

The Corruption of Transition

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Abstract

A political economic framework is used to describe an economy following transition to private ownership. The transition, characterized by massive privatization, is accompanied by a constitutional change, which is influenced by potential shareholders who may be described as the local entrepreneur, the corrupt entrepreneur, or the foreign entrepreneur. The constitutional changes influence the privatization process, particularly in regards to the distribution of the firm's residual claim and the entrepreneurs' investment schemes.

The paper sheds light on how corrupt entrepreneurs corrupt the transition. To this end, a positive model is used to characterize the political-economic equilibrium in which the constitutional change is determined, and the political and economic primitives of the model help us explain why economies perform differently after transition to private ownership. Finally, the paper identifies schemes for both international funding and domestic taxes that can help an economy support, in equilibrium, constitutional changes that are more market oriented.

JEL Classification Code: Transition economies, political-economy, entrepreneurs, constitutional change, institutions, investment scheme.

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1 Introduction

In the last part of the 20th century, we have witnessed transition from “centralized governments” to capitalism. These transitions were characterized by massive resource allocation from public to private hands, which included massive privatization of the economy. This was accompanied by a changing infrastructure and legal system, which affect an economy’s ability to enforce the laws it institutionalizes, and therefore affect the success of the transition.¹ Put differently, the changing political economic institutions and legal system (e.g., the degree to which institutions provide a legal framework that is enforceable and prevents one group from expropriating the other) play an important role in providing a starting point for the transition to capitalism.

This is the focus of the current paper. More specifically, by using micro foundations to characterize the political economic environment of an economy in transition, the paper investigates how interest groups affect the transition of institutions and legal framework to support market regimes, which in turn affects the level of investment and therefore firm’s output.

This paper, therefore, draws from both the literature on institutions and growth (e.g., Acemoglu 2004, Glaeser et al. 2004, Alesina and Rodrik 1994, and North 1990) and the literature on investors rights (e.g., LaPorta et al. 1998, 1999, and 2000, and Glaeser et al. 2001) to explain the transition to capitalism. Furthermore, the paper assumes that the state is an instrument for transferring resources from one group to the other. The paper, however, does not try to un-bundle the institutions. In other words, and following North (1981), the current paper will not comment on the relative roles different institutions play in supporting market regime and constraining the ability of groups and the government to expropriate others. The paper will view a “cluster” institutions without trying to identify the roles different institutions play in transition.²

The government initially owns the firms, whereas all firms are privately owned after the transition. Interest groups, on the other hand, affect the initial constitutional changes, whereas these changes determine the distribution of a firm’s residual claim over physical assets in the post-privatization era.

In order to elucidate the bilateral connection between privatization and the initial constitutional conditions, an index is assumed, i.e., the *constitutional index*. An index value of zero indicates that the

¹For more on the importance of a minimal endowment – institutional, economic, cultural, and political – necessary to ensure that the standard reform policies leads directly to a benign evolutionary process see Murrell (1996) and Rapaczynski (1996).

²Recently, several authors have tried to un-bundle institutions. One example is Acemoglu and Johnson (2003), who investigated the importance of “property rights institutions” and “contracting institutions” in the long-run growth, investment, and financial development of the European colonization. Another is Persson and Tabellini (2003), who investigated the policy and economic consequences of different forms of government and electoral rules.

economy is in total anarchy (e.g., there is no limit on the ability of one group to expropriate the other), whereas an index value of 1 indicates that the economy is in complete order under a market regime (e.g., property rights are well defined).

The government first decides the value of the constitutional index, i.e., the status of the judicial and legal system, and therefore the ability to enforce investor rights, and then sell the firms. More specifically, the model postulates that interest groups prevail in the economy and influence the constitutional index chosen by the government. Firms are then sold to different shareholders, whereby the distribution of the residual rights of control of physical assets is affected by the chosen constitutional index. Some agents, who use illegal methods of operation, benefit from a lower constitutional index, while others, who acquire shares legally, profit when it is higher. These variations in benefits produce differing incentives for the interest groups in pursuing the level of the constitutional index.

The current paper sheds new light on corrupt entrepreneurs' ability, and therefore incentives, to corrupt transition to a market regime. In particular, the current paper identifies the conditions whereby the transition of the judiciary and legal system is kept at bay, and therefore leads to an enduring decline in output as we witnessed in Russia seven years after the transition from communism.

This conclusion can supply us with a rationale for the differences in the economic performance and reforms during Yeltsin's presidency – where Russia grew in 1997 and 1998 by 0.009 and -0.049, respectively – and Putin's Presidency – where Russia grew in 1999 and 2000 by 0.054 and 0.09, respectively.³ The current paper offers a political-economic rationale for the difference in the performance of the two presidents, since this difference stems from the difference in the distribution of political power between the two periods. Putin started his political career from scratch, with almost no binding commitment to existing lobby groups, whereas Yeltsin depended heavily on the support of various domestic interest groups during his rule and 1996 reelection. The Putin government passed about 80 percent of its legislative agenda through the Duma: twenty-nine reform laws in such contentious areas as land property and law enforcement. The government back in 1996-1997 has prepared most of these laws but had no chance of being passed by the former Duma given the fierce conflict between the two branches of government. Overall, the combination of additional resources and the absence of commitments to interest groups and of parliamentary opposition have allowed Putin to pursue his own personal agenda.

The current paper identifies firms and industries that are more likely to be controlled by corrupt entrepreneurs, e.g., very profitable industries such as natural resource monopolies (which is supported empirically by Campos, 2000) and corrupt industries such as drug trafficking and loan sharks. The paper

³The data is taken from Berglof et al (2003), Table 3.3.

also links interest rate to the constitutional index and shows that a higher interest rate is associated with a lower constitutional index. Finally, it identifies policies with regard to both international funds and domestic taxes that can support a higher index in equilibrium. In particular, if international funds are made sensitive to constitutional changes, whereas corrupt entrepreneurs domestic taxes remain less sensitive to these changes, more market-oriented institutions will be developed in equilibrium.

The intuitive nature of the aforementioned results stems from the political-economic structure, and especially from the assumption that an interest group exists that is connected to the government and benefits from a ruleless system (low constitutional index). Moreover, this group uses its own power to redistribute profits, and this ability decreases the higher the constitutional index is. On the other hand, the aggregate investment, which is positively correlated with profits, increases with the constitutional index, under certain conditions.

The next section, Section 2, surveys the literature. Section 3.1 describes the constitutional index; the firm is modeled in Section 3.2; the consumers in Section 3.3; and the behavior of the three different types of entrepreneurs who prevail in the economy and of the government in Sections 3.4 and 3.5, respectively. In Section 4, the investment scheme is investigated (4.1), and the equilibrium level of the constitutional index is determined via political economic equilibrium (4.2). Policy implications are presented in Section 5, discussion and concluding remarks in Section 6.

2 Literature

Gerard Roland (2000) has eloquently argued that central planning could have perfectly coexisted with flexible prices for consumers, and that political constraints and therefore political institutions are to blame for the inefficiency of these regimes (see the model of Shleifer and Vishny, 1992). Put differently, he argued that the political institutions matter. The current paper adopts this view and tries to explain the sources of these political constraints drawing on the literature on interest groups and Menu-Auction, e.g, Bernheim and Whinston (1986), Dixit et al. (1997), and Grossman and Helpman (1994,1995).

One of the most striking stylized facts about transition in Central and Eastern Europe is the major output fall that took place at the beginning of the transition. No country in Central or Eastern Europe has been able to avoid such a fall in output. Furthermore, the output fall over time is very different between countries, where for some the output fall is more permanent than for others (see Table 7.1 in Roland, 2000). Current literature has explained output fall due to disruption and bargaining inefficiency, e.g., Blanchard and Kremer (1997), and search frictions and specific investment, e.g., Roland

and Verdier (1999). The current paper complements these papers by showing the output may fall even without investment specificity and independent of the outside opportunities. All that we need is that the distribution of political power affects the political constraints such that progress will be hampered.

The shareholders are the owners of the firms following privatization, when ownership is identified with residual rights of control of physical assets [Hart (1991), see also Grossman and Hart (1986)].⁴ The owners are entrepreneurs who vary in their behavioral norms (e.g. use of corrupt, as opposed to legal methods of acquiring firms). A different approach, which is not taken in this paper, says that entrepreneurs vary in their productive activities, such as innovations, and unproductive activities, such as rent-seeking or organized crime [Baumol (1990)].⁵ Baumol argued that the “rules of the game,” which we address as the constitutional index, determine the volume of the entrepreneur’s activity. The current paper complements that work by endogenizing the assumption that entrepreneurs vary in their productive (or unproductive) activities and by linking the political-economic primitives of the game to the “rules of the game.” It then shows that the political-economic primitives not only determine the amount invested in the firm, but also which firms each entrepreneur invests in. In particular, it shows that corrupt entrepreneurs invest in both very profitable industries and in corrupt industries (e.g., loan sharks), whereas non-corrupt entrepreneurs tend to invest in less profitable industries simply because the corrupt entrepreneurs have not invested in them. This supplies a theoretical rationale for Campos (2000), who pointed out that in transition economies unofficial production is done mainly in big enterprises with high capital intensity, such as oil refining.

La Porta et al. (2000) used the intuition developed in Jensen and Meckling (1976), who recognized the role of the legal system and the law play in social organizations, and argued that owners of the firm can be separated to “insiders” and “outsiders.” La Porta et al., then, show “insiders” can expropriate “outsiders” unless the rights of the “outsiders” is protected, (henceforth denoted investor protection). The current paper extends this intuition and argues the legal institutions should protect, in addition to outsiders, the law-abiding entrepreneurs. This, as illustrated in the current paper, is especially critical in transition economies.

The current paper assumes that better protection, via higher constitutional index, is achieved by adding better checks and balances to the legal institution.⁶ Moreover, the current paper suggests that the “political” explanations for the difference in legal families is a function of the distribution of political power at the time the laws were written. Legal scholars that investigated the relationship between

⁴A slightly different approach, not taken in the current paper, is taken when residual rights of control are attributed to employee decisions [Coase (1988), Williamson (1985)].

⁵Murphy, Shleifer, and Vishny (1993) discussed the negative effect of rent seeking on growth.

⁶See also La Porta et al. 2003.

commercial legal systems and political history include David and Brierley (1985) and La Porta et al. (1999).

Privatization in the western world has been dealt with in cases of public utility firms [Vickers and Yarrow (1988)]. Privatized firms are usually natural monopolies and therefore, if the economy aims at enhancing its social benefits, it should regulate the privatized firms. When interest groups prevail, the regulation scheme is affected by the competition between the different groups [e.g., Becker (1983), Peltzman (1976), and Stigler (1971)]. The current work relates to this case, where the novelty is in the introduction of a dynamic story in which interest groups not only try to influence government decisions, but also try to influence the laws that govern economic transactions and, as a result, the payoffs from such transactions. Note that the importance of the initial conditions of the legal system was pointed out in *Kremlin Capitalism* (Blasi et. al. 1997) as being a key factor in the success of the privatization process in Russia during the transition period. The importance of the constitutional index was also pointed out as being a key factor to Eastern Asian progress. Corruption (which is possible with a low constitutional index) is one of the “six deadly sins” of Eastern Asia and is one of the six major causes that hinder Eastern Asian progress.⁷

3 The model

A two-period game is assumed, where in the first period government chooses the institutions of the economy and in the second period firms are privatized and ownership distribution is determined. In particular, in the first period, interest groups influence the government’s choice of institutions of the economy by offering the government contributions that are contingent on the government’s choice of institutions. Then, in the second period, the firm shareholders distribution is determined (which is affected by the institutions of the economy) and shareholders choose the amount they want to invest in the firm in order to maximize their objectives.

3.1 The firm

Commodity 0 is manufactured from labor alone with constant return to scale and an input-output coefficient of 1. Since we assume that the aggregate supply of labor is large enough to ensure a positive supply of this commodity, in the competitive equilibrium, the wage rate equals 1. There are $1 \dots J$ firms in the economy that produce commodities $q \equiv (q_1, q_2, \dots, q_J)$.

⁷The Economist, 1998.

During the second stage, the ownership of the firms passes into private hands. With the wage rate fixed at 1, the aggregate reward to the shareholders from producing commodity j depends on the price, $p = (p_1 \dots p_J)$, the investment, X_j , and the industry's economic characteristics, φ_j . These characteristics are assumed to be captured by the index φ_j , where $\varphi_j \in [0, 1]$. Thus, $\pi_j(p, X_j, \varphi_j)$ is the net profit of the privatized firm, j , whilst X_j is defined by $X_j = x_{Lj} + x_{Cj} + x_{Fj} + x_{0j}$. x_{0j} is the capital transferred by firm j from the pre-privatized period, and x_{ij} is the capital transferred to firm j by entrepreneur $i = \{L, C, F\}$, where L, C, and F denote the local entrepreneurs, the corrupt entrepreneurs, and the foreign entrepreneurs, respectively. Furthermore, $\frac{\partial \pi_j}{\partial X_j} \geq 0$, $\frac{\partial^2 \pi_j}{\partial X_j^2} \leq 0$, $\frac{\partial \pi_j}{\partial p_j} \geq 0$, and where $\frac{\partial \pi_j}{\partial \varphi_j} \geq 0$.

Then, since the privatized firm maximizes its profit, the supply function for q can be derived from the profit function using *Hotelling's lemma*, i.e. $\frac{\partial \pi_j}{\partial p_j} = y_j(p, X_j, \varphi_j); \forall j \in J$, where $\frac{\partial y_j}{\partial X_j} \geq 0$ and $\frac{\partial y_j}{\partial \varphi_j} \geq 0$. For the sake of simplicity, it will be assumed that the firms act in a competitive environment, and that, in equilibrium, $q(p) = y(p, \cdot)$.

3.2 The Consumers

The economy is populated by individuals with a mass of 1 and with identical preferences. Each individual maximizes utility given by

$$u = q_0 + \sum_{j \in J} u_j(q_j) \quad (1)$$

where q_0 is the consumption of commodity 0 and q_j is the consumption of commodity j , where $j = 1, 2, \dots, J$. The sub-utility function $u_j(\cdot)$ is differentiable, increasing, and strictly concave. Commodity 0 serves as the numeraire with a price of 1.

Given these preferences, an individual spending an amount w , consumes $q_j = d_j(p_j)$ of commodity j . The demand function $d_i(p_i)$ is the inverse of $\frac{\partial u_i(q_i)}{\partial q_i}$. A consumer consumes $q_0 = w - \sum_{j \in J} p_j \cdot d_j(p_j)$ of the numeraire commodity. The indirect utility, then, takes the form of

$$W(p, w) = w + cs(p) \quad (2)$$

where $cs(p) \equiv \sum_j u_j[d_j(p_j)] - \sum_j p_j \cdot d_j(p_j)$ is the consumer surplus derived from these goods.

Note that quasi-linear preferences imply that $q_j = d_j(p_j)$, and therefore $\pi_j(p, X_j, \varphi_j) = \pi_j(p_j, X_j, \varphi_j)$.

3.3 Constitutional index and measures of heterogeneity of industries

To simplify the analysis, we capture the institutions of the economy using a single dimension variable, coined the “constitutional index.” This index assigns an economy with a number between 0 and 1 depending on its institutional state; in other words, $\theta \in [0, 1]$, where the “better” an economy’s institutions are, the higher is the assigned value. By “better” we mean institutions, and therefore a legal and judicial system, that better support a market regime and help investors protect their residual claimant over the physical assets.

The constitutional index is determined in the game between the government and the entrepreneurs; in other words, it is endogenous in the model. This index takes into account the ability of interest groups and the state to expropriate others, the ability of the legal system to create viable checks and balances, and the political constraints.

We assume heterogeneity among firms with respect to the distribution of shareholder’s residual claim on the physical assets. That leads to another index, which is given (exogenous) in our story. This index is denoted by ε_j , where $\varepsilon_j \in [0, 1]$. More specifically, the shareholder’s residual claim on the physical assets is a function of the industry’s (non-economic) characteristics (e.g., governance). For example, some industries, such as loan sharking, rely on their own power to collect revenues, i.e., ε_j is small, whereas other (more productive) industries rely on the rule of law, i.e., ε_j is large.

This latter assumption introduces heterogeneity, and therefore allows us to better understand industries in which the corrupt entrepreneurs invest. The firm specific measure ε_j includes measurements of corporate governance which are important to the outsiders’ investment decisions. It captures, for example, the bleak and diversified picture on corporate governance of Russian corporations in 1996: “Thirteen percent of companies engaged in bad practices so systematically that their corporate governance was graded as horrible; 46 percent received bad corporate governance grades; and 39 percent, who engaged in only one or two questionable practices among generally good ones, were graded as good. Two percent of the companies attained excellent scores.”⁸

To model the impact of both indexes on the shareholder’s residual claim, we assume that only their aggregate value is of significance. More specifically, we assume that the shareholder’s residual claim is a function of θ_j , where $\theta_j \equiv \theta + \varepsilon_j$. Henceforth, θ_j is coined the “firm-specific constitutional index”.

⁸Blasi et al. (1997), p.101.

Corrupt entrepreneurs may tilt the playing field to their advantage by either increasing their share of the residual claim on the physical assets or by stealing from the firm (e.g., collecting protection fees or simply taking a proportion of the products sold and reselling them on their own).

In the current paper, the corrupt entrepreneur's ability to dilute other shareholders' residual claims over the physical assets is a function of the firm-specific constitutional index, θ_j , and does not affect the firm's profits directly (although it does affect the amount invested in the firm). The corrupt entrepreneur's ability to steal from the firm, on the other hand, reduces the firm's profits. Formally, we assume the firm's profit decreases by a share $D(\theta_j, \alpha_{Cj})$, where α_{Cj} is the corrupt entrepreneur's residual claim. We also assume that $\frac{\partial D}{\partial \alpha_{Cj}} \geq 0$ and $\frac{\partial D}{\partial \theta_j} \leq 0$, and that $D(0, \cdot) = 1$ and $D(2, \cdot) = 0$. The corrupt entrepreneur's income increases by $\alpha_{Cj} \cdot D(\theta_j, \alpha_{Cj})$ times the firm's profits, whereas $(1 - \alpha_{Cj}) \cdot D(\theta_j, \alpha_{Cj})$ of firm j 's profits are lost. In other words, the iceberg assumption is used to model the rent-seeking behavior. Henceforth, we refer to $D(\theta_j, \alpha_{Cj})$ as the Damage Function, whereby the lower θ_j is and the higher α_{Cj} is, the more damage can be inflicted on firm j . The characteristics of the Damage Function are reminiscent to the Damage Control Function in the literature on pesticides (e.g., Just et al. 1979), where corrupt entrepreneurs replace the pests.

3.4 Share Holders

There are three types of shareholders in the economy:

1. Local entrepreneurs (LEs), who consume and benefit from the goods in the economy, q , but who do not influence the realization of the constitutional index.
2. Corrupt entrepreneurs (CEs), who also consume and benefit from the goods in the economy, but unlike LEs, are well connected to the government and are corrupt. Therefore, they try to downscale the constitutional index to better suit their interests.
3. Foreign entrepreneurs (FEs), who do not consume goods in the economy, although they acquire shares in legal ways. Thus, FEs try to influence the government into choosing a higher constitutional index, as opposed to CEs.

Lobby i , representing an organized group, makes its political contribution contingent on the constitutional index chosen by the government. We use $s_i(\theta)$ to denote the contribution schedule tendered by lobby i . The lobby tailors this schedule to maximize the total welfare (income plus consumer surplus less contributions) of its members. It then collects the necessary donations in such a way as to allow all

to share in the gains from the political contribution. Put differently, the joint welfare of the members of lobby i is $V_i = W_i - s_i$, where W_i is their gross-of-contributions joint welfare.

We note that the gross-of-contributions joint welfare of lobby i is

$$W_i(p, \theta_j) = l_i + w_i + \phi_i \cdot cs(p) \quad (3)$$

where l_i is the total labor supply (and also the labor income) of members of lobby i and ϕ_i is their fraction in the voting population.

The entrepreneurs purchase shares and invest in firm j only if they have sufficient funds. The price of a share is normalized to 1, where $\bar{\alpha}_{ij} \cdot N_j$ shares of firm j are sold to entrepreneurs i , where $i \in \{L, C, F\}$. N_j denotes the total number of shares of firm j sold to the public. In addition, we assume that the government distributes shares between the interested parties with no intervention in this process by the entrepreneurs. The entrepreneurs do, however, try to redistribute the firm's shares, and the ability to redistribute shares is a function of the firm-specific constitutional index.

More specifically, the aforementioned assumptions imply that the initial distribution of the shares may be (illegally) altered when the firm-specific constitutional index is smaller than 2. For example, shares may be diluted:

This tactic [diluting strategy] effectively reduced the power of the outside shareholders... In 1994... a new issue of stock took place at Komineft, one of Russia's largest oil companies... Without giving adequate notice to its outside shareholders, the company called a meeting, and the shareholders present approved a very large issuance of new shares. Several key outside shareholders were not notified of this action and were not allowed to buy new shares if they did hear about it. The result was that the outside shareholders' ownership in the company was diluted by a third.⁹

A different tactic that (illegally) alters the initial distribution of the shares, when laws are subject to loose interpretation, is takeovers:

In Krasnoyarsk, Siberia, where a large stake in Russia's second-biggest hydro-electric power plant somehow changed hands for roughly 2% of the market price... [Hence] in Russia, laws of any kind bind only those who care to be bound by them.¹⁰

These examples, among others, help elucidate the connection between ownership of the firm and the *constitutional index*, and explain why entrepreneur i 's residual claimant over the physical assets of firm

⁹Kremlin Capitalism, 1997, p.93.

¹⁰Economist, 1998.

j may not equal $\bar{\alpha}_{ij} \cdot N_j$. Moreover, and to simplify this presentation, it is assumed that the CEs' ability to increase their share of the residual claim is only a function of the firm-specific constitutional index, and that changing the CEs' residual claim does not affect the amount CEs' can invest in alternative assets. Introducing a price for the shares "stolen" from other shareholders does not alter the main results of the model; it does, however, make the presentation more cumbersome.

Next, the behavior of the different entrepreneurs is explicitly derived. These results are derived while taking into consideration that the price of commodity j , p_j , can be rewritten as $p_j(X_j(\theta_j), \varphi_j)$. The reasoning for this is that the equilibrium price clears the market, i.e., $q_j(p) = y_j(p, X_j, \varphi_j)$, and the income of the shareholders and their investment level are a function of the firm-specific constitutional index, i.e. θ_j . In other words, in equilibrium, the price is determined by the demand and supply of the goods, and thus the price, in equilibrium, is a function of $X_j(\theta_j)$ and φ_j .

3.4.1 Type (I): Local Entrepreneurs

The net initial endowment, $e_L - t_L(\theta)$, of local entrepreneurs (or LEs) is distributed between investment in the firms, x_L , and alternative options in the capital market, $e_L - \sum_{j=1}^J \bar{\alpha}_{Lj} \cdot N_j - t_L(\theta) - x_L$, where $t_L(\theta)$ is a tax collected by the government from LE as his share of the transaction costs of the constitutional index and $\frac{\partial t_L(\theta)}{\partial \theta} > 0$. Thus the LEs' total income is,

$$w_L \equiv \sum_{j=1}^J \alpha_{Lj}(\theta_j) \cdot \pi_j(p_j, X_j, \varphi_j) \cdot (1 - D(\theta_j, \alpha_{Cj})) + (e_L - t_L(\theta) - \sum_{j=1}^J \bar{\alpha}_{Lj} \cdot N_j - x_L) \cdot (1 + r) \quad (4)$$

where $\alpha_{Lj}(\theta_j) \equiv 0$ if LEs *did not* purchase firm j 's shares, i.e., $\bar{\alpha}_{Lj} = 0$.

CEs' relative share in the firm's profits is $\alpha_{Cj}(\theta_j)$, and FEs' relative share is $\alpha_{Fj}(\theta_j)$; in other words, $\alpha_{Lj}(\theta_j) = 1 - \alpha_{Cj}(\theta_j) - \alpha_{Fj}(\theta_j)$. It is also assumed that $\frac{\partial \alpha_{Lj}(\theta_j)}{\partial \theta_j} \geq 0$. $(1 + r)$, on the other hand, is the alternative profit from one unit of capital, X_j . Put differently, all entrepreneurs can invest abroad at the alternative cost, e.g. U.S. Treasury bonds. In addition, let $x_i = \sum_{j=1}^J x_{ij}$ for $i \in \{L, C, F\}$.

LEs' share in the firms' dividends, which is affected by the constitutional index, is

$$\sum_{j=1}^J \alpha_{Lj}(\theta_j) \cdot \pi_j(p_j, X_j, \varphi_j) \cdot (1 - D(\theta_j, \alpha_{Cj})).$$

LEs maximize their aggregate welfare, thus,

$$x_L^* \in \underset{\{x_{Lj}\}_{j=1}^J}{\operatorname{argmax}} \{W_L(\cdot) = w_L + \phi_L \cdot cs(\cdot)\} \quad (5)$$

The first order condition of Eq. (5) with respect to X_{Lj} is,

$$R_{Lj} \equiv \alpha_{Lj}(\theta_j) \cdot \left[y_j(p_j, \cdot) \cdot \frac{\partial p_j}{\partial X_j} + \frac{\partial \pi_j}{\partial X_j} \right] \cdot (1 - D(\theta_j, \alpha_{Cj})) - \phi_L \cdot q_j(\cdot) \cdot \frac{\partial p_j}{\partial X_j} = 1 + r; \forall j \in J, \quad (6)$$

In words, the marginal increment in profits due to an increase in investment, $\alpha_{Lj}(\theta_j) \cdot \left[y_j(p_j, \cdot) \cdot \frac{\partial p_j}{\partial X_j} + \frac{\partial \pi_j}{\partial X_j} \right] \cdot (1 - D(\theta_j, \alpha_{Cj}))$, plus the marginal increment in the consumer surplus due to the decrease in p_j attributed to an increase in investment, $-\phi_L \cdot q_j(\cdot) \cdot \frac{\partial p_j}{\partial X_j}$, equals the return from investing in the outside option, $(1 + r)$. Eq. (6) shows that the marginal benefit to a LE from the firm's profit (left hand side of the equation - LHS) is equal to LE's alternative income from one unit of investment (right hand side of the equation - RHS). Eq. (6) also indicates that a decrease in the residual claimant over the physical assets of the firm sold to LE, $\alpha_{Lj}(\theta_j)$, will decrease the investment made by LE. Furthermore, the solution to Eq. (6) is $x_{Lj} = x_{Lj}(x_{Cj}, x_{Fj}, \theta_j)$, for all $j \in J$.

3.4.2 Type (II): Corrupt Entrepreneurs

As noted earlier, a corrupt entrepreneur (or CE) is a local entrepreneur who is well connected to the sources of power. The CEs' behavior is similar to that of the LEs, i.e., they maximize their aggregate welfare. The CE's income level is therefore determined by the *common-agent equilibrium*, where

$$w_C = \sum_{j=1}^J \alpha_{Cj}(\theta_j) \cdot \pi_j(p_j, X_j, \varphi_j) + (e_C - t_C(\theta) - \sum_{j=1}^J \bar{\alpha}_{Cj} \cdot N_j - x_C) \cdot (1 + r) - s_C$$

and where

$$x_C^* \in \underset{\{x_{Cj}\}_{j=1}^J}{\operatorname{argmax}} \{W_L(\cdot) = w_C + \phi_C \cdot cs(\cdot)\}.$$

e_C is the CE's initial endowment and $t_C(\theta)$ is the tax collected by the government from CE as his share of the transaction costs of the constitutional index, where $\frac{\partial t_C}{\partial \theta} \geq 0$.

From the maximization of welfare, CE chooses the optimal contribution plan, i.e. $s_C(\theta)$, where its share of the residual claimant, $\alpha_{Cj}(\theta_j)$, is negatively correlated with the firm-specific constitutional index, i.e. $\frac{\partial \alpha_{Cj}}{\partial \theta_j} \leq 0$, and $\bar{\alpha}_{Cj} \leq \alpha_{Cj}(\theta_j) \leq 1$. Thus, the first order condition with respect to x_{Cj} is

$$R_{Cj} \equiv \alpha_{Cj}(\theta_j) \cdot \left[y_j(p_j, \cdot) \cdot \frac{\partial p_j}{\partial X_j} + \frac{\partial \pi_j}{\partial X_j} \right] - \phi_C \cdot q_j(\cdot) \cdot \frac{\partial p_j}{\partial X_j} = (1+r); \forall j \in J. \quad (7)$$

Hence, as obtained for LEs in Eq. (6), CE equate their alternative cost of capital, RHS, to their marginal benefit from the firm, LHS. Note that the damage function does not affect CE's marginal return to investment, as opposed to LE's marginal return to investment (Eq. (6)). Furthermore, the solution to Eq. (7) is $x_{Cj} = x_{Cj}(x_{Lj}, x_{Fj}, \theta_j)$, for all $j \in J$.

Then, applying the envelope theorem, and since the contribution plan is *locally truthful*,^{11,12}

$$\sum_{j=1}^J \frac{\partial \alpha_{Cj}}{\partial \theta_j} \cdot \pi_j(\cdot) - \frac{\partial t_C}{\partial \theta} (1+r) = \frac{\partial s_C}{\partial \theta}. \quad (8)$$

Thus, in equilibrium, the *marginal contribution schedule* of CE, RHS, is equal to the *net marginal benefit* attributed to the constitutional index, LHS. It is postulated that the larger the constitutional index, the lower is CE's share of the residual claimant, therefore the LHS is negative; in other words, the contribution schedule is downward sloping, $\frac{\partial s_C}{\partial \theta} < 0$.

3.4.3 Type (III): Foreign Entrepreneurs

Foreign entrepreneurs (FE) consider the firm's value as constant, while their contribution to the government is positively correlated with the constitutional index, θ .

The key differences between FE, LE and CE, are that FE is not a consumer in the economy whereas LE and CE are. Thus, foreign entrepreneurs (FE) maximizes their income in a *common-agent* framework, where

$$w_F = \sum_{j=1}^J \alpha_{Fj}(\theta_j) \cdot \pi_j(p_j, X_j, \varphi_j) \cdot (1 - D(\theta_j, \alpha_{Cj})) + (e_F - t_F(\theta) - \sum_{j=1}^J \bar{\alpha}_{Fj} \cdot N_j - x_F)(1+r) - s_F \quad (9)$$

¹¹As was proved by Grossman and Helpman (1994a).

¹²The contributions are "locally truthful", as defined by Dixit, Grossman & Helpman (1996), and Bernheim & Whinston (1986). Grossman & Helpman (1994a) also reached this conclusion for cases in which groups compete for trade protection both in a small and in a large economy [see Grossman & Helpman (1994b)]. Dixit (1995) addresses *locally truthful* contributions when there is a dichotomy between taxes and subsidies on production and consumption in an open economy. Brainard & Verdier (1994) investigate how persistent protection emerges from an interaction between industry adjustment, lobbying, and political response. They investigate the behavior of an industry owner following an exogenous shock, and show that the contributions at equilibrium are locally truthful.

and where

$$x_F^* \in \underset{\{x_{Fj}\}_{j=1}^J}{\operatorname{argmax}} \{W_F(\cdot) = w_F\}. \quad (10)$$

$\alpha_{Fj}(\theta_j)$ is the share of the firm bought by FE, where $\frac{\partial \alpha_{Fj}}{\partial \theta_j} \geq 0$, and $0 \leq \alpha_{Fj}(\theta_j) \leq \bar{\alpha}_{Fj}$. $t_F(\theta)$ is the tax collected by the government from FE as his share in the transaction cost of the constitutional index, where $\frac{\partial t_F}{\partial \theta} \geq 0$. Furthermore, FE's initial endowment is $e_F - t_F(\theta)$.

The first order condition of Eq. (9) is

$$R_{Fj} \equiv \alpha_{Fj}(\theta_j) \cdot \left[y_j(p_j, \cdot) \cdot \frac{\partial p_j}{\partial X_j} + \frac{\partial \pi_j}{\partial X_j} \right] \cdot (1 - D(\theta_j, \alpha_{Cj})) = 1 + r; \forall j \in J. \quad (11)$$

Furthermore, the solution to Eq. (11) is $x_{Fj} = x_{Fj}(x_{Lj}, x_{Cj}, \theta)$, for all $j \in J$. Similar to LE, the damage function reduces FE's marginal return to investment. In contrast to LE and CE, FE does not consume in the economy, i.e., $\phi_L + \phi_C = 1$.

As was pointed out earlier, the contributions in equilibrium are *locally truthful*,

$$\sum_{j=1}^J \left[\frac{\partial \alpha_{Fj}}{\partial \theta_j} \cdot (1 - D(\theta_j, \alpha_{Cj})) - \frac{\partial D(\theta_j, \alpha_{Cj}(\theta))}{\partial \theta} \cdot \alpha_{Fj}(\cdot) \right] \cdot \pi_j(\cdot) - \frac{\partial t_F}{\partial \theta} (1 + r) = \frac{\partial s_F}{\partial \theta}. \quad (12)$$

The marginal benefit from the level of the constitutional index, LHS, is equated to the marginal cost of acquiring a higher constitutional index, RHS. The change in FE's residual claim due to a change in θ_j is affected by both the change in FE's share of the firm's profits $\frac{\partial \alpha_{Fj}}{\partial \theta_j}$ weighted by $(1 - D(\theta_j, \alpha_{Cj}))$ and the change in the damage function $\frac{\partial D(\theta_j, \alpha_{Cj}(\theta))}{\partial \theta_j}$ weighted by FE's share of the residual claims $\alpha_{Fj}(\cdot)$.

3.5 Government

The government chooses the constitution index in a *common-agent* equilibrium so as to maximize its benefit. Then, given the constitution index, it privatizes the firms in the economy.

Due to public opinion¹³ and the desire to govern, the incumbent government has an incentive to maximize the economic surplus, $\hat{W}(p, \theta)$. On the other hand, the need for contributions (e.g. rhetoric and advertisement during elections) produces incentives for the incumbent government to maximize total

¹³Baron (1994), Feddersen and Pesendorfer (1996), Grossman and Helpman (1996a), Grossman and Helpman (1996b), Ledyard (1989), and Snyder (1990) explored/investigated the interaction between the election process and pressure groups. An empirical analysis of the influence of voter preference, party affiliation, and senator ideology on the voting behavior of senators can be found in Levitt (1996).

contributions, $\sum_{i=\{C,F\}} s_i(\theta)$. Combining these incentives results in the following government benefit function,

$$W(p, \theta) = a\hat{W}(p, \theta) + \sum_{j=1}^J N_j + \sum_{i=\{L,C,F\}} t_i(\theta) + G(\theta) - T(\theta) + \sum_{i=\{C,F\}} s_i(\theta), \quad (13)$$

where a is the marginal benefit from the economic surplus.

It is postulated that the government maintains a balanced budget: It equates the cost of upgrading the constitutional index, $T(\theta)$, with the tax collected from the shareholders in the economy, $\sum_{i=\{L,C,F\}} t_i(\theta)$, the funds collected from privatization, $\sum_{j=1}^J N_j$, and the foreign financial support, $G(\theta)$, and thus

$$T(\theta) \equiv \sum_{j=1}^J N_j + \sum_{i=\{L,C,F\}} t_i(\theta) + G(\theta).$$

The economic welfare attributed to individuals in the economy, $\hat{W}(p, \theta)$, can be rewritten as $\tilde{W}(\theta)$. The reasoning for this is that price is a function of the constitutional index, i.e. θ . Aggregate gross welfare, therefore, equals aggregate income plus total consumer surplus, or

$$\tilde{W}(\theta) = l + \sum_{i=\{L,C,F\}} w_i(\theta) + cs(p(\theta)) \quad (14)$$

where $l = \sum_{i \in \{L,C,F\}} l_i$.

4 Equilibrium

We begin by characterizing the investment scheme.

4.1 Investment scheme

In equilibrium, the investment scheme of the three entrepreneur types is similar in nature to the *Lindahl prices*, in that each type invests according to its own valuation of the investment, whereas all three types benefit from the same profit. In equilibrium,

$$\sum_{i \in \{L, C, F\}} R_{ij} = \left[y_j(p_j, \cdot) \cdot \frac{\partial p_j}{\partial X_j} + \frac{\partial \pi_j}{\partial X_j} \right] - [\alpha_{Lj}(\theta_j) + \alpha_{Fj}(\theta_j)] \cdot \left[y_j(p_j, \cdot) \cdot \frac{\partial p_j}{\partial X_j} + \frac{\partial \pi_j}{\partial X_j} \right] \cdot D(\theta, \alpha_{Cj}) - q_j(\cdot) \cdot \frac{\partial p_j}{\partial X_j}; \forall j \in J. \quad (15)$$

Proposition 1. If $\left| \frac{d}{d\theta_j} \ln D(\theta_j, \alpha_{Cj}) \right| > \frac{d}{d\theta_j} \ln(\alpha_{Lj}(\theta_j) + \alpha_{Fj}(\theta_j))$ then, all else being equal, the marginal return to investment, $\sum_{i \in \{L, C, F\}} R_{ij}$, increases with θ_j and is maximized at $\theta_j = 2$.

Proposition 1 can be proved by taking the partial derivative of Eq. (15) with respect to θ_j , while keeping X_j constant. In words, Proposition 1 tells us that if the damage function is sufficiently sensitive to a change in θ_j then aggregate investment is maximized at $\theta = 1$.

The intuition is that if the marginal ability to steal from the firm and therefore introduce inefficiency and loss of output (follows from the iceberg assumption) is sufficiently large, as opposed to CEs' marginal ability to redistribute residual claims over the physical assets, then the marginal return to investment increases as θ increases. The increase in investment when property rights institutions improved is documented in Acemoglu and Johnson (2003). Beck et al. (2000) documented the impact of better investor protection on investment. Furthermore, Mauro (1995) has shown that corruption has a negative impact on investment. Wei (1997) has shown, on the other hand, that corruption has a negative impact on foreign investment. This empirical observation fit the theoretical observations of the current paper, given that $\left| \frac{d}{d\theta_j} \ln D(\theta_j, \alpha_{Cj}) \right| > \frac{d}{d\theta_j} \ln(\alpha_{Lj}(\theta_j) + \alpha_{Fj}(\theta_j))$, since higher corruption is associated with a lower constitutional index.

Proposition 2. The return to investment is a function of θ such that:

1. $\frac{\partial R_{ij}}{\partial \theta_j} > 0$ for $i \in \{L, F\}$, and
2. $\frac{\partial R_{Cj}}{\partial \theta_j} < 0$.

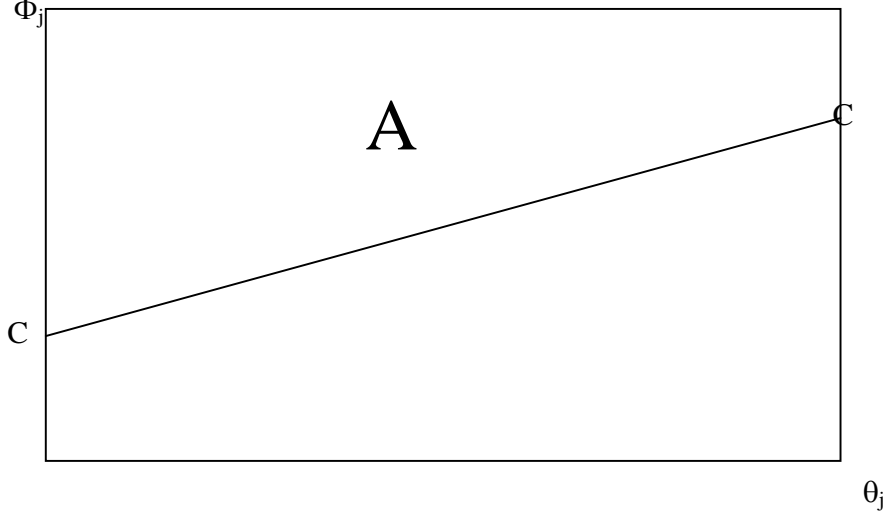


Figure 1: CEs investment, profitability, and the constitutional index

Proof. To derive Proposition 2, let us take the derivative of Eqs. (6), (7), and (11) with respect to θ_j while applying our assumption that $\frac{\partial \alpha_{Cj}}{\partial \theta_j} \leq 0$ and $\frac{\partial \alpha_{ij}}{\partial \theta_j} \geq 0$ for $i \in \{L, F\}$ and that $\frac{\partial D}{\partial \theta_j} \leq 0$.

Before exploring the factors that affect the choice of θ , the economic setting is extended and the importance of a constrained financial market is explored. In particular, we assume that LEs and CEs cannot borrow; in other words,

$$e_i - t_i(\theta) - \sum_{j=1}^J \bar{\alpha}_{ij} \cdot N_j \geq x_i; \text{ for } i \in \{L, C, F\}. \quad (16)$$

Introducing financial constraints helps shed new light on the firms that the entrepreneurs invest in. Hence, we denote as the CC curve the curve depicting the combinations of θ_j and φ_j , whereby the CE is indifferent between investing and not investing in firm j . Given Eq. (16), the curve, presented in Fig. 1, slopes upward since $\frac{\partial \pi_j}{\partial \varphi_j} > 0$. CEs invest in firms located in region A.

Figure 1 characterizes the industries into which CEs will enter. To this end, it can be shown that CEs purchase shares of firms either in industries that are very profitable, e.g., industries that utilize natural resources such as oil or diamonds, or industries that are less transparent and more corrupt, e.g., prostitution and loan sharking.

Proposition 3. If $\frac{d}{d\theta_j} \ln \pi_j(p_j(X_j), X_j, \varphi_j) > \left| \frac{d}{d\theta_j} \ln \alpha_{Cj}(\theta_j) \right|$, then CEs income increases with θ_j .

To derive Proposition 3, we take the total derivative of $\alpha_{Cj}(\theta_j) \cdot \pi_j(p_j(X_j), X_j, \varphi_j)$ with respect to θ_j and rearrange the terms. In other words, if, when the constitutional index increases, the amount

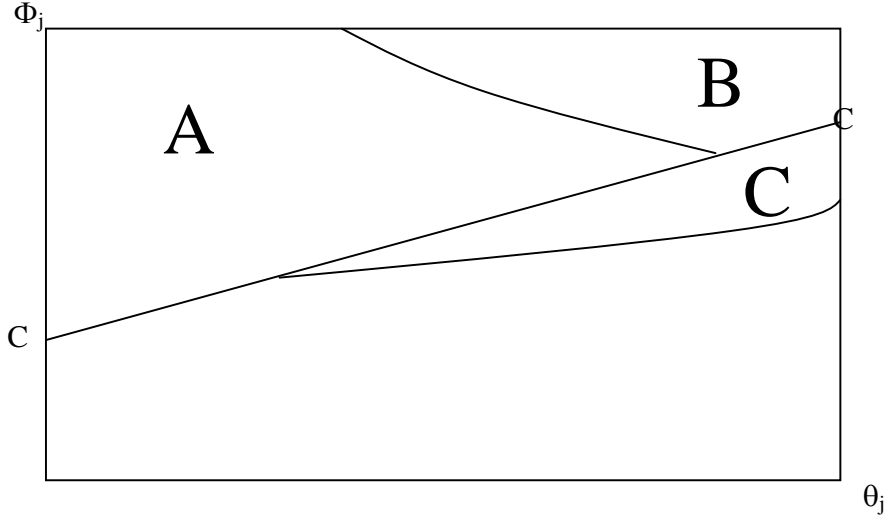


Figure 2: Entrepreneurs, profitability, and the constitutional index

invested increases by a large enough amount, then the value of CE's profits increases. This is in contrast to the amount CE invests in firm j , which decreases with θ_j (this follows from Proposition 2).

LEs and FEs, on the other hand, maximize the amount they invest in the firms at $\theta_j = 2$. Furthermore, this amount increases with θ_j . The reasons are, all else being equal; (i) the smaller θ_j is, the smaller is the residual claimant going to LEs and FEs, and (ii) the smaller θ_j is, the larger is the value of the damage function. Furthermore, when θ_j is small, LEs and FEs may invest in firms with a lower φ_j simply because CEs do not invest in these firms. The reason is that the value of the damage function increases with $\alpha_{Cj}(\cdot)$, and $\alpha_{Cj}(\cdot)$ is smaller in firms with a low φ_j . In other words, LEs and FEs may choose to invest in less profitable industries simply because CEs choose not to enter into these industries. The case in which LEs and FEs invest in both profitable and less profitable industries into which CEs do not enter, is depicted in Fig. 2, where the lower limit is derived from Eqs. (6) and (11). (Remember that LEs and FEs, similarly to CEs, face financial constraints and that both LEs and FEs can choose to invest in the alternative option.) LEs and FEs invest in firms located in regions B and C, whereas CEs invest in firms located in regions A and B (region A in Fig. 1).

We now turn to the institutions chosen in equilibrium.

4.2 The determination of the Constitutional Index

The political-economic equilibrium can be characterized following Grossman and Helpman's (1994a) *Proposition 1*. More specifically, it can be shown that the weighted benefit from the constitutional index divided by the weighted cost equals one plus the discount rate, i.e., $(1 + r)$.

Proposition 4. In equilibrium, given that Eq. (16) is binding, the constitutional index is determined by the following relationship¹⁴,

$$\begin{aligned}
& (1 + r) \cdot \sum_{i=\{L,C,F\}} \frac{\partial t_i}{\partial \theta} \cdot (a + I^i) \\
= & \sum_{j=1}^J \sum_{i=\{L,C,F\}} \left[\frac{\partial \alpha_{ij}}{\partial \theta} \cdot \pi_j(\cdot) + \alpha_{ij} \cdot \frac{\partial \pi_j}{\partial \theta} \right] \cdot (a + I^i) \\
& - \sum_{j=1}^J \sum_{i=\{L,F\}} \left\{ \left[\frac{\partial \alpha_{ij}}{\partial \theta} \cdot \pi_j(\cdot) + \alpha_{ij} \cdot \frac{\partial \pi_j}{\partial \theta} \right] \cdot D(\theta_j, \alpha_{Cj}) + \frac{\partial D(\theta_j, \alpha_{Cj}(\theta))}{\partial \theta} \cdot \pi_j(\cdot) \cdot \alpha_{ij}(\cdot) \right\} \cdot (a + I^i) \\
& - \sum_{j=1}^J q_j(\cdot) \cdot \frac{\partial p_j}{\partial X_j} \cdot \frac{\partial X_j}{\partial \theta} \cdot (a + \phi_C).
\end{aligned}$$

where $I^i = 1$ if $i = \{C, F\}$, and $I^i = 0$ for all other values of i .

Proof: The proof is relegated to the Appendix.

The above relationship, which determines θ , can be expressed as follows,

$$(1 + r) \cdot S(\theta) = B(\theta) \tag{17}$$

where

$$S(\theta) \equiv \sum_{i=\{L,C,F\}} \frac{\partial t_i}{\partial \theta} \cdot (a + I^i)$$

is the cost attributed to the *constitutional index*, and

¹⁴In Proposition 1 it is assumed that an internal solution exists, whereas a graphic solution is depicted later on (Figure 4). The discussion will include the corner solution.

$$\begin{aligned}
B(\theta) \equiv & \\
& \sum_{j=1}^J \sum_{i=\{L,C,F\}} \left[\frac{\partial \alpha_{ij}}{\partial \theta} \cdot \pi_j(\cdot) + \alpha_{ij} \cdot \frac{\partial \pi_j}{\partial \theta} \right] \cdot (a + I^i) \\
& - \sum_{j=1}^J \sum_{i=\{L,F\}} \left\{ \left[\frac{\partial \alpha_{ij}}{\partial \theta} \cdot \pi_j(\cdot) + \alpha_{ij} \cdot \frac{\partial \pi_j}{\partial \theta} \right] \cdot D(\theta_j, \alpha_{Cj}) + \frac{\partial D(\theta_j, \alpha_{Cj}(\theta))}{\partial \theta} \cdot \pi_j(\cdot) \cdot \alpha_{ij}(\cdot) \right\} \cdot (a + I^i) \\
& - \sum_{j=1}^J q_j(\cdot) \cdot \frac{\partial p_j}{\partial X_j} \cdot \frac{\partial X_j}{\partial \theta} \cdot (a + \phi_C)
\end{aligned}$$

is the marginal benefit from the constitutional index attributed to the income and production effects. The marginal benefit can then be decomposed into three parts;

1. Ownership:

$$\sum_{j=1}^J \sum_{i=\{L,C,F\}} \frac{\partial \alpha_{ij}}{\partial \theta} \cdot \pi_j(\cdot) \cdot (a + I^i) - \sum_{j=1}^J \sum_{i=\{L,F\}} \frac{\partial \alpha_{ij}}{\partial \theta} \cdot \pi_j(\cdot) \cdot D(\theta_j, \alpha_{Cj}) \cdot (a + I^i).$$

2. Production:

$$\begin{aligned}
& \sum_{j=1}^J \sum_{i=\{L,C,F\}} \alpha_{ij} \cdot \frac{\partial \pi_j}{\partial \theta} \cdot (a + I^i) \\
& - \sum_{j=1}^J \sum_{i=\{L,F\}} \left\{ \alpha_{ij} \cdot \frac{\partial \pi_j}{\partial \theta} \cdot D(\theta_j, \alpha_{Cj}) + \frac{\partial D(\theta_j, \alpha_{Cj}(\theta))}{\partial \theta} \cdot \pi_j(\cdot) \cdot \alpha_{ij}(\cdot) \right\} \cdot (a + I^i)
\end{aligned}$$

3. Consumption:

$$- \sum_{i=1}^J q_j(\cdot) \cdot \frac{\partial p_j}{\partial X_j} \cdot \frac{\partial X_j}{\partial \theta} \cdot (a + \phi^L).$$

If, however, Eq. (16) is not binding (there are no financial constraints), then the relationship derived in Proposition 4 can be simplified, so that only the ownership effect and the part of the production effect attributed to the damage function, remain.

Proposition 5. If there are no financial constraints then, in equilibrium, the constitutional index equates the left and right hand sides of the following equation.

$$\begin{aligned}
& (1+r) \cdot \sum_{i=\{L,C,F\}} \frac{\partial t_i}{\partial \theta} \cdot (a + I^i) \\
= & \sum_{j=1}^J \sum_{i=\{L,C,F\}} \frac{\partial \alpha_{ij}}{\partial \theta} \cdot \pi_j(\cdot) \cdot (a + I^i) \\
& - \sum_{j=1}^J \sum_{i=\{L,F\}} \left\{ \frac{\partial \alpha_{ij}}{\partial \theta} \cdot D(\theta_j, \alpha_{Cj}) + \frac{\partial D(\theta_j, \alpha_{Cj}(\theta))}{\partial \theta} \cdot \alpha_{ij}(\cdot) \right\} \cdot \pi_j(\cdot) \cdot (a + I^i).
\end{aligned}$$

Next, the conditions for a unique equilibrium, i.e., the conditions under which $S(\theta)$ is an increasing function and $B(\theta)$ is a decreasing function of θ , are derived.

Proposition 6. Given the following conditions, and assuming that the financial constraints are not binding, a unique internal equilibrium exists at $0 < \theta^* < 1$.

1. $\sum_{i=\{L,C,F\}} \frac{\partial^2 t_i}{\partial \theta^2} \cdot (a + I^i) \geq 0$.
2. $\sum_{i=\{L,C,F\}} \frac{\partial^2 \alpha_{ij}}{\partial \theta^2} \cdot (a + I^i) \leq 0$.
3. $\sum_{j=1}^J \sum_{i=\{L,F\}} \frac{\partial^2}{\partial \theta^2} \{D(\theta_j, \alpha_{Cj}) \cdot \alpha_{ij}(\cdot)\} \cdot (a + I^i) \geq 0$.
4. $\frac{d\pi_j}{d\theta}$ is sufficiently small. And,
5. $S(0) < B(0)$ and $S(1) > B(1)$.

The intersection of the demand function for θ , $B(\theta)$, and the supply function of θ , $S(\theta)$, results in a unique internal equilibrium at $0 < \theta^* < 1$. According to this scenario, which is depicted in Fig. 3, the economy will not reach full *capitalism* ($\theta = 1$).

On the other hand, when $B(\theta) > S(\theta)$ for all $\theta \in [0, 1]$, equilibrium is reached at $\theta = 1$. The other extreme of $\theta = 0$ occurs if $B(0) < S(0)$. In such a case, the economy will remain in total anarchy.

The lack of the rule of law, i.e., low constitutional index, in countries like Russia has led to an increase in predatory activities that are likely to have adverse effects on productive activity, i.e., investment. The question then is why is there law enforcement in some countries and less (or hardly any) in other countries? Why some governments are too weak to enforce the law and others are not? Existing literature (e.g., Johnson, Kaufmann, and Shleifer, 1998, and Roland and Verdier, 1999b) explained this

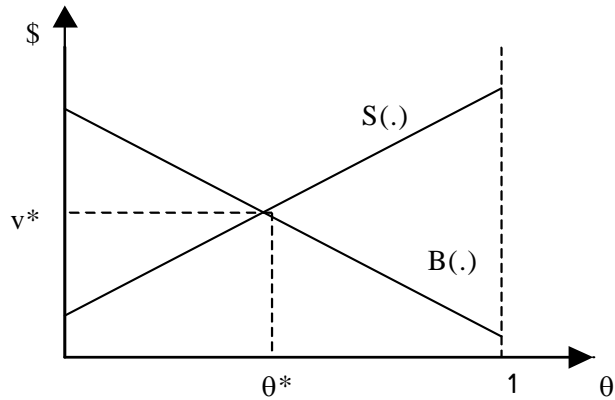


Figure 3: A unique internal equilibrium

difference by modeling coordination problems (law enforcement is a public good).¹⁵ In those papers, there is a “good” equilibrium and a “bad” equilibrium and economies may choose one or the other.

By focusing on a unique equilibrium we are abstracting from the coordination problem. To this end, the current paper gives us an alternative explanation, given the conditions derived in Proposition 6: It is costly to develop institutions, both economically and politically. Furthermore, the cost from creating political institutions is determined by the distribution of political power, and this distribution differ between countries. Therefore, the chosen index in equilibrium differ between countries and thus the ability to enforce the law. Moreover, it is too costly for transition economies to adopt the best institutions, where the unofficial economy and corruption do not exist, if we agree that these costs are too high.

In summary, this section offers a rationale for governments to refrain from making all of the required changes when moving to a market regime. The existence of interest groups, together with the (monetary) cost of the constitutional index, creates incentives for governments to not go “all the way.” To this end, if the incentives to keep progress at bay are very high, then the economy’s output will decline after liberalization. This is further investigated in the following section.

5 Policy Implications

Before concluding, and using Proposition 5, policy implications of the current work are derived.

¹⁵A comprehensive survey of the empirical literature on corruption, government collapse, and unofficial economy is given in Roland (2000), chapter 8. See also Rose-Ackerman (1999).

5.1 Output Reduction

In most economies in transition, if not in all of them, a temporary decline in output is observed immediately after liberalization. In some economies this temporary decline becomes more permanent than in others. For example, Russia's output eight years after liberalization (which started in 1991) is less than 60% of what it used to be before liberalization. Latvia's output is still declining seven years after liberalization (which started in 1990), and equals less than 60% of what it used to be before liberalization. These observations differ substantially from what happened in Croatia and Poland, where the pre-liberalization output was completely recovered six years after liberalization.¹⁶

As far as we know, existing literature can explain a temporary decline in output, but not a permanent decline in output. This is in contrast to the current work, in which a permanent decline in output can be an equilibrium outcome since interest groups affect the government's desire to create institutions that support market regime and since some of these groups stand to gain from keeping progress at bay.

If indeed CEs manage to prevent the government from setting θ too high, they might end up decreasing output. The reason for this is that when θ is low, industries are less attractive to LEs and FEs to invest in [remember that $D(0, \cdot) = 1$ and therefore $\alpha_{ij}(\cdot) \cdot \pi_j(\cdot) \cdot (1 - D(0, \cdot)) = 0$ for $i \in \{L, F\}$]. In terms of Fig. 3, if for low values of θ the marginal benefit from the constitutional index, $B(\theta)$, is small compared to the marginal cost of the constitution index, $S(\theta)$, then output declines after transition.

Corollary 1. If interest rates, r , are very high, then institutions might be in total anarchy during the privatization process.

Corollary 1, which follows directly from Proposition 4, sheds new light on the role the price of capital plays in creating new institutions. More specifically, it shows that the price of capital affects an economy in transition, both at the investment level and at the institutions level. In other words, an increase in the price of capital reduces the amount invested by the entrepreneurs and creates incentives for the government to set institutions that are less compatible with market regime.

5.2 Foreign Intervention

A higher $G(\cdot)$ leads to a lower $t_i(\cdot)$. Furthermore, the more sensitive $G(\cdot)$ is to changes in θ , the lower is the marginal cost of the constitutional index and, therefore, the larger θ is in equilibrium.

Proposition 7. The greater $\frac{\partial G}{\partial \theta}$ is, where $\frac{\partial G}{\partial \theta} > 0$, the higher θ is in equilibrium.

¹⁶The data is taken from Roland (2000).

The proof follows directly from the derivative of the government's budget constraint $T(\theta) \equiv \sum_{j=1}^J N_j + \sum_{i=\{L,C,F\}} t_i(\theta) + G(\theta)$ with respect to θ . Hence, it can be concluded that foreign intervention that does not reduce the dispensable income to the local entrepreneurs (LEs and CEs), and which is subject to a higher *constitutional index*, will help the economy reach a higher *constitutional index* in equilibrium. The importance of this result is amplified when the benefit from a comprehensive market regime, i.e. a higher *constitutional index*, is taken into account. For example, the *constitutional index* affects the share distributions that determine the income distribution of the economy. Income distribution, in its turn, affects the growth in the economy¹⁷.

5.3 Tax Scheme

Lowering the marginal tax levied on CEs, and therefore increasing the marginal tax levied on LEs and FEs, results in a higher *constitutional index* in equilibrium. This normative scheme enables the government to modulate CEs' incentives for a lower index.

Proposition 8. The smaller $\frac{\partial t_C}{\partial \theta}$ is, the higher θ is in equilibrium.

It is important to note that we are not arguing that CEs should not pay taxes. All we are saying is that taxes collected from CEs should be less sensitive to the constitutional index.

6 Discussion and Concluding Remarks

This paper argues that transition to market regimes is a political process in which the parameters of market institutions are defined. Assuming that some interest groups are "corrupt," in the sense that they benefit from weak market institutions, the paper shows that corrupt groups influence this process to retain control in lucrative markets, which results in inefficiency because of under-investment and excessive monopoly power.

The outcome of the transition is captured by the constitutional index. It reflects, among other factors, contractual environment and investor protection. Both political and economic factors affect the constitutional index in equilibrium. For example, powerful corrupt entrepreneurs will lead to lower constitutional index, as will high opportunity cost for investment and high monetary cost of reforms, e.g., high cost of creating human capital and a supporting legal system.

¹⁷For income distribution and growth in a political environment, see Perotti (1993).

Different stages of reform may result in different constitutional indices. In Russia, Yeltsin's presidency could have been characterized by a low constitutional index, reforms were kept at bay and diluting strategies were common. Putin's presidency, on the other hand, is characterized by a higher constitutional index. Putin's government passed about 80 percent of its legislative agenda through the Duma, laws that Yeltsin's government had prepared and support market reforms, but were blocked by the political process.¹⁸ The index can be further raised by addition reforms.

Our analysis shows that the constitutional index is affected by the distribution of political power. In Poland, privatization and restructuring was delayed by various interest-groups. The Polish mass privatization plan was blocked for at least three years in Parliament and after numerous revisions, amendments, and modifications was adopted in April 1993. When the plan finally reached implementation, it lost momentum. A similar story, where political struggle mitigated the benefit from privatization, can be told for Hungary (Dervis and Condon (1994)).

It is shown that the constitutional index affects the distribution of wealth and the amount invested by various groups. Investment by foreign and non-corrupt local entrepreneurs is positively correlated with the constitutional index, whereas investment by corrupt entrepreneurs is negatively correlated with the constitutional index. Furthermore, total investment is positively correlated with this index. Thus, the paper offers an explanation why economies with better investor protection laws and better contractual environment, i.e., a higher constitutional index, outperform economies with weaker investor protection laws and delirious contractual environment, as shown empirically in La Porta et al. (1999) and Mauro (1995).

The possibility that the economy will end up with a low constitutional index is used to explain why in some transition economies, and not others, we observe an enduring decline in output. The low investment levels associated with low indices, especially by foreign entrepreneurs, affects productivity negatively. These predictions are consistent with the empirical findings of Mauro (1995), where "for example, if Bangladesh were to improve its integrity and efficiency of its bureaucracy to the level of that in Uruguay, its investment rates would rise by almost five percent points and its yearly GDP growth rate would rise by over half a percentage point." Foreign direct investment is a mechanism to import knowledge, and its reduction will result with lower productivity and reduced output.¹⁹ Previous studies explained output decline after reforms by price liberalization. This paper argues that output decline can be a result of low constitutional indices.

¹⁸Boycko, Shleifer, and Vishney (1995) also pointed out to the strong opposition to reforms since 1992.

¹⁹Prasad et al. (2003) show that corruption has a strong negative effect on FDI inflows. Transparency of government operations, on the other hand, has a strong positive effect on investment inflows from international mutual funds.

This paper recognizes heterogeneity among industries. It argues that corrupt entrepreneurs are attracted to industries that benefit from lack of openness and transparency and are relatively more profitable. The lower is the constitutional index; the larger is the set of industries they target, and therefore the degree of monopolization of these industries. These predictions are consistent with the empirical findings of Campos (2000), especially that “the main cause of the transition shadow [unofficial economy] is . . . the lack of a rule of law tradition (under socialism, there is no law . . . , there was no tradition – but the Party, and there was no rule, just discretion). ” He observes that the corrupt entrepreneurs own the large corporations, the profitable capital-intensive industries.

The paper recommends policies that facilitate transition with higher constitutional index. To this end, the paper identified policies with regard to both international funds and domestic taxes that can support a higher index in equilibrium. Provision of international funds should be dependent on activities that improve the constitutional index. For example, an active legal framework, strong judiciary framework, and enforcement. Another policy recommendation is to make the reform in the tax payment independent of the nature of reform of the market institutions.

The paper describes an economy in transition, whereby the political-economic structure of the economy determines the share distribution mechanism of the firms by affecting the *constitutional index*. It should be interesting to collect data on constitutional state and privatization processes in different cases in order to corroborate (if possible) the results presented in this paper.

In the model presented, the *constitutional index* is determined in a static world. A dynamic model might shed some light on the inter-temporal relations between the constitutional state and the economic structure. Should a constitutional change precede an economic change? How do the initial conditions affect the transition when political pressure prevails, and do they influence the pace of transition? The transition process affects income distribution, which according to known theory affects the growth process. To what extent can a transition process affect future growth? These questions can be explored using the framework developed in this paper.

7 Appendix

The political-economic equilibrium can be characterized following Grossman and Helpman’s (1994a) *Proposition 1*.

Lemma 1.

$(\{s_i^0\}_{i=C,F}, \theta)$ is a subgame-perfect Nash equilibrium of the political-economic game if and only if:²⁰

1. s_i^* are feasible for $i=C,F$;
2. θ^* maximizes

$$a\tilde{W}(\theta) + \sum_{i=\{C,F\}} s_i(\theta) \text{ on } \theta;$$

3. θ^* maximizes

$$V_i(\theta) + a\tilde{W}(\theta) + \sum_{i=\{C,F\}} s_i(\theta);$$

on θ for every $i \in \{L, C, F\}$.

4. For every $i \in \{L, C, F\}$ there exists a $\theta^i \in \theta$ that maximizes

$$a\tilde{W}(\theta) + \sum_{i=\{C,F\}} s_i(\theta)$$

on θ such that $s_i^*(\theta^i) = 0$.

From Lemma 1 it can be shown, using (2) and (3), that the equilibrium is locally truthful, and thus, in equilibrium,

$$\frac{\partial W_i}{\partial \theta} = \frac{\partial s_i}{\partial \theta}. \quad (18)$$

The marginal economic surplus from the *constitutional index* is,

$$\begin{aligned} \frac{\partial \tilde{W}(\theta)}{\partial \theta} = & \quad (19) \\ & \sum_{j=1}^J \sum_{i=\{L,C,F\}} \left[\frac{\partial \alpha_{ij}}{\partial \theta} \cdot \pi_j(\cdot) + \alpha_{ij}(\cdot) \frac{d\pi_j}{d\theta} \right] \\ & - \sum_{j=1}^J \sum_{i=\{L,C,F\}} \left\{ \left[\frac{\partial \alpha_{ij}}{\partial \theta} \cdot \pi_j(\cdot) + \alpha_{ij}(\cdot) \frac{d\pi_j}{d\theta} \right] \cdot D(\theta_j, \alpha_{Cj}) + \frac{\partial D(\theta_j, \alpha_{Cj}(\theta))}{\partial \theta} \cdot \alpha_{ij}(\cdot) \cdot \pi_j(\cdot) \right\} \\ & - (1+r) \sum_{i=\{L,C,F\}} \frac{\partial t_i}{\partial \theta} - \sum_{j=1}^J q_j(\cdot) \cdot \frac{\partial p_j}{\partial X_j} \cdot \frac{\partial X_j}{\partial \theta}. \end{aligned}$$

²⁰See Grossman and Helpman (1994a) **Proposition 1** and also Bernheim and Whinston (1986) **Lemma 2**.

Substituting Eqs. (8) and (12) into Eq. (18) and applying Lemma 1 Part 2 implies that $a \frac{\partial \bar{W}}{\partial \theta} +$

$\sum_{i=\{C,F\}} \frac{\partial W_i}{\partial \theta} = 0$, where

$$\begin{aligned} & \sum_{i=\{C,F\}} \frac{\partial W_i}{\partial \theta} = \\ & \sum_{j=1}^J \sum_{i=\{C,F\}} \left[\frac{\partial \alpha_{ij}}{\partial \theta} \cdot \pi_j(\cdot) + \alpha_{ij}(\cdot) \frac{d\pi_j}{d\theta} \right] \\ & - \sum_{j=1}^J \left\{ \left[\frac{\partial \alpha_{Fj}}{\partial \theta} \cdot \pi_j(\cdot) + \alpha_{Fj}(\cdot) \frac{d\pi_j}{d\theta} \right] \cdot D(\theta_j, \alpha_{Cj}) + \frac{\partial D(\theta_j, \alpha_{Cj}(\theta))}{\partial \theta} \cdot \alpha_{Fj}(\cdot) \cdot \pi_j(\cdot) \right\} \\ & - (1+r) \sum_{i=\{C,F\}} \frac{\partial t_i}{\partial \theta} - \phi_C \cdot q_j(\cdot) \cdot \frac{\partial p_j}{\partial X_j} \cdot \frac{\partial X_j}{\partial \theta}. \end{aligned}$$

Proposition 4 follows.

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