a particular farm, p is determined by the number of stakeholders n and the quality of the network s , while z , $(M_r - M_k)$, and $(W_k - W_r)$ are determined by other characteristics of the initial farm (asset holdings, agents' income before 1989, type of production, performance, etc.). All these variables will jointly determine the area corresponding to a particular equilibrium, which in turn will specify the probability, say, that this farm will transform into a 'cooperative' (outcome k). Note that this probability is the same as p only in area 1. This probability is one in area 2, zero in area 3, and is determined by the relative likelihood of obtaining the three possible equilibria in area 4. Two main hypotheses arise from the model:

- The higher the probability p of the workers winning the fight, other things equal, the higher the probability of observing a 'cooperative'.
- The higher the gain from switching to one of the players' preferred organizational forms – $(M_r - M_k)$ or $(W_k - W_r)$ – the higher the probability with which this particular organizational form results, other things equal.

3.6 Empirical Analysis

Data was collected on a random sample of farms in two regions of North Bohemia and South Bohemia in the Czech Republic. This survey was part of a larger project named 'Comparative Analysis of the Transition Process of the Agricultural Sector in Selected Central and Eastern European Countries' ('Komparative Analyse des Transformationsprozesses in den Agrarsektoren ausgewählter Staaten Mittel- und Osteuropas', KATO). It also includes surveys of farms in Bulgaria and Poland.

Farmers were interviewed in person by means of a standardized questionnaire in May and June 1999 by members of the KATO research network. The sample consists of 67 large-scale organizations covering the two types of legal entities considered here: cooperatives and corporations. The data include a host of variables describing the reorganization paths and farm characteristics in its foundation year,⁹⁰ as well as characteristics of the original farm.

Table 3.2 provides definitions and descriptive statistics for the variables in the working sample. All variables used in the analysis come directly from the survey. Most of these variables are straightforward but a couple of them deserve a discussion here. The survey questionnaire contained myriad questions from which one is able to infer a clear picture of the nature of the restructuring process, at least at the qualitative level. Specifically, it is possible to determine whether there were frictions between the manager and the workers concerning the organizational choice. Variable FIGHT was created as a dummy equal to 1 whenever such a “fight” took place on the farm. See Appendix 2 for several examples of this type of analysis.

WORK_WON deserves a special comment as well since it is central to the main argument of the paper. This variable was constructed using information on the restructuring path of each farm. For example, if a farm inherited a sizeable share of the assets of the original farm and the initial manager runs a ‘corporation’, it is assumed that the manager won the fight. Alternatively, if a new

⁹⁰ Since it differs among farms, this year is indicated throughout by 199x. By and large, the foundation year belongs to the period 1991-1994.

manager runs a 'cooperative' including the bulk of the assets of the original farm, workers have won. Note that a corporation or a cooperative could emerge even in the absence of a fight. In each case one player accommodates the other one, as shown in the theoretical model.

In order to illustrate further the claim that relatively more reshaping has taken place in farms emerging from former SFs than from former CFs, descriptive statistics for relevant variables are presented in Table 3.3. The number of employees per 100 hectares decreased markedly between 1989 (EMPLAN89) and the year of foundation (EMPLAN9x), but more so for farms emerging from SFs. Similarly, on average 4.25 legal entities (N_LEGAL) emerged from a SF, 94 percent of those representing corporations, while the corresponding number for CF is 1.6, with 78 percent being cooperatives. The polarization is significant, with a higher propensity for SFs to divide into smaller pieces. In addition, the number of cooperatives (N_COOP) emerging from CFs and SFs are 1.27 and 0.08, respectively, while the number of corporations (N_CORP) is 0.24 and 4.00, respectively. Not reported in Table 3.3, the average percentage of the 1989 assets inherited by the successor farms (INHERIT) is 74 percent for cooperatives and 31 percent for corporations.

According to the theoretical model presented in section 5, there are four factors overall determining the probability of a cooperative emerging from the restructuring process: the number of stakeholders on the farm at the beginning of transition, the nature of the stakeholders' network, the gain from switching to the preferred legal form for the manager, and the corresponding gain for the

workers.⁹¹ Further, it was postulated on theoretical grounds that the role of the first two factors is subsumed in a measure of the probability of the workers winning the fight concerning the restructuring path. In particular, the number of stakeholders on the farm has a negative effect on this probability and the strength of their network has a positive effect.

In order to exploit this theoretical setup for estimation, the probability of workers winning the game is employed as a regressor in the final estimation, rather than using the number of stakeholders and the strength of their network as regressors. This probability is estimated via a logit with the number of stakeholders and the quality of their network used as explanatory variables. Next, the income differentials with respect to alternative organizational choices are estimated with the help of ordered logit models for the two types of workers. Finally, the three regressors obtained in this fashion are put together in order to estimate the main model.

While suitable data for employment is available, good quantitative measures for the quality of the networks are lacking. Such measures would include the number of villages that are engulfed by the farm, the distance between those villages, and any other variables that would describe the tightness of social life in those communities. Instead, a dummy variable is used to

⁹¹ The cost of fighting is left out in the empirical analysis due to lack of data. However, it plays a significant role in the theoretical analysis since it enters the players' payoffs.

measure this effect: ORIGIN takes the value 1 if the original farm was a CF, 0 otherwise.⁹²

As discussed in section 4 and reiterated above, the focus of the analysis is the binary decision with respect to the organizational choice: corporation versus cooperative. The main model is then set up as a logit estimation:

$$COOP_i^* = V_i \delta + \varepsilon_i, \quad i = 1, \dots, n, \quad (3.3)$$

and

$$COOP_i = 1 \quad \text{if } COOP_i^* > 0, \quad (3.4)$$

$$COOP_i = 0 \quad \text{if } COOP_i^* \leq 0,$$

where $COOP_i^*$ is a latent farm organization response variable, $COOP_i$ is the observed dichotomous choice of farm organization for farm i after restructuring, V_i is a row vector of exogenous variables, δ is a column vector of unknown coefficients, and ε_i is a farm-specific error term. According to the model in Section 5 and the discussion above, V_i includes three variables: the probability of workers winning the fight, and the income differentials in alternative farming structure for both the manager and the workers. The predictions of the model indicate a positive impact of the first two components of V_i on the probability of observing a cooperative, and a negative impact for the income differential of the manager.

⁹² An alternative specification was attempted by using EMPLOY89 as the only determinant of the probability with which the workers win the fight. Qualitatively, the results did not change.

Since players care about the probability of winning the fight, not about the number of employees and the quality of the network *per se*, an estimate of this probability is needed in order to use it into the main model. A logit model is used to estimate the probability of winning the fight by the workers:

$$\text{WORK_WON}_i^* = Q_i \eta + \varphi_i, \quad i = 1, \dots, n,$$

and

$$\text{WORK_WON}_i = 1 \quad \text{if } \text{WORK_WON}_i^* > 0,$$

$$\text{WORK_WON}_i = 0 \quad \text{if } \text{WORK_WON}_i^* \leq 0,$$

where WORK_WON_i^* is a latent variable denoting the inherent winner of the fight, WORK_WON_i is the observed dichotomous result of the fight on farm i , Q_i is a row vector of exogenous variables, η is an column vector of unknown coefficients, and φ_i is a farm-specific error term.

Two variables make up Q_i : the number of employees on the farm (EMPLOY89), and the quality of their network (ORIGIN). The sample is restricted to 27 observations covering farms which were randomly selected out of the 42 observations for which a fight took place (FIGHT =1). The rest of the 15 observations not used in this estimation will be combined with the 25 observations characterizing farms where fight did not take place (FIGHT = 0) to make up the sample used to estimate the main model. This selection of observations is done to ensure that observations used to estimate the probability of workers winning a fight (and so leading to the farm becoming a cooperative) are not used when estimating the main logit model for which the dependent

variable is COOP. The rationale here is similar to the one behind measuring prediction success by predicting out of sample rather than in-sample.

EMPLOY89 is expected to have a negative sign, while a positive sign is anticipated for ORIGIN, as argued in section 4. Indeed, the expected signs and significance at 5% are obtained in estimating the model (see Equation I in Table 3.4). To perform a sensitivity analysis and further test the theory, two more variables are added to the above specification: INFO, a dummy equal to 1 if the manager of the original farm had access to private information, zero otherwise,⁹³ and POST_SEC, a dummy equal to 1 if the farm manager has post-secondary education, zero otherwise.

These variables are seen as two possible determinants negatively affecting the probability of workers winning the fight. However, both coefficients are insignificant at 5% (Equation II, Table 3.4), and an F-test on these two extra coefficients deems these variables irrelevant as a group (F-statistic = 1.81). Hence, these results confirm the hypothesis that the probability of winning the game by the workers is determined by two factors only: the number of stakeholders on the farm and the quality of their network.⁹⁴

⁹³ Private information here refers to sources that are available to the manager but, to a large degree, not to workers: personal contacts outside agriculture, advanced seminars, etc., as opposed to publicly available information such as from TV, press, public meetings.

⁹⁴ A possible effect of land quality on the outcome of the fight is also investigated. It is certainly plausible that soil fertility and other factors relevant for the value of land plays a role in the outcome of the fight. A survey question that asked the interviewee to rank the average quality of the land in the original farm was used to create a proxy variable measuring this quality. The regression results invariably deemed this factor insignificant.

Using the model in equation I of Table 3.4, the probability $WORK_WON_F$ that the workers win the fight is forecasted for all observations in the working sample (67 observations). In turn, this variable is used in estimating the main model (equation 3) alongside the income differential for each player. However, only 40 observations will be used for this estimation. They comprise 15 observations of farms where there was a fight which were not used in assessing the probability of winning by the workers, and 25 observations of farms where no fight took place. As explained earlier, the reason for this split of the sample is to avoid bias in estimating the impact of the probability of workers winning the fight on the probability of observing a cooperative. If the subsample used to estimate equation I in Table 3.4 is also used in estimating the main model, the slope coefficient estimate for the probability of workers winning the fight will be biased toward finding significance.

One could argue, correctly, that the probably of workers winning the fight obtained with the help of Model I in Table 3.4 is conditional on a fight actually taking place since only such observations were used in estimating it. With a help of a larger data set, the selection mechanism could be accounted for by using a maximum likelihood procedure in order to estimate the unconditional probability of workers winning the fight. However, given the small sample at hand and the two-sided truncation, that is bias in one direction due to lacking observations on no-fights by workers is likely to be offset by bias in the other direction due to lacking observations on no-fights won by firms, ignoring the issue is justified.

Next, income differentials for each player in the two possible outcomes need to be assessed. Good predictors for the gain in income for both players in the case of switching to their preferred organizational type are required. Information about the range of net average income for both players in the year of foundation 199x (INCOME_M and INCOME_W) is available. INCOME_M is equal to 1, 2, or 3, if manager's income falls into 3,000 to 5,000, 5,000 to 10,000, and 10,000 to 20,000 Czech crowns intervals, respectively. Similarly, in the case of the net average income for workers, the intervals are 3,000 to 5,000, 5,000 to 7000, and 7000 to 10,000 crowns, respectively.

Players do not know these incomes a priori. However, they form expectations about the future income streams based on the available information, such as past income and the quality of the assets they own, and are able to predict what these income levels would be in both alternatives.

An ordered logit procedure is required to forecast these incomes for both types of players in the two cases – cooperative or corporation. The following empirical specification is used, where for each farm i in the particular sub-sample:

$$\text{INCOME_M}_i^* = X_i \beta + u_i, \quad i = 1, \dots, n, \quad (3.5)$$

and

$$\text{INCOME_M}_i = 1 \quad \text{if } \text{INCOME_M}_i^* < \gamma_1$$

$$\text{INCOME_M}_i = 2 \quad \text{if } \gamma_1 \leq \text{INCOME_M}_i^* < \gamma_2 \quad (3.6)$$

$$\text{INCOME_M}_i = 3 \quad \text{if } \gamma_2 \leq \text{INCOME_M}_i^*$$

where INCOME_M_i^* is a latent variable representing the income level of the manager of farm i after restructuring, INCOME_M_i is the observed income level for the manager, taking values 1, 2, or 3, depending on the income range as mentioned above, X_i is a row vector of exogenous variables that does not include a constant, β is a column vector of unknown coefficients, γ_1 and γ_2 are the thresholds that determine what value of INCOME_M_i a given value of INCOME_M_i^* will map into, and u_i is a farm-specific error term.

A similar model is used for INCOME_W . Subsequently, the income (payoff) differences corresponding to $(M_r - M_k)$ and $(W_k - W_r)$ in the model are computed, creating variables DIFFINCM and DIFFINCW :

$$\text{DIFFINCM}_i = \text{INCOME_M}_i(r) - \text{INCOME_M}_i(k)$$

$$\text{DIFFINCW}_i = \text{INCOME_W}_i(k) - \text{INCOME_W}_i(r)$$

where the terms denoted by (r) represents the forecasted income level for the particular player in farm i if the organizational choice is a corporation, while the terms denoted by (k) represent the forecasted income level for the particular player in farm i if the organizational choice is a cooperative. These forecasted income levels are obtained using the probabilities estimated in the ordered logit procedure (equations (3.5) and (3.6)), and the midpoints for the relevant income intervals specified above.

The resulting models (EquationsV toVIII in Table 3.5) are built using obvious predictors (the vector X_i) for the income levels in the two cases. In the

case of a manager ending up in a cooperative (Equation V in Table 3.5), predictors for future income are farm's assets (ASSETS89), current income (INCOME89), and the presence of a non-agricultural production on the farm (NON_AG_P), since this activity is usually more lucrative than agricultural production. All coefficients are significant at 10% level or less.

For the workers ending up in their preferred organization (cooperative), good predictors are again ASSETS89 and INCOME89, as well as a measure of the land ownership, number of workers per 100 hectares of land – EMPLAN89 (Equation VI, Table 3.5). In the case of a manager setting up a corporation, determinants of future income can be current assets (ASSETS89), the financial situation of the incumbent farm (FINANCES) as a measure of asset quality, and his/her education level – POST_SEC (Equation VII, Table 3.5).

Finally, in the case of the workers securing a job with a breaking-away corporation, income would depend on some measure of the probability of landing the job (the number of employees per 100 hectares of land) – EMPLAN89, and the presence of some quasi-industrial departments on the farm, NON_AG_P and PROCESS (see Equation VIII in Table 3.5).

Once the probability of the workers winning the game (WORK_WON_F) and the income differentials DIFFINCM and DIFFINCW are calculated, the main model (equation 3) is ready to be estimated. The probability of observing a cooperative is obtained, given the characteristics of the farm. A binary logit procedure with COOP as dependent variable is used. As hinted above, a positive sign for both WORK_WON_F and DIFFINCW, and a negative sign for DIFFINCM

are expected. The anticipated signs are obtained, with WORK_WON_F and DIFFINCW being statistically significant at 10% and 5% level, respectively, while DIFFINCM has the right sign but it is not significant (see Equation III, Table 3.4). A possible reason for the latter result could be the small sample problem encountered in estimating the expected wages.

To further test the theory, one more factor that could potentially account for additional and/or alternative theories is added to equation (3.3). The presence of quasi-industrial activities on the farm could be a factor that influences organizational choice, since those assets are usually much more productive, and therefore more valuable, than agricultural assets. These industrial assets would act as a prize that fuels restructuring. NON_AG_P is a proxy for the level of industrial activities on the farm. This extra variable is found to be statistically insignificant (see Equation IV, Table 3.4). The conclusion is that there is no significant evidence in the sample to reject the hypotheses put forth in the main model.

Further testing is performed in order to account for alternative factors that might affect the restructuring process. It was claimed in section 3 that all characteristics of the farm other than the number of workers and land holdings were similar across the two original types of farming. This assumption is now tested by considering several characteristics of the farm undergoing restructuring other than the number of workers and the quality of their network (see Table 3.6):

Hierarchical structure: the average percentage of management employees in total employment (MANAGMNT), and the average percentage of middle

management in total employment (MIDDLE_M) are virtually identical for both types of farms (SF and CF).

Diversification: the average percentage of crop-cultivated land (CROP), the average percentage of pasture-cultivated land (PASTURES), the average percentage of farms with non-agricultural production (NON_AG_P), the average share of non-agricultural revenue (NON_AG_R), and the average share of non-agricultural workers in total employment (NON_AG_W) all do not differ significantly across CFs and SFs.

Vertical integration: the average percentage of farms possessing a processing unit (PROCESS), and the average percentage of crops delivered to a marketing company (MARKETING) are effectively the same for SFs and CFs.

Finances: the state of the farm's finances is quite similar for SFs and CFs, indicating the presence of identical treatment by the state with regard to the agricultural regulatory and subsidy regimes.

To summarize, the above results provide overwhelming evidence that the farms originating in the collective and state sectors of Czech socialist agriculture are quite similar along a large set of dimensions. If these characteristics differed significantly, they would represent potential explanatory factors for the observed differences in terms of the organizational choices made by CFs and SFs. Since they do not differ significantly, these potential factors fail to pose a serious challenge to the hypothesis that the transaction costs faced by managers and

workers and their strategic interaction are the main determinants of these observed organizational choices.

To conclude, there is very little evidence in the data to invalidate the main assumptions and hypotheses considered here. Indeed, the number of players involved in the intra-organizational process, their ability to make collective decisions, and their perceived payoffs in alternative farming structures determine the restructuring outcome.

3.7 Concluding Remarks

This paper deals with the evolution of property rights in agricultural firms in transition. While several studies analyze the individualization of property rights over agricultural assets from the point of view of the individual farmer (should s/he farm independently or not?), few studies in agricultural transition focus on the factors that kept large-scale farms together. There are several plausible explanations for the inertia of large-scale farms: from the resistance of agrarian lobbies to de-collectivization, which can translate into policies that hinder the definition of private property rights; to a plethora of unfavorable initial conditions; to the uncertainty characterizing the early stages of transition. In the context of a neutral legal environment, this paper offers a framework that emphasizes strategic interaction of farm stakeholders as the engine of organizational change.

The paper offers a simple game-theoretical model that captures the interplay of several factors affecting the restructuring decision, which is viewed in terms of defining individualized private property rights over assets. Emphasis is

placed on the strategic aspect of interaction in the context of specific characteristics concerning the origin of the internal structure of the incumbent farms. Nature also plays a role through the probability of one side winning the fight, illustrating in part the uncertainty inherent in transition.

One could identify several avenues to improve this paradigm. The game-theoretical model could be extended to account for the formation of the group player – the workers. For example, an extra stage could be used to model the decision by the group player whether or not to fight a possible move by the manager. The game would then become sequential, leading to much more richness in terms of possible outcomes.

Transaction costs are essential to the solution of the main puzzle proposed by this essay. Since restructuring is regarded as building a new set of property rights, the cost of such activity, transaction costs, is fundamental for the amount of restructuring being undertaken. When the factors affecting transaction costs render the latter relatively large, less restructuring will take place. In addition, this essay makes transaction costs agent-specific, which in turn drives restructuring through the very definition of the agents involved in the process.

Informal rules matter as well. In the case of relatively neutral new formal institutions or of an activist law that is not properly enforced, informal institutions represent the main factor influencing restructuring. Using historical evidence, this paper builds a theoretical case for a significant discrepancy between the nature of the insiders' networks in state and collective farms, resulting in this understanding that informal rules matter significantly. The presence of strong

networks within incumbent organizations provided an alternative structure to fall back to, yielding stability at a time when change may have been desirable.

The empirical findings concerning Czech agricultural transition tend to support the proposed hypotheses regarding the factors that play a role in the choice of the organizational form. However, additional empirical studies looking into the nature of interaction between farm stakeholders are warranted here. Specifically, further in-depth analysis of the collective action process on the farm would shed light on the properties of the transformational outcome.

Better data is always desirable. A unique dataset from a cross-country survey of farms in transition is used. While a wealth of variables were available to characterize both the current farm and the original farm emerging from the centralized economy, this survey was not designed with the main research question of this paper in mind. Specifically, it contains little data that sheds light in a precise fashion on the nature of the interactions between the various stakeholders on the farm. The hope is that this paper, with its novel way of explaining restructuring inertia, will add to the current impetus in the literature that focuses on the nature of the transformation process, and that subsequent surveys will look more carefully into these matters.

It is an open question whether delaying the de-collectivization process bodes well for efficiency and economic growth. Time will tell whether cooperatives will prove to be viable and, therefore, efficient in the long run. It is also not clear whether in short run cooperatives or the alternatives (e.g., family farms, corporations) are efficient organizational forms during transition. Further

research is needed to clarify the role that cooperatives play, for example, in mitigating transitional uncertainty. Alternatively, it may be the case that an activist policy favouring deep restructuring would have been preferable during the early transition period.

3.8 Appendix

Three case studies outlining the interaction between the manager and the worker as defined in Section 4 are presented below. The source is the farm-level survey that yielded the dataset employed in section 6.

Case Study A: a cooperative emanating from a former CF in South Bohemia displayed a low level of internal conflicts. The CF was established over four villages on the basis of voluntary entry of most of the members. Due to personnel change before the revolution, informational asymmetry between the management and workers was not severe in the early transition period. The middle management and the members voted successfully for a restructuring program that established a new cooperative including most of the incumbent farm's assets. That manager is now very successful in running this business. He was one of the few in the region to pay reasonable rents to landowners.

Case Study B: a corporate farm operating on 5,000 ha was part of a very large SF of about 10,000 ha. It was privatized on the basis of a proposal prepared by the current manager who at the time was part of the middle management of the branch he privatized. This branch was the largest operational unit of the former state farm. Non-agricultural units split up as a result of privatization projects submitted by the respective management of these units. There was no real struggle between the manager(s) and the non-management stakeholders on how to continue farming. This manager was the only person with enough information on the value of land and non-land assets, as well as on the prospects for further

growth, to submit a valid proposal. He also had direct access to information distributed by the district chamber of commerce concerning the latest legislative changes in the early transition years. However, several farmers coming from one village constituted an exception. They did not consent to the manager's privatization proposal. They split up from the original state farm and created individual farms.

Case C: a cooperative farm that emerged from a CF in North Bohemia currently farms 3,500 hectares distributed over three villages. The manager sought to split up the farm by leasing land from the members. He wanted to establish a corporate farm entailing a significant reduction of the workforce. He argued that in order to increase productivity and make the successor farm viable, a price has to be paid in terms of jobs. As most employees had membership titles, they were able to convince other members to reject the manager's proposal. They also fired the manager at the end of 1993 and hired a new one from a neighboring CF. In 2000 the farm was still operating as cooperative.

3.9 Reference List

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Table 3.2 Farm structure in the Czech Republic in 1989 and 1997

Legal form	1989			Legal Form	1997		
	Number of farms	% of land ^a farmed	Avg. ha/farm		Number of farms	% of land ^a farmed	Avg. ha/farm
Plots ^b	3,205	0.4	5	Individual Farms ^b	22,850	23.1	36
---	---	---	---	Corporations	1,349	23.5	613
---	---	---	---	Joint-stock companies	484	11.4	833
Collective farms	1,204	61.4	2,578	Cooperatives	1,011	38.7	1,349
State farms	174	38.2	6,259	State farms	22	0.5	864
---	---	---	---	Other	30	2.8	333
Total	4,613	100.0	---	Total	25,746	100.0	671

Source: Sarris et al. (1999).

^a Percent of total agricultural land farmed by the respective type of organization.

^b Family farms during socialism were household plots used by families for additional food supply. After 1989, family (individual) farming has become a legitimate and important farming type.

Table 3.3 Descriptive statistics for all variables in the working sample

Variable	Definition of the variable	N	Min	Max	Mean	Std. Dev.
ASSETS89	Assets of original farm in millions of Czech crowns	65	3.00	2300	135.30	320.48
COOP	Dummy: 1 if this farm is a cooperative, 0 otherwise	67	0	1	0.73	0.45
CROP	Percent of crop cultivated land	63	0.31	0.98	0.72	0.13
EMPLAN89	Number of employees per 100 hectares of land in 1989	66	3.33	150	13.34	17.70
EMPLAN9X	Number of employees per 100 hectares of land in 199x	66	1.00	13.10	7.14	2.87
EMPLOY89	Total number of employees in 1989	67	30	1,200	315.22	256.59
FIGHT	Dummy: 1 if there was a conflict between the manager and the workers, 0 otherwise	67	0	1	0.63	0.49
FINANCES	Financial situation of the original farm on a 1-5 Likert scale	66	1	5	3.45	1.14
INCOME89	Net monthly income of workers in 1989 in Czech crowns	66	1,800	5,200	3,169.92	762.95
INCOME_M	Manager's net average income in 199x on a scale	66	1	3	1.91	0.55
INCOME_W	Workers' net average income in 199x on a scale	66	1	3	1.77	0.67
INFO	Dummy: 1 if manager of the original farm had access to private information, 0 otherwise	67	0	1	0.54	0.50
INHERIT	Percentage of 1989 assets inherited from SF or CF	65	0.01	1	0.66	0.34
MANAGMNT	Percent of management in total employment of the original farm	67	0.01	0.17	0.03	0.02
MARKETING	Percent of crop delivered to a marketing company	65	0.25	1	0.87	0.18
MIDDLE_M	Percent of technical specialists (middle management) in total employment of the original farm	67	0.01	0.25	0.11	0.04
N_COOP	Number of cooperatives emerged from the original CF/SF	67	0	3	1.06	0.78
N_CORP	Number of corporations emerged from the original CF/SF	67	0	10	0.91	2.25
N_LEGAL	Number of legal entities emerged from the original CF/SF	67	1	10	2.09	2.08
N_PHYSI	Number of physical entities emerged from the original CF/SF	58	0	220	15.31	29.71
NON_AG_P	Dummy: 1 if non-agricultural production existed in the original farm, 0 otherwise	67	0	1	0.63	0.49
NON_AG_R	Percent of non-agricultural revenue in 1989	64	0.01	0.40	0.07	0.10

Variable	Definition of the variable	N	Min	Max	Mean	Std. Dev.
NON_AG_W	Percent of non-agricultural workers in total employment of the original farm	67	0	0.45	0.05	0.10
ORIGIN	Dummy: 1 if this farm originates in collective sector in 1989, 0 otherwise	67	0	1	0.82	0.39
PASTURES	Percent of pasture cultivated land	64	0	0.50	0.24	0.13
POST_SEC	Dummy: 1 if manager has post-secondary education, 0 otherwise	67	0	1	0.61	0.49
PROCESS	Dummy: 1 if original farm processed agricultural products, 0 otherwise	65	0	1	0.09	0.29
WORK_WON	Dummy: 1 if the workers won the fight, 0 otherwise	67	0	1	0.25	0.44

Table 3.4 Means and standard deviations of selected variables categorized by farm origin

Origin of majority of assets and land	EMPLAN89	EMPLAN9x	N_LEGAL	N_PHYSI	N_COOP	N_CORP
Collective farm	10.90 (3.14)	7.77 (2.62)	1.62 (1.37)	16.66 (31.76)	1.27 (0.68)	0.24 (1.09)
State farm	25.57 (42.27)	4.00 (1.87)	4.25 (3.25)	6.88 (5.74)	0.08 (0.29)	4.00 (3.44)

Table 3.5 The main model

Variable	Logit estimation of probability of winning for the workers (Equation I) Dep. variable: WORK_WON	Logit estimation of probability of winning for the workers (Equation II) ^a Dep. variable: WORK_WON	Logit estimation of the probability of observing a cooperative (Equation III) Dep. variable: COOP	Logit estimation of the probability of observing a cooperative (Equation IV) Dep. variable: COOP
ORIGIN	4.41 (2.20)**	10.44 (5.84)*		
EMPLOY89	-0.018 (0.009)**	-0.02 (0.017)		
WORK_WON_F ^b			1.72 (0.90)*	1.23 (0.95)
DIFFINCM ^c			-0.0001 (0.0002)	-0.0002 (0.0002)
DIFFINCW ^c			0.0016 (0.0007)**	0.0013 (0.0008)*
INFO		-3.89 (2.12)*		
POST_SEC		-2.44 (1.80)		
NON_AG_P				1.22 (1.06)
Observations	27	27	40	40
Log likelihood	-9.40	-6.01	-15.97	-15.26

Note: Numbers in parentheses are robust standard errors.

*, ** and *** denote significance at the 10%, 5% and 1% levels, respectively.

^a An F-test on INFO and POST_SEC variables shows that they are irrelevant (F-statistic = 1.81).

^b WORK_WON_F is obtained by forecasting the probability of workers winning the fight using Equation I in this table.

^c DIFFINCM and DIFFINCW are obtained by forecasting incomes for the two players using Equations V to VIII in Table 3.5, and taking the appropriate differences.

Table 3.6 Ordered logit estimates of manager and worker's wages in 199x by restructuring outcome

Variable	Outcome k (cooperative)		Outcome r (corporation)	
	Ordered logit estimation of manager's income (Equation V) Dep. variable: INCOME_M	Ordered logit estimation of workers's income (Equation VI) Dep. variable: INCOME_W	Ordered logit estimation of manager's income (Equation VII) Dep. variable: INCOME_M	Ordered logit estimation of worker's income (Equation VIII) Dep. variable: INCOME_W
ASSETS89	0.003 (0.001)*	0.003 (0.001)**	0.002 (0.0009)**	
INCOME89	0.001 (0.0003)***	0.0009 (0.0002)***		
EMPLAN89		0.096 (0.047)**		0.21 (0.11)*
NON_AG_P	-1.34 (0.51)***			2.33 (1.96)
PROCESS				-3.19 (2.27)
FINANCES			0.84 (0.51)**	
POST_SEC			-1.47 (1.00)	
Observations	49	49	13	13
Log likelihood	-25.42	-36.80	-6.87	-5.17
LR statistic (3df)	24.53***	19.31***	7.83**	13.70***
Pseudo-R2	0.32	0.20	0.36	0.56

Note: Numbers in parentheses are robust standard errors.

*, ** and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 3.7 Testing the similarity of CFs and SFs

Variables	Originating from a CF					Originating from a SF				
	N	Min	Max	Mean ^a	Std. Dev.	N	Min.	Max.	Mean ^a	Std. Dev.
MANAGMNT	55	0.00	0.17	0.03	0.02	12	0.01	0.07	0.03	0.02
MIDDLE_M	55	0.04	0.25	0.11	0.04	12	0.01	0.16	0.10	0.04
CROP	54	0.31	0.98	0.72	0.13	9	0.50	0.91	0.76	0.13
PASTURES	54	0.00	0.49	0.24	0.13	10	0.00	0.50	0.20	0.15
NON_AG_P	55	0	1	0.65	0.48	12	0	1	0.50	0.52
NON_AG_R	52	0.00	0.40	0.07	0.10	12	0.00	0.25	0.08	0.10
NON_AG_W	55	0.00	0.45	0.05	0.10	12	0.00	0.21	0.06	0.07
PROCESS	53	0	1	0.09	0.30	12	0	1	0.08	0.29
MARKETING	53	0.25	1	0.87	0.18	12	0.50	1	0.88	0.21
FINANCES	54	1	5	3.54	1.11	12	1	5	3.08	1.26

^a Formal statistical testing confirms that the means of all variables are not significantly different across the original types of farming.