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Interest: The Determination of Policy
Instruments

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By Gordon C. Rausser* and Gérard Roland**

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1. INTRODUCTION

In any public policy making process, political and economic forces are at play in resolving the strategic interactions among the public and special interests. A schematic representation of the policy making process reflecting these forces is represented in Figure 1. Historically, the right-hand box has been the domain of political science, while the left-hand box has been the domain of economics. At the top of the right box, particular governance structures set the constitutional design establishing voting rules, the rule of law, property rights, laws governing exchange, and more generally the rules by which rules are made. Governance structures also determine the nature and scope of the political feedback mechanisms from groups affected by public policies. In its most expansive representation, any causal analysis of constitutional rules investigates the implications of alternative legal, regulatory and institutional frameworks, as well as various degrees of political, civil, and economic freedoms. In other words, governance structures set the boundaries for the political economic link. Over the course of the last few decades, economists have begun to make significant theoretical and empirical advancements in analyzing the link between governance structures, political economics, and the selection of actual policies.

Political economic analysis seeks to explain the selection and implementation of public policies. This link in the policy-making process endogenizes the instrument settings as a function of governmental bureaucracy and the actions of stakeholders. Interest groups as agents representing stakeholders are the units of analysis. In these links of the policy-making process, interest groups compete by spending time, energy, and money on the production of pressure to influence both the design and the tactical

implementation of policies.

The box at the bottom of Figure 1 recognizes that the implementation of public policies can lead to both intended and unintended consequences. For this link, the potential strategic conduct of both public and private sector agents and their representatives becomes critical. Modern economics has used the concepts of asymmetric information, incentive compatibility, participation constraints, and credible commitments to isolate the incentives embodied in specific policy regimes. Unintended consequences often result from hidden actions or hidden information. Hidden actions are typically characterized as moral hazard problems, while hidden information is generally divided into adverse selection or signaling problems.

Once policies are designed and/or implemented, the process of incidence begins with the assessment of winners and losers. Some groups or segments of the market may bear the burden of the public policies while other groups may reap the gains. The actual incidence of any designed and implemented public policies depends on individual agent incentives and ultimately the market structure. The economic consequences are generally measured both in terms of economic growth or the size of the economic pie and its distribution among various interests. These economic consequences in turn lead to a distribution of political power, represented in the top box of Figure 1.

Much of the academic literature compartmentalizes the links depicted in Figure 1. This compartmentalization has allowed at least four analytical dimensions of public policy to be distinguished in accordance with their imposed assumptions or maintained hypotheses (Rausser and Goodhue 2002). Until the last few decades, the vast majority of public policy analysis has focused on an incidence analytical dimension represented in

the left box of Figure 1. For this dimension, the impact of existing policies and/or the consequences of alternative policy instruments are evaluated. The second analytical dimension generally takes place at the policy implementation link of Figure 1. For this dimension, the perfect implementation assumption is relaxed allowing the application of mechanism design concepts while still maintaining no feedback effects from interest group or coalition formation, and a given governance structure. Modern political economy is a third analytical dimension that comes in many shapes and forms. All of these formulations, however, relax the assumption of no feedback effects from interest group or coalition formation, but typically impose a given governance structure. A fourth analytical dimension that has gained recent favor focuses on governance structures that delineate the boundaries on the negotiations and bargaining that takes place among stakeholders and governmental agents. In its most general form, this analytical dimension relaxes the assumptions of perfect implementation, no feedback effects among interest group or coalition formation as well as given governance structures. As reflected in Figure 1, this dimension is capable of analyzing how the distribution of political power leads to alternative governance structures.

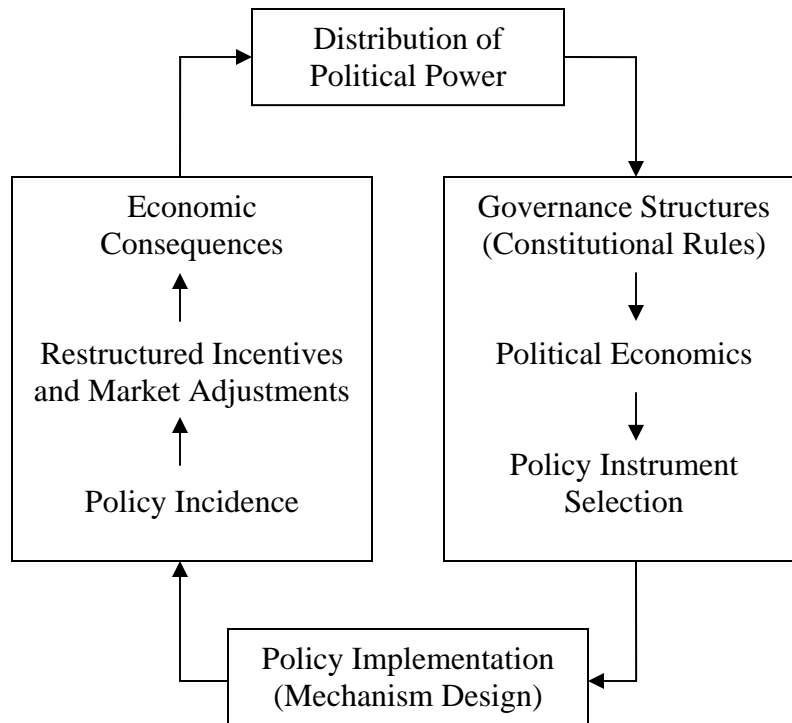


Figure 1: The Policy Making Process and Economic Consequences

In the context of this general framework, the purpose of our paper is to isolate three principal policy instruments: redistributive instruments, national public good expenditures, and local public good expenditures. Not until the recent work in general economics has there been drawn a sharp distinction between national public good and local public good expenditures. In much of the work on agricultural distortions, only a general distinction between national public good policies (particularly agricultural research and development) and redistributive policies have been examined, including the joint determination hypothesis (Rausser 1982, 1992). In accordance with North's seminal work (1981), we treat as synonymous public good policies as productive or PERT (political economic research transactions) policies. To be consistent with recent

economic literature, PERT interventions are national public policies that are intended to correct for institutional and market failures by reducing transaction costs of the private economic system. In contrast, both local public policies and redistributive policies can be treated as synonymous with predatory policies or PEST (political economic seeking transfers) policies. With these policies come deadweight losses and wasteful political economic activities resulting from rent-seeking of interest groups or policymaking authorities.

For the three generic groups of policies: national productive policies, local productive/redistributive policies, and pure redistributive or predatory policies, our purpose is to isolate the potential causal influence of political institutional structures, the assigned authority for governmental decisionmaking, the role of market structure and other socioeconomic characteristics, and finally the effect of sector mobility and asset diversification. In section 2, we investigate recent political governance structures and their potential implications for agricultural distortions. The focus is on the role of democratic mechanisms that have distinguished presidential from parliamentary regimes. We also investigate the potential explanatory role of electoral rules that have been theoretically examined in a number of recent publications.¹

As revealed in the recent theoretical literature, the critical role of the separation of powers under different political systems has implications for the specification of the assigned authorities for actual settings on the policy instruments. Accordingly, in section 3 of this paper, we specify polycentric configurations comprised of policymaking centers

¹ In the recent debate within Congress on the 2008 farm legislation in the United States, coalitions were formed that are largely reflective of electoral rules. House Speaker Nancy Pelosi has supported the continued heavy subsidization of US agriculture as a means for protecting newly elected Democrats from conservative midwest farming districts.

and the influence and pressure that is brought to bear on the policymaking process by organized interest groups. This framework recognizes that most policies that are implemented are determined by a combination of national and local decisions, for example, state, county, province, individual communities (Cremer and Palfrey 2000). The objective functions of the various governmental policymaking centers and the organized interest groups determine what is relevant from a particular country's market structure.

In section 4, we turn to the empirical analysis for each of the three types of policy instruments. We suggest reduced form econometric specifications, paying particular attention to the various explanatory variables that are suggested by our review of the recent theoretical literature. For the dependent variables, decomposing the NRAs into the three pillars (market access, export subsidies, domestic support) results in time series data for the redistributive policy instruments, but expenditures on national and local public goods will require additional data sources. For the explanatory variable, emphasis is placed on two potential variables, sector mobility and asset diversification, which are often swept under the rug in recent theoretical formulations of political economy (Grossman and Helpman, 1994, 1995, 2001).

2. POLITICAL INSTITUTIONAL STRUCTURES: IMPLICATIONS FOR AGRICULTURAL DISTORTIONS.

On an economy-wide basis in democratic societies, the traditional framework for evaluating political economy issues is the median voter model. It has been the workhorse model for most work in political economy in the last few decades. The median voter model predicts that policy in a democracy with competitive elections will cater to the

preferences of the median voter. Competitive forces in a two party system will lead to convergence of electoral platforms towards the preferences of the median voter.

Economists have always known the technical problems associated with the median voter model. It is restricted to one policy dimension, to two competing parties, it assumes perfect knowledge about voter preferences and politicians who only care about being elected and have no intrinsic preferences for policy. Apart from its technical weaknesses, the empirical predictions of the median voter model have also often been at odds with reality. Its main prediction, i.e. that more income inequality will lead to more redistribution, has been contradicted by recent economic trends which have seen strong increases in inequality but few increases in redistribution. On the contrary, many countries such as the US, the UK and others have had reductions in redistribution associated to increases in inequality.

Closer to our concerns, the median voter model does not fit nicely in the political economy of agricultural policy. The fact that support for agriculture is universal in the more affluent countries can only be made consistent with the median voter model if we believe that the median voter is a farmer. In most advanced economies, it is difficult to argue that there are many farmer incomes at the median income level. If we cannot make sense of the observed political support for agriculture using the electoral channel, then we should conclude that the only channel through which agricultural interests get expressed is through lobbying and political pressure. Such an argument might be more convincing for generic trade policy but seems less convincing for agricultural policy since agricultural and rural votes are generally courted during campaigns. As a result, we must

develop models other than the standard median voter formulation that might account for observed patterns of agricultural distortions.

There actually has been much progress in the theory of political economy away from the traditional median voter model (Persson and Tabellini 2000). This progress has generated many new insights. Some of these new results are very promising and make it possible to construct more plausible electoral channels for the political economy of agricultural distortions. The newer class of theories tends to incorporate more institutional details than the standard median voter model. These institutional features include the comparison of electoral rules, different rules for choosing and ousting the executive as well as different rules for designing and making legislative decisions. Moreover, the newer theories have lifted the unsatisfactory restriction of a single-dimensional policy space. Different classes of models such as the probabilistic voting models (Lindbeck and Weibull, 1987) or partisan and citizen-candidate models (Alesina, 1988; Besley and Coate, 1998; Osbourne and Slivinsky, 1996) can tackle multi-dimensional policy spaces in a rather standard fashion. The resulting formulations make it possible to analyze and test predictions relative to the composition of public expenditures as well as the policy mix of PERTs and PESTs in various countries. In particular, it makes it possible to generate predictions relative to the importance of special interest politics and expenditures and policies targeted to narrow interest groups (PESTs) versus general interest politics (PERTs), i.e. public goods benefiting large groups of the population. While this literature is still in its infancy, interesting results have been generated for at least two major categories: 1) the comparative politics of democratic regimes, 2) the comparative politics of electoral rules.

2.1 The comparative politics of democratic regimes

A major distinction in political science is between democracies and non democracies. This is of course a difference of first order. There are however also differences between democracies themselves. The literature has distinguished two main types of democratic regimes: presidential and parliamentary regimes. These two regimes differ in the relations between the executive and legislative branch of government.

In a parliamentary democracy, the executive is chosen (or supported) by a majority in parliament. The government is formed after parliamentary elections, usually by the party perceived to have won the elections, or the party who has received the most votes. If the winning party has the majority of elected representatives in parliament, then the government is formed by that party alone. Otherwise, a coalition government is forged with one or several other parties with which a coalition agreement is forged. The government is thus formed directly as a result of the outcome of parliamentary elections.

At least equally important is the fact that the executive can be brought down at any time by the parliament via a vote of confidence. A legislative bill can generally always be associated with a vote of confidence in the government. Different parliamentary democracies have different vote of confidence rules but they all share the feature that a majority of representatives in parliament has the power to bring down the executive by a vote of confidence. Votes of confidence are usually more threatening when they come from inside the government coalition. Members of the coalition need not fear a confidence vote initiated by the opposition since the opposition usually only commands a minority of votes. However, it has happened repeatedly that a party

belonging to the coalition brings up a vote of confidence in order to make the government fall.

In a presidential democracy, the executive is elected independently of the legislative branch of government, usually by popular vote, and cannot be brought down by the legislature except in extraordinary circumstances such as an impeachment procedure. Impeachment procedures are exceptional and justified by exceptional circumstances, certainly not by political disagreement as is the case with a vote of confidence. The source of power of the executive thus lies with the electorate and is independent of the majority coalition in the legislative branch of government.

These institutional differences between presidential and parliamentary democracies have implications that affect decision-making and the policy mix. First of all, presidential systems have more *separation of powers* between the executive and legislative branch of government since the source of power of the executive is independent from the legislative branch and since it cannot be voted down by the legislature as is the case in parliamentary democracies. This stronger separation of power between both branches of government implies potentially more conflicts between the executive and the legislative branch of government. Second, parliamentary systems have more *legislative cohesion*. This means that there is stronger voting discipline. Not only do elected representatives from the same party generally vote the same way but members from the governing coalition also do. This is closely related to the fact that a vote of confidence can be associated with a legislative bill. Indeed, since members of the governing coalition have majority support in the legislature, they also carry a lot of agenda-setting powers, since only the coalition parties can make legislative proposals that

have a material probability of being accepted. The possibility to associate a vote of confidence to a bill acts as a credible threat to discipline members of the coalition. A coalition member who would want to deviate from the majority and vote against a coalition proposal would be deterred from doing so if the other members threaten to stage a vote of confidence. This would lead to a fall of the government and a possible change of coalition, representing a loss of precious agenda-setting powers for the incumbent coalition.

Persson, Roland and Tabellini (2000) have examined theoretically and empirically the implications of these policy differences on the policy mix within the framework of an accountability model, i.e. a model where voters can vote retrospectively to punish elected representatives who have not brought them an endogenously determined utility level, in terms of the policy mix. The main results are that presidential systems have a smaller size of government and a composition of government expenditures that is less tilted towards national public goods and more towards local public goods and smaller rents to politicians. These results are derived from the two institutional features defined above.

The *separation of powers* under a presidential system creates checks and balances between the executive and the legislative branch of government. These checks and balances make it possible to exploit the conflict of interest between both branches of government (Madison, Federalist Paper No. 10). If the executive branch controls the agenda-setting power over the size of the budget but that the legislative branch controls the agenda-setting power over composition of expenditures and that the approval of both is needed in each case, the separation of powers allows the exploitation of the conflict between both in the interest of voters.

The executive branch has no interest in proposing a large budget size since the composition of expenditures will favor the constituencies who control the legislature. On the contrary, in order to be reelected by its own constituency, the president's interest is to propose a low budget. Separation of powers thus makes it possible to obtain a smaller size of government. It is a device to prevent collusion against voters. This is not the case in a parliamentary democracy. Since the executive emanates from the majority in the legislature, the same party or parties control both the legislature and the executive branch of government. There are thus less checks and balances between both branches of government. There is thus no internal institutional mechanism to limit the size of government. The only force present is the reelection motive. The majority in parliament must satisfy the demands of their voters. This can help limit taxation but only to a limited degree. Indeed, it is always possible to "tax the minority" in order to please the majority constituencies. The smaller size of government may serve to support or detract from economic growth. However, separation of powers will lead to less rents for politicians as the conflict of interest between them will prevent collusion to capture rents. This is not the case in a parliamentary regime.

The *legislative cohesion* on the other hand makes it possible to service in a stable way broad constituencies representing the majority in place. This feature of parliamentary democracy makes it possible to provide general public goods to a majority. Indeed, as the costs are internalized broadly within the government coalition, providing these public goods is politically advantageous to the incumbent majority. In contrast, the absence of legislative cohesion in a presidential system leads to a failure to provide as large an amount of public goods as in a parliamentary democracy. The reason is that within a

presidential system, the lack of legislative cohesion leads to ad hoc coalitions, on a case by case basis. Representatives of the same party also vote less often with their party, especially if they feel they need to do so to protect their constituencies' interests.

Since the politician who controls the agenda can build coalitions on an ad hoc basis, he or she can exploit the desire of other representatives to be part of the coalition. Indeed the latter will compete to be part of a majority on a given bill and will bid down their demands, giving de facto the bargaining power to the agenda-setter. The latter will trade off its own constituencies narrow interests against personal rents in order to be reelected. As a result, in a presidential system, there is under-provision of national public goods and politicians focus more on "pork", i.e. local public goods for their own narrow constituency. Presidential systems will thus, in contrast, to parliamentary systems, have a composition of public expenditures that is more focused towards local public goods and less towards national public goods. Of course, this is directly related to the differences in legislative cohesion in the two systems which is derived from the institution of the vote of confidence in a parliamentary democracy.

These results have a flavor of reality if one compares the parliamentary democracies of Europe with the presidential system in the US. The US has a smaller size of government but it also lags in the provision of some general public goods such as health and education. The predictions of the model have also been borne out in empirical work by Persson and Tabellini (2003). One should however keep in mind that not all presidential systems have a strong separation of powers between the executive and the legislative branch of government. In strong presidential systems like in Russia and Eastern Europe but also in various Latin American countries, the elected legislature has

much less powers than the US Congress and there is strong concentration of powers in the hands of the president.

What are the implications of the comparative politics of democratic regimes for the political economy of agricultural distortions? If these distortions take mainly the form of local public goods, or redistributive policy instruments, via special subsidies to agriculture for example, then we should observe relatively more distortions in presidential systems than in parliamentary systems for developed countries and vice versa for developing countries whose rural population represents a material proportion of the total population. This prediction has not yet been tested. The theory also predicts that the public good component of support to agriculture (PERTs) is likely to be stronger in parliamentary systems.

2.2 The comparative politics of electoral rules

Electoral rules are also thought to have an important impact on policy since they affect the rules of democratic selection of representatives and this may affect the actions taken by the latter when in power in order to be reelected. In principal, one should distinguish between electoral rules in parliamentary democracies and in presidential democracies but this has not been seriously examined in the literature. In some cases, this should not matter but in others it might. In assessing the differences between electoral rules, we will briefly outline the applicability of the results in both types of democratic regimes.

The two main polar electoral rules are the *majoritarian* electoral rule and the *proportional* electoral rule. There are other electoral rules and variants of both majoritarian and proportional but they are the most common and are also polar opposites.

Under the proportional electoral rule, the representation of a party in terms of seat share in the legislature is proportional to the vote share of that party. Exact proportionality can never be obtained because representatives, contrary to vote shares, come in discrete numbers and there are various methods (d'Hondt, Hare and others) to convert vote shares into seats. Nevertheless, seat shares are approximately equal to vote shares. Countries with proportional electoral rule have generally large district magnitudes, potentially covering the whole country as is the case in the Netherlands or in Israel.

Large district magnitudes are consistent with the proportional rules since the larger the number of seats that need to be allocated the closer vote shares and seat shares will be. To give an example, say that one party has 65% of the votes and the other has 35% of the votes, if a district has only two seats, it will, even under proportional rule generally allocate the two seats to the winning party whereas if the district has 200 seats, then the first party will have 130 seats and the other 70 seats. In the latter case, the seat shares will be exactly equal to the vote shares, but not in the former case. Therefore, researchers tend to use a higher district magnitude (larger number of seats competing in an electoral district) as an indication of a higher proportionality of seat shares to vote shares.

Under the majoritarian electoral rule, the winner of an election is the candidate with the plurality of votes, i.e. having more votes than all other candidates. Majoritarian

electoral rule is therefore usually associated with single-member districts. Majoritarian electoral rule may deviate significantly from proportionality. Suppose that one party gets 55% in all districts and the other gets 45% in all districts. According to majoritarian electoral rule, the first party should have hundred percent of the seats and the second zero percent. Researchers usually interpret a smaller district size as closer to majoritarian. Note first that a single-member district is majoritarian by definition. Since there is only one seat, it must go to the winner. However, in the example above with two seats, one senses that it is closer to majoritarian than to proportional.

To summarize, under proportional electoral rule, seat shares are proportional to vote shares and under majoritarian electoral rule, the party who gains the most votes in a district wins the seat. The larger the district magnitude, the more proportional the electoral rule and the smaller the district magnitude, the closer it is to the majoritarian rule.

Differences in electoral rules are also found to influence policy-making and a literature has developed in recent years to explore these distinctions. Lizzeri and Persico (2001) and Persson and Tabellini (1999) have examined the effect of electoral rules on policy in the framework of two party competition with a multi-dimensional policy space. Both have models that deviate from the standard median voter model in the sense that they are able to deal with multiple policy dimensions. The former use a methodology advanced by Myerson (1993), inspired by the Colonel Blotto games, where candidates choose platforms in the form of mixed strategies. The latter use the probabilistic voting model. In both papers, the main difference between the two electoral rules lies in district magnitude. There is assumed to be only one district under proportional rule and a large

number of single-member districts under majoritarian rule. The main result from the two papers is that the majoritarian rule favors local public good provision over national public good provision whereas under proportional rule, it is the opposite.

In both cases the intuition for the result is the same. Under majoritarian rule, in order to get a majority of seats in the legislature or in order to win the presidency (the logic is thus valid for both presidential and parliamentary democracy) a party needs to target the pivotal voter in the pivotal district whereas under proportional rule, they target the pivotal voter in the country. Indeed, under proportional, to get a majority, one needs to get the vote of the median voter in the country whereas under majoritarian rule, there is a “median” district which will give a majority to one of the two parties. In that district, there is a pivotal voter, the median in that district, who will decide which party gets the seat in the district. Therefore, proposing local public goods targeted to the pivotal voter in the pivotal district is electorally “cheaper” than proposing national public goods.

A corollary is that voters in the pivotal districts need not pay taxes for public goods in other districts. On the contrary, tax revenues from other districts can be used to finance local public goods in the pivotal district. They thus get more “value for money”. Under proportional electoral rule, it is the opposite. Since national public goods have many externalities, they may deliver more utility per voter per unit of tax revenue. In other words, they are assumed to be more efficient relative to local public goods. Nevertheless, majoritarian systems are biased towards local public goods because of the electoral incentives associated to the majoritarian rule.

These results have clear implications for the political economy of agricultural distortions. In developed countries, if we assume that these distortions take mainly the

form of local public goods or redistributive policy instruments, then one should observe, everything else equal, relatively more distortions under the majoritarian electoral rule than under the proportional electoral rule. One is more likely to find agricultural voters as pivotal voters under the majoritarian rule rather than under the proportional system. Indeed, it is less likely to find a farmer whose income is median in a developed country. However, it is much more plausible that a farmer may be median in a rural district if that district is pivotal for the elections.

Persson, Roland and Tabellini (2007) model the effect of electoral rules within a parliamentary democracy. The model goes further than the rest of the literature on electoral rules by incorporating not only different electoral rules but also their effect on party formation and government formation. It can indeed be argued that it is not very satisfactory to analyze electoral rules within the framework of a two party system. Countries with proportional electoral rules typically have more than two parties represented in parliament and countries with majoritarian rule are not necessarily all countries with two party systems.

Once we allow for more than two parties in a formal model, then we must model the interaction between the electoral process and legislative bargaining. Indeed, the election outcome or future election outcomes affect the choice of coalition partners which will in turn affect policy-making. Moreover, the electoral rule also affects incentives of parties to merge. The majoritarian rule gives an incentive to parties to merge so as to win a maximum number of districts given the “winner take all” nature of the electoral rule. In other words, the merger of two parties may be able to achieve a number of seats that is much superior to the sum of the seats they would achieve as separate parties. Under the

proportional system, this incentive is by definition absent. If two parties merge, they would get the sum of seat shares that the two separate parties would have.

Under majoritarian electoral rule, the stronger incentive of parties to merge will lead more often to a two-party system and therefore less often to coalition governments. Under proportional rule, since there are fewer incentives to merge, there will be more parties represented in parliament and thus coalition governments will be more frequent. Under a coalition government, government expenditures will tend to be larger since parties in the coalition cater more to their own constituency and do not internalize the interests of the other party (ies) in the coalition. This is related to the “common pool” problem. Therefore, one should see a larger number of parties, more coalition governments and higher government expenditures under proportional electoral rule compared to the majoritarian electoral rule. This is also verified empirically.

The implications of this last model are less obvious in terms of the political economy of agricultural distortions since there are no specific predictions in the model as to the type or composition of public expenditures. However, one could argue that a higher party fragmentation under proportional electoral rule might lead to a higher frequency of parties in government representing rural interests. This implication runs counter to that of previous models discussed above.

3 Government Decision-Making Structure

Another crucial component of the policy-making process (Figure 1) is the assignment of authority to select and actually implement policies. Regardless of the political institutional structure, how political economic coalitions are formed, whether

temporary or “permanent”, is critical. Here, we follow the work of Rausser, Swinnen and Zusman (2008) and adopt the Nash-Harsanyi bargaining game where both the first-stage disagreement payoffs and the second-stage cooperative solution are endogenously determined. For this framework, the election outcomes affect the choice of coalition partners.

In the simple version of the model, the objective function for the policymaking center can be represented by what's defined as the extended objective function:

$$(1) \quad \begin{aligned} U_0 &= U_0(x) \\ &= u_0(x_0) + \sum_{i=1}^n s_i(x_i, \delta_i) \end{aligned}$$

where $u_0(x_0) = \bar{u}(y(x_0), x_0)$, $\bar{u}_0 : \mathfrak{R}^G \times X_0 \rightarrow \mathfrak{R}$, $y(x_0)$, is the G -vector of endogenous variables whose values are determined by the policy vector x_0 , δ_i is a strategy indicator variable indicating whether a "reward" or "penalty" strategy has been adopted in the strategic interaction by the corresponding organized interest group, and $s_i(\cdot)$ represents the strength or influence of interest group i . The index $i=0$ is reserved for the policymaking center, and $i=1, 2, \dots, n$ for the n organized interest groups. That is,

$$(2) \quad \begin{aligned} U_i &= U_i(x) \\ &= u_i(x_0) - c_i(\delta_i) \quad i = 1, 2, \dots, n \end{aligned}$$

where $u_i(x_0) = \bar{u}_i(y(x_0), x_0)$; $\bar{u}_i : \mathfrak{R}^G \times X_0 \rightarrow \mathfrak{R}$ and c_i represents the cost to interest group i of exercising strength or influence.

From the basic specification (1) and (2) and the two-stage Nash-Harsanyi bargaining and coalition formation process, Rausser et al (2008) derive a governing criterion function (sometimes referred to in the literature as a policy or political

preference function) that isolates the distribution of political power across various coalitions. This basic structure for the governing criterion function can incorporate several levels of government, from the local to the national. The number of echelons in this hierarchy and the degree of interdependence among levels are determined by numerous factors, such as the geographic extent of the country, its population size and geographic dispersion, the development of infrastructure, the available organizational technology, the prevailing political culture and the country's history.

In addition to vertical differentiation, there also exists a horizontal differentiation which becomes more pronounced at the governmental hierarchy's upper levels. Particularly with respect to agricultural distortions, two dimensions of governmental horizontal differentiation are important: first, differentiation by the governmental branch (legislative, executive, judicial); second, the functional differentiation by fields of activity or economic industry (e.g., agriculture, trade). In some countries, policymaking authority is concentrated while in other countries it is distributed across the entire governmental structure. The distribution determines the configuration of policymaking centers relative to particular policies. To be specific, consider a group configuration comprising g interested policymaking centers and n organized interest groups. Let $j = 1, 2, \dots, g$ index the policymaking centers and $i = 1, 2, \dots, n$ index the organized interest groups. Also, let $x_0 = (x_0^1, x_0^2, \dots, x_0^g)$ be the vector of policy instruments controlled by the various policymaking centers. Under this specification, the extended objective functions of the policymaking centers are

$$(3) \quad U_j = u_j(x_0) + \sum_{i=1}^n s_{ij}(c_i^j, \delta_i^j) + \sum_{k \neq j} S_{kj}(c_k^j, \delta_k^j) - \sum_{k \neq j} c_j^k \quad j, k = 1, 2, \dots, g$$

where $u_j(x_0)$ is the policy objective function of center j reflecting the center's decision agents' preferences over the entire policy space, X_0 , $s_{ij}(c_i^j, \delta_i^j)$ is the strength of power of the i^{th} interest group over the j^{th} center, $S_{kj}(c_k^j, \delta_k^j)$ is center k 's strength of power over center j ; c_i^j , c_k^j and c_j^k are, respectively, the costs of power of the i^{th} interest group over the j^{th} center, and the k^{th} center over the j^{th} center, and the j^{th} center over the k^{th} center. Note that δ_i^j and δ_k^j are strategy indicator variables determining whether a "reward" or "penalty" strategy has been adopted in the strategic interaction between the corresponding organized groups.

Since reciprocal power relationships prevail among all organized groups, the equilibrium solution of the political economy is a solution to the corresponding $(g+n)$ -person bargaining game. For a case where all disagreement payoffs are treated as given, Rausser et al (2008) show that *the political-economic equilibrium is obtained by maximizing the following policy governance function with respect to $x_0 \in X_0$:*

$$(4) \quad W(x_0) = \sum_{i=1}^n B_i u_i(x_0) + \sum_{j=1}^g B_j u_j(x_0)$$

where

$$(5) \quad B_i = \frac{1}{\bar{U}_i - t_i^0} > 0 \text{ and } B_j = \frac{1}{\bar{U}_j - t_j^0} > 0 \text{ for all } i \text{ and } j$$

where t_i^0 and t_j^0 are the specified disagreement outcomes or in general the noncooperative solutions to the bargaining game.

4. Empirical Analysis

An operational empirical analysis cannot be implemented without specifying the feasible set that constrains the optimization of the governing criterion or policy governance function, i.e., equation (4). Each of the relevant objective functions specified in this equation are interpreted in much of the literature as performance variables (endogenous variables) that are determined in part by the policy instruments. The actual constraint structure that the maximization of (4) is subject to depend on the underlying market structure, socioeconomic conditions, factor mobility, asset diversification, electoral rules of subsection 2.2, and the democratic or nondemocratic regimes of subsection 2.1.

For equality constraint structures, the mapping from the policy instruments to the performance or endogenous variables is straightforward. Under these circumstances, the empirical analysis can focus on estimating the “political weights” or distribution of political power parameters in equations (4) and (5). Moreover, policy reaction functions can be empirically estimated by deriving the choice equations. Obviously, the former is a revealed preference analysis, while the latter is a typical direct analysis of the actual policy choices that are implemented. Although consistency (see the validation tests in Rausser et al 2008, Chapter 17) can be investigated by providing both analyses, in this section we shall consider only the reduced form specifications for the policy reaction functions (Rausser and Goodhue 2002), referred to as the *minimal political-economy theory reduced form*. Due to space limitations, we shall not review the empirical insights presented in Rausser (2007) from interest group size, relevant demand and supply elasticities, size of deadweight losses, etc.

4.1 Endogenous Variables

For the redistributive policy instruments, two readily available alternative data sets exist. The first is for the aggregate NRAs by country covering the time series from 1955 through 2005 (Anderson and Valenzuela, 2008). This same source has also decomposed the aggregate NRAs across the three major pillars: market access, export subsidies, and domestic support. Note also that the total NRA for a product comprises elements from product-specific input subsidies/taxes or equivalent, domestic output subsidies/taxes or equivalent, import subsidies/taxes or equivalent, and export subsidies/taxes or equivalent (depending on whether the product is classified as an import-competing or exportable good, or if it is a nontradable). The NRAs show in most instances that the dominant portion of the NRA is the rate of assistance to output conferred by the border market price support, but as pointed out by K. Anderson, the border measures are also the most common forms of tax on exportables that should be explained. Regardless, this basic data allows a number of potential measures for redistributive policy instruments to be evaluated.

In the empirical literature, as previously noted, a distinction has not been drawn between local versus national public goods. For the case of national public goods, the principal measure has been total expenditures on agricultural research and development. Here the ISNAR agricultural research expenditures by country and year is available. This data has been used in a number of empirical studies that appear in the literature (e.g., Swinnen et al, 2000, Lee and Rausser, 1992).

For local public goods, a readily available data source does not exist. As a result, piecing together the relevant time series data across countries will require a number of

sources. One source is the rural public expenditure data reported by FAO that has recently been used by Allcott, Lederman and Lopez (2006). This data source would have to be augmented by the recent surge in agri-environmental expenditures, particularly by developed countries in the data set. Still another source is the categories of expenditures reported by the World Bank Stage 1 on agricultural distortions, particularly those expenditures listed under S-35 through S-38. These particular categories include non-product-specific subsidies, net of abnormal taxes for primary agriculture, research and extension, agricultural training schools and inspection surfaces.

4.2 Explanatory Variables

In addition to the explored explanatory variables identified in de Gorter and Swinnen (2002), Anderson (1995) and Rausser (2007), a number of unexplored or weakly explored subsets of explanatory variables should be considered. Many of these variables are summarized and maintained by the World Bank, and are categorized in the Appendix to this paper. However, one of the principal problems is that many of these data sources do not stretch over the full time period that is covered by the redistributive policy instruments, briefly described in section 4.1. Nevertheless, the critical political-economic regimes outlined in section 2 of this paper can be captured through discrete regimes: dictatorial, parliamentary-democratic, and presidential-democratic. Similarly, discrete regimes can be used to distinguish at least two electoral rules: majoritarian and proportional.

For the governance structures, including branches of government, role of bureaucracy, interest group access, and admissible coalitions, we are guided by the discussion in section 3 of this paper. Once again, discrete regimes will be critical in

allowing us to distinguish across countries with regard to their propensity to pursue redistribution, local or national public good expenditures. Also note that here the various data sources on temporal consistency and credible commitment indicators, briefly outlined in the appendix to this paper, should be assessed. Unfortunately, few of these indicator variables stretch back as far as even 1980. Finally, there is no need to restrict our investigation to internal polycentric governance structures. For many countries, external institutions such as GATT/WTO accession and World Bank and IMF conditionality effectiveness may prove to be significant explanatory variables.

Another potential subset of explanatory variables, largely unexplored, is sector mobility and asset diversification. As demonstrated in Rausser et al (2008), in the limit sector mobility or asset diversification drive a convergence between “the special interest” and “the public interest”. For those countries with constitutional principals and institutional structures that promote resource mobility or asset diversification, a political-economic interest group structure will emerge that has little if any incentive to acquire and exercise political power. In essence, in the limit there is no incentive for various private sector interests, or for that matter policymaking centers to engage in the implementation of redistributive policies. One of the few empirical studies that focus on one dimension of farmer mobility was the seminal analysis of Gardner (1987). In his analysis Gardner specified two geographic mobility variables, both of which were statistically significant in explaining the degree of distortions across commodities in the United States. More generally, with respect to all countries, potential data sources are specified in our Appendix under the titles *sources for mobility* and *sources for asset diversification*. For the former, various human capital measures of potential mobility

stretch back as far as 1960. For the latter, the fine work of Deininger and his colleagues can be employed to initiate an investigation of asset diversification on the three groups of proposed endogenous variables.

5. CONCLUSION

Our purpose in this paper has been to shine the spotlight on recent theoretical developments in political economy and what role they might play in explaining and reforming individual country and global distortions in food and agriculture. We have isolated a number of potential explanatory variables that will allow us to explain and distinguish between predatory or redistributive policies that result in market distortions, local public goods that serve the interest of political well-positioned geographic regions of a particular country, and national public goods that promote economic growth and generally serve the “public interest”.

The remarkable data set on agricultural distortions prepared by the World Bank under the leadership of Kym Anderson provide a watershed opportunity for describing patterns across time and countries that might potentially isolate the critical forces that explain the magnitude of redistribution and governmental support for both national and local public goods. To be sure, a number of challenges remain. These challenges include *inter alia* completing the time series for both agricultural public research and development expenditures and local public good expenditures across the time frame for which the net effects of redistributive instruments have been captured by the first stage of the World Bank analysis. The next major challenge is completing the statistical analysis, wisely separating the sample data which allows exploratory investigations (some would characterize as data mining) to be concluded before proposing the analysis that will allow

testable hypotheses to be evaluated and assessed. A third challenge is to capture the dynamic implications of both “policy traps” and crisis shocks resulting from external changes that motivate new political-economic equilibriums. In characterizing the patterns that emerge across time and countries, our emphasis should be on discontinuous jumps in the degree of redistribution or the investment in public good policies, both local and national. Finally, in the empirical sketch outlined in section 4 of this paper, capturing regime changes in the reduced form specifications may well allow insights to emerge on sustainable policy reform.

REFERENCES

- Alesina, A. 1988. “Credibility and Policy Convergence in a Two-Party System with Rational Voters” *The American Economic Review* 78(4), 796-805.
- Allcott, H., D. Lederman and R. Lopez. 2006. “Political Institutions, Inequality, and Agricultural Growth: The Public Expenditure Connection”, World Bank Policy Research Working Paper 3902, April 2006.
- Anderson, K. 1995. “Lobbying incentives and the pattern of protection in rich and poor countries” *Economic Development and Cultural Change* 43:2, 401-423.
- Anderson, K. and E. Valenzuela. 2008. “Estimates of Distortions to Agricultural Incentives, 1955-2005”, Prerelease version to World Bank, Washington D.C., April 2008.
- Baylis, K., Rausser, G., S. Peplow and L. Simon. 2008. “Payment for Environmental Services: A comparison of U.S. and EU agri-environmental policies”, *Ecological Economics*, forthcoming.
- Besley, T. and Coate, S. 1998. “Sources of inefficiency in a representative democracy: A dynamic analysis” *American Economic Review* 88:1, 139-156.
- Cremer, J. and T.R. Palfrey. 2000. “Federal Mandates by Popular Demand.” *Journal of Political Economy* 108: 905-927.
- de Gorter., H. and J. Swinnen 2002. ”Political economy of agricultural policy” B. L. Gardner & G. C. Rausser (ed.), *Handbook of Agricultural Economics*, Elsevier, Vol 2.

- Gardner, B. 1987. "Causes of US Farm Commodity Programs", *Journal of Political Economy* 95(2), 290.
- Grossman, G.M. and E. Helpman. 1994. "Protection for sale," *The American Economic Review* 84, 833-850.
- Grossman, G.M. and E. Helpman. 1995. "Trade wars and trade talks," *Journal of Political Economy* 103, 675-708.
- Grossman, G. and E. Helpman. 2001. *Special Interest Politics*. MIT Press, Cambridge, MA.
- Lee, D.R. and G. Rauser. 1992. "The Structure of Research and Transfer Policies in International Agriculture: Evidence and Implications" IAAE Occasional Paper.
- Lindbeck, A. and J.W. Weibull. 1987. "Balanced-budget Redistribution as the Outcome of Political Competition", *Public Choice* 52, 273-297.
- Lizzeri, A. and N. Persico. 2001. "The Provision of Public Goods under Alternative Electoral Incentives." *The American Economic Review* 91(1):225-239.
- Milesi-Ferreti, G., R. Perotti and M. Rostagno. 2002. "Electoral Systems and Public Spending", *Quarterly Journal of Economics* 117:2, 609-657.
- Myerson, R.B. 1993. "Incentives to Cultivate Favored Minorities Under Alternative Electoral Systems", *The American Political Science Review* 87:4, 856-869.
- North, Douglass C. 1981. *Structure and Change in Economic History*. New York: Norton.
- Osborne, M. J. and Slivinsky, A. 1996. A model of Political Competition with Citizen-Candidates" *Quarterly Journal of Economics* 111, 65-96.
- Persson, T. and G. Tabellini. 1999. "The size and scope of government: Comparative politics with rational politicians", *European Economic Review* 43 (4-6), 699-735.
- Persson, T. and G. Tabellini. 2000. *Political Economics: Explaining Economic Policy*. MIT Press, Cambridge, MA.
- Persson, T. and G. Tabellini. 2003. *The Economic Effects of Constitutions*. MIT Press, Cambridge, MA.
- Persson, T., G. Roland, and G. Tabellini. 2000. "Comparative Politics and Public Finance." *Journal of Political Economy* 108: 1121-1161.

Persson, T., G. Roland and G. Tabellini. 2007. "Electoral Rules and Government Spending in Parliamentary Democracies", *Quarterly Journal of Political Science* 2, 155-188.

Rausser, G. 1992, "Predatory Versus Productive Government: The Case of U.S. Agricultural Policies", *Journal of Economic Perspectives* 6:3, 133-157.

Rausser, G. 2007. "Second Stage: Political Economy Analysis of Distortion Patterns", paper presented at the World Bank Workshop on the Political Economy of Distortion Patterns, Portland, OR, July 2007.

Rausser, G. and R. Goodhue. 2002. "Public Policy: Its Many Analytical Dimensions," in *Handbook of Agricultural Economics*, B. Gardner and G. Rausser (eds.). Volume 2, Chapter 39, Elsevier North Holland.

Rausser, G., J. Swinnen and P. Zusman. 2008. *Political Power and Endogenous Policy Formation*, forthcoming.

Swinnen, J. H. De Gorter, G. Rausser and A. Banerjee. 2000. "Political Economy of Public Research Investment and Commodity Policies in Agriculture: an Empirical Study" *Agricultural Economics* 22(2), 111-122.

APPENDIX

2005 World Bank governance indicators: Sources

- African Dev. Bank
- Afrobarometer
- Asian Dev. Bank
- BTI
- BEEPS
- QLM
- CUD
- Country Policy and Institutional Analysis
- EIU
- EBR
- Freedom House
- Gallup International
- EGV
- DRI
- WMO
- Heritage Foundation
- IJT
- WCY
- Media Sustainability Index
- Latino Barometer
- Merchant International group
- PRC
- Political Risk Services
- Reporters without Borders
- State's Trafficking in People Report
- Amnesty International
- WBS
- World Economic Forum

1. Voice and Accountability (VA)

Extent to which a country's citizens are able to participate in selecting their government as well as freedom of expression, association, and media.

- Accountability of public officials
- Civil liberties
- Freedom of press
- Military in politics
- Democratic accountability
- Representativeness: how well population can make voices heard in political system

2. Political instability and absence of violence (PV)

Perceptions of likelihood of government destabilized or overthrown by unconstitutional or violent means including political violence or terror.

- Military coup that reduces GDP growth rate
- Political terrorism, assassination that reduces GDP growth rate
- Ethnic tension
- Internal conflict – political violence and impact
- External conflict – risk to government and investment
- Civil unrest
- Extremism – threat by groups with narrow, fanatical beliefs

3. Government effectiveness (GE)

Quality of public services, civil services and degree of independence from political pressures, quality of policy formulation and implementation, and credibility of government commitments to such policies.

- Government personnel turnover rate that reduces GDP growth rate
- Institutional rigidity that reduces GDP growth rate
- Quality of bureaucracy
- Public spending composition
- Quality of public infrastructure
- Quality of schools
- Policy consistency and forward planning
- Time spent by management dealing with govt officials

4. Regulatory quality (RQ)

Ability of government to formulate and implement sound policies and regulations that permit and promote private sector development

- Export reduction due to worse regulations (limits)
- Import reductions due to worse regulations (quotas)
- Increase in regulatory burdens
- Legal restrictions on non-resident ownership of equity
- Tax effectiveness
- Tax system distortionary

5. Rule of law (RL)

Extent to which agents have confidence in and abide by rules of society and in particular the quality of the contract enforcement.

- Increase in crime, kidnapping foreigners
- Enforceability of contracts (govt and private)
- Popular observance of law
- Impartiality of legal system, judicial independence
- Property rights, Intellectual property rights
- Legal framework to challenge govt actions

6. Control of corruption (CC)

Extent to which public power is exercised for private gain including petty and grand forms of corruption as well as capture of the state by elites and private interests.

- Increase in assessment of corruption
- Public trust in financial honesty of politicians
- Frequency of extra payments, bribery
- Red tape to be encountered
- Likelihood of encountering corrupt officials
- Power through patronage rather than ability
- Accounting standards
- Transparency of decision making

Sources for WBI

Name of data source	Year started	Frequency	# Countries	Name of original indicator	Freedom (WBI)
Bertelsmann Transformation Index	2003	3 years	116-119	Competition	Economic (RQ)
Economist Intelligence Unit	1997	Quarterly	120-152	Unfair competitive practices	Economic (RQ)
Economist Intelligence Unit	1997	Quarterly	120-152	Price controls	Economic (RQ)
Economist Intelligence Unit	1997	Quarterly	120-152	Discriminatory traiffs	Economic (RQ)
Economist Intelligence Unit	1997	Quarterly	120-152	Excessive protections	Economic (RQ)
Institute for Management Development World Competitiveness Yearbook	1987	Annual	46-53	Easy to start company	Economic (RQ)
Institute for Management Development World Competitiveness Yearbook	1987	Annual	46-53	The exchange rate policy of your country hinders the competitiveness of enterprises	Economic (RQ)
Merchant International Group Gray Area Dynamics	1994	Quarterly	118-156	Unfair Competition	Economic (RQ)
Merchant International Group Gray Area Dynamics	1994	Quarterly	118-156	Unfair Trade	Economic (RQ)
World Economic Forum Global Competitiveness Survey	1996	Annual	58-126	Competition in local market is limited	Economic (RQ)
World Economic Forum Global Competitiveness Survey	1996	Annual	58-126	Anti-monopoly policy is lax and ineffective	Economic (RQ)
World Economic Forum Global Competitiveness Survey	1996	Annual	58-126	Easy to start company	Economic (RQ)
Business Environment Risk Intelligence	1980	3/year	50-53	Political Risk Index: Social Conditions: Wealth Distribution, Population	Economic (VA)
Heritage Foundation Index of Economic Freedom	1995	Annual	150-157	Labor Freedom	Economic (None)
Heritage Foundation Index of Economic Freedom	1995	Annual	150-157	Property Rights	Economic (RL)
World Economic Forum Global Competitiveness Survey	1996	Annual	58-126	Undue political influence	Political (CC)
Business Environment Risk Intelligence	1980	3/year	50-53	Political Risk Index: Fractionalization of political spectrum and the power of these factions	Political (VA)
Economist Intelligence Unit	1997	Quarterly	120-152	Vested interests	Political (VA)
Economist Intelligence Unit	1997	Quarterly	120-152	Accountability of Public Officials	Political (VA)
Freedom House: Freedom of the World	1972	Annual	149-197	Political Rights	Political (VA)
Global Insight Business Risk and Conditions	1998	Annual	181-202	Representativeness	Political (VA)

Name of data source	Year started	Frequency	# Countries	Name of original indicator	Freedom (WBI)
Cingranelli Richards Human Rights Database and Political Terror Scale	1980	Annual	159-192	Independence of Judiciary	Civil (RL)
Economist Intelligence Unit	1997	Quarterly	120-152	Fairness of judicial process	Civil (RL)
Economist Intelligence Unit	1997	Quarterly	120-152	Enforceability of contracts	Civil (RL)
Economist Intelligence Unit	1997	Quarterly	120-152	Human Rights	Civil (VA)
Freedom House: Countries at the Crossroads	2003	Annual	30-60	Civil Liberties	Civil (VA)
Freedom House: Freedom of the World	1972	Annual	149-197	Civil Liberties	Civil (VA)
Global Insight Business Risk and Conditions	1998	Annual	181-202	Judicial Independence	Civil (VA)

Temporal Consistency and Credible Commitment Indicator Candidates

Name of data source	Year started	Frequency	# Countries	Name of original indicator
Global Insight Business Risk and Conditions	1998	Annual	181-202	Representativeness: How well the population and organized interests can make their voices heard in the political system
Political Risk Services International Country Risk Guide	1984	Monthly	130-140	Government Stability: Measures the government's ability to carry out its declared programs, and its ability to stay in office
Business Environment Risk Intelligence	1980	3/year	50-53	Restrictive (coercive) measures required to retain power
IMD World Competitiveness Yearbook	1987	Annual	46-53	Risk of political instability
Political Risk Services International Country Risk Guide	1984	Monthly	130-140	Bureaucratic Quality: Measures institutional strength and quality of the civil service, assess how much strength and expertise bureaucrats have and how able they are to manage political alternations without drastic interruptions in government services, or policy changes.
Global Insight Business Risk and Conditions	1998	Annual	181-202	Policy consistency and forward planning: How confident businesses can be of the continuity of economic policy stance—whether a change of government will entail major policy disruption, and whether the current government has pursued a coherent strategy
Global Insight Business Risk and Conditions	1998	Annual	181-202	Tax Effectiveness: How efficient the country's tax collection is.
IMD World Competitiveness Yearbook	1987	Annual	46-53	Real corporate taxes are non distortionary & Real personal taxes are non distortionary
Global Insight Global Risk Service	1996	Quarterly	106-142	Enforceability of government contracts
Global Insight Global Risk Service	1996	Quarterly	106-142	Enforceability of private contracts
World Economic Forum Global Competitiveness Survey	1996	Annual	58-126	Legal framework to challenge the legality of government actions is inefficient

Name of data source	Year started	Frequency	# Countries	Name of original indicator
Heritage Foundation Index of Economic Freedom	1995	Annual	150-157	Property Rights
World Economic Forum Global Competitiveness Survey	1996	Annual	58-126	Public trust in financial honesty of politicians
Merchant International Group Gray Area Dynamics	1994	Quarterly	118-156	Corruption. Largely bribery
Political Risk Services International Country Risk Guide	1984	Monthly	130-140	Corruption: Within the political system distorting the economic and financial environment

Sources for Mobility

Name of data source	Year started	Frequency	# Countries	Name of original indicator
African Development Bank Country Policy and Institutional Assessments	1998	Annual	15-52	Labor Market Policies
Business Environment and Enterprise Performance Survey	1999	3 years	18-27	How problematic are labor regulations for the growth of your business?
Heritage Foundation Index of Economic Freedom	1995	Annual	150-157	Labor Freedom
Castello and Domenech (2002)	1960-2000		108	Human capital Gini coefficient
Barro (2001)	1965-1995		100	Human Capital measure based on test scores, years of schooling, dropout rates and pupil-teacher ratios
Birdsall and Londono (1997)	1970-1995		43	Human Capital: Years of Education

Sources for Asset Diversification

Name of data source	Year started	Frequency	# Countries	Name of original indicator
Business Environment Risk Intelligence	1980	3/year	50-53	Political Risk Index: Internal Causes of Political Risk: Wealth Distribution, Population
IFAD Rural Sector Performance Assessments	2004	Annual	100-124	Access to land
Deininger and Squire (1998)	1950-1990	Decade	103	Gini coefficients on land distribution, derived from FAO Agricultural Censuses
Deininger and Olinto (2000)				
Li, Squire and Zou (1998)	1998	Once	115	Land inequality Gini
Deininger and Squire (1996)	1890-1996	Annual	138	Income inequality Gini coefficients*
Dollar and Kraay (2002)	1960-2000	Annual	92	Income inequality Gini coefficients
Taylor and Hudson (1972)	1960	Once	54	Land distribution Gini