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Policy Reform as Collective Action

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Abstract

A government desiring support for its policy reform program, without coercion, behaves as if it faces a political constraint. Citizen support depends on the estimate, by at least some minimum proportion of the population, that the program will succeed and the outcome will be in their individual self-interest. Government behavior has implications for the program, whose contents constitute the set of signals used by citizens to estimate the probability that the program will succeed. The government uses various devices to mobilize support for its program. An informed expert could design a program acceptable to both the government and the citizens.

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SUMMARY

To reduce both implementation costs and the risk of policy reversal, a government prefers to have the support of citizens for its policy reform program, without coercion. The extent of this support depends on the estimate, by the population, that the program will succeed and that the outcome will be in their individual self-interest. Hence, in designing policy reform programs, rational governments behave in equilibrium as if they face political constraints in implementation. This behavior, in turn, has implications for the program, which contains the signals used by the population to estimate the probability that the program will succeed.

Asymmetrical information is assumed, with the government being better informed about the probability of success of a program than ordinary citizens. Focusing on macroeconomic policy reform by design, two state-society types are distinguished, namely: (1) collectivist society, utilitarian government, and (2) individualist society, self-indulgent government. In the collectivist society, the utilitarian government designs its program to maximize social welfare. In the individualist society, the self-indulgent government receives positive utility from government revenue but disutility from effort. In maximizing its welfare, the government selects levels for the signals to minimize the shadow price, in terms of its own welfare sacrificed, of obtaining political support.

In the individualist society, with a self-indulgent government, an informed expert could design a program acceptable to both the government and the citizens. Such an expert would maximize a net social benefit function subject to the political constraint and a reservation utility level of the government. The government, in turn, will be observed taking various actions to mobilize support among ordinary citizens for its policy reform program.

I. INTRODUCTION

Economic policy reform could entail microeconomic and/or macroeconomic measures, involving stabilization, or structural and institutional changes. Whether spontaneous or by design, such a reform constitutes collective action. It proceeds from an equilibrium, whether stable or not, reflecting the behavior of a group of people (citizens for short) and a government, working in a particular historical, cultural, political, and institutional context. This paper, using standard economic theory, formalizes aspects of the character of this collective action.

For concreteness, we consider economic policy reform of a macroeconomic nature and by design. The determination of the saving and tax rates occupy a central place in such a reform. In assessing the success of the constituent economic program one would include, as important, three criteria, namely: (i) the appropriateness of the technical design of the program to solve the country's macroeconomic problem(s);[2] (ii)) the degree of program implementation and the associated human and other resource costs; and (iii) the sustainability of the reform, and hence the risk of policy reversal by the existing or some future government.[3]

We argue that rational governments, in designing their policy reform programs, behave, in equilibrium, as if they face political constraints in implementation. In other words, to reduce implementation costs and make insignificant the risk of policy reversal, a government prefers to have the support of citizens for its policy reform program, without coercion. The extent of this support depends on the (ex ante) estimate, by individuals whose numbers sum up to at least some constitutionally or traditionally determined proportion of the population, that the program will succeed and that the outcome will be in their individual self-interest. This politically constrained equilibrium behavior of rational governments prevails, irrespective of the political/constitutional system in the country. The equilibrium behavior of the government, in turn, has implications for the content of the program, because the program itself contains the signals used by the individuals in the society to estimate the probability that the program will succeed. The analysis in the paper assumes asymmetrical information, with

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[2]From a macroeconomic perspective, these problems could include sluggish growth, high inflation, and/or weak balance of payments.

[3]Because reversal can be costly, opponents of a reform program are more likely to want to block implementation than to wait and try to reverse it afterwards. But a high cost of reversal does not necessarily rule out serious attempts at reversal after implementation, especially when the opponents are convinced about an alternative policy path different from that contained in the program and the outcome of the program did not cause them to change their minds, or when their level of real income dropped markedly during implementation and there is little prospect of a recovery for them in the absence of some policy reversal or modification.

the government being better informed about the probability of success of a program than ordinary citizens. The paper argues also that the political constraint influencing the government's behavior helps explain some common activities of governments everywhere including those in so-called authoritarian regimes.[4] Among these activities, we highlight devices to mobilize support without coercion for policy reform programs.

We effectively distinguish the probability that a program will succeed from the probability that the government is committed to the program. In other words, given credible commitment to the program by the government, the question becomes the government's *ability* to design and implement a program that would solve the macroeconomic problem(s) of the country.[5]

When a government does not have appropriate support for its macroeconomic reform program, one observes certain actions of the population. If the program, constitutionally, must receive the support of a democratic vote before implementation can proceed, then the program simply fails to obtain the necessary majority, in a referendum, for the case of a direct democracy, or in parliament, in a representative democracy. When the government can legally attempt to implement the program without a democratic vote, then the populace will try to send signals to the government that it may not win the next election. Such signals could include protests and strikes by organized groups as well as attacks in the press. These could get supplemented by exit of various forms from the economy—greater leisure, capital flight, smuggling, and tax evasion, to name a few examples. When the government has no intention of seeking democratic approval for its program and can stay in power irrespective of its popularity—e.g., through the suspension of elections and/or the constitution—the population will try to stop the program via disruptive tactics. Typically these tactics would include violent

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[4]As Kreuger-Turan (1993, p. 362), for example, state: "Authoritarian governments are often in need of greater legitimacy since they replace governments which have come to power through ways known to and accepted by the electorate. As a result, in contrast to the suggestion that they can do anything they deem necessary, they are probably constrained from making decisions and adopting policies which would undermine their popularity." See, also, Stallings and Brock (1993) and Herrera and Graham (1994).

[5]The issue of government commitment to a policy reform program has been a major preoccupation of economists. See, for example, Rodrik (1989) who, inter alia, showed that lack of credibility vis-a-vis economic agents about the government's commitment to implementing a reform program could have significant welfare effects. That paper goes on to demonstrate the existence of ways—costly though—by which the government could signal its commitment.

protests and strikes by various popular and organized groups, and even insurrections, as well as exit.[6]

Thus, in our context, not to oppose a program is to support it. This, in short, constitutes an *informational rent* to a credible government. In ordinary parlance, it entails giving the government the benefit of the doubt and some time to implement its program as well as for the program to begin to show some effects. A government which behaves as if it faces political constraints will realize that a limit exists for this informational rent (the grace period or time allowance).[7]

The equilibrium behavior of the government depends, not surprisingly, on what we shall call the *state-society type*. First, with respect to society and the relationship among its individuals, we think of two different kinds of societies, namely: (i) collectivist; and (ii) individualistic. In this structure, a polarized society with conflicting interest groups becomes a special case of the individualistic society, and does not get treated separately in this paper. Second, with respect to governments, and their self-interested behavior, we think of two types, namely: (i) the utilitarian (social welfare-maximizing) government, and (ii) the self-indulgent (revenue-maximizing and effort-conserving) government. This results in four possible state-society types. But we conjecture a low incidence for the collectivist society, self-indulgent government; that is, a government emerging from a collectivist society is most likely a social-welfare-maximizing type. Among the remaining three state-society types, the individualist society, utilitarian government would seem unstable; namely, it is likely to be successfully "invaded" by a self-indulgent government. Hence one can focus on the other two state-society types: (i) collectivist society, utilitarian government; and (ii) individualist society, self-indulgent government.

But only for the second of these two state-society types is the political constraint likely to pose a serious problem. For consider a situation in which all the individuals in the country behave as if they are members of one big family with identical tastes, while the government,

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[6]Strikes, protests, and insurrections do not, of course, necessarily mean that the majority of the population does not support the government. A well-organized minority can give the impression of widespread opposition when, in fact, this is not the case. But a government typically remains free, in such circumstances, to test its (or its program's) popularity directly via a referendum or election.

[7]A complication arises from the fact that policy reform programs contain not only major elements (devaluation, financial liberalization, privatization, tax reform, etc.); but each of these major categories contains within it a multitude of sub-components. Often opposition builds up, from various segments of the population, to particular sub-components, despite clear support for the main elements of the program. A properly designed program would typically have guiding principles that direct the handling of adjustments during implementation to deal with such opposition.

however it came into power, behaves as if it aims to maximize the social welfare of the citizens. In brief, in this society, governments have complete allegiance to the group. We also think it realistic to assume that, in this collectivity, the citizens have full information about the ability of their government and of potential candidates to form the government. In this collectivity, then, the government's policies will be geared to maximizing social welfare. It becomes trivially true that, in pursuing policy reform, the government always behaves as if it faces a political constraint. Thus we shall focus only on the individualist society, self-indulgent government.

The key elements which operate in the analysis of this paper have been incorporated in numerous political-economy models in the literature. For instance, Dewatripont and Roland (1992a, 1992b, 1995)[8] have explored the implications for policy reform, and in particular the choice between big bang and gradualism as strategies, of the existence of *political constraints*, in situations where the government is the agenda-setter and there is risk of policy reversal when the outcome is considered bad by the populace.[9] As Dewatripont and Roland (1992a) realize, the existence of political constraints facing governments implementing economic reforms may appear puzzling to many economists, due to the possibility of designing compensation schemes that losers will find incentive compatible to accept.[10] One obvious

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[8]In this context, see, also Romer and Rosenthal (1979), Murphy, et al. (1992), Haggard and Webb (1994), and Rodrik (1994).

[9]Johnson (1994) has emphasized the role of legitimate authority and the handling of certain distributional costs that will arise during implementation as important factors explaining different degrees of success in implementation. Grindle and Thomas (1991) also seek to demonstrate "the critical nature of implementation" in policy reform and present an "interactive model," which they contrast with an approach they designate the "linear model." In the latter, once a decision to reform is taken, implementation proceeds and is either successful or unsuccessful. The interactive model underscores the complexity of the process and the role of decisionmakers during implementation as they respond to various pressures and challenges..

[10]Dewatripont and Roland (1992a) discuss, in particular, a model of restructuring where a reform-minded government faces sectors with a workforce that is heterogenous in terms of relative opportunities outside their current jobs, these opportunities being private information to individual workers. The government plan involves working out an incentive compatible exit bonus, productivity level, and wage increase inducing workers with the best relative outside opportunities to leave, without being able to observe individual effort disutilities. The reform plan is gradual in that the reform induces one group of workers to leave in the first period and the other group to leave in the second period. The political constraint arises from the requirement that a majority (or even unanimity) of workers approve a reform plan prior to its implementation. But, in this context, see, in contrast, Murphy, et al. (1992). As regards

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response stresses the cost of working out appropriate compensation schemes. Indeed, in the absence of complete information on losers and gainers, and in the context of distributional conflicts, compensation schemes may themselves face enormous political constraints. There is also a time consistency problem that makes it difficult for the Government to credibly commit itself, ex ante, to a compensation scheme.

Clearly appropriate compensation schemes can buy political support. But in our analysis, a failure to obtain adequate political support does not arise from lack of, or inability to credibly commit, budgetary funds to compensate those who must bear adjustment costs (transitional losers). For, in that case, one would have, for example, to address the problem of why the government cannot borrow to finance the adjustment cost needed or how the government can credibly commit to compensate the transitional losers out of additional tax receipts resulting from reform. Rather, in our model, a failure to obtain adequate political support emanates from a failure to convince enough potential supporters that the program will succeed and that the utility of the outcome of the program, given success, will be superior to the utility from the best alternative state of the world. Compensation, then, rather than merely buying support or helping with adjustment finance, in our model, would, more importantly, constitute a *signal* of the government's confidence in the appropriateness of its program. It would constitute a signal to obtain support for the program, influencing the computation of the probability that the program will succeed.

Asymmetrical information features prominently in discussions of government behavior. In our context, an important paper is that of Rogoff (1990) in which the political business cycle arises from temporary information asymmetries about the incumbent leader's competence in administering the public goods production process, even though in equilibrium the voters can deduce the leader's current competency by the degree to which he distorts tax and expenditure policies.[11]

Assumptions (explicit or implicit) about *state-society types* are elements of all discussions of government behavior. Typically, in the policy reform area, the state-society type assumed is individualist society, self-indulgent government, sometimes with special emphasis on the individualist society with polarized groups. The latter emphasis has, for example, provided the basis for some of the models explaining resistance to reforms or why socially optimal reforms get delayed, highlighting the role played by distributional conflicts. In that literature, delays and resistance get explained by: (i) powerful vested interests that block reforms that would preclude their continuing to reap economic rents from suboptimal policies;

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[10](...continued)
incentive compatible compensation schemes, a large literature exists, particularly for the so-called Clarke-Groves-Vickrey mechanisms; see, for example, Green and Laffont (1977), Groves (1979), and Caillaud, et al. (1988).

[11]Of relevance, also, are Alesina (1994, 1995).

and (ii) war of attrition between competing groups, each trying to shift the cost of reforms on to the other(s).[12] Fernandez and Rodrik (1991) have, in addition, emphasized that individual-level uncertainty about the outcome of a reform could lead to a status quo bias in policy choice and resistance to the reform, by even those who stand to gain.[13]

The rest of the paper is organized as follows. Section II looks at the individualist society with a self-indulgent government and shows the government maximizing its welfare subject to the political constraint. This constraint is that the government must obtain the approval of some specified minimum fraction of the population before it proceeds to implement its reform program. A signaling model, in which the contents of the program constitute the set of signals that the program will succeed, is presented and the equilibrium discussed. Section III presents the problem of an expert maximizing a net social benefit function subject to the political constraint and a "participation" constraint by the government. Finally, Section IV discusses some empirical aspects while Section V concludes.

II. Individualist Society, Self-Indulgent Government

Consider a situation in which the members of the society act as strict individualists and the government acts, in strict self-interest, as a revenue maximizer and effort minimizer. We consider here the case when there is a government in power, with a constitutional authority to design a program; that is, the government is the agenda-setter.

A. The Decision-Making Procedures

We assume the following stylized collective choice process. First, the government decides the option to place before the citizens. Second, each individual citizen decides whether to support the program or not. Third, given the constitutional or traditional procedure for making a decision in such a situation, the individual choices are collated and a decision reached as to whether or not the program is approved for implementation.

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[12]See, e.g., Alesina and Drazen (1991). In the general context of state-society relations, also of relevance are Bruno (1993), Frey (1994), Ng (1988), Noam (1980), Olson (1971), Pommerehne (1990), Pommerehne et al (1997), and Wittman (1995).

[13]Dewatripont and Rowland work with a model in which the government sets the agenda but is faced with political constraints; they consider the situations of decision making under both unanimity and majority rule. They stress uncertainty of outcomes, which in principle could include the uncertainty about distributional effects. They argue that high reversal costs, in case of a negative outcome, politically could work, ex ante, against a big bang; gradualism may be more acceptable because of the possibility of early reversal at a lower cost "after partial uncertainty resolution." They argue that, while the model of Fernandez and Rodrik (1991) does not contain aggregate uncertainty and neglects the option value of reversibility, in their model they focus on the problem of reform design to overcome the status quo bias.

Consider, first, the constitutional procedure for such decisionmaking. One could identify: (i) the constitutional system, and (ii) the voting rule. The former involves one or more of the following: (i) dictatorial/authoritarian system; (ii) representative democracy with a simple or a qualified majority; and (iii) direct democracy with a simple or qualified majority. Within this constitutional structure, a government making an important policy decision would be free to seek advice and consultation, for example, from an expert authority or layman (people's) committee. Moreover, in reaching a decision, the parties concerned would typically engage in bargaining and negotiation (see Table I).[14]

It is widely agreed in collective choice theory that decisionmaking rules and institutional arrangements (and hence decisionmaking procedures) matter.[15] Also, there is the view that individuals in the society may prefer using different decisionmaking procedures for different questions.[16] For example, for policy reform, the populace may prefer that an expert team make recommendations that the government simply implements without going to a parliament. Or they may prefer the experts' recommendations to be approved by a simple majority of parliament. We will simply assume throughout the paper that the constitutional system and voting rules are already established by law or tradition.

B. The Ordinary Citizens

We assume that the ordinary citizens (or voters) know the past performance of the current government, in economic management, and the recent economic history of the country, including the performance of other governments of the recent past. The citizens are also assumed to have prior beliefs about the competence of the government in power to design an appropriate program addressing the macroeconomic problems of the country and about the government's efficiency in managing such a policy reform program during implementation. Note that efficiency includes ability to avoid waste and corruption in government spending.

Suppose ϵ^H and ϵ^L denote high and low ability, respectively, of the government to solve the country's macroeconomic problems. This ability of the government, in turn, measures its competence to design an appropriate program as well as its efficiency in managing such a program during implementation. We assume that the citizen considers the probability that a program presented by the government will succeed (achieve its objectives

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[14]See, e.g., Pommerehne et al. (1997), for similar classification of mechanisms in another area. By law, some elements of a program may not need formal approval by any body outside the government, even in a democracy, especially when no new legislation is needed. In those cases, the government has authority to attempt implementation immediately it decides.

[15]See, e.g., Pommerehne (1990).

[16]See, e.g., Ng (1988) and Pommerehne et al (1997).

and solve the country's macroeconomic problems) as directly related to the probability that the government has high ability to solve the nation's macroeconomic problems. We thus define $P(\epsilon^H)$ as the probability that the government has high ability to solve the country's macroeconomic problems and $1-P(\epsilon^H)=P(\epsilon^L)$ as the probability that the ability is low.

Table 1. Decision-Making Procedures

Constitutional System	*Voting Rule*	*Advice/Consultation in Agenda-Setting*	*Negotiation Before "voter" Decision on Support of Agenda*
Authoritarian	—	1. Expert team 2. Layman team/interest groups 3. Discussion with close advisers	—
Representative democracy	1. Simple majority 2. Qualified majority	1. Expert team 2. Layman team/interest groups	Bargaining among representatives and interest groups
Direct democracy	1. Simple majority 2. Qualified majority	1. Expert team 2. Layman team/interest groups	1. Bargaining among interest groups 2. Canvassing individual "voters"

We posit that the set of *signals*, σ, used by the citizens to compute $P(\epsilon^H)$ consist of the elements of the program presented by the government. The government has an informational advantage over the typical ordinary citizen regarding the likelihood of success of the program in solving the country's problems. On seeing the program, each citizen computes the probability that it will succeed—that the government has the ability to solve the country's macroeconomic problems—given the set of signals (σ), using the prior probabilities and updating according to Bayes' rule as follows:

$$(1) \qquad P(\epsilon^H|\sigma)=P(\epsilon^H)\left[\frac{P(\sigma|\epsilon^H)}{P(\sigma|\epsilon^H)P(\epsilon^H)+P(\sigma|\epsilon^L)(P(\epsilon^L)}\right]$$

where the subscript, i, is dropped for convenience, in equation (1) and most other equations below.

Let the utility function of the representative citizen be:

$$(2) \qquad U_i = U_i(c_i, g_i, \tau_i)$$

where c_i and g_i represent private and public goods, respectively, consumed by individual i, and τ_i represents the effective income tax rate relevant to individual i. The citizen supports the government's program if :

$$P(\epsilon^H|\sigma)U(.) \succ U^0(\omega). \tag{3}$$

U(.) is the utility expected from the proposed program when fully implemented, and $U^0(\omega)$ represents the highest expected utility attainable by the representative citizen among all alternative scenarios he/she considers probable for the evolution of the economy.[17] Strictly speaking, the U's are present value calculations over some time horizon comprising T periods. But, for notational convenience, and without loss of generality, we do not specify the discounting process.

A major characteristic distinguishing members of the population is the utility derived from g. Thus, if one were doing a war-of-attrition model, it would be possible to group the citizens by their g/Y types—e.g., "low" and "high" g/Y types[18]. Of course, the allocation of g as well as the distribution of tax burden are, to some extent, political decisions.

If there is some uncertainty about the estimate U(.) or $P(\epsilon^H|\sigma)$, in equation (3), then some adjustment should be made as required. The uncertainty could relate to outcomes,[19] in which case U(.) should be adjusted, or it could relate to the confidence with which the individual holds her/his estimate of the probability of success of the program, in which case $P(\epsilon^H|\sigma)$ should be adjusted. When such uncertainty exists, a fairly straightforward way to make the adjustment in our model would be to multiply the left hand expression by a factor, say, $0 \prec \beta \leq 1$, so that equation (3) becomes:

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[17] $U^0(\omega)$ is similar to the *reversion expenditure* of Romer and Rosenthal (1979), *mutatis mutandis*.

[18] In this regard, it is interesting to compare our framework with that in Alesina and Drazen (1991). In our model, essentially, to solve the macroeconomic problem the tax level should be lowered and the saving rate raised. Hence the g/Y ratio must decline. If, as a result g must decline (this may not be necessary because Y rises), a major source of group conflict would be whose g gets reduced. Also, in terms of grouping of citizens by types, the characteristic would be the g/Y ratios—say taste for "high" and "low" equilibrium g/Y. In the Alesina-Drazen paper, taxes must be raised, so the battle is over the distribution of the additional tax burden and groups differ according to the utility loss they suffer from distortionary taxation.

[19] This seems the thrust of the paper by Fernandez and Rodrik (1991) who show that individual level uncertainty regarding the distribution of the gains and losses from a reform could be such that, even though a majority of the citizens would vote for the reform without this uncertainty, with the uncertainty the majority could compute the expected gains as lower than the expected losses and so fail to support the reform, even when individuals are risk neutral. The problem arises in the Fernandez-Rodrik model because of the existence of some individual-specific cost revealed to the individual and incurred only after the individual has decided to make the adjustment to the reform. At a sufficiently high level of this cost and with uncertainty as to the identity of gainers and losers from the reform, even risk-neutral individuals may prefer the status quo, when under certainty they would have preferred the reform.

(3a) $$\beta[P(\epsilon^H|\sigma)U(.)] \succ U^0(\omega), \qquad 0 \prec \beta \leq 1,$$

where β is the index of certainty, with the certainty with which the individual holds the probability (including of the utility) estimates increasing as β approaches unity.

Lack of credibility that a government, even if politically supported, will follow through and fully implement a reform program, has the effect of lowering β. Hence, in our model, if the public is sufficiently unconvinced about the government's commitment, the value of β may be so low that equation (3a) is not satisfied. In that case, the equilibrium behavior of the government will, in fact, be not to attempt implementation of the program before it has raised its credibility substantially in the eyes of citizens. We shall henceforth simply assume, with no loss of generality, that $\beta=1$ and hence that equation (3) is the relevant constraint.[20]

Another source of uncertainty for the citizen is the chance that the government itself could decide not to complete implementation of the program, not because of a lack of commitment to the program but because the government receives a signal during implementation that the program may be defective. The assumption being made in the paper is that assessment of the ability of the government (and hence the willingness to support the government) is, ipso facto, an assessment of the ability of the government to make the right decision as to whether to fully implement, modify, or abort the program, once implementation starts and additional information about program effects becomes available to the government.

C. The Government

The government is assumed to set the agenda, and to receive positive utility from revenue, G_R, but disutility from effort, θ_g. Let ψ denote some arbitrary fraction of the "voting" population,[21] ψ^* the minimum level of ψ required for approval of the policy reform

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[20]The dilemma of gradualism versus the big bang, under political constraint, can be viewed from the perspective of equation (3a). It has been argued that government credibility may be helped by a reform of large magnitude (see, e.g. Rodrik, 1989) implying that β may be higher the greater the speed of reform. In contrast, it has also been argued that it may be easier to obtain political support for a gradual than a big-bang reform program (and hence more rational for the government to select the gradualist strategy) in view of adjustment costs requiring compensation of some sort (see, e.g., the papers of Dewatripont and Roland), implying that the ratio $U(.)/U(\omega)$ is lower with a big bang than with a gradualist approach. Political support thus hinges on the outcome of these opposing tendencies—on β and on $U(.)/U(\omega)$ respectively—to "force" the right speed in equilibrium.

[21]We use "voter" here to signify the active population in matters of this kind. A "voter"may not literally vote, outside of a democracy. But, as long as the citizen stands ready to express

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agenda for it to be fully implemented, and m the size of the voting population. Define a function χ which assigns the value 1 to all voters for which equation (3) holds and the value zero to all voters for which equation (3) does not hold. Then the problem of the self-interested, self-indulgent, government can be stated as:

(4) $$\text{Maximize } W = W(\tau, \theta_g)$$

subject to

(4a) $$\chi(\tau, \theta_g) - \psi^* m \geq 0$$

The constraint (4a), the political constraint, simply states that the sum of all those who vote "yes" to the program should equal or exceed $\psi^* m$. The government solves this problem for $\tau=\tau^*$ and $\theta=\theta_g^*$ and presents the associated program, $\sigma^* = (\tau^*, s^0, r^*, g^*, c^*, Y^*)$ for example,[22] as a set of signals to the citizens, to generate support for the program. It is this set of signals that the citizens use to compute $P(\epsilon^H|\sigma)$, the probability that the program will succeed.

If the program will be implemented over several time periods, the speed and sequencing of the reform could influence the calculation of the probability of success and the expected utility if the program is successful.[23] This could be easily incorporated into the current analysis by having signals dated, so that each signal, say τ, would now be represented by up to T parameters, say $\tau_1 \ldots \tau_T$, if there are T possible periods of implementation of the program. Instead of say six elements of $\sigma(.)$ there could, thus, in fact be up to 6T elements, each element (a dated signal) being effectively a different signal. We shall ignore this complication, without loss of generality.

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[21](...continued)
his/her voice openly to influence the government decision, that person is considered a "voter." We also do not get into the issue here of eligibility versus actual turnout of voters, as in the Romer-Rosenthal (1979) paper. In essence, we assume that actual "turnout" is 100 percent.

[22]In the example given, $r*$ is the rate of interest to achieve the desired saving rate, s^0, given the level of income, Y^*, expected from the program.

[23]Sequencing of reforms plays an important role in the analysis of Dewatripont and Roland (1995) and, in that context, the well-known argument that appropriate sequencing could serve as an effective means of building a constituency for reform enabling more painful reforms in later periods.

D. Equilibrium

In equilibrium:[24] (i) the government chooses its set of signals according to equations (4)-(4a) and follows the behavioral rule of equations (5a)-(5c) below; (ii) each citizen supports the program according to equation (3); (iii) the program satisfies the condition for approval under the constitutional or traditional system according to equation (4a); and (iv) beliefs of citizens are updated according to equation (1). In this equilibrium, the government sets τ and θ_g such that, assuming

(5a) $$\tau > 0, \quad \theta_g > 0$$

the following hold:

(5b) $$\frac{W_1}{\chi_1} = \frac{W_2}{\chi_2} \quad \text{or} \quad \frac{W_1}{W_2} = \frac{\chi_1}{\chi_2} \quad \text{and}$$

(5c) $$\lambda\left[\chi(\tau,\theta_g) - \psi^* m\right] = 0,$$

where

(5d)[25] $$\lambda = \left[\frac{\tau W_1 - \theta_g W_2}{\theta_g \chi_2 - \tau \chi_1}\right] \geq 0$$

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[24]The equilibrium concept here is *perfect bayesian*; see Fudenberg and Tirole (1990).

[25]Alternatively, assuming that $\tau > 0$ and $\theta_g > 0$, we have $\lambda = -\left(\frac{W_1}{\chi_1}\right) = -\left(\frac{W_2}{\chi_2}\right)$. Note that:

$$W_1 \equiv \frac{\partial W}{\partial \tau} = \frac{\partial W}{\partial G_R}\left[\tau \frac{\partial Y}{\partial \tau} + Y\right]$$

$$W_2 \equiv \frac{\partial W}{\partial \theta_g}$$

$$\chi_1 \equiv \frac{\partial \chi}{\partial \tau} = \frac{\partial \chi}{\partial U}\left[\frac{\partial g}{\partial \tau}\frac{\partial U}{\partial g} + \frac{\partial c}{\partial \tau}\frac{\partial U}{\partial c}\right] \quad \text{and}$$

$$\chi_2 \equiv \frac{\partial \chi}{\partial \theta_g} = \frac{\partial \chi}{\partial U}\left[\frac{\partial g}{\partial \theta_g}\frac{\partial U}{\partial g}\right].$$

Note that U refers to the utility of the citizens.

and W_j or χ_j is the partial derivative with respect to the jth variable.[26]

Now W_1 is the marginal welfare obtained by the government from a marginal increase of taxation (and W_2 for reduction in effort)—and vice versa for tax reduction (and effort increase); χ_1 the marginal amount of support obtained from a marginal reduction in taxation (χ_2 for increased effort)—and vice versa for tax increase (and effort reduction); and λ is the shadow price of obtaining support (via reduced taxation or increased effort in our model) in terms of welfare sacrificed by the government.[27] Thus, a simple but important element of the equilibrium is the equimarginal principle of equation (5b); namely, the government equates shadow prices, in terms of welfare forgone, of obtaining support via reduced taxation or increased effort.

In condition (5c), if $\lambda > 0$, then $\chi(.) - \psi^* m = 0$; the government maximizes its welfare by obtaining the minimum necessary support to assure implementation. But if $\lambda = 0$ in equilibrium then the government reaches its maximum welfare at a level of support greater than the minimum required. We would expect the normal situation to be one in which $\lambda > 0$; in other words, so long as the government can raise τ or lower θ_g without losing support it will do so. Hence, in equilibrium, the government does only what is necessary to get the minimum

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[26]Form the Lagrangian with equations (4) and (4a) and derive the Kuhn-Tucker conditions as follows:

$$L = W(\tau, \theta_g) + \lambda\left[\chi(\tau,\theta_g) - \psi^* m\right]$$

A(1a) $W_1 + \lambda\chi_1 \leq 0$ **A(1b)** $W_2 + \lambda\chi_2 \leq 0$

A(2) $\chi(\tau,\theta_g) - \psi^* m \geq 0$

A(3a) $\tau \geq 0$ **A(3b)** $\theta_g \geq 0$

A(4) $\lambda \geq 0$

A(5a) $\tau(W_1 + \lambda\chi_1) = 0$ **A(5b)** $\theta_g(W_2 + \lambda\chi_2) = 0$

$\lambda\left[\chi(\tau,\theta_g) - \psi^* m\right] = 0$

A(6)

From A(5a)-A(5b)—the complementary slackness condition—we solve for λ of equation (5d). Given the assumptions stated as equation (5a) in text, equations A(5a)-A(5b) also imply condition (5b) in text.

[27] In addition, $\lambda\chi_1$ is the marginal imputed cost of reduced taxation (to buy a marginal unit of popular support) in terms of welfare sacrificed by the government ($\lambda\chi_2$ for increased effort).

required support. We conclude that, in equilibrium, the shadow prices of taxation and effort will be positive.

In principle, it is quite possible for the program to be approved even if the government is judged to be a low efficiency government, as long as citizens generally estimate that they would still be better off supporting the program than not. The likelihood of a program submitted by a government estimated to be one of low ability being approved would clearly depend substantially on the alternatives open to the citizens and thus on $U(\omega)$. The more desperate the citizens (the lower is $U(\omega)$), the more likely that a low ability government could produce a program that receives the required political support to begin implementation.

III. Expert Assistance and Equilibrium

A rational government suspecting that it has a prior rating of low ability, and committed to solving the macroeconomic problem of the country, should be observed taking actions to improve its $P(\epsilon^H|\sigma)$ rating. Such a government could provide a set of supplementary signals, say σ_s, to augment σ and thereby raise the updating factor—in brackets in equation (1). The new probability that the program will succeed will be the probability $P(\epsilon^H|\sigma,\sigma_s)$ computed exactly as in equation (1), mutatis mutandis.

For example, the government could have the program designed by an expert group outside the government and include that information as one of the supplementary signals. There is some empirical evidence that this could be favorably received by the populace, especially when that outside expert group is composed mainly of other citizens of the country.[28] In addition, the government could set up a special implementation team in order to improve the citizens' estimate of the probability that the government will be highly efficient in the implementation of the program. Another supplementary signal is some form of compensation of those likely to be adversely affected by the program during some transitional period. In this vein, the government could propose that some portion of g would comprise real expenditure on social safety net programs.

An informed expert could be invited by both the gvernment and the citizens to design a program (acting as a quasi-utilitarian) acceptable to both parties (the government and citizens). For such an expert, the problem can be stated as:

(6) $$\text{Maximize } Z = Z(c, g, \tau, \theta_g)$$

subject to

(6a) $$\chi(c,g,\tau,\theta_g) \geq \psi^* m$$

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[28]See, e.g., Pommerehne, et al (1990).

(6b) $$W(c,g,\tau,\theta_g) \geq W^0$$

where W^0 is some reservation utility that must be guaranteed the government to encourage it to accept a program that would, inter alia, resolve the nation's macroeconomic problem. Equation (6b) is tantamount to a participation constraint, with the government being the participant concerned. We can think of Z as a *net social benefit function*. The expert, using all the preference revelation information on both parties at her/his disposal, can, in equilibrium, set c, g, τ, and θ_g, such that the following hold:[29]

(7a) $$c>0,\ g>0,\ \tau>0,\ \theta_g>0$$

(7b) $$\frac{W_1}{\chi_1}=\frac{W_2}{\chi_2}=\frac{W_3}{\chi_3}=\frac{W_4}{\chi_4}$$

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[29]Form the Lagrangian, with multipliers λ and μ, specify the Kuhn-Tucker conditions (not given here), assume that c, g, τ, and θ_g are all strictly positive, and obtain, from the complementary slackness condition, the following:

(B1)
$$\lambda=\Upsilon_{12}-\mu\Gamma_{12}=\Upsilon_{23}-\mu\Gamma_{23}=\Upsilon_{34}-\mu\Gamma_{34}=\Upsilon_{13}-\mu\Gamma_{13}=\Upsilon_{14}-\mu\Gamma_{14}=\Upsilon_{24}-\mu\Gamma_{24}$$

where

B(2a) $\Gamma_{12}=\left[\frac{W_1-W_2}{\chi_1-\chi_2}\right]$ **B(2b)** $\Gamma_{23}=\left[\frac{W_2-W_3}{\chi_2-\chi_3}\right]$ **B(2c)** $\Gamma_{34}=\left[\frac{W_3-W_4}{\chi_3-\chi_4}\right]$

B(2d) $\Gamma_{13}=\left[\frac{W_1-W_3}{\chi_1-\chi_3}\right]$ **B(2e)** $\Gamma_{14}=\left[\frac{W_1-W_4}{\chi_1-\chi_4}\right]$ **B(2f)** $\Gamma_{24}=\left[\frac{W_2-W_4}{\chi_2-\chi_4}\right]$

and

B(3a) $\Upsilon_{12}=\frac{Z_2-Z_1}{\chi_1-\chi_2}$ **B(3b)** $\Upsilon_{23}=\frac{Z_3-Z_2}{\chi_2-\chi_3}$ **B(3c)** $\Upsilon_{34}=\frac{Z_4-Z_3}{\chi_3-\chi_4}$

B(3d) $\Upsilon_{13}=\frac{Z_3-Z_1}{\chi_1-\chi_3}$ **B(3e)** $\Upsilon_{14}=\frac{Z_4-Z_1}{\chi_1-\chi_4}$ **B(3f)** $\Upsilon_{24}=\frac{Z_4-Z_2}{\chi_2-\chi_4}$

Given λ and μ, (7b) and (7c) are consistent with (B1). That is, if equation (7b) holds, then $\Gamma_{12}=\Gamma_{23}=\Gamma_{34}=\Gamma_{13}=\Gamma_{14}=\Gamma_{24}$, and if equation (7c) holds then $\Upsilon_{12}=\Upsilon_{23}=\Upsilon_{34}=\Upsilon_{13}=\Upsilon_{14}=\Upsilon_{24}$.

(7c) $$\frac{Z_1}{\chi_1}=\frac{Z_2}{\chi_2}=\frac{Z_3}{\chi_3}=\frac{Z_4}{\chi_4}$$

(7d) $$\lambda\left[\chi(c,g,\tau,\theta_g)-\psi^* m\right]=0$$

(7e) $$\mu\left[W(c,g,\tau,\theta_g)-W^0\right]=0$$

where λ and μ are the Lagrange multipliers. Again we have equimarginal conditions that are intuitively obvious. The relationship between λ and μ would depend on certain assumptions one finds reasonable to make. For instance, we can reasonably assume that the expert allows $\lambda>0$, so that the political constraint binds, and, in return, deprives the government of all informational rent, so that $\mu>0$; with the latter assumption, the government receives just enough τ and relief from θ_g to attain the minimum welfare. Otherwise $\mu=0$, and the government succeeds in enjoying a welfare level higher than its reservation level.

IV. Some Empirical Aspects

In recent years, there has been an explosion of case studies on economic policy reform.[30] These studies have, not surprisingly, had several objectives. Sometimes they merely recount the macroeconomic achievements of programs and the economic factors behind those developments. They might, in such cases, pursue one or two political economy themes, most notably, developments in income distribution and/or the importance of government commitment to reform. At other times, the studies are used for supporting or criticizing particular approaches to or aspects of reform, for example: monetarism versus structuralism; the shortcomings and/or strengths of the overall technical framework/model used in the program design; the importance of the decisionmaking process or of institutional capacity to implement complex programs; authoritarian versus more democratic approaches to policy making and implementation; big bang versus gradualism; and sensitivity (or the lack thereof) to poverty alleviation as an integral part of a policy reform program.

Although we believe that it would be interesting and useful to look at one or two of these case studies, against the backdrop of the analysis in this paper, such an attempt may prove sensitive to country authorities. Hence we make no attempt at such a review. Rather we briefly state some general implications of our analysis as well as some ways in which governments mobilize support for policy reform programs.

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[30]Among the books worth reviewing are Bates and Krueger (1993), Bruno (1993), Corbo and Suh (1992), Cornia and Helleiner (1994), Haggard and Kaufman (1992), Haggard and Webb (1994), Nelson (1990), Ranis and Mahmood (1992), Taylor (1993), Thomas, et al. (1991), and Williamson (1993).

A. Political Constraints and Success in Policy Reform

We have argued that, once they become committed to a program of policy reform, governments behave, in equilibrium, as if they face a political constraint, namely the need to obtain some specified minimum support from the population. In this light, rational governments will know that their population will use certain signals to assess the probability of success of the program, or, alternatively put, the ability of the government to solve the country's macroeconomic problem. A rational government will therefore send signals with a view to soliciting the required support of the population. We have argued that, in this context, the elements of the program will constitute the main set of signals that the population will use to compute the probability that the program will succeed. A rational government for which the priors of citizens are very pessimistic may need to supplement the main set of signals by providing an additional set of signals giving further details on how the program was designed and the organization for its implementation. A rational government will therefore look for indications of its prior rating by the population, in order to determine whether it needs to send supplementary signals of its ability (and of its program) to solve the nation's macroeconomic problem.

Our analysis implies that if governments undertaking policy reform behave randomly with respect to recognition of political constraints, the ones that succeed in implementing their programs and successfully stave off attempts at reversal or substantial modification, without coercion, will tend to be those behaving as if they face political constraints.[31] This in no way implies that satisfying political constraints and implementing a program necessarily guarantees that the program will succeed in solving the country's macroeconomic problem. For instance, in our framework, the government could design a program with a very low saving rate (that is, the s^0 contained in the program could be lower than that needed to solve the nation's macroeconomic problems). Programs designed by so-called populist regimes would seem to experience this kind of shortcoming. The distributional objectives of those programs result in low saving rates relative to those needed for macroeconomic stability.[32]

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[31]This is a straightforward application of evolutionary theorizing. Dewatripont and Roland (1995), for example, argue that big-bang strategists underestimated the political constraints of transition to a market economy, in the Eastern European economies, and that, as a result, all of the big-bang programs experienced substantial modification, rejection, or delays. While this may be the case, it should be noted that our analysis does not state ex ante whether a gradualist or a big-bang strategy is more likely to be optimally selected by a rational government maximizing its welfare subject to a political constraint. It would all depend on the equilibrium in the particular political context.

[32]For a discussion and case studies of such programs, see the contributions in Dornbusch and Edwards (1992). Populism is, from a macroeconomic perspective, about redistribution through high real wages, high employment, and accelerating growth. But the policies typically

(continued...)

What it does imply is that when a program gets implemented and certain well defined subset of the population loses, those groups may attempt to have some elements of the program reversed or new policies put in place to modify the outcomes (especially distributional outcomes). If the pro-reversal groups are politically small (or weak), ignoring them does not violate observance of the political constraint. When they are not politically weak, they will force observance of the political constraint by extracting some form of compensation from those who gained from the reform or by ensuring reversal of elements of the program.

B. Mobilizing Support for Policy Reform

Related to the above, our analysis suggests that governments will be seen taking actions to mobilize support for policy reform. Five such actions seem common, namely: (i) consultation and advice from outside parties; (ii) maintaining the option to reverse or revise the program after experience with partial implementation; (iii) judicious attempts at balancing distributional concerns; (iv) safety net measures as integral elements in a program; and (v) ensuring consistency of overall policy strategy with national values and idealogy. We briefly discuss each of these.

Consultation and advice

As indicated before, use of experts from prominent organizations can prove particularly useful to a policy reform minded government that has, nevertheless, lost credibility with the populace (perhaps because it took too long to come up with a serious program of action), or to a regime that has just taken over. Any type of regime can invite a group of experts to draw up a policy reform program, to assure the citizens of the soundness of such a program, and thereby gain the necessary political support for implementation. The government could, alternatively, consult various interest groups (business groups, labor organizations, agricultural groups, university professors, etc.) and seek their reactions to its draft program. In the process, the preferences of these groups become evident, allowing the government the opportunity to come up with a consensus program that, at the same time, addresses the underlying problem(s) of the country.

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[32](...continued)
result in serious bottlenecks for the economy—partly as a result of strong expansion of demand for domestic goods (leading to accelerating inflation) and a growing "shortage" of foreign exchange. Capital flight and currency substitution typically accompany these developments. We encapsulate all these negative factors, in our framework, in the saving rate being "low."

Reversibility and revision options

Major policy reform programs often get introduced in crises. In such circumstances, the citizens often find it optimal, in a world of uncertainty, to grant authority to a government they consider credible to begin implementation in a way that ensures reversal or modification will not be costly (if the program turns out unpopular). A government may, therefore, as part of its agenda-setting, give an explicit or implicit commitment that a program it has put forward will be revised or reversed if it proves unpopular during implementation. In this way, the equilibrium program is attained via a quasi-evolutionary process that also controls implementation costs.

Balancing distributional concerns

As noted repeatedly in discussions of policy reform, distributional conflicts could cause delays in implementing reforms. Typically, where countries succeed in finding consensus solutions, the programs include various devices that address distributional concerns, in order to secure the support of various groups. So-called heterodox stabilization programs[33]—for instance, combining major monetary and fiscal reforms and price controls with exchange rate as a nominal anchor—could be seen as devices to balance distributional concerns of various groups, in the interest of obtaining consensus and limiting implementation costs. Other examples include ceilings on wage increases, on taxation of certain groups, on the speed of price liberalization, and on the adjustment of prices of parastatal goods and services. The challenge for policy formulation is to control the associated allocative inefficiencies of incomplete adjustment, and prevent degeneration of such policies into wasteful patronage activities or populism. For example, taxes and expenditures outside the normal budgetary processes (extrabudgetary funds) designed specifically to favor certain groups in order to obtain their support could erode a policy of fiscal restraint and make difficult assessment of effective taxation and protection of different commodities and services, while further opening doors to rent-seeking (corrupt) activities.

Safety-net programs

Safety-net programs have become major devices with which governments try to stave off social unrest and garner political support from what can be a large portion of the population.[34] Such programs are poverty alleviation and income maintenance programs

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[33]See Bruno (1993) for a discussion and case studies of such an approach to stabilization.

[34]For analysis and case studies, see, e.g., Graham (1994) and Stewart (1995).

targeted to the lowest income groups of the population. Temporary public works employment programs or demand-based social funds are examples of safety nets.[35]

Ensuring consistency of strategy with national values and ideology

When governments want political support for major policy reforms, they try to demonstrate that the reforms conform to, or do not violate, fundamental values (and/or ideologies) of the societies; for these values constitute the primary focal points for economic policy. Hence when governments become unsure about the consistency of their proposed reforms with the values and ideological focal points of the society, they typically launch a frontal attack on these focal points to convince their citizens that the focal points are themselves inconsistent with achieving a satisfactory (high) level of economic welfare. Policy strategies which have required such frontal attacks to obtain political support have included privatization, reduced government controls, liberalization of markets, and a shift from import substitution to more outward-oriented policies. Until such ideological conversion of a relevant "majority" has taken place, governments do not usually succeed in implementing and sustaining reforms based on the "new" ideology. The equilibrium behavior of governments—launching a frontal attack on the extant ideology—simply reflects recognition of this point.[36] Of course, the government itself may have had to go through an ideological awakening, perhaps induced by popular protests (the citizens being "ahead" of their government) or by concerted external influences.

The need to make fundamental strategic changes in policy is clearly one important reason why countries delay policy reform until crises. This should not surprise, since called for is a paradigm change; one simply sees the Kuhnian story being repeated in a different context. This story informs us that, first, attempts will be made to reform within the extant ideological framework; the repeated failures of different experiments help build support for a fundamental change. The crisis then provides the appropriate timing when, as it were, $U(\omega)$ has reached a very low level making resistance to fundamental reforms almost nonexistent.

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[35]See, for example, the discussion of Bolivia's Emergency Social Fund by Graham (1994, pp.54-82), which she credits for increasing the political sustainability of reform as well as contributing to poverty reduction.

[36]Vested interests usually complicate the problem for governments. But such interests do not usually prove difficult to handle, once the basic ideological battle has been won; this often happens only via a quasi-evolutionary process. For instance, marketing boards get quickly dismantled, once enough evidence has been accumulated to demonstrate their *net* economic costs to the relevant majority. Until then, at best, support usually can be obtained only for "reform" of the boards.

V. CONCLUDING REMARKS

We have argued that rational governments, in designing their policy reform programs, behave, in equilibrium, as if they face political constraints in implementation. In other words, to reduce implementation costs and make insignificant the risk of policy reversal, a government prefers to have the support of citizens for its policy reform program, without coercion. The extent of this support depends on the estimate, by a constitutionally or traditionally determined minimum proportion of the population, that the program will succeed and that the outcome will be in their individual self-interest. This politically constrained equilibrium behavior of rational governments prevails, irrespective of the political or constitutional system in the country. The equilibrium behavior of the government, in turn, has implications for the content of the program, because the program itself contains the signals used by the individuals in the society to estimate the probability that the program will succeed.

Many policy reform programs, perforce, contain far more policy instruments (and targets) than we have included in our framework here, because resolution of the country's macroeconomic problems often require detailed action on many fronts, not only to achieve stabilization but also to address deep-seated structural dislocations and inefficiencies in the economy. Even though the government welfare function and the political support function will each contain many more arguments, the basic principles we have put forward would apply to these cases as well. In particular, equilibrium would entail behavior as if subject to political constraints; signaling will occur, with the contents of the program constituting the main signals; and choice of instrument and target levels will be in conformity with the equimarginal principle of equating shadow prices, in terms of welfare foregone, of obtaining support via differential use of various instruments and targets. A government may arrive at this equilibrium only via a quasi-evolutionary process, involving search and trial and error.

We have concerned ourselves, in this paper, only with the positive aspects of the subject matter. One does not need to be an expert in backward induction to deduce the main policy implication of our analysis. If policy reform programs "selected" for survival are those exhibiting characteristics of the equilibrium we have discussed, and if governments sooner or later are impelled by circumstances to recognize political constraints (if they want their programs fully implemented and to survive attempts at reversal or fundamental modification) then governments can choose from the outset to behave as if they face political constraints and maximize their welfare accordingly. The alternative is to arrive at the equilibrium through fumbling and hence having to incur what might be called *fumbling costs*, namely, coercion costs, reversal costs, and costs of social tension and upheavals.

One could argue that some fumbling was inevitable in the past, because of limited analytical understanding and empirical experience (including case studies). It is not clear that one could say the same today. In this regard there are two relevant issues for thought. One is whether, in the real world of incomplete information and uncertainty, some degree of search (including via trial and error) may not be unavoidable, even if a government tries to avoid the fumbling path by consciously trying to behave rationally from the outset. The other, indeed

related, issue has to do with *path dependence*. Does the path to the "equilibrium" matter, and if so how?

We do not want to delve deeply into these issues here. But we would conjecture that search is unavoidable and would be an element of optimal behavior (as compared with fumbling), and that the path to equilibrium matters. Indeed, the *process* by which one reaches equilibrium is a worthwhile area of research, from both a positive and normative perspective. We would also conjecture that the *path* to some given macroeconomic equilibrium over some given period of time will entail greater social costs of implementation with fumbling than with a conscious attempt (including via optimal search) to behave "rationally" as we have used the term here. In addition, we would conjecture that the *stable equilibrium* would typically take longer to reach with fumbling than with a conscious attempt to behave rationally, where stability is defined in terms of ability to survive attempts at reversal. All of this, of course, has implications for the important question of optimal sequencing in mulifaceted policy reform under uncertainty, asymmetrical information, and political constraint.

Finally, it is worth underscoring that a rational government remains fully committed to achieving the main economic objectives of its reform program. The object of the rational government involves attaining these objectives while satisfying the political constraints.

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