It is widely believed that political factors (elections, partisan motives, and bureaucracy) are crucial in determining economic policies and in turn economic outcomes. The early literature based on rational expectations focused on the link between elections and fiscal policy. For instance, Rogoff and Sibert (1988) showed how the incumbent political party manipulates policy instruments in an attempt to increase its re-election probability. Persson and Svensson (1989) and Alesina and Tabellini (1990) developed two-party models to show how fiscal and public debt policy can be used strategically by the incumbent party to influence the choices of its successor. In Lockwood et al. (1996), electoral uncertainty reduces the marginal cost of public debt and this leads to relatively loose fiscal policy before elections, in the form of over-spending, under-taxing and over-borrowing.

More recently, the emphasis has been on economic growth. There is robust empirical evidence that sociopolitical instability affects economic growth. This is a rich literature that includes Barro (1991), Easterly and Rebelo (1993), Barro (1996), Levine and Zervos (1996), Alesina and Perotti (1996), Alesina et al. (1997), Rodrik (1998), Devereux and Wen (1998), Darby et al. (1998) and many others (for a recent survey, see Drazen (2000, chapter 11). Most of these papers use various sociopolitical indices (measures of democracy, political violence, government duration, and income inequality) in ad hoc growth regressions to see how sociopolitical factors affect economic growth.

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1 We thank Tryphon Kollintzas, Sajal Lahiri, Ben Lockwood, Jim Malley, Thomas Moutos, S. Mansoob Murshed, Simon Price, Euclid Tsakalotos, Panos Tsakloglou and Vangelis Vassilatos for comments and discussions. We also thank seminar participants at the IESG Easter mini-conference, University of Warwick, April 1999. All errors are ours.

2 For a recent survey of the literature on politics and macroeconomics, see Drazen (2000).
The present chapter formalizes the link among electoral uncertainty (in the form of re-election probabilities), fiscal policy and economic growth. To do so, it builds upon previous work by Alesina and Tabellini (1990), Lockwood et al. (1996), Devereux and Wen (1998), Persson and Tabellini (1999a) and Asteriou et al. (2000). The setup is a two-party, general equilibrium model of optimal growth and fiscal policy, in which the elected party chooses distorting taxes to finance government consumption expenditures. We use a fully dynamic infinite-time horizon model, so that we do not ignore any important dynamic implications. Within this politico-economic setup, we study how re-election probabilities (interpreted as a measure of political uncertainty) affect the conduct of fiscal policy, and in turn how fiscal policy affects private investment and economic growth.

The model is as follows. We consider a closed economy with a private sector (households and firms) and two political parties that can alternate in power because of elections. Households consume, work and save in the form of capital. Firms use capital and labour to produce a single good. The elected political party forms a government that finances its public consumption services by taxing households’ income. The dynamic way we model the electoral system is similar to that in Lockwood et al. (1996). That is, the elected party chooses economic policy while in office by playing Stackelberg vis-à-vis private agents and Nash vis-à-vis the other party, which may regain power in the next election with a non-zero probability. Since optimal tax policies are inherently time-inconsistent, we solve for Markov strategies, and hence a Markov-perfect general equilibrium in which optimal policies are time-consistent. We work as follows: we first solve for a competitive equilibrium, given any (Markov) fiscal policy; then, we endogenize fiscal policy by solving for Markov strategies.

There are two main results for economic policy. First, the optimal income tax rate is flat over time. This is a version of Barro’s (1979) tax smoothing result: it is optimal to smooth out tax distortions over time. In other words, it is optimal for policymakers to keep the tax rate (and the associated government expenditures-to-output ratio) constant over time, even if the underlying general equilibrium model is non-linear and economic policy is the outcome of a game between two political

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3 See our companion papers Asteriou et al. (2000) and Economides et al. (2001) for a comparison of these models. See also Persson and Tabellini (1999a) for a survey of the literature on political uncertainty, economic policy and economic growth.

4 Thus, optimal policies depend on the current value of the relevant state variables. For the properties of Markov strategies and Markov-perfect equilibria in macroeconomic setups, see Obstfeld (1991).
parties that alternate in power, rather than the choice of a single benevolent government. Second, the optimal income tax rate (and the associated government expenditures-to-output ratio) decreases with the probability of getting reelected. In other words, when re-election becomes less certain, policymakers find it optimal to go for a larger public sector. In turn, the higher tax rate - required to finance the larger public sector - reduces private capital accumulation and economic growth. In other words, electoral uncertainty can distort the size and role of government. This is consistent with empirical evidence of a negative effect of “too large” government sizes upon economic growth in OECD economies (see Tanzi and Schuknecht, 1997, 2000).

Asteriou et al. (2000) also provide direct empirical support for our results. Specifically, by using UK data, they confirm that lower ex ante re-election probabilities (calculated by using opinion polls) lead to lower economic growth. Note that since they use the incumbent’s popularity as a measure of ex ante re-election probabilities, they provide evidence different from that of the literature that has mostly used ad hoc indices of sociopolitical instability.

The mechanism that drives our results is as follows. When there is electoral uncertainty (in the sense that there is a non-zero probability of being out of power in the next election) and the political parties do not care enough about economic outcomes when out of power (specifically, we need to assume that the parties care about economic outcomes less when out of power), they effectively face a quasi finite time-horizon. As a result, the lower the probability of getting reelected, the smaller the effective discount rate, the less the incumbent party values capital accumulation, and the more it spends on current unproductive activities. In other words, electoral uncertainty induces policymakers to follow shortsighted, inefficient policies; here, the inefficiency takes the form of a relatively large government sector with short-term benefits, high tax burden and eventually low economic growth. Note that, in general, one needs more than one imperfection to generate such inefficiency. Here, it is electoral uncertainty in combination with the assumption that political parties care relatively little about economic outcomes when out of power (see also Economides et al. (2001)).

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5 Laver and Hunt (1992) provide evidence from the political science literature that this is indeed the case in most democratic countries. See Lockwood et al. (1996) for details.
The rest of the chapter is as follows. Section 1 presents the theory. Section 2 reviews the empirical literature. Section 3 concludes with a general discussion.

1 A POLITICO-ECONOMIC MODEL OF OPTIMAL GROWTH

Consider a closed economy with a private sector and two political parties. The private sector consists of a representative household and a representative firm. The household consumes, works and saves in the form of capital. The firm produces a single good by using labour and capital. The political party in power forms a government that finances public consumption services by taxing the household’s income. All economic policy instruments are endogenous, i.e. optimally chosen. We assume discrete time and infinite time-horizons. We will first solve the private agents’ optimization problems, for any given economic policy. Then, economic policy will be determined by a Nash game between two alternating political parties.

Households

The representative household maximizes intertemporal utility:

\[ \sum_{t=0}^{\infty} \beta^t u(c_t, g_t) \]  

Where \( c_t \) and \( g_t \) are respectively private consumption and government consumption at time \( t \), and the parameter \( 0 < \beta < 1 \) is the discount rate. The instantaneous utility function is increasing and concave, and satisfies the Inada conditions. For algebraic simplicity, we assume that \( u(.) \) is additively separable and logarithmic. Thus,

\[ u(c_t, g_t) = \log c_t + \delta \log g_t, \]  

where the parameter \( \delta \geq 0 \) is the weight given to government consumption relative to private consumption.

The household rents its beginning-of period capital, \( k_t \), to the firm and receives \( r_t k_t \), where \( r_t \) denotes the return to capital at \( t \). It also supplies inelastically
one unit of labour services per unit of time and receives labour income, \( w_t \). Further, it receives profits, \( \pi_t \). Thus, the household’s flow budget constraint is:

\[
c_t + k_{t+1} = (1 - \theta_t)(r_t k_t + w_t + \pi_t)
\]  

(2)

where \( 0 < \theta_t < 1 \) is the income tax rate. The initial capital stock, \( k_0 \), is given. For algebraic simplicity, we assume full capital depreciation.

The household acts competitively by taking prices, tax policy and public services as given. From the household’s viewpoint, the state at any time \( t \) can be summarized by the predetermined capital stock, \( k_t \), and the current tax rate, \( \theta_t \). We will solve this optimization problem by using the technique of dynamic programming. Then, let \( V(k_t; \theta_t) \) denote the value function of the household at time \( t \). This value function must satisfy the Bellman equation:

\[
V(k_t; \theta_t) = \max_{c_t, k_{t+1}} \left[ \log c_t + \delta \log g_t + \beta V(k_{t+1}; \theta_{t+1}) \right]
\]  

(3)

Using (2) into (3) for \( c_t \), the optimality condition for \( k_{t+1} \) is:

\[
\frac{1}{c_t} = \beta \frac{V(k_{t+1}; \theta_{t+1})}{c_t}
\]  

(4a)

while the envelope condition for \( k_t \) is:

\[
V_k(k_t; \theta_t) = \frac{(1 - \theta_t)r_t}{c_t}
\]  

(4b)

**Firms**

Technology takes a Cobb-Douglas form. The production function is:

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6 Assuming inelastic labour supply does not affect our main results.

7 See also Sargent (1987, chapter 1). Equations (4a)-(4b) give the standard Euler equation, i.e.

\[
\frac{c_{t+1}}{c_t} = \beta(1-\theta_{t+1})r_{t+1}.
\]

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\[ y_t = A k_t^\alpha \]  

(5)

where \( A > 0 \) and \( 0 < \alpha < 1 \) are parameters.

At any time \( t \), the representative firm maximizes profits, \( \pi_t \):

\[ \pi_t = y_t - r_t k_t - w_t \]  

(6)

The firm acts competitively by taking prices as given. This is a static problem. The standard first-order conditions, that also imply zero profits, are:

\[ r_t = a A k_t^{a-1} \]  

(7a)

\[ w_t = (1 - a) A k_t^a \]  

(7b)

\textit{Government budget constraint}

We assume that at each time \( t \), the government runs a balanced budget, and for simplicity there is no public debt. That is, the government finances public consumption services, \( g_t \), by taxing the household’s income at a rate \( \theta_t \). The government’s flow budget constraint is:

\[ g_t = \theta_t (r_t k_t + w_t + \pi_t) \]  

(8)

\textit{Competitive Equilibrium (given economic policy)}

Given tax policy, \( \{\theta_t\}_{t=0}^\infty \), a Competitive Equilibrium (CE) is defined to be a sequence of allocations \( \{c_t, k_{t+1}, g_t\}_{t=0}^\infty \), and prices \( \{r_t, w_t\}_{t=0}^\infty \), such that:  

(i) Households maximize utility and firms maximize profits, given prices and economic policy. (ii) All budget constraints are satisfied. (iii) All markets clear via price flexibility. This CE is characterized by equations (1)-(8) above. In this subsection, we will take

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8 The firm’s problem is written in labour intensive form. Then, in equilibrium, there is one unit of labour services. For details, see Barro and Sala-i-Martin (1995, chapter 2).

9 Thus, we choose to solve for a CE in terms of tax rates \( \{\theta_t\}_{t=0}^\infty \). Alternatively, we could solve in terms of spending \( \{g_t\}_{t=0}^\infty \). Below, we endogenize the choice of \( \{\theta_t\}_{t=0}^\infty \).
advantage of the specific functional forms used to get a closed-form analytical solution for this CE.

We start with economy-wide output. Equations (5), (6) and (7a)-(7b) imply:

\[ r_t k_t + w_t + \pi_t = y_t = Ak_t^\alpha \]  \hspace{1cm} (9)

By making use of the Cobb-Douglas constraint in (9) and the log-linear utility function in (1a)-(1b), equations (1)-(8) imply:\textsuperscript{10}

**Result 1:** In a Competitive Equilibrium (given any Markov economic policy), optimal private consumption and end-of-period capital follow:

\[ c_t = A \left(1 - a \beta \right) \left(1 - \theta_t \right) k_t^\alpha \]  \hspace{1cm} (10a)

\[ k_{t+1} = A a \beta \left(1 - \theta_t \right) k_t^\alpha \]  \hspace{1cm} (10b)

Note two things in (10a)-(10b). First, these are closed-form analytic solutions. This is thanks to the special structure of the model: log-linear utility functions, Cobb-Douglas production functions and full capital depreciation.\textsuperscript{11} Second, the sign of \( \frac{\partial c_t}{\partial \theta_t} \) and \( \frac{\partial k_{t+1}}{\partial \theta_t} \) is always negative. Thus, private consumption and capital accumulation decrease with the current tax rate, \( \theta_t \) (see Asteriou et al., 2000, for a richer model in which the sign of \( \frac{\partial k_{t+1}}{\partial \theta_t} \) is non-monotonic).

It will be useful for what follows, to present also the government’s budget constraint in a CE. Using (9) into (8), government expenditures are simply:

\textsuperscript{10} We work as follows: In a CE, the structure of the problem implies a conjecture of the value function in equation (3) of the form \( V \left(k_t; \theta_t \right) = u_0 + u_1 \log k_t + u_2 \theta_t + u_3 \log \theta_t \), where \( u_0, u_1, u_2, u_3 \) are undetermined coefficients. Then, the optimality conditions (4a)-(4b) together with equations (5), (6) and (7a)-(7b) give (10b). In turn, (10a) follows from (10b) and the budget constraint (2). Then, plugging (10a)-(10b) back into (3) and equating coefficients on both sides of the Bellman, we can solve for \( u_0, u_1, u_2, u_3 \). Note that while we can solve for \( u_1 \) at this stage, we cannot solve for \( u_0, u_2, u_3 \) before we also solve for optimal policy in the next section. This is how it should be in a general equilibrium model where policy is endogenously chosen. For details, see Asteriou et al. (2000) and Malley et al. (2001).
\[ g_t = \theta_t A k_t^a \]

so that the expenditures-to-output ratio will be constant, if the tax rate is constant (see below).

We summarize the findings so far. Equations (10a), (10b) and (10c) give \( c_t \), \( k_{t+1} \) and \( g_t \) respectively in a Competitive Equilibrium (CE). This is for any Markov fiscal policy, where the latter is summarized by the current tax rate, \( \theta_t \). Note that \( c_t \), \( k_{t+1} \) and \( g_t \) are functions of the predetermined capital stock, \( k_t \), and the current tax rate, \( \theta_t \), only. This will make the political parties’ optimization problem recursive and hence optimal policies will be time consistent. The next subsection will endogenize the choice of \( \theta_t \).

**Definition of Political General Equilibrium**

To endogenize economic policy, we form a Nash game between two political parties, denoted by \( i \) and \( j \), which can alternate in power according to an exogenous re-election probability, \( 0 \leq q \leq 1 \). For simplicity, elections take place in each time-period. Thus, the party in power at time \( t \) has a probability \( q \) of winning the next election and remaining in power in the next time-period \( t+1 \), and a probability \( 1-q \) of losing the election and remaining out of power at \( t+1 \). The elected party chooses the current tax rate, \( \theta_t \), to maximize the utility of the representative household. In doing so, it plays Stackelberg vis-a-vis private agents (households and firms). It also plays Nash vis-a-vis the other political party, which may be in power in the next time-period with a non-zero probability.

Specifically, the Political General Equilibrium (PGE) is defined as follows: (i) In each time-period \( t \), the elected party \( i \) chooses its tax policy to maximize (1a)-(1b) subject to the Competitive Equilibrium (summarized by (10a)-(10c) above) and by taking as given the policy of the other party, \( j \neq i \), which may be in power at \( t+1 \). (ii) We solve for symmetric Nash strategies. That is, since the two parties are assumed

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11 See also Sargent (1987), Stokey and Lucas (1989) and Obstfeld and Rogoff (1996). For a similar model with a single government, see Malley et al. (2001).
to be alike, their (Nash) strategies are symmetric ex post.\(^{14}\) (iii) The parties do not care about economic outcomes when out of power. This assumption is made for simplicity. All we need to assume is that the political parties care about economic outcomes less when out of power than when in power (see below for details). (iv) We focus on Markov policy strategies. That is, \( \theta_t \) will be a function of the current value of the economy-wide state variables only. Note that this also confirms the solution to the private agents’ optimization problem in the previous subsection (see Result 1 above). (v) The solution for \( \theta_t \), in combination with the CE above, will give a Markov-perfect general equilibrium, which we call Political General Equilibrium (PGE). This equilibrium is similar to that in Asteriou et al. (2000) and Economides et al. (2001).

**Problem Formulation**

We solve the above problem by using the technique of dynamic programming. From the political parties’ viewpoint, the state variable at any time \( t \) is the economy’s inherited stock of capital, \( k_t \). Let \( V^P(k_t) \) and \( V^N(k_t) \) be respectively the value functions of party \( i \) when in power, and when out of power, at time \( t \). Then, \( V^P(k_t) \) and \( V^N(k_t) \) must satisfy the following pair of Bellman equations:\(^{15}\)

\[
V^P(k_t) = \max_{\theta_t} \left[ \log c_t + \delta \log g_t + \beta q V^P(k_{t+1}) + \beta(1-q)V^N(k_{t+1}) \right] \quad (11a)
\]

\[
V^N(k_t) = 0 + \beta(1-q)V^P(k_{t+1}) + \beta q V^N(k_{t+1}) \quad (11b)
\]

where \( c_t \), \( k_{t+1} \) and \( g_t \) follow (10a), (10b) and (10c) respectively. Notice that in (11a), the incumbent party has a probability \( q \) of remaining in power and a probability \( 1-q \) of losing the coming election. In (11b), when the party is out of power, it knows that there is a probability \( q \) of continuing to be out of power and a probability \( 1-q \) of coming back to power in the next election. Also notice that when out of power, the parties do not care about policy outcomes; hence the zero in (11b).

\(^{13}\) See Lockwood et al. (1996) for a richer model in which the electoral cycle lasts two time-periods so that the elected party can remain in power for two periods. Our main results do not depend on this.

\(^{14}\) See Lockwood et al. (1996) for partisan differences in a public finance model.

\(^{15}\) This modeling is borrowed from Alesina and Tabellini (1990) and Lockwood et al. (1996).
**Optimal Policy and Political General Equilibrium**

Solution of the policy problem in (11a)-(11b) implies:\(^{16}\)

**Result 2:** In a Political General Equilibrium, the optimal income tax rate, \(\theta\), is constant over time and equal to:

\[
0 < \theta = \frac{\delta}{\delta + \Omega} < 1
\]

where,

\[
\Omega = 1 + \beta(qu_i^p + (1-q)u_i^N) = \frac{(1 - a\beta)(1 + a\beta(1 - 2q)) + a\beta(1 + \delta)(q + a\beta(1 - 2q))}{(1 - a\beta)(1 + a\beta(1 - 2q))}
\]

Notice two things in (12). Firstly, it is optimal to keep the policy instrument flat over time. This is a tax smoothing result. Obviously, this type of policy introduces fewer intertemporal distortions. Secondly, the “effective” discount rate, \(\Omega\), increases with the probability of getting reelected, \(q\), i.e. \(\frac{\partial \Omega}{\partial q} > 0\). That is, as the probability of getting reelected increases, policymakers care effectively more about the future. In turn, (12) implies \(\frac{\partial \theta}{\partial q} < 0\). That is, as the probability of getting reelected increases, the tax rate - and the associated government expenditures-to-output ratio - decreases. Since \(c_t\) and \(k_{t+1}\) decrease with the tax rate \(\theta_t\) (see equations (10a) and (10b) above), it follows that as the probability of remaining in power increases, both consumption and growth increase.

Therefore, when (a) there is electoral uncertainty and (b) the parties care relatively little about economic outcomes when out of power, they effectively face a quasi-finite time-horizon. In this case, as the re-election probability gets smaller (i.e.

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\(^{16}\) We work as follows: Inspection reveals that we have to solve a dynamic programming problem with a log-linear payoff function and Cobb-Douglas constraints. Thus, the functional formulation of the policymakers’ problem is similar to that of the private agents’ above. This means that the value functions in (11a)-(11b) are expected to be of the log-linear form \(V^P(k_t) = u_0^P + u_1^P \log k_t\) and \(V^N(k_t) = u_0^N + u_1^N \log k_t\), where \(u_0^P, u_1^P, u_0^N, u_1^N\) are undetermined coefficients. Using this conjecture for the value functions into (11a)-(11b), differentiating the right-hand side of (11a) with respect to \(\theta_t\), imposing the symmetry conditions \(\theta_t^P = \theta_t^N = \theta_t\), \(u_0^P = u_0^N = u^P\) and \(u_1^N = u_1^N = u^N\), plugging the optimality conditions back into (11a)-(11b) and equating coefficients on both sides of the Bellman equations, we solve for \(u_0^P, u_1^P, u_0^N, u_1^N\). Note that this also completes the solution for the CE above. For details, see Asteriou et al. (2000) and Malley et al. (2001).
falls), the party in power cares less about the future and spends more now. Since higher spending requires higher tax revenues, the tax rate is higher than without electoral uncertainty. This is bad for growth.

These results are summarized in the following proposition:

**Proposition 1:** There is a unique Markov-perfect general equilibrium in Nash strategies among political parties. In this political equilibrium, when the probability of getting reelected decreases, it is optimal for policymakers to follow short-sighted fiscal policies (in the form of a higher total expenditure-to-output ratio) and this is bad for private capital accumulation and economic growth.

Note that the above result can also hold in richer setups with more economic policy instruments. In particular, when Asteriou et al. (2000) include government production services that provide Barro-type production externalities to private firms, they show that the share of tax revenues allocated to government production services vis-a-vis government consumption services increases with the re-election probability. In other words, when political uncertainty increases (i.e. the re-election probability falls), not only the tax rate increases as in the present model, but also the allocation of total tax revenues turns in favor of non-productive activities. Both economic policy instruments work in the same direction, so that electoral uncertainty again reduces economic growth.

It is important to emphasize that the main result of the literature (i.e. the lower the re-election probability, the stronger the incentive for policymakers to choose short-sighted distorted fiscal policies, and hence the lower is economic growth and intertemporal welfare) holds under the crucial assumption that political parties care about economic outcomes more when in than out of power (see the Bellman equations (11a)-(11b) above). This point has been made clear by Lockwood et al. (1996). Using a more general setup, Economides et al. (2001) revisit the underlying mechanism and confirm that to get this realistic result, re-election uncertainty must indeed be combined with the hypothesis that political parties care about economic outcomes

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17 When $q = 1$, we get the benevolent government case (second best).
more when in than out of power. More importantly, they show that this preference over being in power is ad hoc (exogenously set). In other words, if the incumbent party can also choose how much to care about economic outcomes when in and out of power, it is optimal to care the same so that short-sighted distorted policies, like the one derived above, do not arise.

2 EMPIRICAL EVIDENCE: A REVIEW OF THE LITERATURE

This section will briefly review the relevant empirical literature and summarize its methodology, main findings and problems. Following the theoretical analysis above, we will focus on the link among political uncertainty, fiscal policy and economic growth.

The connection between fiscal policy and economic growth has long been a central area of empirical research. Recently, thanks mainly to the theory of endogenous growth, interest has focused on the implications of the different tax structures and the different types of government expenditures for economic growth. For instance, Mendoza et al. [1997] provide evidence that distortionary taxation harms investment and economic growth, while non-distortionary taxation does not. Kneller et al. [1998, 1999] provide similar evidence for taxes and also find that productive government expenditures enhance growth, while non-productive expenditures harm growth (see Asteriou et al. (2000) for a recent survey).

Also, since the early 1960s in most OECD countries, there is evidence that: (i) the size of the public sector (measured by total government expenditures as a share of GDP) has increased substantially and (ii) government consumption (for example, transfers and government wages) as a share of GDP shows a sharply upward movement relative to government investment (see Alesina, 1999 and Tanzi and Schuknecht, 2000). Thus, there seems to be a negative relationship between large-sized governments and economic and social performance, see Tanzi and Schuknecht (1997, 2000). These trends in the data can be explained by theories of political distortions. For instance, as we showed above, electoral uncertainty can induce

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18 That is, Economides et al. (2001) show that if there is electoral uncertainty (i.e. \( q < 1 \)) but the parties care the same about economic outcomes all the time irrespectively of whether they are in power or not, then the solution is equivalent to that of a benevolent (one party) government.
policymakers to go for short-sighted policies, in the form of too large public sectors and biases in favor of unproductive activities, and this is bad for economic growth.

One is then led to investigate the empirical link among political distortions, economic policy instruments and economic growth. To do so, the literature has used several indices of political distortions. For instance, inequality in the distribution of income; socio-political instability in the form of frequent government turnovers, political violence and unrest; political corruption, bureaucracy and lack of property rights; pre-electoral bribes and fiscal euphoria. Although there are differences across different studies, two results seem to be rather robust: (a) there is a correlation between political distortions and the conduct/manipulation of economic policy; (b) there is a negative effect from political distortions to economic growth, see Alesina et al. (1997), Alesina (1999) and Drazen (2000). Note that the literature has emphasized not only how policies affect the macro-economy but also how variability (i.e. lack of persistence) in policies affects the macro-economy.

However, several empirical issues are still open. As Drazen (2000, chapter 11) points out and our theoretical model above makes clear, one should be able to divide the reduced-form effect from political distortions to economic outcomes into two sub-effects: from distortions to economic policy instruments, and in turn from economic policy instruments to economic outcomes. Unfortunately, it is rather rare to find significant support for both sub-effects simultaneously, especially if one tests formally the cross-equation restrictions implied by the (general equilibrium) theory. This is why most empirical studies have relied exclusively on unrestricted reduced-form regressions. Asteriou et al. (2000) is a recent example of this methodology in a theoretical model similar to the one presented above. When they use government’s popularity as a measure of ex ante re-election probabilities, they find a strong negative effect from low popularity to economic growth in the UK. However, the data cannot distinguish the two sub-effects (i.e. from popularity to fiscal policy instruments, and from fiscal policy instruments to economic growth). We believe this is a promising area for further empirical research.

3 CONCLUSIONS AND RELATED POLITICO-ECONOMY ISSUES

In this chapter, we have used a general equilibrium politico-economy model to formalise the link among electoral uncertainty, fiscal policy and economic growth.
We showed that lower re-election probabilities can create pressure for short-sighted fiscal policies, and this is bad for economic growth. This result follows from a combination of electoral uncertainty and the assumption that the parties care relatively little about economic outcomes when out of power. These predictions are consistent with empirical evidence.

So far we have been rather formal. We will end the chapter with a discussion of some closely related politico-economy issues.

**Market failures versus policy failures**

Although electoral uncertainty can induce short-sighted fiscal policies, this is obviously not a message against elections or multi-party political systems. It is well known that elections and political parties have a multiple role to play within a society. For instance, as Persson and Tabellini (1994) point out, elections make officeholders accountable to the electorate, in the sense that voters have the chance to select either the most competent policymaker or the policymaker whose ideology is closer to the majority of the voters. Elections can also control the moral hazard of the policymakers, who have to limit their opportunism to reduce the threat of replacement.

Instead, the way to interpret our results is as another application of the tradeoff between “market failures” and “policy failures”. The general idea is that when there are market failures (public goods, externalities, monopolistic situations, influential lobbies and so on), policy intervention is needed to correct these failures, and fiscal policy is an obvious candidate for this role. It is then the tradeoff between market and policy failures that determines the optimal policy. What we have shown in this chapter (as well as in our companion papers in Asteriou et al., 2000 and Economides et al., 2001) is that electoral uncertainty pushes policymakers (who care relatively little about economic outcomes when out of power) to follow short-sighted inefficient policies. Therefore, while economic policy is needed to correct the existing market failures, it also generates its own distortions.

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19 There is a view that problems like these are possible to disappear in the near future. As Alesina et al. (1997) point out, this is based on two arguments: (a) The EU integration process will make national policies much less independent, and (b) many countries will soon face problems of oversized public sectors. Although both (a) and (b) are true, they are not enough to eliminate political business cycles. Even within the EU, member-countries will not completely lose their fiscal autonomy. Also, globalization may worsen some of the existing political distortions. For instance, within the new integrated environment, national governments have a stronger incentive to free ride on other economies.
Need for enforcement mechanisms

Given the above, a natural question to ask is the following: can we design mechanisms that reduce political distortions? In the context of our multi-party democratic model, the task is to design mechanisms that give policymakers the incentive to care about economic outcomes all the time, and not just when they happen to be in power. In Rogoff (1990) type models, the task is to design mechanisms that discourage policymakers from manipulating pre-election probabilities. In Alesina and Drazen (1991) type models, the task is to design mechanisms that force policymakers to stop the war of attrition and break the vicious cycle of the status quo.

Therefore, in most politico-economy models, the main task is to design mechanisms that can extend the effective time horizon of policymakers, without harming the function of multi-party democracies. Note that this is consistent with the general game theoretic result that many properties, concerning the comparison between non-cooperative and cooperative outcomes, may change once the model allows for dynamics (recall that the one-shot equilibrium of the prisoner’s dilemma game is not necessarily the equilibrium of the same game repeated a sufficiently large number of times). It is also consistent with the literature on public goods. For instance, Glomm and Lagunoff (1999) show that, concerning the provision of public goods, whether voluntary (i.e. decentralised) or coercive (i.e. centralised) mechanisms prevail, depends crucially on whether the game is static or dynamic. This is because, in a dynamic set-up, the accumulation process mitigates the problem of conflicting interests occurring in coercive communities and hence such communities become more attractive.

How can we force policymakers to care about the future? The ideal scenario would be a kind of endogenous enforcement. However, this is too good to be true in a world that typically exhibits political distortions, and where elections have usually the features of a one-shot noncooperative game. In this case, the task is to establish a constitutional and political system (through monitoring, provision of information to the public, fines/subsidies, credible punishment of political corruption, etc) that

(an example is EU redistributive transfers). Also, when unpopular measures of fiscal stabilization are taken, this can increase political distortions in the short run (rent seeking activities). See Alesina et al. [1997] for these issues.
increases political competition between selfish politicians and gives them incentives for more far-sighted policies. There is a rapidly developing literature on these issues that are beyond the scope of this discussion, see Laffont (1999), Myerson (1999) and Persson and Tabellini (1999b).

All this means that we do not only need game theory but also implementation theory. As Moore (1992, pp. 188-9) has pointed out, the former is concerned with how a given game is played, while the latter is concerned with the design of the game. The choice of mechanism will be driven by the choice of the equilibrium concept. Our preference should be for a cooperative equilibrium concept in general, or (in the context of our model) a mechanism in which the political parties care about economic outcomes the entire time even when they are out of power. In other words, a complete theory on the link between politics and economics requires an analysis of both the “electoral” and the “governmental” level, Myerson (1999, pp. 672-3). As Myerson says, the electoral level defines the procedures, by which candidates are elected, while the governmental level defines the channels through which the constitutional structure of the political system affects the way economic policy is formed. In the present chapter, as in most of the relevant literature, we focused only on one of these levels; on the governmental level, taking as given the electoral system.

To sum up, the two-way link between politics and economics is expected to remain one of the main determinants of the way economic policy is conducted. The need for setting up the right incentives for policymakers is a big challenge in democratic societies.

REFERENCES


bureaucracies, political corruption, etc.


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