AN ANALYSIS OF POLITICAL BUSINESS CYCLE THEORY AND ITS RELATIONSHIP WITH THE NEW POLITICAL MACROECONOMICS

Abstract. The paper analyses the four principal model types that comprise the political business cycle literature. It then considers how this literature complements the 'new political macroeconomics' in analysing the impact of politics on inflation. Political business cycle models can be classified according to the political motivations of opportunism and ideology as well as by the way in which individuals form expectations. Using this classifications we pay particular attention to the underlying assumptions of the models. The paper concludes that a satisfactory model should incorporate the possibility of both ideological and opportunistic behaviour. While some academics continue to frown at the political business cycle literature, the 'new political macroeconomics' has generally been well received, perhaps as a consequence of its foundations stemming from the new classical macroeconomic revolution of the 1970s. However, the two have common political foundations in exploring the effect of political incentives on macroeconomic variables. The incorporation of rational expectations by political business cycle theorists has united the two strands of literature to some extent and yet, as we explain, there remain factors that one can take from the political business cycle literature and incorporate within the new political macroeconomics.

Keywords. Political business cycles; objective functions; opportunism; ideology; inflation bias.

1. Introduction

The term political business cycle is usually attributed to the work of Kalecki (1943). Kalecki argued that governments are subject to pressure from the entrepreneurial class to maintain the discipline of the work-force through the fear of unemployment. Although government policy to alleviate the worst effects of a recession would gain wide support, the entrepreneurial class would object to involvement at such an intensity in an economic upsurge. As a consequence, government are pressurised into 'shaping' the business cycle. Kalecki referred to the resultant cycle as the political business cycle.

Kalecki's model is in effect a pressure group model. Its weakness is the lack of analysis of the relationship between the economy and groups within society. The relationship is assumed rather than explored. Moreover, there is only one ideological motivation for government and that is to defend the interests of the entrepreneurial class.

The main developments in the political business cycle literature followed a resurgence of interest in the 1970s. The literature can be classified according to the opportunistic-ideological spectrum of political motivation and, furthermore, according to the expectations that individuals are assumed to hold. These classification marks allow us to identify four variants in the political business cycle literature: (i) the pure political business cycle; (ii) strong partisan theory; (iii) weak partisan theory and (iv) the rational political business cycle. We will analyse each in turn.

The 1970s saw the emergence of new classical macroeconomics. One of its most dramatic conclusions is that, under certain conditions, governments are unable to use demand management policies to influence output or unemployment. The policy neutrality proposition was in stark contrast to the idea that governments could actually engineer a business cycle and freely manipulate the economy. Therefore, the new political macroeconomics, which grew out of the new classical revolution, has paid a great deal of attention to the effect of politics on inflation and, most notably, contributed to the debate about making central banks independent. However, it has been shown by Alesina (1987) that it is possible to have a political business cycle within a new classical model. This weak partisan model will be discussed along with the other political business cycle variants using the classification highlighted above. Our additional interest in the new political macroeconomics is to show how one can draw further from the political business cycle literature to make conclusions concerning inflation within a new political macroeconomic framework.

2. Pure political business cycle

The pure political business cycle model is associated primarily with the work of Nordhaus (1975).[1] Nordhaus takes political parties to be solely interested with political competition and the maintenance of power. In so doing parties aim to maximise the votes obtainable at election time. The election period is taken to be of fixed length so that there are periodic elections. The economy is described by the familiar Phillips curve relationship between inflation and unemployment. It is assumed that there exists a greater trade-off in the long-run than in the short-run.

Voters are portrayed as having a poor understanding of the economic system. This is seen as a rational ignorance because of the information cost incurred in both observing and understanding the economic system. Consequently, voters are assumed to use rates of inflation and unemployment as a guide to the governments performance. Moreover, it is taken that voters' memories extend only over the course of the current election period. In effect each election period is independent of the next. At election time voters compare the performance of the government by reference to some standard for the economy.

It is assumed that individuals' expectations are static so that there is no change in expected economic performance. This allows one to model an individuals voting function as determined by current policies which are represented by rates of inflation and unemployment. The aggregate vote

function is then the summation of individual voting functions and is taken to be quasi-concave. Moreover, voters have decaying memory of past events.

The final assumption of the Nordhaus model is that the score hypothesis holds. This states that popularity is directly related with economic outcomes. Specifically, this model associates rising unemployment and inflation with falling popularity. The definition of popularity most commonly taken is the number of people who would vote for the incumbent if an election was held tomorrow.

Given these assumptions government is able to exploit the short-run Phillips curve in order to maximise votes at election time. If there was no short-run trade-off the government would pursue the optimal inflation rate which is consistent with the tangency between the long-run Phillips curve and the aggregate voting function. This is the golden policy rule. If the aggregate voting function is taken to be the social welfare function, the golden policy rule is akin to a long-term planning agency not discriminating between generations.

With the short-run Phillips curve government vote-maximising behaviour implies a political business cycle. Prior to an election government attempts to increase aggregate votes by moving along one particular short-run Phillips curve, trading-off inflation for lower unemployment. Provided inflation is not too high this allows government to attain a higher level of government popularity. Thus the chances of the government being re-elected are increased.

This is the myopic policy choice and is associated with lower unemployment and higher inflation than the golden policy rule.

The myopic policy cannot be sustained since it does not lie along the long-run Phillips curve or inflation-unemployment trade-off. Thus, after an election the shadow price of inflation is high. The government has an incentive to contract the economy in order to reduce inflation.[2] The lower is inflation when government initiates a pre-election expansion the higher the attainable level of popularity and the greater the chance of election success. If inflation is high enough when the pre-election expansion is initiated, government can actually reduce individuals' welfare.

The pure political business cycle implies boom-bust cycles and stop-go policies. The government will induce falling unemployment and rising output growth prior to the election and rising unemployment and falling output growth after the election.

The Nordhaus model can be criticised on several fronts. It assumes that political parties are motivated solely by opportunism and thus neglects partisan behaviour. Furthermore, it ought to be recognised that political parties may need to signal to different sets of voters that they are capable of handling both sides of the Phillips relationship. Thus, a simple opportunistic or ideological dimension to the government's objective function could be inadequate in the construction of a realistic portrayal of political behaviour.

The Nordhaus model is crucially dependent upon the traditional score hypothesis whereby voters credit the government in terms of popularity for improvements in economic outcomes. However, the score hypothesis views the voters as non-sophisticated. Chappell and Keech (1988) distinguish between naive and sophisticated voters. Naive voters are unable to determine the future implications of economic policy and thus how sustainable the economic position is. This is important because in the Nordhaus model governments in the run-up to the election are creating combinations of output growth, inflation and unemployment that are not sustainable. A sophisticated voter cannot be manipulated by such policies. Indeed a sophisticated voter will penalise these policies. Moreover, Chrystal and Alt (1981) have noted that the traditional score hypothesis popularity function tends to be time dependent.

The score hypothesis assumes that popularity functions are ideologically-free, simply relating positive economic outcomes with positive movements in popularity. However, Swank (1991) calls into question the straightforward relationship between economic outcomes and popularity. He argues that we need to consider how popularity is affected by the future expectations of economic outcomes. Swank's argument can be seen as important in three ways. Firstly, it acknowledges the importance of expectations. Secondly, it incorporates the concept of economic competence and, thirdly, it offers an ideological component to popularity. Consequently, it is possible for an incumbent to receive increasing support even if an economic variable worsens. If the key problem is unemployment an incumbent party of the Left may

receive increasing support despite rising unemployment. However, the relationship between ideology and economic conditions is clouded by the perceived competence of the political parties in managing the economy. If a political party is believed to lack competence then even if it is identified as prioritising the key economic problem it may not receive the support one might suppose.

In the UK we can identify the April 9th, 1992 election as an example of an incumbent government facing worsening economic conditions and the key economic problem being widely identified as a higher priority of the main opposition party. Despite this the incumbent Conservative government was re-elected. Consider the economics of the pre-election period. The UK unemployment rate in the election quarter was 9.6%, a rise of exactly 2% on the equivalent quarter of the previous year. The OECD average had risen from 6.8% to 7.4%. Meanwhile, inflation over the same period had fallen from 6.0% to 4.1%. The OECD rate had fallen from 4.9% to 3.4%.[3]

The economics of the period were mirrored by individuals' perceptions. Over the period 1991(2) to 1992(2), in response to a Gallup question as to the most urgent problem facing the country, the most frequent reply was unemployment. An average of 38.2% of respondents identified unemployment compared to 14.2% identifying prices as the most urgent problem. Further, in reply to the question as to which political party would best handle their perceived most urgent problem, the Conservatives and Labour were both identified by 33.7% of respondents. So despite the predominance of the

unemployment issue the Labour Party did not appear to gain the popular support one may have supposed of a left-of-centre party. The competence of the Labour Party was clearly an issue. It appears that the competence factor lost Labour the 1992 UK election and explains why Labour subsequently became 'New Labour' continually stressing its ability to govern.

Labour was of course helped by the growing dissatisfaction with the Conservatives after 1992, but again the competence factor was important. This time, however, Labour was the beneficiary. The period from January 1996 through to the election in May 1997, saw an average of 73.6% of respondents to MORI polls express dissatisfaction with the government's running of the country. However, at the same time there was no popular perception that the economic conditions of the country would get worse. Only 4.2% more people thought the economy would get worse rather than improve with the largest number, 39.8%, believing economic conditions would stay the same.

Research is needed into the concepts of economic and administrative competence. There is a need to define these competencies more clearly and to explore their interdependence. However, it can be seen from the above analysis that popularity functions are affected by both ideology and competence. The score hypothesis, upon which the pure political business cycle is built, does not incorporate either and is much weaker as a result.

A further problem of the Nordhaus model is that of flexible election dates. The flexibility of the election date, in effect, presents the government with an

additional policy instrument. Indeed it provides us with the intriguing question of whether it is the election date that determines movements in government instruments and economic outcomes or whether it is these movements in economic variables that determine the election date.

We would expect the flexibility of the election date to at least dampen Nordhaus cycles. It also poses problems in empirical testing. Much of the evidence, particularly for economic outcomes has used either a patterned or dummy variable.[4] However, the construction of these variables tends to be based around an election date which is not at a fixed interval but is set by the incumbent government. Opportunistic motives could be important in the setting of this date so that the date coincides with an improving or satisfactory economic state. Thus, even if one finds cycles in unemployment or output around the time of the elections it may be inappropriate to attribute them to the effect of the election date itself. It could be the case that the cycles in fact contributed to the setting of the election date. Empirical testing of opportunistic motives as defined by Nordhaus is best done by an analysis of cycles in government instruments.

The Nordhaus hypothesis assumes a straightforward relationship between the manipulation of instruments, monetary or fiscal, and effects on economic variables. The Nordhaus model appeared in a period when macroeconomic orthodoxy was being challenged by the new-classical school. In particular, the policy neutrality result suggests that anticipated government policy could be ineffective. If individual agents hold rational expectations and thus use all

available information in forming their expectations of a variable, rather than merely using past realisations, on average their forecasts are correct. If it is further assumed that markets are perfect then individual actions would negate anticipated government policy.

Despite these reservations the pure political business cycle model contains qualities which can be built upon. Its simplicity invoked much of the subsequent literature. In particular, it helped in dividing the literature between primarily opportunistic or ideologically motivated models and according to whether individuals are deemed to form adaptive or rational expectations.

3. Partisan theory

The pure political business cycle approach omitted an ideological dimension from the utility function of politicians. Political parties are a coalition of interests. Assuming that the only motivation is to retain power ignores issues relating to the pursuance of partisan interests. Partisan theory has categorised political parties as being of the Left or Right. It has portrayed the party of the Left as being concerned with the interests of the worker and the party of the Right as defending the interests of the entrepreneur. In order to defend these interests partisan theory assumes that a party of the Left will prioritise unemployment over inflation and undertake monetary and fiscal policies to promote growth and welfare. The party of the right will prioritise inflation over

unemployment. Monetary and fiscal policy will be tighter than under a party of the Left.

The definition of partisan theory stresses that political parties will have different economic priorities. The validation of partisan theory comes from two related perspectives. The first is a purely economic validation of the concept of partisanship. It considers how individuals are affected differently over the course of the business cycle. If it is possible to identify groups such that they are affected differently over the course of the business cycle, then it would appear valid to have political parties that offered different economic priorities. The political parties would then be able to affect policy in order to serve the economic interests of their core constituents.

The typical economic validation is to consider the share of national income going to capital and labour over the course of the business cycle. For instance, Hibbs (1977) cites evidence that the profit to wages ratio increases steadily after a trough in business activity, peaking halfway through an expansion, before falling away. Since unemployment typically lags changes in output, unemployment will tend to fall as the profit to wages ratio also falls. Unemployment will only fall when it is profitable for firms to change employment levels rather than utilisation rates. Hence, an increase in the share of income going to labour will coincide with a fall in productivity. This suggests a negative relationship between labour's share of national income and productivity measures. Furthermore, the analysis implies that with falling unemployment the waged sector as an entity benefits. Conversely, rising

unemployment is associated with a falling share of national income to the waged sector and a rise in both productivity and the profit to wages ratio.

Reder (1955) and Phelps (1972) argue that a tightening in the labour market will cause a narrowing of wage differentials.[5] A tightening of the labour market, which reduces labour slack for every kind of job, causes a substitution effect whereby workers with the minimum specified qualifications can substitute for those previously more skilled. The effect is to raise the equilibrium wage paid on jobs requiring less than the highest degree of skill initiating a domino effect of substitution within the labour market.

Phelps believes that the less skilled will fare better in getting jobs when the labour market is tighter because the cost of overlooking them or discriminating against them has increased. The mechanism through which this operates is upgrading.

The importance of employment over the business cycle and the state of the labour market has attracted much attention. It is believed that employment effects are quantitatively greater than those stemming from inflation. Thurow (1970), while finding that inflation leads to further inequality of incomes found that the effects of higher unemployment were nine times more potent in determining the incomes of wage-earners and the poor. Thurow suggests that the combination of low unemployment and high inflation has a net redistributive effect towards lower paid workers and the poor.

A second validation of partisan theory is offered by polls of political support. Hibbs (1982) considers how social class in the UK affects answers to opinion polls concerning the number who see unemployment as the most important problem. The replies were for October 1964, September 1969, and May 1975. While there was a time dimension, such that regardless of class a higher number replied that unemployment was the most important problem in 1969 relative to 1964 and in 1975 relative to 1969, it was always the case that lower social classes showed a greater concern for unemployment.

Hibbs (1982) estimates a political support model among occupational groups for the period 1962(3) to 1978(4). The political support for the incumbent government was found to vary more across occupational groups in relation to unemployment than inflation. Moreover, lower social classes expressed their sensitivity towards unemployment levels via their voting intentions.

3.1 Strong partisan theory

Partisan theory can be categorised according to whether partisan policies are thought to have permanent effects on the economy and whether government persistently pursues such policies. Strong partisan theory takes the pursuit of the partisan economic priorities as both the sole objective and motivation of political behaviour and as having persistent effects on the economy. Therefore,

it lies at the opposite end of the ideology-opportunistic spectrum to the pure political business cycle model.

With strong partisan theory, as with the Nordhaus hypothesis, it is assumed that government is able to manipulate the economy. The ability to manipulate the economy for partisan objectives results in strong partisan theory also being referred to as the party control hypothesis. Strong partisan theory is closely associated with Douglas Hibbs.[6] Tests for the effect of strong partisan theory thus involve analysing whether the Left versus Right dimension has led to discernible partisan effects on economic instruments and outcomes, net of trends, cycles and random fluctuations. However, if ideologies are not constant then we may have government specific effects rather than party specific effects.

Strong partisan theory assumes that the only motivation of politicians is ideology. Re-election considerations are not considered.[7] It further assumes that government can manipulate the economy to achieve the desired partisan goals. The role for popularity is implicit in determining the behaviour between the polity and the economy since the political parties aim to satisfy their core constituents.

3.2 Conventional weak partisan theory

Weak partisan theory infers transitory partisan effects. The works of Frey and Schneider are the classic expositions of conventional weak partisan theory.[8] Their work highlights a trade-off between opportunism and ideology. By incorporating both behavioural characteristics in government's objective

function, we move away from the polarised perspectives of the pure political business cycle and strong partisan models. The mechanism that underpins the Frey and Schneider model is one which switches behaviour from being opportunistically motivated to being ideologically motivated. The key to this switching mechanism is government's popularity lead over the main opposition party. Government has in mind an ideal popularity lead. This ideal lead is referred to as the critical popularity lead. Government feels electorally safe when its actual popularity lead is in excess of the critical popularity lead. This critical lead is a function of the position in the election period. The nearer the forthcoming election, the higher the desired critical popularity lead.

If government's actual popularity lead is in excess of the critical popularity lead then government holds a popularity surplus. If government's popularity lead falls short of the critical lead then government holds a popularity deficit. A popularity surplus motivates government to act ideologically while a popularity deficit motivates them to act opportunistically.

Frey and Schneider define opportunistic behaviour in accordance with the pre-election expansion highlighted by Nordhaus (1975). However, this behaviour is not confined solely to the run-up to the next election but to whenever government holds a popularity deficit. The score hypothesis is again assumed so that to increase popularity government manipulates the levers of government policy to effect economic variables, such as unemployment and inflation. Ideological behaviour is defined by the desired proportion of government expenditures in GDP. In the UK case Labour will desire a higher

relative size of government expenditure. This satisfies the partisan characteristics of a Left-wing party in promoting welfare and economic growth.

Frey and Schneider thus define narrow behavioural types. The popularity lead index switches behaviour between that of the pure political business cycle and that of strong partisan theory. The popularity lead index is in effect governments indicator.

The Frey and Schneider politico-economic model is based upon two functions – an evaluation function and a reaction function. The evaluation function is open to those criticisms levelled at the score hypothesis. Conventional weak partisan theory further assumes that governments can alter real economic variables. However, problems can be identified with the reaction function. Chrystal and Alt (1981) question the treatment of the Labour Party. There is no clear distinction between that behaviour characterising Labour under positive and negative popularity lead differentials. In both situations Labour is seen as increasing expenditures. Chrystal and Alt ask why Labour should have a target share of expenditures in national income when they have a positive popularity lead differential and not when they have a negative popularity lead differential. A second problem with the reaction function is that ideological differences between the parties are assumed not to alter the relationship between instruments and targets. This is particularly so when one is looking at particular components of expenditures which may be favoured more by one party than another.

The flexibility of the election date causes difficulty to all political business cycle models in the U.K. Here it interferes with the concept of the critical popularity lead upon which the switch between ideological and opportunistic behaviour depends. If the election date is fixed there is a determinate popularity lead at every instance in the election cycle. With a flexible election date we would expect the opportunistic dimension in the model to be dampened. This will affect the probability of opportunistic behaviour over the course of the election cycle which with a fixed election period may have been expected to increase.

An area of interest that does not appear to have been previously addressed is the choice of governments indicator which switches behaviour between opportunism and ideology. In the Frey and Schneider model the popularity lead indicator is seen as being affected by economic variables. Thus, the index can be used as an indicator by government as a guide to its re-election chances. However, while traditional popularity indices might indicate poor re-election chances, polls relating to the likely winners of the next election might actually indicate that the incumbent is expected to win. This was certainly a common occurrence in the 1980s. According to Gallup, between 1982(2) and 1989(4), voters consistently believed that the Conservatives were the likely winners of the next election. Indeed only in 1986(2) did more people believe that Labour were more likely to win the next election than the Conservatives.[9] In effect, what may be referred to as the winners index inferred less opportunistic behaviour than the popularity lead index in this period.

3.3 Rational partisan theory

The second example of weak partisan theory is rational partisan theory. This has its foundations in new classical macroeconomics and is thus a new political macroeconomic model. This model is important because it shows how a political business cycle can emerge within a new classical framework. It is primarily associated with the works of Alberto Alesina.[10] It differs from the Frey and Schneider variant of weak partisan theory in important respects. The transitory nature of partisan effects does not involve any trade-off between opportunistic and ideological behaviour. It stems from election result uncertainty and the new classical macroeconomic framework. Individuals are assumed to be fully informed in every other respect and to hold rational expectations. Political parties are assumed partisan. In a single party system with no elections policy neutrality would exist. However, policy surprises are generated by the uncertainty over the election result. To understand the theory in more detail we follow Alesina (1987).

In the simplest case wage contracts are signed annually. Wage-bargainers in the period prior to an election are faced with an event which has a probabilistic outcome. The model assumes that electoral competition involves two political parties. There are thus two possible outcomes each of which can be assigned with a probability that is exogenously determined. A Lucas

surprise supply function is used to describe the economic system as in equation (1).

$$Y_t = a \ (\Pi_t - W_t) + Y^*$$

(1)

where, Y_t = rate of growth of output (in period t); P_t = inflation rate; W_t = rate of growth of nominal wages; Y^* = rate of growth of output compatible with the natural rate of unemployment.

W age bargainers are assumed not to suffer from money illusion and thus set the rate of growth in nominal wages in accordance with the expected inflation rate. Wage contracts for the next period are based upon those rational expectations of inflation for the next period, $_{t-1}\Pi_t^e$:

$$W_t = {}_{t-1}\Pi_t^e = E \ (\Pi)$$

(2)

where $E \ (\Pi)$ is expected inflation. Substituting equation (2) into (1):

$$Y_t = a \ (\Pi_t - E \ (\Pi)) + Y^*$$

(3)

Equation (3), thus, implies that deviations in the rate of growth of output from the natural rate result from deviations in actual inflation from expected inflation. It is the probabilistic election result and the partisan nature of political parties that offers the possibility of such deviations. Of the two parties, the party of the Left, party L, is more sensitive to unemployment and has a stronger incentive than the party of the Right, party R, to generate policy

surprises and growth. Party L is willing to promote growth and higher levels of welfare and prepared to finance this by money creation.

A lesina (1987) presents the objective functions of the two political parties as cost functions. Assume that party L has an ideal or bliss point inflation rate, c, which is unaffected by whether or not this is expected, and penalises decreases in the rate of growth as indicated by the parameter b'. The cost function for party of the Left can be written as:

$$Z_t^{L'} = \Sigma q^t [\frac{1}{2} (\Pi_t - c)^2 - b'Y_t]$$
(4)

where q is a discount factor assumed equal for both parties. The summation is over all current and future periods. To simplify the algebra, output enters linearly into the cost function. The party of the Right attributes no value to unexpected inflation and their ideal inflation rate is zero. The cost function for the party of the Right can be written as:

$$Z_t^R = \Sigma q^t [\frac{1}{2} \Pi_t^2]$$
(5)

Substituting (3) into (4) and assuming $Y^* = 0$:

$$Z_t^{L'} = \Sigma q^t [\frac{1}{2} \Pi_t^2 + \frac{1}{2} c^2 - c \Pi_t - b'a (\Pi_t - E(\Pi))]$$
(6)

Given that we can write the infinite summation of q^t as $1/(1-q)$ and let $b = b'a$ we manipulate the cost function of party L such that: $Z_t^L = Z_t^{L'} - (\frac{\frac{1}{2} c^2}{1 - q})$

$$Z_t^L = \Sigma q^t \left[\frac{1}{2}\Pi_t^2 - b(\Pi_t - E(\Pi)) - d\Pi_t\right] \tag{7}$$

It is assumed that policy-makers can choose the rate of inflation. The elected party thus sets inflation immediately after the election. There exists a probability distribution of electoral outcomes which, given the assumption of rationality, is not dependent on either current or past economic performance. The probability of party L being elected is P and the probability of party R being elected is, hence, 1-P.

Opinion polls taken in period t-1 provide wage-bargainers with information on voting intentions and reveal P. However, when wages are set there is election result uncertainty. This uncertainty is only relevant to those contracts negotiated prior to the election for the period t in which the election occurs.

When elected the governing party chooses the rate of inflation so as to minimise its own cost function. Assuming inflationary expectations are given the first order condition for the party of the Left is:

$$\Pi_t^L = b + c \tag{8}$$

The first order condition for the party of the Right is:

$$\Pi_t^R = 0 \tag{9}$$

In period t-1 wage-bargainers set:

$$W_t = E\left(\Pi\right) = P E\left(\Pi^L\right) + \left(1 - P\right) E\left(\Pi^R\right) = P\left(b + c\right) \qquad (10)$$

If party L is elected in period t there is unexpected inflation and therefore output growth is above the natural level $Y*$:

$$Y_t^L = a\left[\Pi_t^L - E\left(\Pi\right)\right] = a\left(1 - P\right)\left(b + c\right) \qquad (11)$$

If party R is elected in period t there is a contraction:

$$Y_t^R = a\left[\Pi_t^R - E\left(\Pi\right)\right] = -a P\left(b + c\right) \qquad (12)$$

Given our assumptions, we can view b as the difference between the desire of the parties to generate surprise inflation and c as the difference between the ideal rates of inflation of the two political parties. Therefore, Alesina (1987) likens these to a measure of political polarisation. The greater the difference between the two parties in terms of the choice of inflation the greater is the degree of political polarisation. In turn, greater political polarisation infers heightened economic fluctuations as can be seen from equations (11) and (12). The greater are b and c the larger is the effect of elections on output for a given level of election result uncertainty.

Equations (11) and (12) also reveal that the more unexpected the election result the larger the potential economic fluctuations. The lower the probability of party L being elected the larger is output growth under party L and the smaller the recession under party R. The higher the probability of party L election success the less is any party L growth or the greater any party R recession. For a given degree of political polarisation, a surprise election result

causes a larger business cycle while a more certain result gives rise to a smaller business cycle. Wage-bargainers when faced with a probabilistic election result are using opinion polls as a guide to the election result just as punters use the past form of horses in placing their bets. In effect, the more uncertain the election result the more wage-bargainers are edging their bets and the greater the potential for a discrepancy between the expected and actual inflation rates.

Both greater political polarisation and election result uncertainty give rise to greater output fluctuations. The duration of the post-election fluctuations is dependent upon the time that wage contracts have to run when the election occurs. The most straightforward scenario would be when all wage contracts are signed simultaneously. Given the assumptions of the model, wage contracts signed after the election do not give rise to output fluctuations since voters know who is in power and their discretionary inflation choice. However, the inflation rate is always higher under a party L government because their discretionary inflation choice reflects a stronger incentive to generate inflation surprises and the higher relative weight given to output as opposed to inflation.

The rational partisan model seems most appropriate for countries with a two-party system and with fixed election dates. In the UK context the model is undermined by the flexibility of the election date. Wage-bargainers are not faced by a solitary source of uncertainty. Rather, they are faced by both election result uncertainty and election date uncertainty. The implication of this additional source of uncertainty is additional deviations from trend. Testing of the rational partisan theory in this setting is made acutely difficult. Modelling

procedures would have to take into account the uncertainty of the actual election result as well as the uncertainty over the actual election date. Moreover, the time between elections can be short. For instance, in the UK there were two elections in 1974.[11]

Even if election dates are fixed, modelling procedures have to take into account election result uncertainty. This is not the case with the tests employed by Alesina and Roubini (1992). The idea was to see whether an intervention term can be added that achieves statistical significance. However, their term requires a change in the political persuasion of government. They make the assumption that when the incumbent has been re-elected it has tended to coincide with elections that have involved "virtually no political uncertainty" (p.669). This, of course, would in turn imply virtually no economic blip.

To show very simply that the link between re-election and the lack of election result uncertainty is generally unfounded, we devised an index of UK election result uncertainty. This index was for the ten elections from October 1959 to April 1992. Data was taken from Gallup opinion polls concerning the expected winners of the next general election. We assume that the electorate face a choice between voting Conservative or voting Labour. The uncertainty index is the ratio of the average percentage of people questioned in the four quarters up to and including the election quarter who believed the actual election winners would indeed win to those who believed the election winners would actually lose.[12] The lower the index the more uncertain the result. The resultant index of uncertainty is shown in table 1.

Table 1: Index of uncertainty

October 8th, 1959	1.95	October 10th, 1974	1.48
October 15th, 1964	1.85	May 3rd, 1979	1.48
March 31st, 1966	1.18	June 9th, 1983	3.89
June 18th, 1970	1.54	June 11th, 1987	2.28
February 28th, 1974	1.27	April 9th, 1992	1.54

Of these elections, the 1966 election is deemed to have been the most uncertain. This election saw Labour re-elected taking 363 of the 651 seats. This clearly refutes the association between re-election and a lack of election result uncertainty. The elections of 1983 and 1987 do support the assertion of Alesina and Roubini, but generally there is no clear association between re-election and a lack of uncertainty.

The rational partisan theory is devoid of a dynamic and interactive relationship between the economy and the polity. Popularity does not influence policy, but rather determines the magnitude of economic fluctuations. Individuals are assumed to vote according to policy rather than economic performance as in strong partisan theory. However, to use policy as a voting indicator requires strong assumptions about the information available to voters. In particular, they must comprehend the ideological motivations of political behaviour and the implications in relation to policy and economic outcomes. This is despite the fluidity of ideology.

4. Rational political business cycle

The rational political business cycle models assume that a government's objective function can be defined in terms of opportunism or vote-maximisation. In contrast to the pure political business cycle model of Nordhaus these models assume that individuals form expectations according to the rational expectations hypothesis.

The rational political business cycle is most closely associated with the works of Rogoff and Sibert (1988), Rogoff (1990) and Persson and Tabellini (1990). There is, however, a difference in the focus of the Persson and Tabellini variant in that it focuses on governments demonstrating their competence at managing the inflation-unemployment relation. The other variant considers how governments wish to appear competent in relation to managing the public finances.

Although we will be primarily concerned with the instrument cycle variant, a brief sketch of the Persson-Tabellini framework is useful. The common element is that the objective function of voters can be defined over competence. The more competent the government the lower the inflation cost of an increase in output. Effectively, a more competent government faces a flatter Phillips curve. In a Keynesian model and assuming that quantities react more quickly than prices, the government is modelled as having an incentive at elections to pursue polices aimed at affecting output, possibly by initiating new government financed contracts. The aim is to appear more competent. This

incentive arises since post-election the government can partake in inflation financing of these expenditures so that the full cost in terms of inflation is only revealed after individuals have cast their vote. Competent governments may ironically have more of an incentive to demonstrate their competence simply because they are able to do so. This is because it is assumed that governments do place some weight on social welfare and acutely incompetent governments would not engage in expansionary policies since the future inflation costs would be too great.

In concentrating on the instrument-based version of rational political business cycle theory we follow Rogoff (1990). The key concept in the approach is that of administrative competence. This is defined as the revenue needed to deliver a given level of government goods and services. The more competent is government the less revenue it requires to provide the given level of goods and services.

An individual's utility function is defined over their consumption of the private good, c, the public consumption good per capita, g, the public investment good per capita, k, and a "looks" shock, η. The looks shock is intended to capture those factors related to the ability of the government and Prime Minister to lead or govern, but which are not correlated with their competence in administering the production of public goods. An individual's consumption of the private good is directly related to the cost of the public goods, τ. Tax is in the form of lump-sums. It is assumed that the total cost of public goods in the current period refers to those consumption goods which can

be consumed in this period but to those investment goods that are consumed in the following period, $t+1$.

Each party's competence shock is serially correlated which provides individuals with the incentive to vote for a party that currently appears more competent. The competence shocks for the two parties are independent and competence is deemed to vary across time and across political leaders. Competence is an inherent characteristic of the political party and its leader.

In any period voters are able to jointly observe taxes, τ, and government consumption spending, g. However, they have to use this information to form expectations about investment spending which is 'consumed' in the following period and, consequently, about the incumbent's latest competency shock. The government thus holds an informational advantage.

The incumbent has to set the level of consumption spending and lump sum taxes before it observes its "looks" shock although the voter can observe this prior to voting. The assumption is based on the fact that it takes time to collect taxes and deliver services while the "looks" shock is intended to capture information right up to election day. The individual voter will compare their expected utility under the two political parties.

The incumbent leader will maximise a discounted function defined over the probability, π, of being in office after the election and over social welfare which relates both to the mix of public consumption and investment goods and to the consumption of the private good. The information advantage that the

government holds allows it signal to voters its unobserved competency. It can do this through manipulations of g and τ. Signalling arises because there is a limit to the amount that the incumbent would be prepared to manipulate the public finances. As with the Persson and Tabellini model the incumbent places some weight on social welfare. Therefore, the incumbent is concerned about the mix of public consumption and investment and the need to resort to inflation financing of public expenditures

Voters can be manipulated by the level of the lump-sum tax relative to the level of public consumption goods because of the information asymmetry. The temptation to signal affects social welfare and thus Rogoff and Sibert (1988) liken it to cheating. If the sum of the indices of competence and non-economic popularity are low a rise in non-economic popularity is likely to increase the incentive to cheat more than if the same sum is greater than the expected level of competence. Therefore, the relationship between popularity and manipulations of government instruments is dependent upon perceived competence. There is no cheating in non-election years since the public are able to observe the level of public investment and the competence shock relating to the period t+1 in the period t+2.

The pre-election tendency for government to favour consumption spending over investment spending can be referred to as the visibility hypothesis. The concept of visibility refers both to the immediacy of policy implications and to the more concentrated effect on individuals. The benefits of capital expenditures may take longer to appear and be less tangible. Tests of the

visibility hypothesis could be focused upon pre-election expansions of current expenditures. An adequate test would presumably require the identification of narrowly defined expenditures. It would also have to be borne in mind that the incentive to signal competence is not constant and crucially dependent upon perceived competence.

Harrington (1993) noted that if informed individuals could observe policies then voting would depend on policies and not economic performance. The assumption that voting depends on policy is made in the case of rational political business cycle models and in the strong and rational partisan theories. The ability to both observe and comprehend past policies is a strong assumption. For instance, an individual's tax bill comprises a mix of a local property tax[13] and indirect and direct taxes. In return they receive a bundle of public goods and services provided centrally and locally. The link between the "tax price" of public goods and their consumption is difficult to evaluate. If policy is difficult to evaluate, let alone difficult to observe, individuals are likely to use other indicators in deciding upon their voting intentions.

The relationship between the economy and the polity could be better developed. In particular, it is unclear how competence originates. The issue of competence is clearly a fruitful one for researchers. The term competence is often misused and there is a need for a better understanding of what it encapsulates. This is certainly true in the UK where the perceived ability to govern has been an important determinant of recent election results.

5. Reflections on political business cycle models

The political business cycle literature can be summarised according to four model types: (1) Pure political business cycles; (2) Strong partisan theory; (3) Weak partisan theory and (4) Rational political business cycles.

Underlying the Nordhaus (pure) political business model and the Frey and Schneider variant of weak partisan theory is the score hypothesis. This views voters as naive such that they award improvements in economic conditions with increases in government popularity. The score hypothesis is ideologically-free although ideology should not be discounted in an analysis of government popularity. The mechanism by which ideology affects popularity indices needs to be pursued further. It is perhaps appropriate to consider how voters interpret the competence of political parties in dealing with the most urgent problem, either economic or non-economic. In this respect popularity becomes a function of ideology and perceived competence. Further, voter expectations are an important mechanism in determining popularity. If unemployment is expected to worsen then voting intentions may reflect views concerning the relative abilities of the parties to tackle this problem.

Research into modelling the popularity of political parties should perhaps better appreciate the inter-relationships between ideology, competence and expectations. This is perhaps best highlighted by the Conservative Party's ability to win the 1992 UK general election despite high unemployment,

expectations of even higher unemployment and the Conservatives association with prioritising inflation over unemployment.

Despite flexible election dates in many countries, including the UK, the political business cycle theory typically works under the assumption of fixed periodical elections. Implications for all models variants follow from flexible election dates. Not least, flexible election dates give governments an additional policy instrument. One would expect this to dampen the magnitude of opportunistic manipulations of policy instruments. In the Nordhaus model government can wait for economic improvement rather than create a pre-election boom. Further, the act of signalling in the rational political business cycle model could be replaced by the act of calling an election.

The flexibility of the election date has not seemingly been a major issue in weak partisan theory. However, discussion is equally relevant here. Flexible election dates interfere with the concept of a critical popularity lead which is at the heart of the Frey and Schneider model. It is the key to the switching mechanism which causes policy behaviour to switch between being either ideological or opportunistic. Research could perhaps consider whether the additional policy instrument of choosing the election date implies any greater scope for partisan policies.

The second weak partisan model is that of rational partisan theory. The model crucially depends on the assumption of partisan parties, rational expectations and perfect markets. Individuals are assumed to be fully informed

although an information gap arises in the election period concerning the result of the election and thus the future policy-maker 'type'. A flexible election date ceases to render election result uncertainty the sole source of economic deviations. The second source is election date uncertainty. Wage-bargainers are not only faced with a probabilistic election but with the additional problem of when the election itself will be. The implication is of additional economic fluctuations.

It may well be that the assumed behavioural types of the political business cycle models are typically too simplistic. Perhaps opportunistic behaviour should include behaviour whereby political parties act in a way so as to demonstrate their ability to mange both sides of the Phillips relation and to deal with those issues typically identified with alternative political parties. This behaviour is not considered in any of the four model types. Even in the Frey and Schneider variant, which recognises the need for political parties to appeal to both their core voters and floating voters, opportunistic behaviour is simply modelled as that of the pre-election phase of the pure political business cycle.

More research is needed to analyse the instruments of political expediency. The rational political business cycle offers the possibility that government expenditure policy will be biased towards consumption and away from investment expenditures. Consumption expenditures are more immediate and more visible expenditures. The manipulation of expenditure in accordance with the visibility hypothesis requires research based on narrowly defined components of expenditures.

6. Bridging the gap with the new political macroeconomics

We have seen how the political business cycle literature can be categorised according to the objective function of the policy-maker and the nature of the expectations process. In the last part of this paper we briefly consider how the political business cycle literature and the new political macroeconomics complement one another. In particular, we consider how the two strands of literature have been brought together by the work of Alesina in relation to excessive inflation and how we could draw on other strands of political business cycle theory to strengthen this tie.

With the growing ascendancy of new classical macroeconomics in the 1970s the models of Nordhaus, Hibbs and Frey and Schneider were open to criticism. This centred on the ability of governments to actually manipulate output and unemployment in the way these models described. At the heart of new classical macroeconomics is the policy neutrality result. This insisted that under certain conditions anticipated monetary or fiscal policy would have no affect on the economy's output or unemployment levels. This required rational expectations, market clearing and an aggregate supply function such that only errors relating to prices would result in output or unemployment moving away from a natural level.[14]

The models of Nordhaus, Hibbs and Frey and Schneider sat uncomfortably with the new classical policy neutrality proposition. Alesina has

done more than most to show that it is possible to take the ideas of political business cycle theorists, embed them within new classical tradition and still be able to describe a political business cycle. What causes cycles in output and unemployment is the informational gap caused by election result uncertainty. Similarly, the rational political business cycle school has shown that in the presence of rational expectations an informational gap concerning government competence can result in cycles in either instruments or economic outcomes or indeed both. However, this school is rather more diverse and not all models incorporate all three of the new classical macroeconomic ingredients. It is the Alesina model that has built a bridge between traditional political business cycle theorists and new classical macroeconomics.

While Alesina's model is often used to focus on how a political-economic cycle can result from a new classical macroeconomic model, it also shows how politics can subtly affect the magnitude of inflation bias or the degree of excess inflation. The concept of inflation bias arose from the work of Kydland and Prescott (1977). Within a new classical macroeconomic model the government's objective function is modelled over the costs and benefits of inflation. Moreover, the government inherits the objective function of the median voter. While government would prefer low levels of inflation per se, they derive welfare from output gains that leads to the level of output rising above and unemployment falling below their natural levels. However, this can only be achieved by surprise inflation and so government is modelled as placing a particular weight on output relative to inflation. The greater this

weight the more prepared they are to use surprise inflation and thus higher inflation to boost output and reduce unemployment.

In the Kydland and Prescott model, the public are aware of a government's incentive. Inflationary expectations are biased upwards which causes government to deliver higher inflation. If they did not then the result would be lower output and higher unemployment. The incentive to generate surprise inflation simply leads to excessive inflation. The degree of this excessive inflation depends on the relative weight given to output and surprise inflation. This weight was referred to by Barro and Gordon as the benefit parameter. The greater the benefit parameter, the greater inflation bias. Inflation bias is measured from the government's bliss point inflation rate. The bliss point is the combination of inflation and unemployment/output that delivers the government the highest possible level of satisfaction.

The Alesina model takes the two political parties as placing different relative weights on output to inflation. Therefore, the benefit parameters of the two potential governments are different. A left-of-centre government would place more weight on output and thus surprise inflation than a right-of-centre government. Consequently, the inflation bias of the former is greater than that of the latter. Although Barro and Gordon (1983) argue that there might be downward pressure on inflation bias because governments value the future credibility of their economic policy, there would seem no reason to believe that one party would be more concerned about this future cost arising from today's

surprise inflation. The result is that inflation is higher under a left-wing as opposed to a right-wing government.

Alesina's model borrows the concept of ideology from the traditional political business cycle school to draw inferences within a new classical framework. In particular, Alesina's model is an extension of the Barro and Gordon framework. However, it is also possible to consider how opportunism could affect inflation bias. Perhaps, the best way to think of opportunism is in the manner of Frey and Schneider. They essentially saw opportunism as reflecting the time elapsed in an election period and the government's level of popularity relative to that of the opposition.

Once could imagine defining a discounted popularity index to measure the incentive for opportunism. Popularity could be discounted or weighted by the time to the next election. As Frey and Schneider themselves note, unpopularity can be tolerated by a government in the early part of an election period but less and less so as the next election approaches. Opportunism would then affect the relative importance of output to inflation. The greater the incentive for opportunism the more weight government places on output and thus surprise inflation. The incentive would be to court popularity since the government's welfare function is inherited from the median voter.

The implication of our weighted popularity index is that unpopularity increases the value of the government's benefit parameter. The cost of inflation matters relatively less. The effect is to increase inflation bias. The government

is willing to accept more inflation for some amount of extra output. Since the marginal rate of substitution between inflation and output is affected, individuals' expectations of inflation are affected resulting in higher inflation. If the bliss level of inflation is unaffected, the result is greater inflation bias.

We can use the same notation as that used for the earlier derivation of the Alesina model in order to show the possible effect of opportunism on inflation and inflation bias. Assume that policy-maker i has the following objective function:

$$Z_t^i = \Sigma q^t [\frac{1}{2} (\Pi_t - c^i)^2 - b_t^i Y_t]$$ (13)

where b_t^i equals b_{pop}^i when the discounted popularity index is high and b_{unpop}^i when low and $b_{pop}^i < b_{unpop}^i$. The ideal rate of inflation for policy-maker i, c^i, is not time-dependent. Opportunism affects the marginal rate of substitution between inflation and output (unemployment), but not the ideal level of inflation. Solving this modified version of Alesina's model and allowing α in equation (1) to equal 1, the discretionary inflation choices are:

$$\Pi_{pop}^i = b_{pop}^i + c^i$$ (14)

$$\Pi_{unpop}^i = b_{unpop}^i + c^i$$ (15)

Therefore, inflation is higher when the popularity of the policy-maker is lower. Furthermore, it follows that the inflation bias, which is measured from the

optimal inflation rate, is greater when government or policy-maker i is unpopular.

There may be further pressure from opportunism to increase inflation bias since, in addition to output having greater relative importance, the degree to which the loss of future credibility matters decreases. Therefore, the downward pressure from the credibility cost identified by Barro and Gordon is likely to be less. Coupled with the higher benefit parameter, the greater discounting of any credibility loss works to increase inflation bias during periods of government unpopularity.

In conclusion, by drawing on the political business cycle literature and, in particular, the way in which the objective functions of policy-makers are modelled, one can make further observations as to the magnitude of inflation bias. In this way the political business cycle literature can complement the focus on inflation of the new political macroeconomics.

7. Final Comments

In this paper we have reviewed the much maligned political business cycle literature. We have examined the importance of the expectations formation process and the characterisation of the government's objective function. It would appear too simplistic to suggest that governments are solely opportunistic or ideological. Incorporating both behavioural types into any political macroeconomic model seems the common sense approach.

A central theme of the new political macroeconomics has been the effect of politics on inflation. The concept of inflation bias arises from the portrayal of a government inclined to generate surprise inflation. Since the government's welfare function is nothing more than that of the median voter this is an opportunistic model in the Nordhaus sense, but without the repeated business cycle. Nonetheless, inflation bias is the result of opportunism and the desire to affect the popularity of the median voter.

Alesina shows how a political business cycle is possible within a new classical framework. The importance of this model is that it uses behavioural characteristics from political business cycle theory. Inflation bias is determined by ideology which affects the weight a political party places on surprise inflation relative to the cost of inflation itself. Here each party inherits the welfare function of its representative core constituent. This is often forgotten in understanding Gordon Brown's decision to grant the Bank of England operational independence in May 1997. Labour may have expected there to be a greater degree of excessive inflation because of the publics' perception that, relative to the Conservatives, it would place less weight on the cost of inflation. By shifting responsibility for monetary policy to the Bank it could hope to remove the effect of its own ideology on inflation bias.

Using behavioural characteristics reflecting both the importance of the time elapsed in an election period and the government's popularity one can further examine pressures affecting inflation bias. After allowing for the time to

an election, unpopular governments may feel more inclined to generate surprise inflation which can lead to greater inflation bias.

The final message of this paper is that political business cycle theory and the new political macroeconomics complement one another. There is a clear overlap since both recognise that to truly understand government economic policy one must acknowledge important political dimensions.

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Notes

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[1] See also MacRae (1977).

[2] MacRae (1977) describes this as an investment for election day success.

[3] The UK figures are from Economic Trends (various editions) and the OECD figures from Economic Outlook (various editions).

[4] For instance, see McCallum (1978) for a refutation of the pure political business cycle in the US; Keil (1988) for supportive evidence in the UK for outcome and instrument cycles; Alesina and Roubini (1992) for a denial of outcome cycles in an international context and Alesina, Cohen and Roubini (1992) for some weak evidence of cycles in monetary and fiscal variables in an international context

[5] For a counterview see Perlman (1958).

[6] See in particular, Hibbs (1977, 1982, 1986).

[7] Interestingly, Hibbs (1992) moves away from strong partisan theory by referring to a trade-off between opportunistic and ideological considerations. This is weak partisan theory.

[8] In particular, see Frey (1978) and Frey and Schneider (1978).

[9] In 1986(4) 33% of voters thought the Conservatives would win in the next election and 44% Labour. Between 1982(2) and 1989(4) the average respective figures were 57.3% and 22.8%.

[10] See Alesina (1987), Alesina and Sachs (1988) and Chappell and Keech (1988).

[11] The two elections in 1974 were on February 28th and October 10th.

[12] The average of the four quarters was taken in order to represent the typical length of the British wage contract.

[13] In the UK the local tax is the Council Tax. Houses are placed into one of eight bands according to property value. There is a discount of 25% for those houses with one adult occupant and rebates available for those on low incomes.

[14] For a derivation of a new classical aggregate supply function see Lucas (1973).