

The Elasticity of Intertemporal Substitution: A Tool to Constrain Profligate Government Spending

Suzanna-Maria Paleologou

Department of Economics, Aristotle University of Thessaloniki, Thessaloniki, Greece

Email: smp@econ.auth.gr

How to cite this paper: Paleologou, S.-M. (2020). The Elasticity of Intertemporal Substitution: A Tool to Constrain Profligate Government Spending. *Theoretical Economics Letters*, 10, 607-619.

<https://doi.org/10.4236/tel.2020.103039>

Received: April 28, 2020

Accepted: June 19, 2020

Published: June 22, 2020

Copyright © 2020 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

We construct a theoretical model to explain profligate electoral fiscal behaviour and to provide a tool, namely the estimated elasticity of intertemporal substitution, for the fiscal authorities to detect and timely constrain such behaviour to promote fiscal prudence. The key is to obtain data on the incumbent party preferred sequence of public consumption levels over time. The model frames this case using a CES utility function and provides one possible mechanism to explain why there are so many examples in the empirical literature that find insignificant electoral biases in fiscal variables.

Keywords

Electoral Fiscal Profligacy, Public Consumption, Elasticity of Intertemporal Substitution

1. Introduction

In democratic institutions, it is common to observe fiscal profligacy, especially in pre-election periods. It is a short-sighted behaviour indicating that there is political instability, lack of commitment, and disagreement of consecutive governments. This behaviour gave rise to a large number of studies on political budget cycles¹, both theoretical and applied².

The first strand of these studies is related to the “rational partisan cycle models” and is best represented by [Alesina \(1987\)](#), [Aghion and Bolton \(1990\)](#) and [Mile-](#)

¹The term, political business cycle was introduced by [Kalecki \(1943\)](#) in a brief but influential article where he explored the political implications of full employment, which followed from the Keynesian revolution in economic policy making.

²See [Drazen \(2000 and 2001\)](#), for a review of the theoretical and empirical political business cycles literature.

si-Ferretti and Spolaore (1994), Milesi-Ferretti (1995a, 1995b). Alesina (1987) shows how the repeated interaction of political parties can reduce the magnitude of economic policy fluctuations. In particular, before elections, both parties will have an incentive to announce “*convergence policies*”³ to capture probabilistically middle voters. By trading-off ideology, they increase their chances of election. However, if political parties could commit to pre-electoral platforms, then they would follow policies much less distant from their most preferred policies⁴. Aghion and Bolton (1990) show that right-wing governments would choose to issue debt in order to make a large fraction of the population a debt-holder. As a result, the left-wing that favours more default, loses support. A left-wing government followed by a right-wing government will run a budget deficit in order to constrain the right-wing government, but in the opposite case, the right-wing government does not gain through the accumulation of debt. Milesi-Ferretti and Spolaore (1994) construct atheoretical model that allows for the analysis introducing “*strategic inefficiencies*” by a rational incumbent. The incumbent party intentionally chooses an inefficient tax system, even if this will impose costs on himself in the future in the form of lower spending. This is because the incumbent wants to “tie the hands” of any future policymaker by making the allocation of public spending less relevant to the unattached voters. Milesi-Ferretti (1995a)⁵ shows that the composition of debt, between nominal and indexed, can be used strategically if a left-wing party is more inflationary than a right-wing. His model has implications both for fiscal and monetary policy. This strand of literature is most appropriate for countries with—two party systems—and fixed election dates. However, all of the aforementioned models can be criticized on the grounds that the voters’ full information assumption is a very strong one and the only uncertainty is about the election outcome.

The second strand of the literature is related to “the strategic debt cycles models”, developed by Persson and Svensson (1989), Alesina and Tabellini (1990), Cukierman et al. (1992) and Azzimonti (2011). They argue that the incumbent party strategically manipulates state variables because of time-inconsistent preferences. Election outcomes are completely independent of the government policy choices. In particular, an incumbent party may have the incentive to strategically use a state variable to influence the policy choices chosen by its successor. Persson and Svensson (1989) use the level of debt as the state variable that gives

³The term *convergence policy* means that a left-wing party adopts some of the policies of the right-wing party and vice versa. This is something that has been observed in Blair’s Labour party. For example see “Displaced, defeated and not sure what to do next” *The Economist*, January 23, 1999, pp. 19-23.

⁴Wittman (1983) and Calvert (1985) implicitly assume the possibility of binding commitments to electoral platforms.

⁵Milesi-Ferretti (1995b) illustrated the same idea but the government focused on the choice between fixed and flexible exchange rates. An inflation averse government may not choose a fixed exchange rate in order to capitalize on the inflationary reputation of its opponent. An opposite incentive is to “*tie the hands*” of its opponent if the opponent wins the election. For a more inflationary government electoral considerations reinforce the incentive to “*tie its own hands*” with fixed exchange rates.

the incumbent party the instrument to control the future government. They show that a right-wing government may borrow more when it knows that will lose the election and be succeeded by a left-wing government. They assume that increases in borrowing lead to distortionary taxation. Such a policy is optimal only if the government attaches less weight to the welfare cost of using distortionary taxation over time in order to reach its preferred level of public consumption. [Alesina and Tabellini \(1990\)](#) modify the [Persson and Svensson \(1989\)](#) model. The main difference is that they focus on the disagreement about the composition of public spending where [Persson and Svensson \(1989\)](#) focus on the level of public spending. They develop a two-period closed economy model to endogenously determine the interest rate. They explicitly consider voting behaviour and develop a voting equilibrium. Public debt is the strategic variable used to influence the choice of its successors. Debt accumulation is viewed as a means of optimizing the dead-weight losses of taxation associated with the provision of public goods. They find that in democratic societies, deficits and debt accumulation is higher, than in autocratic societies. In [Cukierman et al. \(1992\)](#), instability and polarization determine the equilibrium efficiency of the tax system and the more unstable and polarized a country is then the main source of revenue is seigniorage. The inertia in reforming the tax system is captured by choosing the efficiency level of the tax system. The equilibrium level of tax inefficiency will be higher when the probability of losing the election is high and the marginal cost of an inefficient tax system is low. When the probability of losing the election is low then the marginal cost of an inefficient tax system will be high and the value of the inefficiency will fall. [Azzimonti \(2011\)](#) presents a model where disagreements about the composition of public expenditures, in a polarized and politically unstable society, results in an implementation of short-sighted policies by the government and the higher the degree of polarization then the greater the inefficiency. Only political stability can mitigate the effects of polarization by making the incumbent internalize the dynamic inefficiencies introduced by the choice of growth-retarding policies.

The third strand of the literature is related to the “rational political budget cycle models” represented by [Rogoff and Sibert \(1988\)](#), [Rogoff \(1990\)](#), [Alesina and Cukierman \(1990\)](#), [Shi and Svensson \(2006\)](#) and [Drazen and Enslava \(2010\)](#). This strand of the literature examines the case when a government in election periods acts strategically in order to signal its preferences and/or its ability to the voters. In these models there is incomplete information or uncertainty about the government competence, which is used to cause the electoral cycles. [Alesina and Cukierman \(1990\)](#) analyze the case where an incumbent party trades-off its preferences and its popularity knowing that the voters are not fully informed. There is not an explicit policy instruments in their model. They show that the incumbent party has an incentive to choose policies that are between its ideal ones and the opponent’s party’s ideal, which makes it very difficult for the voters to observe the incumbent’s party preferences with precision. [Rogoff and Sibert \(1988\)](#) show that when temporary information asymmetries arise they can cause elec-

toral cycles in macroeconomic variables such as taxes, public expenditures, deficits and money growth. The key mechanism in their model is that the government's competence causes a form of uncertainty, which makes possible the existence of political business cycles. In this type of model, there is incomplete information and bounded rationality. In Rogoff (1990), a political budget cycle arises due to temporary information asymmetries about the incumbent leader's competence in administering the public goods production process. The incumbent has an incentive to bias pre-election fiscal policy towards easily observed consumption expenditures and lump-sum taxes are used to finance the expenditures. In contrast with the analysis of Rogoff and Sibert (1988), where the very competent and very incompetent distort the least, here the very competent incumbent distorts the most. Shi and Svensson (2006) show how the existence of strong institutional constraints on politicians and the large share of informed voters in developed countries render less effective fiscal policy manipulations. Drazen and Enslava (2010) develop a model in which incumbents try to influence voters by changing the *composition* of government expenditures, rather than the overall level of expenditures or revenues. Other studies show, that fiscal prudence can offset any intertemporal, public expenditures, tax and debt, biases resulting from common-pool distortions (Van der Ploeg, 2010) and also, overspending will not happen when a government consists of a coalition that can win an election even when public expenditures and taxes are low (Khemani and Wane, 2008).

The novel contribution of our paper is that we construct a theoretical model that provides a practical tool for the fiscal authorities or possibly an independent non-partisan bureaucracy to detect and timely constrain any profligate electoral fiscal behaviour to promote fiscal prudence. The key trade-off at work, in our model, is that, on the one hand, the incumbent party today has different preferences across public consumption. On the other hand, the elasticity of intertemporal substitution (EIS) influences the incumbent's tolerance for intertemporal variability in public consumption across the two periods. Hence, when the EIS is small enough, the incumbent's aversion to variability in public consumption dominates and the government's behaviour is characterized by fiscal prudence or non-opportunism. Our model is a "hybrid" in the sense that it nests, for specific values of the EIS, two well-known models in the theoretical literature namely, the Milesi-Ferretti and Spolaore (1994) model (hereafter MFS) and the Persson and Svensson (1989) model (hereafter PS).

The paper is structured as follows: in section 2, we present our model and we state our main results in terms of a proposition; section 3 discusses some policy implications and section 4 concludes the paper.

2. A Simple Model

We consider a case where, an incumbent party, at a particular point in time, has the option to go or not to go for elections. We take the no election option as the benchmark case for comparing the optimal resource choice, as well as, their al-

location between two public goods. In particular, we examine the case where the incumbent party is going to lose the election with certainty. This is known as the PS bias. In the PS model, the level of debt is the state variable that gives the current government an instrument to control the future government. Then a right-wing government may borrow more when it knows that will be succeeded by a left-wing government, than when it knows that it will remain in power in the future. PS assumes that increases in borrowing lead to distortionary taxation. Such a policy is optimal only if the government attaches less weight to the welfare cost of using distortionary taxation over time in order to reach its preferred level of public consumption⁶.

MFS construct a model of government spending which highlights the logic of strategic use of state variables. In this way, their analysis allows to examine the paradox of “*strategic inefficiency*” by a rational incumbent. The general principle clarified in their model is that: “*The existence of a credible commitment technology is not necessarily beneficial because it may be used to influence election results in a socially inefficient way*” (Milesi-Ferretti and Spolaore, 1994: p. 122). The incumbent party intentionally chooses an inefficient tax system even if this will impose costs on himself in the future in the form of lower consumption levels. This is because the incumbent wants to “tie the hands” of any future policymaker by making the allocation of public spending less relevant to the unattached voters. The exogenous preferences become more relevant and determine the election result.

By introducing the PS bias in the MFS model we develop a theoretical model to analyse why it can be the case that a surely-losing government could decide not to overspend in the proximity of elections. Let's assume that there are two parties, A and B with Party A being the incumbent, and two periods, 0 and 1. There are elections at the end of period 0 to select a government for period 1. Party A knows with (almost) certainty that it is going to lose the election and thus, there is in fact no uncertainty in the model. In both periods, the government receives tax revenue of T_0 and T_1 , can borrow or lend at an interest rate/and allocates the available resources, R_0 and R_1 , to two public goods given the following budget constraint: $R_0 + (1/1+r)R_1 = T_0 + (1/1+r)T_1 = T^*$ in such that: $x_t + y_t = R_t$, for $t = 0,1$.

It is assumed that the public good, x_t , is equally preferred by both parties as both spend the same amount of resources on it. In contrast the public good, y_t , is a good that differentiates the two parties from the voters' perspective. In other words, the two parties have an ideological difference with respect to this good. The difference is expressed in the form of a higher weight attached to it.

All three agents in the model, namely Parties A and B and the median voter M, have preferences of the following form:

$$U^i = \frac{(C_0^i)}{\gamma} + \beta \frac{(C_1^i)}{\gamma}, \quad i = A, B, M \quad (1)$$

⁶This is why they say the government is stubborn.

where utility (U) derived from public goods consumption in each period is given as:

$$C_t^i = [x_t^{i/\rho} + \theta^i y_t^{i/\rho}]^\rho, \quad i = A, B \quad (2)$$

$$C_t^M = [x_t^{M/\rho} + \theta^B y_t^{M/\rho}]^\rho + \delta q^M \quad (3)$$

where β is the discount factor; γ determines the EIS between public goods consumption in period 0 and 1, and $\gamma < 1$; ρ is the inverse of the EIS between the two types of public goods; θ^i the weight of consumption on public good y_t depending on which party is in power; $\delta = 1$ when party A is in power; $\delta = 0$; otherwise and q^M is the exogenous preferences of the median voter.

The two parties differ in the weight they place on the public good y_t . Notice that the median voter shares Party B's preferences over the two goods. However, the median voter gets utility from other aspects of government when party A is in power (represented by the term δq^M) and because of the relative weights⁷ placed on one type of the public good used in the model. However, when Party B is in power the term δq^M vanishes.

Consider first the benchmark case (i.e., no election). We assume that the incumbent party's problem is solved in two steps: First, it decides the optimal allocation of C_0 and C_1 for given R_t and then it determines the optimal R_0 . Hence, in the first step the optimization problem is:

$$\begin{aligned} \max_{C_0 C_1} U^i &= \frac{(C_0^A)^\gamma}{\gamma} + \beta \frac{(C_1^A)^\gamma}{\gamma} \\ \text{s.t. } C_t^A &= [x_t^{A/\rho} + \theta^A y_t^{A/\rho}]^\rho \\ R_0 + \frac{1}{1+r} R_1 &= T^* \\ \text{and } x_t^A + y_t^A &= R_t \end{aligned} \quad (4)$$

From the first order conditions in the above optimization problem we get:

$$x_t^A = \frac{\alpha^A}{1 + \alpha^A} R_t \quad (5)$$

$$y_t^A = \frac{1}{1 + \alpha^A} R_t \quad (6)$$

where $\alpha^A = (\theta^A \rho)^{\rho/(1-\rho)}$ and by substituting (5) and (6) into C_t^A in (4) the result is:

$$C_t^A = R_t \quad (7)$$

Given Equation (7) the second step in the incumbent party's A optimization problem is:

$$\max_{C_0 C_1} U^A = \frac{(C_0^A)^\gamma}{\gamma} + \beta \frac{(C_1^A)^\gamma}{\gamma} \quad \text{s.t.} \quad C_0^A + \frac{1}{1+r} C_1^A = T^* \quad (8)$$

⁷See Milesi-Ferretti and Spolaore, 1994 model for a similar use of weights.

From the first order conditions we have:

$$R^{*(\gamma-1)} - \beta \left[(T^* - R^*) (1+r) \right]^{\gamma-1} (1+r) = 0$$

which can be solved for the optimal R_0 as:

$$R_0^* = \frac{\left[\beta (1+r)^\gamma \right]^{1/\gamma-1} T^*}{1 + \left[\beta (1+r)^\gamma \right]^{1/\gamma-1}} = \left(\frac{K}{1+K} \right) T^* \quad (9)$$

where $K = \frac{R_0^*}{T^* - R_0^*}$. Equation (9) shows that R_0^* and T^* are proportional

and the quantity in the bracket is positive. The larger the value of T^* then the larger will be the optimal level of resources available for public consumption, when there are no elections.

We assume now that there is an election at the end of period 0 and that the incumbent party is going to lose the election with certainty. This assumption is equivalent of saying that the PS bias is introduced into the MFS model. In the resulting model, the median voter has no exogenous bias in favour of Party A, i.e., the median voter's preferences are $q^M = 0$ in (3). The median voter's preferences over expenditure allocation are identical to party B's, which is going to win the election. This alters the incentives for Party A, which knows that public goods consumption in period 1 will be allocated by Party B. Thus,

$$x_t = x_1^B = \frac{\alpha^B}{1 + \alpha^B} R_1 \quad (10)$$

and

$$y_t = y_1^B = \frac{1}{1 + \alpha^B} R_1 \quad (11)$$

From the above it follows that $\alpha^B > \alpha^A$, since $0 < \rho < 1$ and $\theta^A < \theta^B$ ⁸. The latter is so as it is assumed that Party A loses the election because the weight Party B puts on y_t is greater than Party A's weight⁹.

⁸This assumption is different from the assumption that MFS have in their model where $\theta^A > \theta^B$. In the MFS model Party A has a stronger preference for "unproductive" expenditure than Party B (e.g. current expenditures on goods and services that are immediately visible to the voters) i.e., Party A is more susceptible to use strategically government expenditure.

⁹If there is uncertainty about the election outcome, in order to determine which party will win the election, we need to focus on the behaviour of the median voter. Since party A's constituency size is not large enough to guarantee automatic re-election because $m_A < m_B < (N/2) + 1$, where N are the individual agents $(1, 2, \dots, N)$, m_A is the number of supporters for Party A, and m_B is the number of supporters for Party B. Also there is a number of unattached voters which are identified by their exogenous preferences q^i . These are distributed across them with zero mean: $q^i \sim U[-q, q]$, which means that the median voter has no exogenous bias in favour of Party B. Thus, the median voter's preferences must be $q^M = 0$. In this case the incumbent party A would mimic the opponent's choices to get re-elected. In the MFS model the asymmetries created between Party A and Party B, are that Party A has an electoral advantage in terms of its own constituency's size but its preferences for "unproductive" expenditure makes it less appealing to the unattached voters. If our model is solved for this case, we obtain the same result as in the MFS paper. Namely, the incumbent party will mimic the opponent's choices and deviate from its preferred public consumption patterns in order to win the election.

Given that the solution for the first step, i.e., the optimal allocation of resources between x_t and y_t remains the same as in the no election case, the optimization problem in the second step is:

$$\begin{aligned} \max_{C_0^A, C_1^A} \quad & U^A = \frac{(C_0^A)^\gamma}{\gamma} + \beta \frac{(C_1^A)^\gamma}{\gamma} \\ \text{s.t.} \quad & C_0^A + \frac{1}{1+r} \frac{1}{X} C_1^A = T^* \end{aligned} \quad (12)$$

where $X \equiv \left[\left(\frac{\alpha^B}{1+\alpha^B} \right)^{1/\rho} + \theta^A \left(\frac{1}{1+\alpha^B} \right)^{1/\rho} \right]^\rho$ because Party B chooses an allocation of expenditures in period 1 which is different from Party A's preferred allocation. Using (6) and by substituting (9a) and (9b) into (4) we obtain:

$$C_1^A = \left[\left(\frac{\alpha^B}{1+\alpha^B} \right)^{1/\rho} + \theta^A \left(\frac{1}{1+\alpha^B} \right)^{1/\rho} \right]^\rho R_1 = XR_1 \quad (13)$$

X enters the budget constraint in the same way as $(1+r)$ so the election effectively is identical to a reduction in the interest rate. This case differs from the benchmark case only by the fact that X enters the budget constraint. Notice that $X > 1$ because Party B chooses an allocation of public consumption in period 1 which is different from Party A's preferred allocation.

In simple intertemporal models, an interest rate reduction can increase or reduce period's one consumption, depending on whether γ is positive or negative. This parameter determines the EIS between public consumption in period 0 and 1. Then, from the first-order conditions we have:

$$R_0^L = \frac{X^{\gamma/\gamma-1} \left[\beta^{1/\gamma-1} (1+r)^{\gamma/\gamma-1} \right] T^*}{1 + X^{\gamma/\gamma-1} \left[\beta^{1/\gamma-1} (1+r)^{\gamma/\gamma-1} \right]} = \left(\frac{K}{X^{\gamma/\gamma-1} + K} \right) T^* \quad (14)$$

where R_0^L stands for the R_0 of losing the election. Thus, we can conclude that R_0^L is proportional to T^* and the quantity in the bracket is a positive constant. The larger the value of T^* then the larger will be the amount of available resources for public consumption in period 0.

To examine for potentially differential behaviour of the incumbent party, between the case of losing the election with certainty and the benchmark case of no election, we have to compare (9) and (14). The result of this comparison is summarized as:

Proposition: *The amount of resources spent by the incumbent party in the pre-election period, when it will lose the election with certainty (R_0^L), would be greater, less or equal than the benchmark level of resources that the incumbent party would spend if there was no election (R_0^*) as the EIS is greater, less or equal than 1; That is, $R_0^L > (\leq) R_0^*$ as $\text{EIS} > (\leq) 1$.*

Proof: R_0^L in (9) is equal to R_0^* in (14). If $X^{\gamma/\gamma-1} = 1$ requires that $\gamma = 0$. In this case, the incumbent party allocates to public goods in the pre-election pe-

riod the same amount of resource as if there were no elections. In contrast, the incumbent party tends to manipulate the allocation of resources in the pre-election period (i.e., $R_0^L > R_0^*$) when $X^{\gamma/\gamma-1} > 1$. This requires $0 < \gamma < 1$. On the other hand, the case of strategic behaviour in the pre-election period is ruled out when $X^{\gamma/\gamma-1} < 1$, which requires that $\gamma < 0$. To complete the proof, notice that the $EIS = \frac{1}{1-\gamma}$ (Barro and Sala-i-Martin, 1995¹⁰ and Romer, 1996¹¹). If $\gamma = 0$ then the $EIS = 1$; if $0 < \gamma < 1$ then the $EIS > 1$ and if $\gamma < 0$ then the $EIS < 1$. QED.

The result obtained when $EIS > 1$ is basically the PS result, i.e., a government which knows with certainty that the election will be lost, consumes more in the pre-election period than if there were no elections. In this case, the greater than one the EIS , the more variability in utility and thus in public consumption, between the two periods, the incumbent party is willing to allow. Hence, in this case, precautionary policy actions are needed to constraint the squabbling public consumption behaviour.

The result of no strategic behaviour, derived by MFS and PS, is implied when the $EIS < 1$. For a small enough EIS , the incumbent's dislike of variability of consumption is the dominant determinant of public consumption. That is, the incumbent has no incentive to spend too much today in order to constrain the government's hands tomorrow and the dominant behaviour will be characterised by fiscal prudence.

Finally, in the case where $R_0^L = R_0^*$ the preferences of the incumbent party correspond to a Cobb-Douglas utility function as this case is associated with an $EIS = 1$.

Overall, when the $EIS \leq 1$ there will be no need to control for profligate fiscal behaviour in the context of the political business cycle framework, within the finite election horizons of our model, because in this case, the incumbent party dislikes any profligate intertemporal spending.

3. Policy Implications

In this section, we explore the implications of the theoretical model for developing a tool that can help detect profligate government behaviour to timely adjust discretionary fiscal policies to eliminate the negative effects of the electoral fiscal profligacy. First of all, there are two key features that distinguish political parties from a benevolent social planner. First, political parties only care about the well-being of their constituency. They do not maximize the welfare of the whole population and they lack of commitment. The implication of these two is that political competition does not induce politicians to maximize an utilitarian welfare function as in the traditional Lindbeck-Weibull (1987) model, studied in Sleet and Yeltekin (2008) because promises made over the campaign are non-binding.

¹⁰See pp. 64-65.

¹¹See pp. 39-40.

Instead they attempt to maximise the utility of the party in power.

Over the last years, worldwide, there is an increased awareness of the fiscal implications of political distortions—such as excessive deficits—that lead to the suggestion that discretionary fiscal policy should be disciplined by a combination of procedural and numerical fiscal rules possibly *via* an independent non-partisan agency, which all political parties trust and that will set the alert for timely fiscal adjustments and budget constraints when electoral profligacy is detected.

We develop a tool namely, the estimated EIS—which is a measure that is crucial in economics and public finances—in order to monitor changes in the EIS of the government and in particular of the ministry of finance to detect and timely constrain profligate electoral fiscal behaviour. For this purpose, public consumption data of different frequencies (quarterly, semi-annual) could be used for monitoring the EIS in order to detect this type of pre-electoral behaviour.

Particularly helpful, in this direction, is previous experience with private consumption data that have been used to estimate the EIS. All the empirical studies up to now are micro studies where the EIS is estimated separately for rich households or asset holders since poor consumers may substitute less intertemporally because their consumption bundle contains a larger share of necessities, which are more difficult to substitute between time periods (e.g., [Attanasio & Browning, 1995](#) use micro data and [Ogaki et al., 1996](#) use cross-country data). Most studies use the Generalized Method of Moments (GMM) to estimate the EIS (e.g., [Noda and Sugiyama, 2010](#) uses quarterly and semi-annual data for total consumption per capita and nondurable goods plus services data). Sometimes Two Stage Least Squares (TSLS) is used, which in contrast to GMM requires the assumption of homoskedastic errors. A few researchers use methods based on maximum likelihood, especially limited information maximum likelihood but this estimator has weak instrument and poor small sample property problems ([Yogo, 2004](#)) so could use the Continuous Updating Estimator (CUE), which utilises more information of the dataset ([Hansen et al., 1996](#) and [Newey and Smith, 2004](#)). Several authors assume away the simultaneity problem and use OLS. As the weak instrument problem is so difficult to overcome, [Neely et al. \(2001\)](#) suggested that this simplification leads to more stable and sensible estimates of the EIS.

The use of the EIS tool, we propose in this paper, could be used for the Eurozone-member countries *via* an independent non-partisan bureaucracy to detect squabbling spending behaviour in pre-election periods and hence, timely intervene to control it. The existence of this type of tool could also be desirable in non-election periods in the event of any unexpected fall in public revenue. In this case, there will be no need to spend a lot of time to decide which spending cuts to implement in order to balance the budget and there will be no need for the minister of finance to relax the budgetary rules. The smooth and prudent budgetary policy will generate the peaceful conditions needed to go ahead with

fiscal policy as planned and/or implement any necessary reforms, which often require tough political decisions to be taken.

4. Conclusion

We develop an election cycle model, which introduces within an MFS style rational partisan cycle model, aspects of a PS style strategic debt model. In doing so we show that it is not always necessary to be true that incumbent parties strategically manipulate fiscal variables in pre-election periods to influence election outcomes to constrain the hands of a successor government in the post-election period. We show that, depending on the preferred sequence of public consumption levels over time and in particular the magnitude of the EIS, they may choose not to change their public consumption patterns in pre-election periods.

The model we develop provides a tool, which is the estimated EIS, to detect and timely constrain profligate electoral fiscal behaviour. The results of our model are in accordance with the empirical findings of Ohlsson and Vredin (1996), Andrikopoulos et al., (2004), Brender and Drazen (2008) and Drazen and Eslava (2010) where they all find evidence of absence of manipulative pre-electoral fiscal behaviour. In particular, Ohlsson and Vredin (1996), empirically test, for Sweden, if public expenditures and revenue depend on elections and ideology but they find no electoral effects. Andrikopoulos et al. (2004) find no support to the presence of electoral or partisan cycle-type hypothesis in the EU. Brender and Drazen (2008) show that electoral political cycles may not take the form of affecting fiscal aggregates because creating deficits in election years is not an effective tool to help re-election. Similarly, Drazen and Eslava (2010) find that voters are averse to high overall public consumption and deficits in pre-election years. These empirical studies show, in relation to our theoretical model, that incumbent parties can have a relatively low EIS, that is $EIS < 1$ and thus, favour overtime smoothness in public consumption, instead of inducing high variability of public consumption, which would then lead to a relatively high EIS, that is $EIS > 1$.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

- Aghion, P., & Bolton, P. (1990). Government Domestic Debt and the Risk of Default: A Political-Economic Model of the Strategic Role of Debt. In R. Dornbusch, & M. Draghi (Eds.), *Public Debt Management: Theory and History* (pp. 315-344). Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511628528.022>
- Alesina, A., & Cukierman, A. (1990). The Politics of Ambiguity. *Quarterly Journal of Economics*, 105, 829-850. <https://doi.org/10.2307/2937875>
- Alesina, A. (1987). Macroeconomic Policy in a Two-Party System as a Repeated Game.

- Quarterly Journal of Economics*, 102, 651-678. <https://doi.org/10.2307/1884222>
- Alesina, A., & Tabellini, G. (1990). A Positive Theory of Fiscal Deficits and Government Debt. *Review of Economic Studies*, 57, 403-414. <https://doi.org/10.2307/2298021>
- Andrikopoulos, A., Loizides, I., & Prodromidis, K. (2004). Fiscal Policy and Political Business Cycles in the EU. *European Journal of Political Economy*, 20, 125-152. <https://doi.org/10.1016/j.ejpoleco.2003.02.001>
- Attanasio, O. P., & Browning, M. (1995). Consumption over the Life Cycle and over the Business Cycle. *American Economic Review*, 85, 1118-1137.
- Azzimonti, M. (2011). Barriers to Investment in Polarized Societies. *American Economic Review*, 101, 2182-2204. <https://doi.org/10.1257/aer.101.5.2182>
- Barro, R. J., & Sala-i-Martin, X. (1995). *Economic Growth*. New York: McGraw-Hill.
- Brender, A., & Drazen, A. (2008). How Do Budget Deficits and Economic Growth Affect Reelection Prospects? Evidence from a Large Panel of Countries. *American Economic Review*, 98, 2203-2220. <https://doi.org/10.1257/aer.98.5.2203>
- Calvert, R. (1985). Robustness of the Multidimensional Voting Model: Candidates' Motivations, Uncertainty and Convergence. *American Journal of Political Science*, 29, 69-95. <https://doi.org/10.2307/2111212>
- Cukierman, A. S., Edwards, S., & Tabellini, G. (1992). Seigniorage and Political Instability. *American Economic Review*, 82, 537-555. <https://doi.org/10.3386/w3199>
- Drazen, A. (2000). *Political Economy in Macroeconomics*. Princeton, NJ: Princeton University Press. <https://doi.org/10.1515/9780691188003>
- Drazen, A. (2001). The Political Business Cycle after 25 Years. In B. S. Bernanke, & K. Rogoff (Eds.), *National Bureau of Economics Research Macroeconomics Annual* (pp. 75-117). Cambridge, MA: MIT Press. <https://doi.org/10.1086/654407>
- Drazen, A., & Eslava, M. (2010). Electoral Manipulation via Voter-Friendly Spending: Theory and Evidence. *Journal of Development Economics*, 92, 39-52. <https://doi.org/10.1016/j.jdeveco.2009.01.001>
- Hansen, L. P., Heaton, J., & Yaron, A. (1996). Finite Sample Properties of Some Alternative GMM Estimators. *Journal of Business & Economic Statistics*, 14, 262-280. <https://doi.org/10.1080/07350015.1996.10524656>
- Kalecki, M. (1943). Political Aspects of the Full Employment. *Political Quarterly*, 14, 322-331. <https://doi.org/10.1111/j.1467-923X.1943.tb01016.x>
- Khemani, S., & Wane, W. (2008). *Populist Fiscal Policy*. Policy Research Working Paper No. 4762, Washington DC: Development Research Group, The World Bank. <https://doi.org/10.1596/1813-9450-4762>
- Lindbeck, A., & Weibull, J. (1987). Balanced Budget Redistribution as a Political Equilibrium. *Public Choice*, 52, 273-297. <https://doi.org/10.1007/BF00116710>
- Milesi-Ferretti, G. (1995a). Do Good or Do Well? Public Debt Management in a Two-Party Economy. *Economics and Politics*, 7, 59-78. <https://doi.org/10.1111/j.1468-0343.1995.tb00104.x>
- Milesi-Ferretti, G. (1995b). The Disadvantage of Tying Their Hands: On the Political Economy of Policy Commitments. *Economic Journal*, 105, 1381-1402. <https://doi.org/10.2307/2235106>
- Milesi-Ferretti, G.-M., & Spolaore, E. (1994). How Cynical Can an Incumbent Be? Strategic Policy in a Model of Government Spending. *Journal of Public Economics*, 55, 121-140. [https://doi.org/10.1016/0047-2727\(94\)90084-1](https://doi.org/10.1016/0047-2727(94)90084-1)
- Neely, C. J., Roy, A., & Whiteman, C. H. (2001). Risk Aversion versus Intertemporal

- Substitution: A Case Study of Identification Failure in the Intertemporal Consumption Capital Asset Pricing Model. *Journal of Business & Economic Statistics*, 19, 395-403. <https://doi.org/10.1198/07350010152596646>
- Newey, W., & Smith, R. (2004). Higher Order Properties of GMM and Generalized Empirical Likelihood Estimators. *Econometrica*, 72, 219-255. <https://doi.org/10.1111/j.1468-0262.2004.00482.x>
- Noda, A., & Sugiyama, S. (2010). Measuring the Elasticity of Intertemporal Substitution for Consumption: Some Evidence from Japan. *Economics Bulletin*, 30, 1-9.
- Ogaki, M., Ostry, J. D., & Reinhart, C. M. (1996). Saving Behavior in Low- and Middle-Income Developing Countries: A Comparison. *IMF Staff Papers*, 43, 38-71. <https://doi.org/10.2307/3867352>
- Ohlsson, H., & Vredin, A. (1996). Political Cycles and Cyclical Policies. *Scandinavian Journal of Economics*, 98, 203-218. <https://doi.org/10.2307/3440854>
- Persson, T., & Svensson, L. E. O. (1989). Why Stubborn Conservatives Would Run a Deficit: Policy with Time Inconsistent Preferences. *Quarterly Journal of Economics*, 104, 325-346. <https://doi.org/10.2307/2937850>
- Rogoff, K. (1990). Equilibrium Political Budget Cycles. *American Economic Review*, 80, 21-36.
- Rogoff, K., & Sibert, A. (1988). Elections and Macroeconomic Policy Cycles. *Review of Economic Studies*, 55, 1-16. <https://doi.org/10.2307/2297526>
- Romer, D. (1996). *Advanced Macroeconomics*. New York: McGraw-Hill.
- Shi, M., & Svensson, J. (2006). Political Budget Cycles: Do They Differ across Countries and Why? *Journal of Public Economics*, 90, 1367-1389. <https://doi.org/10.1016/j.jpubeco.2005.09.009>
- Sleet, C., & Yeltekin, S. (2008). Politically Credible Social Insurance. *Journal of Monetary Economics*, 55, 129-151. <https://doi.org/10.1016/j.jmoneco.2007.10.002>
- Van der Ploeg, F. (2010). Political Economy of Prudent Budgetary Policy. *International Tax and Public Finance*, 17, 295-314. <https://doi.org/10.1007/s10797-009-9117-0>
- Wittman, D. (1983). Candidate Motivation: A Synthesis of Alternatives. *American Political Science Review*, 77, 142-157. <https://doi.org/10.2307/1956016>
- Yogo, M. (2004). Estimating the Elasticity of Intertemporal Substitution When Instruments Are Weak. *Review of Economics and Statistics*, 86, 797-810. <https://doi.org/10.1162/0034653041811770>