

UC Berkeley

CUDARE Working Papers

Title

Putty-clay politics in transition economies

Permalink

<https://escholarship.org/uc/item/0t30p88v>

Authors

Lyons, Robert F.
Rausser, Gordon C.
Simon, Leo K.

Publication Date

1996-05-01

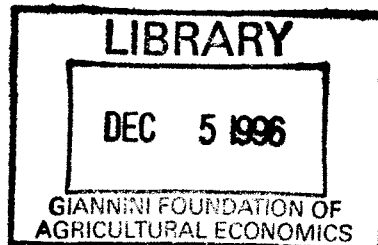
DEPARTMENT OF AGRICULTURAL AND RESOURCE ECONOMICS /
DIVISION OF AGRICULTURE AND NATURAL RESOURCES
UNIVERSITY OF CALIFORNIA AT BERKELEY.

WORKING PAPER NO. 707

PUTTY-CLAY POLITICS IN TRANSITION ECONOMIES

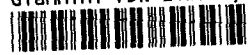
by

^{F.} Robert Lyons, ^{C.} Gordon Rausser, and ^{K.} Leo Simon



California Agricultural Experiment Station
Giannini Foundation of Agricultural Economics
May 1996

Giannini FDN Library



005344

Putty-Clay Politics in Transition Economies

Robert Lyons

Gordon Rausser

Leo Simon

University of California at Berkeley

May 1996

Abstract

We build a bargaining-theoretic model of an important dilemma inherent in any major political economic transition process. While swiftly removing the old order is a necessary condition for a successful transition, it also leads to widespread social disruption that may threaten the viability of the reform process. This issue lies at the heart of much of the “big-bang/gradualism” debate in the literature. We argue that this dichotomy is overly simplistic. In particular, the debate, as it has been framed, has failed to capture the significance of interest group competition. Interest group competition matters precisely because the political environment during a transition is fluid and malleable and is thus open to manipulation by interests seeking to mold post-transition governance structures to best serve themselves. As different economic and political structures will give rise to different incentives within these interest groups, one might expect that transition strategies will differ across societies. We show this is the case with two interesting examples. First, we consider how transition strategies differ in open and closed economies. We are able to derive a number of strong results, the most striking of which identifies conditions under which closed economies outperform open economies in terms of social welfare. Our second set of experiments examines Krueger’s (1993) “vicious and virtuous circles” theory of policy reform. We identify conditions under which societies with political systems that reward rent-seeking behavior enjoy higher social welfare than societies with political systems that reward productive behavior.

JEL Classification: C78, F19, (P16 + P26)/2, P51.

Keywords: Political Economy; Transition Economies; Multilateral Bargaining; Trade Policy.

Please address correspondence to:

Robert Lyons

Department of Agricultural and Applied Economics

207 Giannini Hall

University of California

Berkeley, CA 94720

Tel: (510) 642-8230

Fax: (510) 643-8911

Email: lyons@are.berkeley.edu

Putty-Clay Politics in Transition Economies

The recent literature on the transitions underway in Central and Eastern Europe (CEE) and the Former Soviet Republics (FSR) has focused in part on a fundamental tradeoff inherent in any major political-economic transition process. On the one hand, if a transition is to be successful, the entrenched institutions of the old order must be removed swiftly and effectively to allow new and unfamiliar institutions to take root. On the other hand, the removal of the old order may result in social and economic disruption sufficient in scale to endanger the economic and political viability of the transition process itself. How should transition governments choose policies to safely navigate between the horns of this dilemma?¹

The literature on this question is, unfortunately, of little help to policy-makers, as it has been focused very narrowly on justifying *a priori* either a “big-bang” or “gradualist” approach.² As the debate has been framed, it boils down a simple question: do transition governments have enough *état de grâce* to implement the necessary but painful reforms required to establish a market-based economy? To evaluate the question, one needs a model of the political process during a transition. Big-bangers, despite recognizing the existence of political constraints, do not explicitly model these constraints. Gradualists do model politics; however, we believe the model they typically employ fails to adequately represent the political environment during a transition. In one form or another, gradualist models involve a single decision-maker, “the government,” which acts as a Stackelberg leader in choosing a transition strategy. This model assumes a well established governance structure exists by which a government can impose its decisions on society. We argue in this paper that, on the contrary, transition policy-making is difficult exactly because this governance structure does not exist.

Because the configuration of political power is, by definition, more fluid and contestable, the

¹ The other “part” of this literature concerns the complementarity and sequencing of reforms. For instance see Lipton and Sachs (1990), Kornai (1990), Roland (1991), Newbery (1993), Gates, Milgrom and Roberts (1993), Roland (1994), Galbis (1994), Dewatripont and Roland (1995).

² Big-bangers include Lipton and Sachs (1990), Kornai (1990), Aslund (1991), Berg and Sachs (1992), Murphy, Shleifer and Vishny (1992), Woo (1994), Sachs and Woo (1994). Gradualists include Roland (1991), Hare and Revesz (1992), Dewatripont and Roland (1992), Aghion and Blanchard (1993), Murrell (1993), Coricelli, Milesi and Gian (1993), Wei (1993), Roland (1994), Dewatripont and Roland (1995).

policy-making process during a transition is a particularly volatile arena for competition between interest groups. Each competitor seeks to mold the structures that institutionalize political power before they “harden” to form the governance structure of the post-transition era. In this “putty-clay” model of politics, the relative incentives of the interest groups will depend on the particular economic and political characteristics of the society within which they operate. Since transition policy is determined through the workings of this political process, one would expect that societies with different economic and political attributes would likely choose different transition strategies. For instance, our model predicts that export-oriented countries are likely to pursue more gradual transition strategies than import-oriented economies. We also show that societies which reward rent-seekers with political power may attain more efficient equilibria than societies in which rent-seeking is discouraged. From this point of view, providing *a priori* justifications for either a big-bang or gradualist approach seems overly simplistic.

That interest group competition is crucial to the quality of the transition process seems undeniable. Consider the history of the FSR since 1991 and CEE since 1989. While the institutional apparatus of Communism was dismantled rather quickly in these countries, its gestalt has proven considerably harder to eliminate. One of the more persistent vestiges of the old structure has been the social and political influence of its leaders, the *nomenklatura*. While the *nomenklatura*'s power originated in the institutional context of Communism, it has survived, albeit tarnished, despite the dismantling of this structure. The recent electoral successes of former Communists across CEE and the FSR are evidence of the *nomenklatura*'s political resilience.

The *nomenklatura* are, in some sense, natural candidates for leadership roles in a market based system. From years of privilege and experience, they have accumulated certain kinds of human capital, including organizational and networking skills, which are valuable in a market economy. Capitalism requires capitalists after all, so why not let the *nomenklatura* assume this mantle in the new order? Presumably, reformers fear that if the *nomenklatura* are allowed to play a pivotal economic role in the new system, they will leverage their *vestigial* power against this newly acquired *economic* power to obtain *political* power, which they will use to shape the transition process in their own self-interest.

While the transition dilemma is obviously multifaceted, it is useful to begin by considering a simple two-dimensional version, which we depict graphically in Fig. 1. We represent the dilemma as a tradeoff between *continuity* and *distortion*. The variable ρ , on the horizontal axis in the

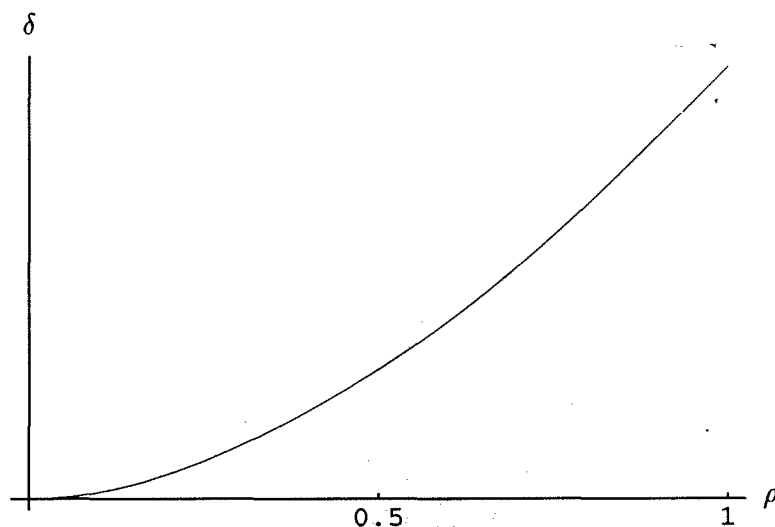


Figure 1: The Tradeoff between Continuity (ρ) and Distortion (δ).

figure, measures the degree of continuity between the pre- and post-transition social orders.³ This variable measures the degree to which the new order resembles the old. Without loss of generality we normalize ρ to lie in the unit interval. A ρ value near zero represents a maximally disruptive transition strategy. While this approach reduces the *nomenklatura*'s economic and political role in the transition, its cost is massive economic and social disruption. A less disruptive transition strategy would move ρ towards one, which, while reducing the dislocation costs, increases the *nomenklatura*'s economic and political significance in the transition. The variable δ , on the vertical axis in Fig. 1, measures the social cost of this policy. This variable represents the degree to which the economy is distorted relative to a competitive equilibrium. Our interpretation of δ as a measure of market distortion reflects the reformers' dilemma: an inevitable consequence of providing the *nomenklatura* with greater access to the political process is that they will be more successful in pursuing their own economic interests. In the context of our simple economy, this translates into the *nomenklatura* using their political power to institutionalize distortionary economic policies aimed at garnering rent for themselves at the expense of producers and consumers.

Our notion of continuity (ρ) is an abstract index of change across both space and time that results from a complex set of transition policies. One natural interpretation of ρ is that it represents the speed of transition. Very fast transitions are highly disruptive and correspond to low values of

³ We also refer to ρ as a measure of disruption—the opposite side of the same coin.

ρ . Very slow, even stalled, transitions are minimally disruptive and correspond to high ρ values. This interpretation is in line with the literature on big-bang versus gradualist transition strategies.

An alternative interpretation of ρ is developed in Lyons, Rausser and Simon (1994), which studies the land reform process in Bulgaria. The *real boundaries* provision of Bulgaria's land reform legislation entitles land owners or their heirs to the *precise* parcels of land that they owned in 1946, prior to the advent of Communist rule. As a result of extensive internal migration, there is little correlation between these 1946 boundaries and the plots farmed at the end of the Communist era. Under these conditions, such a high degree of precision has required an elaborate apparatus for restituting land and reconciling competing claims. The result has been long delays, much confusion and costly losses in agricultural output. From a purely economic standpoint, the reformers' emphasis on historical precision seems indefensible. Yet when one considers the organization of rural society in Bulgaria, a clear justification for historical precision emerges. At the time that the land reform was instituted, the former *nomenklatura* bosses still held considerable political, economic and social power within rural society, though the collectives had been nominally dissolved. The massive disruption caused by an historically precise land reform—moving ρ close to zero—can be rationalized as a tool for reorganizing rural social and political relationships and maximizing the likelihood that the reformers will be able to wrest control over an important political power base away from the *nomenklatura* (Swinnen, 1994; Lyons et al., 1994).

In the next section we formally present the model and derive our stylized " ρ - δ tradeoff." In §2 we develop a general methodology for comparing transition strategies in societies with different economic and political structures. We then use this methodology to focus on two sets of comparisons. As an example of different economic structures, in §3 we compare transition strategies in open and closed economies. We show that open economies do not always outperform closed economies, as one might expect. As an example of different political structures, in §4 we compare a society where political power is acquired through rent-seeking with one where political power is acquired through productive contributions to the economy. The former characterizes policy reform under what Krueger (1993) has called a "vicious circle," while the latter characterizes policy under a "virtuous circle." We, however, show that from a social welfare standpoint, virtuous circles are sometimes vicious and vicious circles virtuous. We conclude the paper in §5.

1 The Model

Our model has two stages: a transition period, and a post-transition period. There is no economic activity during the transition. There is a simple one-sector closed economy in the post-transition era. Each period has a distinct political process by which policy is made. In both periods, the policy chosen is the outcome of competition between three interest groups whose payoffs are measured purely in terms of economic surplus obtained in the post-transition economy.

During the transition period, the three interest groups engage in a multilateral bargaining game to choose the disruptiveness of the transition, *i.e.*, a level of ρ . This degree of disruption has two effects on the post-transition period. First, it affects the productivity of the economy. Second, it affects the future distribution of political power between the three interest groups. As observed above, a defining characteristic of transition periods is that the policy-making environment is more fluid—less institutionalized—than in periods of stability. Borrowing the familiar “putty-clay” metaphor from production theory, the interest groups in the transition game view the post-transition governance structure as putty to be molded to best serve their various economic interests. By the second stage of our model, this governance structure has “hardened” and politics is reduced to a matter of weighting the preferences of the interest groups in accordance with their immutable relative political power.

In the post-transition period, then, we use a political preference function (PPF) approach to the political process. The outcome of this process determines how distorted the economy is, *i.e.*, a level of δ . We derive a post-transition reaction function that relates the equilibrium level of distortion (δ) consistent with any degree of transition disruption (ρ). This reaction function is the ρ - δ tradeoff described above and shown in Fig. 1. The purpose of this paper is to investigate the nature of this tradeoff.

1.1 The Post-Transition Economy

We construct a very simple one-sector closed economy with linear supply and demand. The economic impact of the disruptiveness of the transition is transmitted *via* the slope of the supply function $S(q|\rho) = \gamma(\rho)q$ where $\gamma' < 0$. More disruptive transitions steepen the supply curve, increasing prices and reducing output, while less disruptive transitions have the opposite effect. For later use, we define $\gamma_0 \equiv \gamma(0)$, *i.e.*, the slope of the supply curve following a maximally disruptive

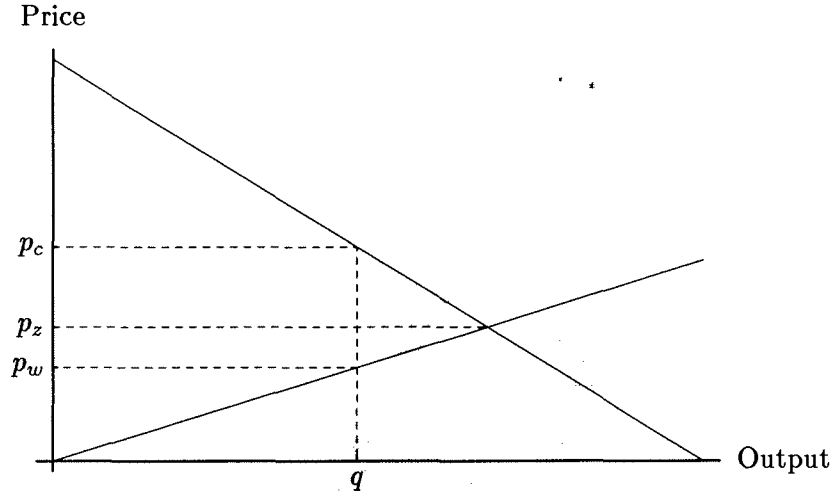


Figure 2: Equilibrium in the Closed Economy.

transition.⁴

Demand is independent of the transition: $D(q) = \alpha - \beta q$. Equilibrium in this economy depends not only on the level of disruption caused by the transition, but also the degree to which the *nomenklatura* are allowed to distort the economy through their rent-seeking activities. The equilibrium level of distortion, δ^* , is determined by a political process which we detail below. For now, given the disruptiveness of the transition, ρ^* , and some level of distortion, δ^* , equilibrium in the post-transition economy, occurs where:

$$S(q^*|\rho^*) + \delta^* = D(q^*)$$

Solving for equilibrium output we find:

$$q^* = \frac{\alpha - \delta^*}{\gamma(\rho^*) + \beta}$$

which is declining in distortion. Henceforth we dispose with asterisks to denote optimal values and do not explicitly write functional dependencies except where necessary to avoid ambiguity.

⁴ The underlying production function is Cobb-Douglas and depends on the disruptiveness of the transition:

$$q = A(\rho)v^{\frac{1}{2}} \quad A' > 0, A'' < 0$$

where v is a perfectly elastically supplied resource that serves as the numeraire. The function $A(\cdot)$ captures the economic effect of the transition: $A' > 0$ because more disruptive transitions reduce economic productivity. Solving for the market supply curve yields the equation given in the text, where $\gamma(\rho) = \frac{2}{nA^{\frac{1}{2}}}$, and n is the number of firms.

Fig. 2 depicts this equilibrium. p_p is the price paid to producers for each unit of the good. p_c is the price paid by consumers of the good. The wedge between these prices is the per unit distortion caused by *nomenklatura* rent-seeking. p_z is the zero-distortion or “free-market” price.

An important feature of this economy can be seen in this diagram, *viz.*, the relative incidence of distortion on producers and consumers. The incidence of distortion on producers is equal to the difference between the zero-distortion price and the producer price. The incidence of distortion on consumers is the difference between the consumer price and the zero-distortion price. The *proportion* of incidence that falls on producers is:

$$h = \frac{\gamma}{\gamma + \beta} \quad (1)$$

which has the following important property:

Proposition 1. *The more disruptive the transition, the more producers bear the burden of marginal increases in distortion. The converse is also true: less disruption reduces the burden of distortion on producers relative to consumers.*

The proposition follows directly from the fact that h is declining in ρ : $h' = \gamma'\beta/(\gamma + \beta) < 0$. It should be noted that the truth of this proposition does not depend on the linearity of supply and demand.

1.1.1 Interest Groups

Both the transition and post-transition decisions are inherently political in nature, since both involve the allocation of surplus among different interest groups. In the context of transition economies, we identify three relevant interest groups: (i) the “old-guard” or *nomenklatura*, (ii) producers, and (iii) the “center.” We model the *nomenklatura* as rent-seekers who control the trading sector. They acquire rent from the distortion between the consumer and producer prices. In Fig. 3, these rents are represented by the darkly shaded region, defined as $R = \delta q$. Rent is concave in distortion and maximized where $\delta = \alpha/2$.

Our second interest group is comprised of the producers of the economy’s sole good. Producers care about their surplus, represented by the lightly shaded region below p_p in Fig. 3 and defined as $PS = p_p q/2$. Producer surplus is monotonically decreasing in distortion.

While these first two interest groups are at least stylized representations of political factions that actually exist in many transition economies, our third group is more of an abstract construct,

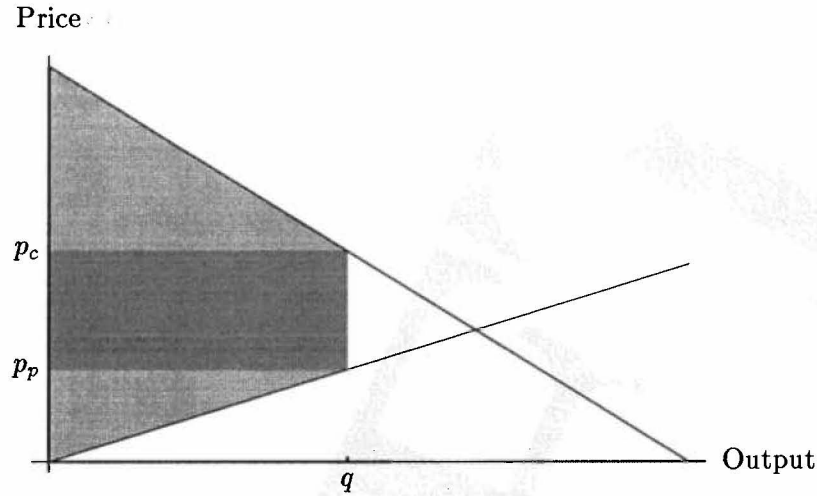


Figure 3: Payoffs to the Interest Groups.

which we refer to as the “center.” One can interpret the center as representing, collectively, the various domestic groups that espouse centrist positions in policy debates inside transition economies. Alternatively, one can view the center as an external agent promoting the goals that, for instance, the World Bank, might be expected to advocate. In our model, the center cares about social welfare, defined to be the sum of consumer and producer surplus, $W = PS + CS$. Consumer surplus is represented by the lightly shaded region above p_c in Fig. 3 and is defined as $CS = (\alpha - p_c)q/2$. Like producer surplus, consumer surplus is monotonically decreasing in distortion. Thus W is also declining in distortion.

1.2 The Post-Transition Political Model: Choosing δ

Unlike the political turmoil inherent in a transition process, we envision politics in the post-transition world to be institutionalized. Instead of an explicit non-cooperative framework, then, we use a political preference function approach (Rausser and Freebairn, 1974; Zusman, 1976; Rausser and Foster, 1990; von Cramon-Taubadel, 1992; Bullock, 1994; Rausser, Simon and van 't Veld, 1994). A bureaucrat in the second stage is charged with choosing a level of distortion which maximizes the weighted sum of interest group utilities as formulated in the following *governance function*:

$$G = \omega R + \frac{1 - \omega}{2} (PS + W), \quad \omega \in [\omega_z, 1] \quad (2)$$

where ω is the political preference weight of the *nomenklatura*. This definition of G implies that political power in the post-transition period is zero-sum: gains in power by the *nomenklatura* are directly translated into losses for the center and producers, who evenly split the residual. Thus, we normalize ω to lie in the unit interval. The actual value of ω is determined by the disruptiveness of the transition and is fixed in the post-transition period. That is

$$\omega = \omega_z + \lambda\rho^\epsilon \quad (3)$$

The relation in (3) is an example of what we call a *political-economic technology* or PET.⁵ In general, a PET relates policy and/or economic variables to political power in much the same way that a production technology relates factors of production to outputs. In (3) one policy variable—the disruptiveness of the transition—determines the distribution of political power in the post-transition period. In one of our comparative statics exercises we experiment with alternative specifications of this PET.

We offer two interpretations of the political-economic technology in (3), corresponding to different interpretations of ρ . The first considers ρ an indicator of the strength of the *nomenklatura*'s social and political networks, as in our introductory example of Bulgarian land reform. In this case, a transition which leaves those networks intact (*i.e.*, one in which ρ is large) will afford the *nomenklatura* greater political power in post-transition society. The other interpretation considers ρ an indicator of the speed of transition. In this case, equation (3) can be interpreted as a representation of Lipton and Sachs' (1990) *état de grâce* theory. In the immediate aftermath of the downfall of the old order, the *nomenklatura*'s political power ebbs due to its association with a discredited and illegitimate system and popular expectations that the reformers will soon set things right. As the transition drags on—*i.e.*, as ρ moves closer to one—popular sentiment may grow impatient with the reformers and less critical of the *nomenklatura*. Given these interpretations, we choose λ and ϵ

⁵ For (3) to make sense, we must place some restrictions on its parameters. Since welfare and producer surplus are strictly decreasing in δ , the governance function, G , will only be concave if ω is sufficiently large. Formally, G will have an interior solution if and only if $\omega > \omega_c = (2\gamma + \beta)/(6\gamma + 5\beta)$. It is important to be clear about what we mean by an "interior solution." Depending on how we constraint the lower bound on distortion, there may be interior solutions which give negative distortion. If we interpret negative distortion as a subsidy paid by the *nomenklatura* to producers and consumers, the natural lower bound on distortion is that level consistent with a zero retail price. Define this level of distortion as $\delta_{\min} = -\alpha\gamma/\beta$. It can be shown that the *nomenklatura* power weight consistent with this level of distortion is $\omega = 1/3$. This is larger than ω_c , implying that this level of distortion is in fact an interior solution.

There are a number of problems with allowing negative distortion. First, the *nomenklatura* do not have any income source in the model beyond the rent they collect. It is unclear then how they could pay a subsidy to the other players. Second, short of another bargaining process, it is difficult to imagine an effective institution which could divide the subsidy between producers and consumers. For these reasons we constraint distortion to be nonnegative. The minimum level of ω consistent with zero distortion is $\omega_z = (2\gamma_0 + \beta)/(4\gamma_0 + 3\beta)$, where γ_0 is $\gamma(\rho)$ evaluated at $\rho = 0$. ω_z is the lower bound we set on ω in (3). Fig. 4 graphically summarizes these restrictions.

in (3) so that $\omega' > 0$ —i.e., more disruptive transitions reduce the *nomenklatura's* post-transition political power, while less disruptive transitions increase it.

1.2.1 The ρ - δ Tradeoff

We now turn to deriving the ρ - δ tradeoff itself from the bureaucrat's problem. The first order condition for the bureaucrat is

$$F = \omega R_\delta + \frac{1-\omega}{2} (PS_\delta + CS_\delta) = 0$$

Solving this yields the optimal level of distortion in the post-transition economy *given the disruptiveness of the transition*, ρ :

$$\delta(\rho) = \frac{\alpha [(2\gamma + \beta) - \omega (4\gamma + 3\beta)]}{[(2\gamma + \beta) - \omega (6\gamma + 5\beta)]} \quad (4)$$

Equation (4) is the bureaucrat's reaction function to the transition. This reaction function is, in fact, the ρ - δ tradeoff. The transition affects this tradeoff in two ways: *politically* through ω and *economically* through γ .

The Political Effect of the Transition. If we consider distortion as a function of *nomenklatura* power, we find that for $\omega \in [\omega_z, 1]$:

$$\delta_\omega = \frac{2\alpha(2\gamma + \beta)(\gamma + \beta)}{\text{DEN}^2} > 0$$

where $\text{DEN} = (2\gamma + \beta) - \omega(6\gamma + 5\beta) < 0$. That is, distortion is strictly increasing in ω (see Fig. 4). Since ω is increasing in ρ , this result captures the political effect of disruption:

Proposition 2. *Less disruptive transitions increase nomenklatura power which in turn increases the optimal level of distortion in the post-transition economy.*

The Economic Effect of the Transition. If we consider distortion as a function of γ , we find that for $\omega \in [\omega_z, 1]$:

$$\delta_\gamma = \frac{2\alpha\beta\omega(\omega - 1)}{\text{DEN}^2} \leq 0$$

That is, distortion is decreasing in γ (see Fig. 5). Since γ is an inverse measure of economic productivity, it follows that the optimal level of distortion is higher in more productive economies. Further, recognizing that γ is decreasing in ρ , this result captures the economic effect of disruption:

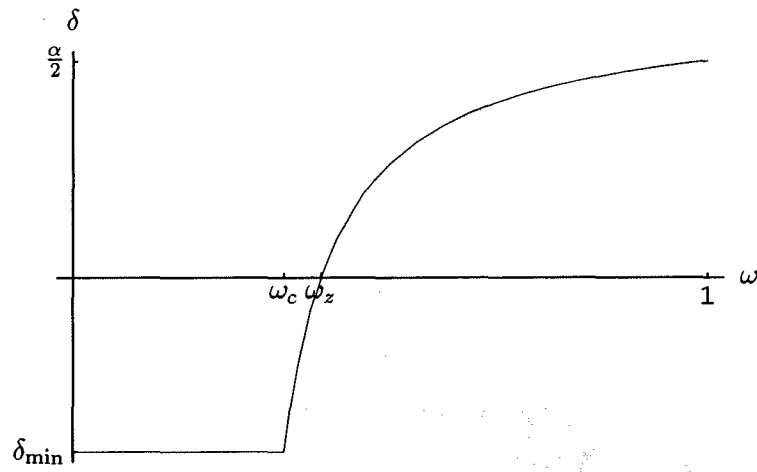


Figure 4: How Distortion Varies with ω .

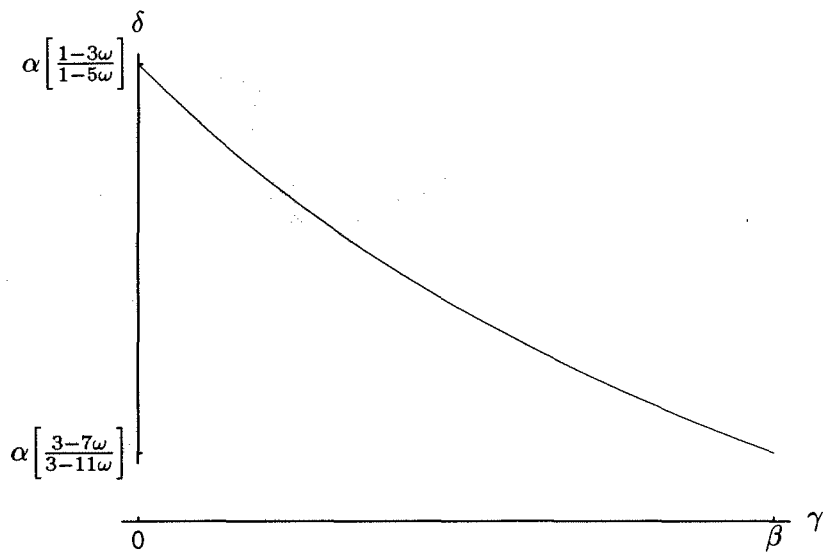


Figure 5: How Distortion Varies with γ .

Proposition 3. *Less disruptive transitions lead to higher economic productivity which in turn increases the optimal level of distortion in the post-transition economy.*

It is important to understand that the explanation for Proposition 3 does not involve the *nomenklatura's* political power. In fact, this effect is *strongest* when the *nomenklatura* are *weakest* and vice-versa:

$$\delta_\gamma = \begin{cases} -\frac{2\alpha\beta\omega^2}{\text{DEN}^2} & \text{if } \omega = \omega_z \\ 0 & \text{if } \omega = 1 \end{cases} \quad (5)$$

The explanation is economic, not political and lies in the relative *incidence* of distortion on producers and consumers, as explained in Proposition 1. Increases in ρ flatten the supply curve. As the supply curve gets flatter, the burden of increases in distortion shifts away from producers and onto consumers—*i.e.*, producers become less resistant to increases in distortion as ρ gets larger. Since producers are weighted twice as heavily as consumers in the bureaucrat's governance function, the shift in incidence enhances the bureaucrat's incentive to increase distortion. Further, when the *nomenklatura's* power is weakest, by construction of G , the producers' power is at its peak. This incidence effect then will be greatest when the *nomenklatura's* power is minimized, as evidenced by (5).

The incidence effect is subtle because it is an argument about cross-partial derivatives. While producers always prefer less distortion (a statement about PS_δ), they feel less strongly about this preference the flatter is their supply curve (a statement about $PS_{\delta\gamma}$).

The Slope of the Tradeoff. Proposition 2 and Proposition 3 indicate that the political and economic effects of increasing ρ , when considered independently, each raise optimal distortion. Unless these independent effects have a countervailing interaction, it seems that the slope of the ρ - δ tradeoff should be positive. This is in fact true, as there are no interaction effects:⁶

$$\delta' = \omega'\delta_\omega + \gamma'\delta_\gamma > 0$$

which is strictly positive since $\omega' > 0$, $\delta_\omega > 0$, $\gamma' < 0$ and $\delta_\gamma \geq 0$.⁷ This result formally captures the intuition behind the ρ - δ tradeoff:

⁶ There are no interaction effects—*i.e.*, no terms with $\gamma'\omega'$ —because we've assumed affine supply and demand.

⁷ See the appendix for a discussion of the curvature of the tradeoff, *i.e.*, δ'' . For a wide range of parameter values, the tradeoff will be convex.

Proposition 4. *Less disruptive transitions lead to higher levels of distortion in the post-transition economy. The converse is also true.*

1.3 The Transition Political Model: Choosing ρ

In contrast to the post-transition political system, the configuration of political power during the transition is, by assumption, fluid rather than institutionally embedded into a fixed governance structure. To distinguish this kind of political environment from the post-transition era, we model the transition political process as a Rausser-Simon multilateral bargaining (MB) game (Rausser and Simon, 1991). Their MB model generalizes the classical Ståhl-Rubinstein bargaining game (Ståhl, 1972; Ståhl, 1977; Rubinstein, 1982) to a multidimensional issues space with multiple players.⁸ In this section we describe a special case of this framework, directing the reader to the original paper for a more general treatment and for technical details.⁹

In a Rausser-Simon bargaining game, there is a fixed, finite number of negotiating rounds. In the first round of negotiations, each player (*i.e.*, each interest group) submits a *proposal*, which is simply a value for ρ . One of these proposals is chosen at random by “nature” according to an exogenously specified vector of *access probabilities* and put to a vote. Players’ access probabilities reflect the relative distribution of power between them.¹⁰ If all parties accept the tabled proposal then the game ends. If one or more parties rejects it, then play proceeds to the next round. This process continues until the last round.

If players cannot reach an agreement in the last round, an exogenously specified default alternative is implemented. In this paper, we presume that the default alternative is a breakdown in the economic system, a possibility so catastrophic that it is less preferable to each party than *any* negotiated level of ρ . Thus, a consensus can be obtained in support of *any* proposal in the final round. It follows that in the final round of any equilibrium, each interest group will propose its

⁸ For other applications of this model, see Rausser and Simon (1992a), which analyzes the structure and performance of political alliances, and Rausser and Simon (1992b), analyzes the various privatization programs in CEE from a multilateral bargaining perspective. See also Baron and Ferejohn (1987) for a closely related model of multilateral bargaining.

⁹ The Rausser-Simon MB model has two properties that make it especially useful for this analysis, although any model with these properties would do just as well. First, the MB model violates the so-called “independence of irrelevant alternatives” axiom first set forth in Nash (1950). As explained in Rausser et al. (1994), models that assume or exhibit IIA (including the Nash bargaining model and Rubinstein’s infinite horizon sequential bargaining model (1982)) are generally unrealistic representations of political-economic bargaining situations, particularly in transition economies. This is so because they can be represented as reduced-form single-decision maker problems, which we argue disqualifies them as models of collective choice. Second, the special version of the MB model we use here possesses a monotonicity property which we describe below.

¹⁰ The access probabilities should not be confused with the distribution of power between parties in the post-transition era. While in reality they are related, in our model we place no particular restrictions on the distribution of access probabilities in the transition game.

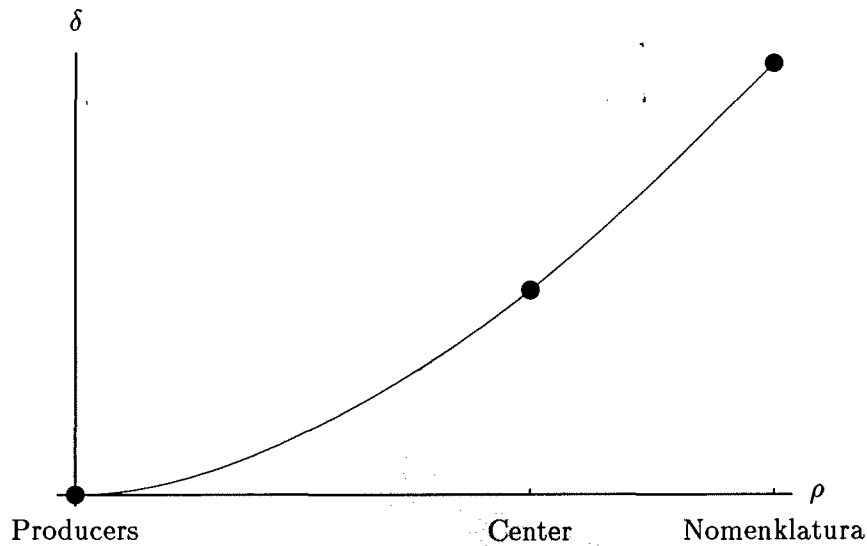


Figure 6: The Ideal Points of the Interest Groups.

ideal level of transition disruption and all parties will accept the proposal selected by nature.¹¹

Now consider the decision problem facing players in the penultimate round of negotiations. In equilibrium, each party will accept any tabled proposal with a payoff weakly exceeding its *reservation utility*. This reservation utility is the weighted sum of the payoffs the party expects to receive from each of the proposals that would be submitted in the final round, where the weights are the players' access probabilities. It follows that the penultimate round proposal of any player's equilibrium strategy must be the ρ -value that maximizes that player's payoff, subject to the condition that it provides the other players with their reservation utilities. Proceeding backwards up the game tree with this algorithm, we can compute the proposals that each party must submit in each round of negotiations. In equilibrium, whichever proposal is selected by nature in the first round will be unanimously accepted and will be the solution to the game.

Fig. 6 shows the ideal points of each interest group in the transition bargaining game. As we show in the appendix, rent is monotonically increasing in ρ .¹² Thus the *nomenklatura's* ideal point lies at the upper extreme of the tradeoff, where $\rho = 1$. A sufficient condition for producers' surplus

¹¹ For ease of exposition, we assume that a party must vote in favor of a proposal whenever it is indifferent between accepting or rejecting that proposal. We could accomplish the same thing by invoking one of several equilibrium refinements, such as properness.

¹² To guarantee convergence in the MB game, all players' payoffs must be concave in the bargaining instruments. It is possible to show that producers surplus and welfare are both concave in ρ for reasonable parameter values. However, rent is often likely to be convex in ρ for these same parameter values. To guarantee convergence in the bargaining game then we must assume players are sufficiently risk averse to guarantee concavity.

to be monotonically decreasing in ρ is that equilibrium output in the post-transition economy lie in the inelastic portion of demand (technically, in equilibrium $\beta > \gamma_0$). In this portion of the demand curve, the increase in output from a less disruptive transition is insufficient to compensate producers for the concomitant reduction in price. To make our bargaining framework simple, we will assume this condition holds so that producers are in direct opposition to the *nomenklatura*, with an ideal point at $\rho = 0$.

It is possible to show that under a reasonable and wide range of parameters, the center will prefer an interior level of disruption between these two extremes.¹³ The center's ideal level of disruption, $\hat{\rho}$, occurs where:

$$\delta' = -\gamma' \frac{q}{2} \quad (6)$$

We can interpret this first order condition as in standard consumer theory. The LHS of (6) is the slope of the ρ - δ tradeoff. This slope can be considered the relative price of disruption in terms of distortion, *i.e.*, less disruption can only be “bought” at the price of more distortion. A little algebra reveals that the RHS of (6) is the center's marginal rate of substitution (MRS) between disruption and distortion. In (6) then, the center is simply setting its marginal rate of substitution between disruption and distortion equal to their relative price.

1.3.1 The Monotonicity Property

While not true in general, in the context of this particular structure for the MB game, the following important property of the solution holds which greatly simplifies our comparative statics analyses.

Proposition 5 (Monotonicity). *Suppose ρ_0 is the solution to a particular transition game following the structure described above. Now suppose some parameter in the model is perturbed slightly such that the center's ideal point $\hat{\rho}$ moves either left or right. Then the solution to the perturbed game will also move in the same direction.*

A proof of this proposition is given in the appendix. The intuition is straightforward. If we compare two games whose only difference is that in the first, the center is more closely aligned

¹³ The center will have an interior solution iff

$$\delta'' > - \left[q'(\gamma' + \delta') + \frac{\gamma'' q}{2} \right]$$

The RHS of this expression is negative. Thus, this condition will certainly hold if $\delta'' > 0$, *i.e.*, if the tradeoff is convex. This is true for a wide and reasonable selection of model parameters, thus we will assume that it holds. If it fails to be true for a particular parameter set that is interesting, we can guarantee concavity via risk aversion.

with the *nomenklatura* than in the second, one could reasonably expect that the solution to this first game lies closer to the *nomenklatura*'s ideal than the solution to the second game. The label “monotonicity” refers to the fact that there is no reversal: if an ideal point moves right, the solution will never move to the left and *vice versa*. With this monotonicity property we are able to establish some very clear comparative statics results, to which we now turn.

2 Restructuring the Tradeoff

As examples of how to apply our framework we provide two sets of comparative statics experiments. Our first experiment is economic: we compare transition incentives in open and closed economies. Our second experiment is political: we compare alternate specifications of political economic technologies which allow contemporaneous positive or negative feedback between second period distortion and the power distribution.

As these experiments share a common logic involving the effects of *restructuring* the ρ - δ tradeoff, before proceeding to the experiments themselves, we explain this logic. In all the experiments we first consider a small change in a structural attribute of the post-transition economy or polity. This change generates a new ρ - δ tradeoff. The new tradeoff, in turn, alters the center's ideal point, $\hat{\rho}$, while leaving the ideal points of the extreme players unchanged. Suppose the center's ideal point shifts to the right (*i.e.*, they prefer a less disruptive transition in the restructured economy). Then by the monotonicity property of Proposition 5 we conclude there will be less disruption in the restructured economy than in the original economy. Analogously, if the center prefers less disruption in the restructured economy than the equilibrium outcome of the transition game will be less disruptive than the original game.

In order to appreciate how differences in the economic or political attributes of countries alter their transition strategies, we must understand how the center's ideal point changes when the ρ - δ tradeoff is restructured. By restructuring the tradeoff, we mean “swiveling” it around a particular ρ -value (and possibly shifting it vertically as well). After restructuring, the tradeoff is either flatter or steeper at every feasible ρ value. Define the *swivel point* as ρ_s . Note that this point does not need to be feasible—that is, $\rho_s < 0$ or $\rho_s > 1$ is allowed.

Restructuring the tradeoff alters incentives in the bargaining game, and it is these changes that are critical. For “small” (comparative-statics sized) swivels, the *nomenklatura*'s and producers' ideal disruption levels will remain unchanged at the extremes of the tradeoff, since these player's

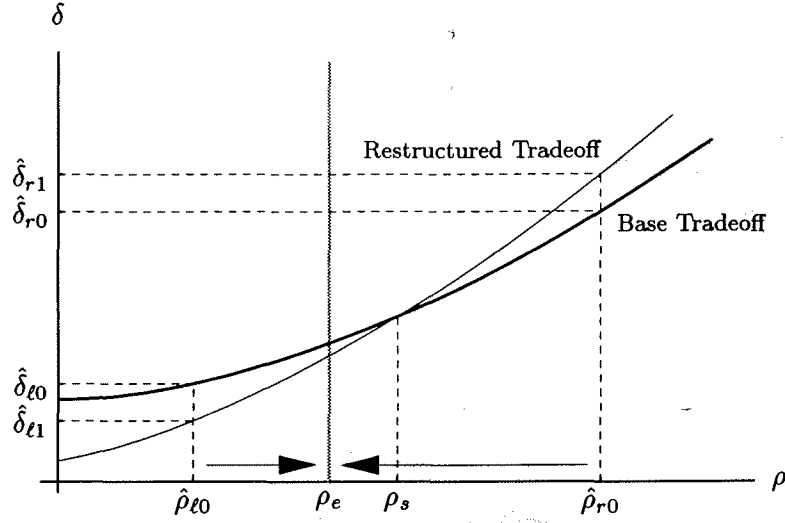


Figure 7: Restructuring the Tradeoff.

payoffs are monotonic in ρ . However, the center's ideal point will be affected by rotating the tradeoff, as this alters both the relative price of disruption to distortion as well as the center's MRS between the two. Recall that the center's ideal point is the solution to the first order condition (6):

$$W_\rho \equiv -q \left[\delta' + \frac{\gamma'q}{2} \right] \equiv 0 \quad (6')$$

Our comparative statics results depend on understanding how a given restructuring alters this condition and thus changes the center's ideal point, $\hat{\rho}$. If this condition becomes negative (positive) due to a rotation of the tradeoff, then $\hat{\rho}$ will shift to the left (right). We can then invoke the monotonicity property of the bargaining game to show that the equilibrium level of disruption follows suit. In the following discussion, let 0-subscripts denote values in the initial base economy and 1-subscripts denote values in the restructured economy.

Consider what happens to the center's first order condition if we steepen the ρ - δ tradeoff, swiveling around ρ_s , as in Fig. 7. For $\rho > \rho_s$ distortion becomes greater. For $\rho < \rho_s$ distortion becomes smaller. Suppose the center's ideal point in the closed economy lies to the right of the swivel point, *i.e.*, $\hat{\rho}_0 > \rho_s$. Since we have steepened the tradeoff, δ' is more positive than it was initially. This lowers W_ρ and the center's ideal point shifts to the left. Borrowing from consumer theory, we refer to this phenomenon as the *substitution effect*. The swiveling has increased the price of ρ relative to δ , making it optimal to "consume" less ρ . For a steepening of the tradeoff, this effect is always negative.

Restructuring the tradeoff has a second effect on the center's first order condition in (6'). At the initial ideal point $\hat{\rho}_{r0}$ the level of distortion in the perturbed economy will be higher than in the initial economy: $\hat{\delta}_{r1} > \hat{\delta}_{r0}$. At the same level of disruption, $\rho = \hat{\rho}_{r0}$, the center is worse off in the perturbed economy than in the original economy. This jump in distortion acts like a negative *income effect* in consumer theory, inducing the center to reduce "consumption" of ρ even further than the substitution effect would dictate. Thus, the center's ideal point in the restructured economy lies to the left of its ideal in the base economy.

It is important to realize that, unlike the substitution effect, the sign of the income effect is different depending on the location of the center's ideal point in the base economy relative to the swivel point. Suppose, now, that the center's base economy ideal point is at $\hat{\rho}_{\ell 0}$, which lies to the left of the swivel point ρ_s . The substitution effect remains the same: the slope of the new tradeoff at $\hat{\rho}_{\ell 0}$ is larger than it was in the initial economy, inducing a leftward pressure on the center's ideal point. However, the income effect now moves in opposition to the substitution effect: the center is *better* off at its base economy ideal point in the perturbed economy as $\hat{\delta}_{\ell 1} < \hat{\delta}_{\ell 0}$. That is, the income effect induces a rightward pressure on the center's ideal point. Which effect dominates depends on how far to the left of the swivel point the center's initial ideal point lies.

There is some point, call it ρ_e , to the left of the swivel point at which the income and substitution effects just offset each other. That is, if the center's initial ideal point were located at $\hat{\rho}_0 = \rho_e$, then the center's ideal point would be unaffected by a restructuring of the tradeoff. For $\hat{\rho}_0 < \rho_e$ the income effect dominates and the new ideal point lies to the right of the old. For $\rho_e < \hat{\rho}_0 < \rho_s$ the substitution effect dominates and the new ideal point lies to the left of the old. Of course, for $\hat{\rho}_0 > \rho_s$, both effects push the ideal point to the right.

We will call the point ρ_e the center's *point of polarity*, which has the following important property:

Proposition 6 (Polarity). *If the ρ - δ tradeoff steepens, the center's ideal point will always move towards the point of polarity. If the tradeoff flattens, the center's ideal point will always move away from the point of polarity.*

This property allows us to make strong statements about the welfare effects of most restructuring scenarios. Let ρ_0^* and ρ_1^* represent solutions to the base and restructured transition games. Whether welfare is higher in the restructured economy or not depends on the relative location of the solution, ρ_0^* , and the center's ideal point, $\hat{\rho}_0$, in the base economy *vis-a-vis* the point of polarity, ρ_e . There are eight cases to consider, which we present in tabular form:

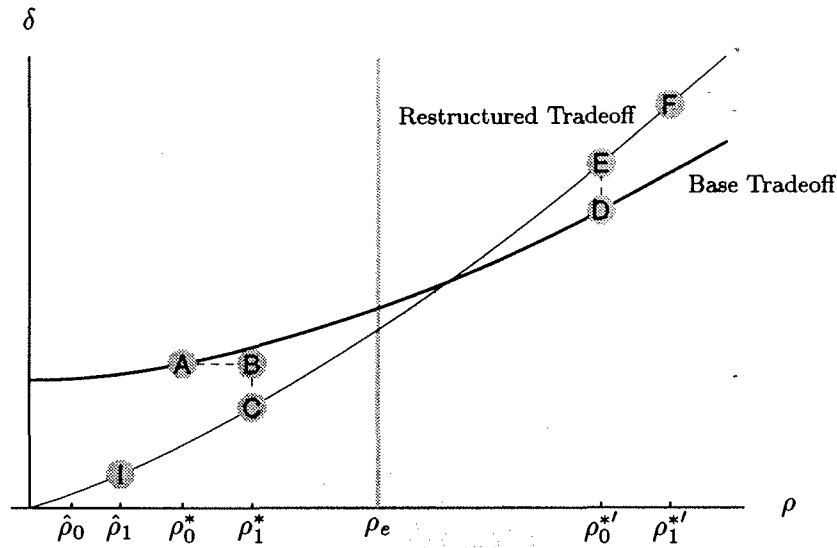


Figure 8: Welfare effects of steepening the tradeoff.

Proposition 7 (Welfare). *Under a steeper tradeoff, welfare will be:*

	$\rho_0^* < \rho_e$	$\rho_0^* > \rho_e$
$\hat{\rho}_0 < \rho_e$	higher	lower
$\hat{\rho}_0 > \rho_e$	ambiguous	lower

Under a flatter tradeoff, welfare will be:

	$\rho_0^* < \rho_e$	$\rho_0^* > \rho_e$
$\hat{\rho}_0 < \rho_e$	lower	higher
$\hat{\rho}_0 > \rho_e$	ambiguous	higher

The logic of the proof differs slightly for those cases that lie on the principal diagonals of the tables in Proposition 7 versus those that lie on the off-diagonals. We prove one case of each type, as the others follow analogous logic. Consider Fig. 8. The left-hand side of this figure depicts the case in the top-left cell of the upper table in Proposition 7. In this case the restructured tradeoff is steeper, while in the base economy both the center's ideal point, $\hat{\rho}_0$, and the solution, ρ_0^* , lie to the left of the point of polarity. The solution to the base economy lies at point A. By the polarity proposition, since the center's ideal point lies to the left of ρ_e and the tradeoff is steeper, the solution to the new game lies to the right of the old, at point C. By monotonicity of the welfare function, $C \succ B \succ A$. By transitivity then, the new equilibrium must be preferred to the old. Similar logic can be applied to those cases in Proposition 7 where the center's ideal point and the solution lie on the same side of the point of polarity.

The right-hand side of Fig. 8 depicts the case in the top-right cell of the upper table in Proposition 7. In this case again the restructured tradeoff is steeper, however in the base economy the center's ideal point, $\hat{\rho}_0$, and the solution $\rho_0^{*'}$ lie on opposite sides of the point of polarity. Again, by the polarity proposition, since the center's ideal point lies to the left of ρ_e and the tradeoff is steeper, the solution to the new game lies to the right of the old, at point F . Point I represents the center's ideal point in the restructured economy, which, by definition, is preferred to point F . By convexity of the center's indifference curves then, we know that $E \succ F$. By monotonicity of the welfare function, $D \succ E$. Thus, by transitivity, $D \succ F$, meaning social welfare is lower in the restructured economy. Similar logic can be applied to the case in the top-right cell of the lower table in Proposition 7.

Two of the eight cases in Proposition 7 are ambiguous, both occurring when the initial solution lies to the left of ρ_e , while the center's initial ideal point lies to the right of ρ_e . This corresponds to the case where the center is more closely aligned with the *nomenklatura* than producers, but the producers are strong enough in the bargaining to keep the solution on their side of the point of polarity.

A wide range of economic and political experiments can be considered as a restructuring of the tradeoff. Proposition 7 is very powerful as it allows us to almost completely characterize the welfare effects of these experiments. In the next two sections we provide several examples.

3 Open and Closed Economies

Our first set of experiments involves the comparison of open and closed economies. Little work has been done specific to transition economies that examines the importance of trade-orientation for the speed or quality of the transition. On first reflection, standard neoclassical intuition would suggest that, *ceteris paribus*, open economies should enjoy faster and smoother transitions and perhaps exhibit a more productive and less distorted post-transition economy. Foreign trade is, after all, generally considered to be an effective engine of productivity growth and a disciplinary force against domestic distortion. In the context of our model, however, we find these intuitions are only partially supported. There is a profound difference between export-oriented and import-oriented open economies. In partial support of the standard intuition, we find export-oriented economies often will choose less disruptive (more gradual) transition strategies, have a less distorted market, and enjoy a higher standard of living than a closed economy. Less supportive of standard intuition

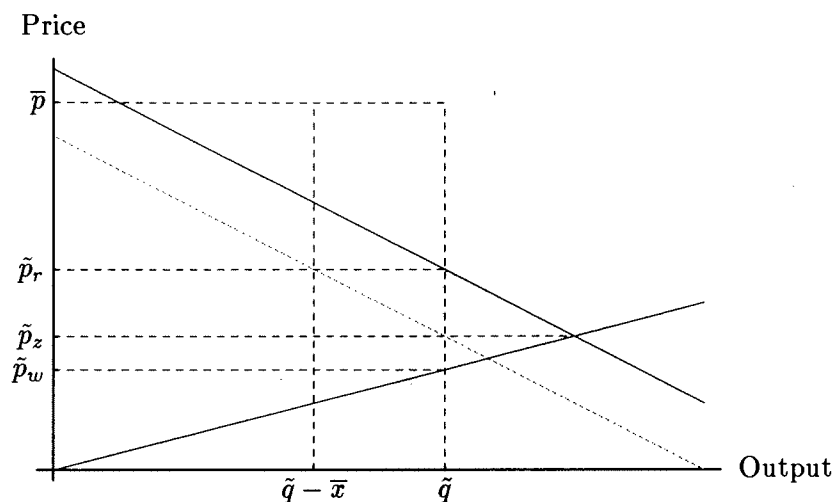


Figure 9: Equilibrium in the Export Economy.

is our finding that import-oriented economies often will choose more disruptive (faster) transition strategies, have a more distorted market, and suffer a lower standard of living than closed economies. Further, we are able to establish conditions under which these results are reversed—most notable when export economies do worse than closed economies.

Consider first the case of an export-oriented economy. This entails the following changes to the structure of the closed economy (see Fig. 9). First, define \bar{x} as a fixed, exogenous export quota. We assume \bar{x} is small so we may usefully compare the closed economy to the export economy. Second, redefine the demand function to include the fixed export quota:

$$\begin{aligned} D(\tilde{q}|\bar{x}) &= \alpha - \beta(\tilde{q} - \bar{x}) \\ &= (\alpha + \beta\bar{x}) - \beta\tilde{q} \end{aligned}$$

where \tilde{q} is the quantity demanded including exports. Third, define \bar{p} as the fixed world price. So that the export quota is binding we assume $\bar{p} > \tilde{p}_z = (\gamma[\alpha + \beta\bar{x}]) / (\gamma + \beta)$ where \tilde{p}_z is the zero distortion price in the export economy. Finally, as the *nomenklatura* control the domestic trading sector in the closed economy, we assume they also own the export quotas. Thus they garner the difference between the domestic wholesale price and the world price on the \bar{x} units exported in addition to any domestic rents they may acquire.

In order to concisely represent the difference between the export and closed economy models, we define an operator, Δ , that returns the difference between the same variable V in the closed

and export economies $\Delta V = V_{\text{export}} - V_{\text{closed}}$. For instance, the difference between domestic output in the export and closed economies is $\Delta q = q_{\text{export}} - q_{\text{closed}} = \beta \bar{x} / (\gamma + \beta)$.

Now consider how interest group payoffs differ in the export economy. For producers we have:

$$\Delta PS = \frac{\gamma \beta \bar{x}}{2(\gamma + \beta)^2} [\beta \bar{x} + (\gamma + \beta)] > 0$$

$$\Delta(PS_\delta) = -h \Delta q < 0$$

where h is the incidence of distortion on producers relative to consumers, as defined in (1). While producer surplus is *larger* in the export economy, producers actually do worse *at the margin*. Thus producers are more intransigent to increases in distortion in the export economy than the closed economy for *any* value of ρ .

For consumers, we find the opposite. While consumer surplus is lower under the export economy, consumers are less intransigent to increases in distortion for all levels of ρ .

$$\Delta CS = \frac{\gamma \beta \bar{x}}{2(\gamma + \beta)^2} [\gamma \bar{x} - (\gamma + \beta)] < 0$$

$$\Delta(CS_\delta) = h \Delta q > 0$$

Combining the changes for producer and consumer surplus, we show that the increase in producer surplus is larger than the decrease in consumer surplus—*i.e.*, for fixed ρ , welfare is higher in the export economy than in the closed economy. However, the center is no more or less intransigent to increases in distortion than in the closed economy.

$$\Delta W = \Delta PS + \Delta CS = \frac{\bar{x} h \Delta q}{2} > 0$$

$$\Delta(W_\delta) = \Delta(PS_\delta) + \Delta(CS_\delta) = 0$$

The *nomenklatura* now capture the export as well as domestic rents and we find that

$$\Delta R = \bar{x} (\bar{p} - \tilde{p}_z) > 0$$

$$\Delta(R_\delta) = 0$$

Not surprisingly, the *nomenklatura* garner more rent in the export economy. Less obvious, however, they are no more or less in favor of marginal increases in distortion than in the closed economy.

These results lead to the following propositions.

Proposition 8. *The export economy's ρ - δ tradeoff lies everywhere below the closed economy's ρ - δ tradeoff. That is, the export economy is always less distorted than the closed economy.*

The bureaucrat's first order condition is everywhere smaller in the export economy than in the closed economy:

$$\Delta F = - \left(\frac{1-\omega}{2} \right) h \Delta q \leq 0 \quad (11)$$

This follows from the fact that marginal increases in distortion in the export economy lower producer surplus more than in the closed economy while leaving welfare and rent the same. Further, this condition is true for *any* value of ρ , thus proving the proposition.

Proposition 9. *The export economy's ρ - δ tradeoff is everywhere steeper than the closed economy's ρ - δ tradeoff.*

Re-solving the bureaucrats' first order condition for the export economy we find

$$\Delta \delta = \frac{(1-\omega)\gamma\beta\bar{x}}{\text{DEN}} \leq 0 \quad (12)$$

If we differentiate the absolute value of this difference with respect to ρ , we find that it gets smaller as ρ gets larger:

$$-\Delta \delta' = -\frac{\bar{x}\beta}{\text{DEN}^2} \left(\gamma'\beta(1-\omega)(1-5\omega) + 4\omega'\gamma(\gamma+\beta) \right) < 0 \quad \forall \rho \quad (13)$$

The sign follows from the fact that $\gamma' < 0$, $\omega' > 0$ and $\omega > 1/5$ for all feasible ρ values. This means then that as ρ increases, the difference between the export and closed economy tradeoffs is shrinking which necessarily implies the slope of the export economy's ρ - δ tradeoff is everywhere *steeper*, proving the proposition.

It is important to understand that both of these propositions are based on the logic of Proposition 1, the relative incidence property of the economy. In particular, it should be noted that Proposition 9, which says that the tradeoff in the export economy is more severe, is *not* a result of the fact that the *nomenklatura* get to keep the export rents.¹⁴

Fig. 10 compares the export, closed and import economy tradeoffs. From this picture it is clear this experiment is a restructuring of the tradeoff. From (12) one can see that the tradeoff swivels at the ρ level consistent with $\omega = 1$. Through our choice of parameters for the PET in (3) ω never reaches one in the interior of the unit interval (*i.e.*, $\omega' > 0$). This implies, as it appears in the figure, that the swivel point, ρ_s , lies at or to the right of $\rho = 1$. The point of polarity, ρ_e , by definition lies

¹⁴ It is also worth noting that all the results of this section go through if we remove the center from the game. That is, a transition game between producers and the *nomenklatura* would slightly alter the algebra but not the content of these results.

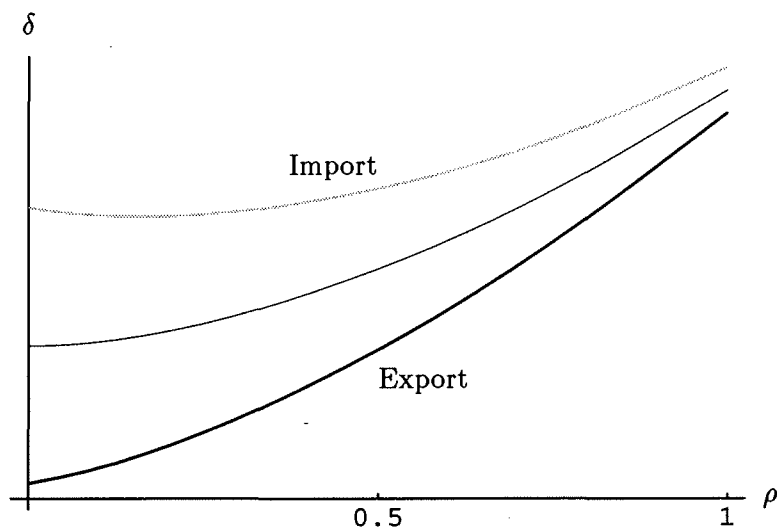


Figure 10: The ρ - δ Tradeoff in Closed and Open Economies.

somewhere to the left of ρ_s . We define the point of polarity implicitly in terms of how the center's first order condition changes in the export economy:

$$\Delta\delta' + \frac{\gamma'}{2}\Delta q \equiv 0 \quad (14)$$

that is, the point at which the substitution effect ($\Delta\delta'$) just offsets the income effect ($\frac{\gamma'}{2}\Delta q$). Whether ρ_e lies inside the unit interval or not depends on how close the swivel point ρ_s is to one. We consider both cases in turn.

Assume first that ρ_s is large enough such that $\rho_e > 1$. Since the center's ideal point always lies in the unit interval, this implies $\hat{\rho}_0 < \rho_e$. Since for the export case the tradeoff is steeper, then, by the logic of the polarity proposition, the center's ideal point in the export economy lies to the right of its closed economy ideal point. This is because, in this case, the income effect generated from Proposition 8 outweighs the substitution effect resulting from Proposition 9. The monotonicity property of the transition bargaining game then implies that the solution ρ in the export economy also lies to the right of the closed economy solution—*i.e.*, the transition is *less* disruptive in the export economy. Under this scenario, because $\rho_e > 1 \implies (\hat{\rho}_0 < \rho_e \text{ and } \rho_0^* < \rho_e)$, Proposition 7 indicates that welfare will be higher in the export-oriented economy than in the closed economy. It should be comforting to neoclassical economists that this result confirms our standard intuition regarding the benefits of an export-oriented economy. The reasons behind the result, however, are quite different than those that most economists would provide to justify export-orientation.

Further, this pro-export result does not necessarily obtain if the point of polarity is inside the unit interval, *i.e.*, $\rho_e < 1$. In this case it is possible that the center's ideal point actually lies to the right of the point of polarity. If $\hat{\rho}_0 > \rho_e$ the export economy will suffer a *more* disruptive transition. That is, there are cases where the substitution effect outweighs the income effect, causing the center's ideal point (and with it the solution) to shift to the left. As is clear from (14), ρ_e is a complicated function of *all* the model's parameters, so it is difficult to make general statements about the likelihood of this outcome. However, the welfare proposition indicates that if this case does occur, welfare in the export economy may be *lower* than in the closed economy.

The major results of this section are reversed in import-oriented economies. First, the import economy's ρ - δ tradeoff is everywhere *above* the closed economy tradeoff, implying that the import economy is always more distorted than the closed or export economies. Second, the import economy tradeoff will be *flatter* than the closed or export economy's ρ - δ tradeoff. In some cases, these results combine to generate a more disruptive transition and a lower standard of living in the import as compared to the closed economy. However, in some cases (*i.e.*, $\hat{\rho}_0 > \rho_e$), import-oriented economies may actually enjoy less disruptive transitions and higher social welfare.

4 Vicious and Virtuous Circles

Our second experiment considers the significance of differences in political as opposed to economic structures. In this section we consider alternative specifications for the political economic technology given in (3). Recall the original specification:

$$\omega = \omega_z + \lambda\rho^\epsilon$$

This PET might be called “decoupled” as it admits no contemporaneous relationship between post-transition political power and the post-transition choice of δ . That is, under this PET there are no political feedback effects within the post-transition period. Our purpose in this section is to evaluate the impact of allowing such feedback effects.

In the context of developing country trade policy, Anne Krueger (1993) has argued that policies that support inefficient economic actors generate a “vicious” circle of rent-seeking and economic stagnation, while policies that support efficient economic actors generate a “virtuous” circle of productivity and economic growth. In this section we formalize this hypothesis. The results reveal that Krueger's logic is right only part of the time.

We incorporate both vicious and virtuous feedback effects through a more general specification of (3):

$$\omega = \omega_z + \lambda\rho^\epsilon + \mu\delta^\eta \quad (3')$$

where $\eta > 0$. Depending on the sign of μ , this PET will exhibit either positive or negative feedback between the degree of distortion chosen in the post-transition period and the *nomenklatura's* political power in that period. Thus, if $\mu > 0$, increasing distortion leads to an increase in the *nomenklatura's* political weight in the post-transition governance function. This represents a *vicious* circle. Conversely, if $\mu < 0$, increases in distortion tend to dampen *nomenklatura* power, thus representing a *virtuous* circle.

We incorporate these feedback effects into (3') with the following interpretations. First, consider the case of negative feedback ($\mu < 0$). Under this “virtuous PET,” the *nomenklatura's* power derives from productivity in the economy. The more they are seen to be contributing productively to the economy, the more willing the populace will be to accept the *nomenklatura* in a leadership role. Alternatively, the more they are needed in the marketplace, the more they will be able to leverage their vestigial power to gain political power. Under either interpretation, the *nomenklatura's* power is positively related to productivity. Suppose we index productivity with output q . Since output is declining in distortion, there is an endogenous negative relationship between visibility and distortion. We represent this relationship in reduced form by assuming δ enters directly and negatively into (3').

Now consider the case of positive feedback ($\mu > 0$). The interpretation for this “vicious PET” is the conventional one—power is money. Suppose we measure the depth of the *nomenklatura's* pockets by the size of the rents they extract from the domestic market. Since these rents are increasing in distortion, there is an endogenous positive relationship between *nomenklatura* power and distortion. When $\mu > 0$, the PET in (3') captures this relationship in reduced form.

While there has been relatively little formal study of this question, it is a topic about which economists have strong intuitions derived from the kind of logic found in Krueger (1993). We should note that Krueger did not derive her hypothesis from a model, but merely presented a reasonable and concise formulation of what is becoming standard intuition in economic policy circles. For example, it would appear, intuitively, that from a social welfare standpoint, the virtuous PET should dominate the decoupled PET, which in turn should dominate the vicious PET. After all, the vicious technology actually rewards the *nomenklatura* for socially undesirable behavior—rent-

seeking—while the virtuous technology rewards socially productive behavior—promoting output. The major lesson to be learned from our analysis is that, in general, neither of these intuitions is correct. That is, sometimes “vicious” circles lead to higher social welfare than “virtuous” circles.

4.1 The New First Order Condition

Given that ω is now dependent on δ , the second period bureaucrat’s first order condition, F , now contains a new term:

$$\Delta F = \omega_\delta \left\{ R - \frac{1}{2} (PS + W) \right\} \quad (15)$$

where $\omega_\delta = \eta\mu\delta^{\eta-1}$. Define ρ_s as the point where rent just equals the average of consumer and producer surplus. To see why this level of ρ is the swivel point notice that for $\rho > \rho_s$ the term in brackets in (15) is positive; for $\rho < \rho_s$ this term is negative. This implies the following proposition:

Proposition 10. *The ρ - δ tradeoff will be steeper (flatter) under a vicious (virtuous) technology than under a decoupled technology.*

Combining this fact with the polarity proposition we can neatly characterize the quality of transition strategies adopted under different political economic technologies by examining the relative locations of the center’s decoupled ideal point, $\hat{\rho}_0$, and the point of polarity, ρ_e :

Proposition 11. *If $\hat{\rho}_0 > \rho_e$, transitions will be more (less) disruptive under a vicious (virtuous) PET; If $\hat{\rho}_0 < \rho_e$, transitions will be less (more) disruptive under a vicious (virtuous) PET.*

Proposition 11 is sufficient to prove our point that the way in which political power is acquired will alter the transition strategy chosen by different societies. Perhaps more interesting, however, are the welfare implications of these different PETs. We can combine Proposition 7 and Proposition 10 to identify scenarios under which vicious circles will actually be virtuous and vice-versa:

Proposition 12. *“Vicious” PETs are virtuous (i.e., they lead to higher social welfare) and “virtuous” PETs vicious if ρ_0^* and $\hat{\rho}_0$ both lie to the left of the point of polarity.*

If the center’s ideal point and the decoupled solution both lie to the left of the point of polarity, the income effect of restructuring the tradeoff will dominate the substitution effect in equilibrium. Under a vicious PET the income effect is positive, leading to higher welfare. Under a virtuous PET the income effect is negative, leading to lower welfare.

5 Conclusion

Our paper has focused on a fundamental tradeoff inherent in any major political economic transition process. While swiftly removing the old order is a necessary condition to establish a strong foundation for new and unfamiliar institutions, it also leads to widespread social disruption that may threaten the viability of the reform process. This issue lies at the heart of much of the “big-bang/gradualism” debate. We have argued in this paper that the big-bang/gradualist dichotomy is overly simplistic. In particular, the debate, as it has been framed, has failed to capture the significance of interest group competition. By definition, during periods of political transition, societies lack well-established governance structures. Shaping the future “constellation of political power” (Swinnen, 1994) is an important part of policy-making during these times. The incentives that drive each interest group in this process will depend on the specific economic and political characteristics of a society. Our premise has been that the different incentive structures in these societies will generate different transition strategies. While these strategies are probably not optimal from the standpoint of economic efficiency, they can be (and, in our model, *are*) optimal in a political-economic sense.

To evaluate the plausibility of these hypotheses we have built a very simple economic model, embedded within a richer political model than is usually found in the literature. Using this model, we developed a general methodology to compare transition strategies in societies with different economic and political structures. This method allows one to establish whether a specific structural difference between societies will lead to a more or less disruptive transition. Further, in most cases, we are able to establish determinate welfare effects.

As an example of the importance of differing *economic* characteristics on the nature of the tradeoff, we compared the transition strategies adopted in closed and open economies. As an example of the importance of differing *political* characteristics on the nature of the tradeoff, we compared the transition strategies adopted in societies characterized by “vicious” versus “virtuous” circles, as discussed in Krueger (1993). In both sets of experiments we find standard intuition is a poor guide to the policy analyst. For instance, export economies do not always outperform closed economies and vicious circles are sometimes virtuous.

certainty equivalent also shifts to the right.

Now consider the $T - 2$ nd round participation constraints. The lottery in the perturbed game's $T - 1$ st round favors the *nomenklatura* even more than the T th round lottery: all 3 points are closer to the *nomenklatura*'s ideal point. Conversely, the $T - 1$ st round lottery in the perturbed game hurts the producers even more than the T th round lottery: all 3 points are farther from the producers' ideal point. Thus not only are the $T - 2$ nd round's participation constraints shifted to the right, but the *nomenklatura*'s constraints are converging to the solution more quickly than the producers in the perturbed *versus* the initial game. This implies the solution to the perturbed game—which is the point where the participation constraints form an interval of length zero—must lie to the right of initial game's solution.

By symmetry, a shift of the center's ideal point to the left will lead the solution to the left. This proves the proposition. □

References

- Aghion, P. and Blanchard, O. J. (1993). On the speed of transition in Eastern Europe. Mimeo, Massachusetts Institute of Technology.
- Aslund, A. (1991). Principles of privatization, in L. Csaba (ed.), *Systematic Change and Stabilization in Eastern Europe*, Dartmouth, UK: Aldershot, pp. 17–31.
- Baron, D. P. and Ferejohn, J. A. (1987). Bargaining and agenda formation in legislatures, *American Economic Review, Papers and Proceedings* 77(2): 303–309.
- Berg, A. and Sachs, J. (1992). Structural adjustment and international trade in Eastern Europe: The case of Poland, *Economic Policy* 14: 117–73.
- Bullock, D. S. (1994). In search of rational government: what political preference studies measure and assume, *American Journal of Agricultural Economics* 76(3): 347–361.
- Coricelli, F., Milesi, F. and Gian, M. (19). On the credibility of big bang programs: a note on wage claims and soft budget constraints in economies in transition, *Discussion Paper 124*, Center for Economic Performance, London School of Economics.
- Dewatripont, M. and Roland, G. (1992). The virtues of gradualism and legitimacy in the transition to a market economy, *Economic Journal* 102: 291–300.
- Dewatripont, M. and Roland, G. (1995). The design of reform packages under uncertainty, *American Economic Review* 85(5): 1207–1223.
- Galbis, V. (1994). Sequencing of financial sector reforms: A review, *Working Paper WP/94/101*, International Monetary Fund.
- Gates, S., Milgrom, P. and Roberts, J. (1993). Complementaries in the transition from Socialism: a firm-level analysis. Mimeo, Stanford University.
- Hare, P. and Revesz, T. (1992). Hungary's transition to a market economy: The case against a 'big-bang', *Economic Policy* 14: 227–64.
- Kornai, J. (1990). *The Road to a Free Economy, Shifting from a Socialist System: The Example of Hungary*, New York: W.W. Norton and Company.
- Krueger, A. O. (1993). Virtuous and vicious circles in economic development, *American Economic Review* 83(2): 351–355.
- Lipton, D. and Sachs, J. (1990). Creating a market economy in Eastern Europe: The case of Poland, *Brookings Papers on Economic Activity* pp. 75–147.
- Lyons, R. F., Rausser, G. C. and Simon, L. K. (1994). Disruption and continuity in Bulgaria's agrarian reform, in A. Buckwell, S. Davidova, K. Moulton and A. Schmitz (eds), *Privatization of Agriculture in New Market Economies: Lessons from Bulgaria*, Kluwer Academic Publishers, Norwell, MA.
- Murphy, K., Shleifer, A. and Vishny, R. (1992). The transition to a market economy: pitfalls of partial reform, *Quarterly Journal of Economics* 107(3): 889–906.

- Murrell, P. (1993). What is shock therapy? what did it do in Poland and Russia?, *Post-Soviet Affairs* 9(2): 111–40.
- Nash, J. F. (1950). The bargaining problem, *Econometrica* 18(2): 155–162.
- Newbery, D. (1993). Transformation in mature versus emergin economies: why has Hungary been less successful than China?, *Discussion Paper on Economic Transition DPET 9310*, University of Cambridge.
- Rausser, G. C. and Simon, L. K. (1991). A non-cooperative model of collective decision making: A multi-lateral bargaining approach, *Working Paper 618*, Dept. Agricultural and Resource Economics, University of California at Berkeley.
- Rausser, G. C. and Simon, L. K. (1992a). The political economy of alliances: Structure and performance, *Working Paper 665*, Dept. of Agricultural and Resource Economics, University of California at Berkeley.
- Rausser, G. C. and Simon, L. K. (1992b). The political economy of transition in eastern europe: Packaging enterprises for privatization, in C. Clague and G. Rausser (eds), *The Emergence of Market Economies in Eastern Europe*, Blackwell, MA.
- Rausser, G. C., Simon, L. K. and van 't Veld, K. (1994). Political economic processes and collective decision making, *Working Paper 718*, Department of Agricultural and Resource Economics, University of California, Berkeley.
- Rausser, G. and Foster, W. (1990). Political preference functions and public policy reform, *American Journal of Agricultural Economics* 72(3): 641–52.
- Rausser, G. and Freebairn, J. (1974). Estimation of policy preference functions: an application to us beef import policy, *Review of Economics and Statistics* 56(4): 437–449.
- Roland, G. (1991). Political economy of sequencing tactics in the transition period, in L. Csaba (ed.), *Systematic Change and Stabilization in Eastern Europe*, Dartmouth, UK: Aldershot, pp. 47–64.
- Roland, G. (1994). The role of political constraints in transition strategies, *Economics of Transition* 2(1): 27–41.
- Rubinstein, A. (1982). Perfect equilibrium in a bargaining model, *Econometrica* 50: 97–109.
- Sachs, J. and Woo, W. T. (1994). Structural factors in the economic reforms of China, Eastern Europe, and the Former Soviet Union, *Economic Policy* 9(18): 101–45.
- Ståhl, I. (1972). *Bargaining theory*, Stockholm School of Economics.
- Ståhl, I. (1977). An n -person bargaining game in the extensive form, in R. Henn and O. Moeschlin (eds), *Mathematical Economics and Game Theory*, Springer-Verlag, Berlin.
- Swinnen, J. F. M. (1994). Political economy of policy reform in Bulgarian agriculture, in A. Buckwell, S. Davidova, K. Moulton and A. Schmitz (eds), *Privatization of Agriculture in New Market Economies: Lessons from Bulgaria*, Kluwer Academic Publishers, Norwell, MA.
- von Cramon-Taubadel, S. (1992). A critical assessment of the political preference function, *Agricultural Economics* 7(3/4): 371–394.

- Wei, S.-J. (1993). Gradualism versus big bang: Speed and sustainability of reforms, *Working Paper R93-2*, John F. Kennedy School of Government, Harvard University.
- Woo, W. T. (1994). The art of reforming centrally planned economies: comparing China, Poland, and Russia, *Journal of Comparative Economics* 18(3): 276-308.
- Zusman, P. (1976). The incorporation and measurement of social power in economic models, *International Economic Review* 17: 447-462.