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ECONOMIC VOTING IN BRITAIN, 1857-1914

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ABSTRACT[1]

Despite limited government control over the pre-1914 economy, opposition politicians were enthusiastic in blaming bad economic news on the incumbent. In a study of 458 by-elections between 1857 and 1914, we find that voters typically gave new governments a 'honeymoon' but thereafter held them responsible for high unemployment and high prices. Each 1% rise in the price level, on average, brought about a 0.21% swing against the government of the day, while each one-point rise in the percentage unemployed had double this effect. Attributing shorter- or longer-term memories to voters, as they used the past to determine what constituted unacceptable price and unemployment levels, makes little difference to this result. We also look at grievance asymmetry – the idea that voters give government more blame for bad outcomes than they give credit for good ones – and find some evidence in its favour.

Keywords: voting, inflation unemployment, Britain, elections

JEL classification: N43

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ECONOMIC VOTING IN BRITAIN, 1857-1914

1. Introduction

The economy is important in the political fortunes of modern governments. This has been found in nearly all major western democracies including Britain (Clark et al, 2004), Canada (Anderson, 2006), Denmark (Nannestad and Paldam, 1997), Sweden (Jordahl, 2006) and the US (Atkeson and Partin 1995; Carsey and Wright, 1998; Hansen 1999; Niemi, Stanley, and Vogel 1995; Squire and Fastnow 1994), as well as in cross country data sets that include established democracies (Lewis-Beck 1988) and many new democracies from the developing and semi-developed world (Wilkin *et al*, 1997). But the relationship is consistent neither across countries nor within countries across time (Lewis-Beck and Paldam, 2000). This has led to a vast number of articles and books being written on economic voting, with Lewis-Beck and Paldam, in a review that is now more than ten years old, citing more than 200 publications in the field. Nonetheless, nearly all studies focus on the post-1945 period. Exceptions include Bloom and Price (1975) and Claggett (1986), which use U.S. congressional election results going back to 1896 and 1866 respectively, as well as Blewett (1972) who employs some simple descriptive statistics to analyse the effect of unemployment on by-election swings in Britain from 1900 to 1910. There has, however, has been no comprehensive statistical analysis of economic voting in pre-1914 Britain: analysis of nineteenth century British politics has instead tended to focus on the relation between class, perceived personal economic interest and the vote (Vincent, 1967; Wald, 1983; Dunbabin, 1988; Irwin 1994). Yet there have been plenty of suggestions that the level of unemployment or prices cost this or that government an election: the Tories in 1868 (Hanham, 1978), the

Liberals in 1874 (Maloney, 2005), the Tories in 1880 (Lloyd, 1968; Hanham, 1978; Pugh, 1982), the Liberals (loss of overall majority) in 1885 (Blewett, 1972), the Unionists in 1892 (Blewett, 1972) and the Liberals in 1895 (Pelling, 1967; Pugh, 1982; Searle, 2004). Pelling (1967, p.13) goes so far as to say that 'the working class … was always concerned about unemployment and higher prices and … this concern led … to the defeat of any government which sought a new mandate during a period of trade depression.' Lloyd (1968, p.41) asserts: 'No doubt the bulk of voters in 1880 were concerned with simple domestic questions concerned with the cost of living and the level of unemployment.'

2. Literature

Britain before 1914 had a modern politics at least to the extent that any economic voting was historically, geographically and socially relative. Some governments suffered from slumps or benefited from booms more than others. Pelling (1967) argues that the incumbent Liberals got particular mileage from the relatively benign economic conditions around the two general elections of 1910. Not only did the Conservative opposition find it harder to make a case for a change of government, but their protectionist policies seemed a divisive and unnecessary attempt to fix an economy that was not broken. Blewett (1972) argues cogently that not all bad economic news was bad political news for the government of the day, even suggesting that the 1903-4 recession helped the incumbent Unionists by succouring their man Chamberlain's protectionist crusade. This is probably going too far – a more obvious response from a protectionist voter would be to blame the government for not having abrogated free trade earlier – but it does illustrate that the electoral effects of economic events, then as now, are unlikely to be straightforward. Blewett actually plots by-election swings against unemployment levels, for both the 1900-06 and 1906-10 parliaments. The

lack of fit in the first case but much closer correlation in the second does provide some support for his hypothesis above.

The picture of the newly enfranchised using their vote to further their personal or class economic interests – and getting the freedom to do so once the 1872 Ballot Act stopped landlords and employers inspecting their vote – is acknowledged on all sides as far too simple. So it was at the time. John Stuart Mill proved correct in his reassuring prediction, just before the 1867 Reform Act, that enfranchised workers would follow too many gods to inflict levelling policies on their betters (Maloney, 2005, p.74). All this suggests that, if macroeconomic issues did indeed become more bound up in voting as the century progressed, that might have been due less to the enlarged electorate than to the fact that general elections became more general. Regional issues remained of the utmost importance – as the Tories were reminded in 1880 when they fared worst in the regions most damaged by the slump in the export trade (Lloyd, 1968, p.149) – but better party organisation and wider newspaper readership meant that national economic issues were at least competing with more parochial concerns. Again, while 'influence politics remained powerful' well into the last quarter of the nineteenth century (Nossiter, 1975; Joyce, 1980), the arrival of the secret ballot in 1872 did diminish the pressure which employers or landlords could put on a voter.

Vincent (1967) argues that the type of work you did influenced the extent to which you would vote economically. 'Those who were institutionalised and given society by their work' (miners, dockers, workers in large factories) would have more clear-cut material objectives than the rest, whose 'material situation gave no clear lead' and who, moreover, looked to rhetorical and ideological politics to provide them with the dimension of belonging which

they lacked in their working lives (pp.43-4). To ask what the second type 'hoped to get, say, from the election victory of 1880,' is 'to ask the wrong question. What they primarily hoped to get was the election victory itself, as a visceral thrill and as an assertion of their own importance.' (ibid., p.47). It is not the purpose of the present study to try and disaggregate voters into these two types. But Vincent's argument does reinforce the complexity of the behaviour we are studying – complexity likely to be evident even at the 'surface' electoral level.

All the above emphasises how different economic voting patterns can be – across elections, across regions and across classes. Maybe this is all the more reason to try and pick out any general pattern that exists, however overlaid by specific factors at specific times and places, and this is what we try to do in the current article.

And, while our primary aim is simply to establish whether economic voting existed in nineteenth century Britain, we also seek to address a number of important questions recurrent throughout the literature on economic voting. In particular we focus on two issues: responsibility and grievance asymmetry.

2.1 Responsibility

The fact that voters are concerned about unemployment and the cost of living does not necessarily imply that their votes will be affected. Worrying about prices and unemployment is not the same thing as blaming the government for them, or thinking that the alternative government would make much difference. Much of the economic voting literature has asked exactly when voters will see the government as responsible for the economic situation.

Powell and Whitten (1993), and Whitten and Palmer (1999) find that this depends on factors such as the number of parties in the government coalition, whether there is minority government and whether the government controls both the upper and lower legislative chambers. Both these studies find that clarity of responsibility increases the effect of economic variables on the vote, while Anderson (2006) demonstrates that this effect is muted in federal systems where voters are unsure whether to blame state or national level institutions. Hellwig (2001) concludes that the internationalisation of the economy affects the degree to which voters blame national government for weak economic performance (also see Fernandez-Albertos (2006)).

How much, or how little, pre-1914 U.K governments had to take responsibility and blame is a major issue in the current article. Between 1857 and 1914 mean government expenditure was 10.5% of GDP, compared with 39.6% for the period 1950 to 2000[1]. Thus the government's ability to use counter-cyclical policies would have been much reduced even if they had adopted Keynesian ideas half a century earlier than they actually did. In addition it was well understood that the gold standard tied British prices, at least in the long run, to the world's quantity of money, not that of the U.K. Neither of these factors, however, exempted governments from all responsibility for prices and employment. The more governments disassociated employment from aggregate demand, the freer the voters were to attribute it to other things which *were* within the government's control, notably its commercial policy. The charge that the friends of free trade were the enemies of employment never went away in the Victorian era (Irwin, 1996), flaring up with the repeal of the Corn Laws in 1846 (Gash, 1972; Irwin, 1996), the Anglo-French commercial treaty of 1860 (Maloney, 2005), the agricultural depression and Fair Trade movement of the 1880's (Brown, 1943; Eichengreen, 1992) and

Joseph Chamberlain's campaign for tariff reform after 1903 (Sykes, 1979; Irwin, 1994). The political dynamic went the other way when the Liberals in 1880 campaigned on Disraeli's failure to remove tariffs in India on finished cotton imported from Britain and the consequences for jobs in Lancashire (Hanham, 1978, p.322).

Nor did understanding that long-term prices were driven by the gold standard necessarily calm voters down with regard to short-term prices – especially those pushed up by indirect tax increases – or give the government an alibi in the eyes of those opposed to the gold standard in the first place. From the 1850's onwards gold was blamed for the violence of price fluctuations year-on-year (Sayers, 1933), though Britain still awaits a counterfactual study on what would have happened to prices under bimetallism (for the U.S., see Drake (1985)). After 1870 the gold standard was blamed not just for fluctuations, but for fluctuations around a deflationary trend (Nicholson, 1885; Walker, 1896) and, while it never became the salient election issue that William Jennings Bryan made of it in the U.S., the Gold and Silver Commission of 1886 helped keep it in the public eye.

Certainly, whatever the stance of opposition parties on macroeconomic issues, it did not deter them from handing out blame. 'It is idle for the Chancellor of the Exchequer to say that he has not stopped the growth of wealth in the country' said Gladstone during the Midlothian campaign of 1879-80 (Lloyd, 1968, p.58). At the same election, another Liberal candidate asked everyone who was earning less, or was employed less often, under Disraeli than they had been under the Liberals, to hold up his hand. 'A large number of people held up their hands, and the meeting was a success.' (ibid., p.149).

2.2 Grievance asymmetry

Grievance asymmetry -- where voters respond differently to economic conditions according to whether they are good/improving or bad/deteriorating -- has also a major literature of its own. This was first motivated by psychological research which found that individuals responded differently to positive and negative stimuli.[2] However, economic grievance asymmetry could also arise from diminishing marginal utility of income. There are two forms of grievance asymmetry discussed in the economic voting literature. The first, introduced by Mueller (1970), is where voters' reaction to an economic variable depends on whether it is above or below a certain threshold. The problem, as Nannestad and Paldam (1997) observe, is that this threshold rate is not known.

The second form of grievance asymmetry was first considered by Bloom and Price (1975). It focuses not on whether, say, unemployment is high or low but on whether it is rising or falling. This avoids the problem of thresholds, which might be why far more studies have focused on this form of grievance asymmetry, though evidence of its existence is at best mixed, with Claggett (1986) and Nannestad and Paldam (1997) for and Lewis-Beck (1988), Kiewiet (1983) and Headrick and Lanoue (1991) against.

3. Method

To test for the presence of economic voting we focus on three economic indicators: prices, national income and unemployment. Our choice of prices and unemployment is in part because of historians' belief that voters in specific elections responded to these two, and in

part because the vast majority of the economic voting literature also focuses on prices and unemployment: the review article by Lewis-Beck and Paldam (2000) calls them the big two. We also include national income as a general measure of economic performance. Our method is based on a first differences approach with our dependent variable being swing to the government. The use of swing, as opposed to the share of the vote gained by the government, has the significant advantage that it eliminates possible omitted variable bias due to constituency-specific effects that we are unable to observe. It, however, does come with some limitations as by adopting swing as our dependent variable we are unable to capture some of the complex dynamics of a multiparty political system. In the context of present study, however, we believe these problems are minimal as for the majority of our sample British politics was truly a two party system with only a very small percentage of the vote going to parties other than the two major ones. It is only in the final three elections, after the birth of the Labour party, that any significant share of the vote went to a third party.[3]

Using swing as our dependent variable also makes the specification of our econometric model somewhat more complicated due to changes in the identity of the government. It is therefore worth explaining this in detail.

Let the governing party's share of the vote at the by-election in constituency *i* be:

$$V_{Bi} = \alpha_i + \sum \beta_j (X_{jB} - X_j^*) \qquad (1)$$

where α_i is a constituency fixed effect, and represents the vote the government would get in that constituency if the economic situation were at the point where it was neither gaining

them or losing them votes. For each macroeconomic variable X_j, X^* is the level at which (ceteris paribus) voters would be evenly split between government and opposition.

Now suppose that the government at the time of the by-election was already in power before the last general election. We can thus represent its general election vote in seat *i* in the same way:

$$V_{Gi} = \alpha_i + \sum \beta_j (X_{jG} - X_j^*)$$

Hence the increase in the government's share of the vote (and, in a two-party system, the swing to the government) will be:

$$S_{Bi} = \sum_j \beta_j [(X_{jB} - X_j^*) - (X_{jG} - X_j^*)]$$

If, however, the current government had been in opposition before the general election, the effects of the economic situation on its vote at that general election will be reversed, so that:

$$S_{Bi} = \sum_j \beta_j [(X_{jB} - X_j^*) + (X_{jG} - X_j^*)]$$

or, generalising, $S_{Bi} = \sum_j \beta_j [(X_{jB} - X_j^*) \pm (X_{jG} - X_j^*)]$ (2)

where $\pm$ is positive (negative) when the government at the time of the by-election is in its first (second or subsequent) parliamentary term.

This, however, represents only that part of a by-election swing which might be caused by the economy. We therefore add an intercept – the fact of its being a by-election may affect the government vote – and a number of control variables. Is it a government-held seat? Is it a majority or minority government? And what caused the by-election? Hence equation (2) becomes:

$$S_{Bi} = \gamma + \sum_j \beta_j [(X_{jB} - X_j^*) \pm (X_{jG} - X_j^*)] + \sum_k Z_{kBi} \qquad (3)$$

where the Z's are the control variables

Before we can estimate this, we have to assume values for the X^*'s – the values of each economic variable at which (ceteris paribus) the electorate would be evenly divided about the government. In the case of our first two variables, unemployment and prices, we are unable to reject the null that the co-efficient on the time trend is zero. Initially, then, we simply take their average values across the period we are looking at. (Later we try various moving average formulations as an alternative description of the way voters might have formed reference values in their minds before evaluating the current situation.) The third variable, national income, is as expected on an upward time trend, and therefore we take the trend value for each year as our X^*. Here $(X_j - X_j^*)$ is expressed as a percentage and thus represents the current output gap.

In a series of by-election swings, regressed on a limited number of macroeconomic variables, there is likely to be not only autocorrelation of the residuals, but autocorrelation which is

stronger at some times than others. If some non-economic event lifts or depresses the government's popularity for six months or a year, this will show up as consistently positive or negative residuals. At other times no such effect may be present. Such correlation in the error term while not affecting our estimates will lead to biased standard errors and consequently may lead to incorrect inference. One option would to include a set of time effects to capture these time-variant shocks. However, the inclusion of a complete set of time dummies produces problems. Not only would they be collinear with our economic variables which are measured on an annual basis, but a large number of dummy variables would also significantly reduce the number of degrees of freedom in what is a relatively small sample.

An alternative to the inclusion of time dummies is utilise cluster-robust standard errors. These allow for any form of correlation in the error terms within a specified group. Clustering by time will allow for any autocorrelation in the error term between observations within each period that is clustered; it however does not allow for any autocorrelation between such periods (Thompson, 2009). Clustering is not a costless option as, while expanding the group size helps to eliminate possible bias, it also increases the size of the standard errors, which can equally lead to false inference: in particular it may mean we erroneously reject a true null hypothesis (Thompson, 2009). The appropriate period length to choose is thus the minimum one that eliminates autocorrelation in the error terms of successive periods. We found this to be a period of one year.

4. Data and Variables

Our data set uses voting data on 458 by-elections that took place between 1857 and 1914 in Britain,[4] and, to derive by-election swings, general election results during the same period.

Due to the limitations of swing we did not include elections in which a third party (i.e. party other than Liberal, Liberal Unionist or Conservative)[5] came first or second.[6] Further, due to the complications of calculating swing in multimember districts we exclude all elections where the number of candidates from either of the two main parties is less than the number of seats contested. Thus in a two member district we exclude observations where only one Unionist or Liberal candidate stands. When we can use double constituencies, we sum the vote of the two candidates for each of the main parties.[7] This results in 194 observations being dropped. Because the 1884 reform act significantly increased the number of single member districts, the majority of our sample is drawn from the post 1884 period.[8]

In addition to the economic variables already mentioned we also include a number of political control variables. We include a dummy variable indicating whether the seat is currently held by the government; a dummy variable indicating whether the incumbent government is a minority government; and a set of dummy variables indicating the reason for the by-election being held.

Our data on general election results is drawn from the Society of Europe CD-ROM (Caramani, 2000), while our data on by-election results along with the reason for the by-election is taken from Craig (1974, 77). Data on national income was taken from the Abstract of British of Historical Statistics (Mitchell, 1988), and data on unemployment from Feinstein (1972), which compiles figures from the trade union records collected by the Ministry of Labour. While Feinstein is careful to weight each union's figures by the total number employed in the corresponding trade (not just the number in the union) he still warns that his figures might over- or under-estimate the unemployment rate as a whole. So far, but

only so far, as any such error is consistent, this would do no harm to our own study, which works with deviations from trend. Our prices index is that of O'Donoghue, Goulding and Allen (2004), which we normalise to give it a mean value of 100 over our period. This study collected prices from two sources. From 1857 to 1870, their preferred index is that compiled by G.H.Wood, who derived his figures partly from the Board of Trade's Report for Wholesale and Retail Prices and partly from his own collection of data from Co-Operative Society records. There are questions, especially, over the latter, some of which are described by Layton and Crowther (1938) as in the nature of 'an intelligent guess.' More reliable are the 1870-1947 figures from Feinstein (1972), who calculates a consumer price deflator 'in a form which was as nearly as possible consistent in concept and definition with the then Central Statistical Office's (post-1947) official estimates of the National Accounts.' (O'Donoghue, Goulding and Allen, 2004, p.39). The principal drawback for our purposes is that the figures include the whole of Ireland, though, as this never comprised more than 2 per cent of consumers' expenditure, Feinstein judges this 'unlikely to have had a significant effect on the implied deflator.'

The fact that we have only annual price and unemployment data to work with is another limitation. If a year began or ended with a sharp upturn or downturn, a January or December by-election will not be well served by the annual figures. (It remains important to enter the by-election by its month because in some cases this will affect the degree of responsibility we are attributing to the incumbent government for the state of the economy.) However, all these factors operate in the direction of concealing, not simulating, significant links between the economy and the vote. So far as we do find significant results, we can reasonably plead *a fortiori.*

5. Results

Table 1 shows the results of estimating equation (3)

TABLE 1 HERE

Only the output gap is significant, and only at the 10% level, though we do find some significant political factors affecting by-election performance. In their own seats, governments on average suffered a hostile swing of 4.2% more than in opposition-held seats. Minority governments, for some reason, fare better than majority governments. (All minority governments during our period are either short-lived Conservative governments during the long Whig / Liberal ascendancy of 1846-86, or Liberal governments relying on Irish support after the Liberals made the Home Rule issue central.) As regards the reason for calling the by-election, we multiply each dummy variable by minus one when it is a by-election in an opposition-held seat. Consequently, from 'peerage' onwards, the coefficients above measure how the reason for the by-election affected not the government vote but the vote of the party to which the outgoing MP belonged (presumably the relevant effect if any). 'Peerage' covers both appointments and successions to the peerage, and is insignificant. 'Minister' covers cases of newly-appointed ministers who, under a rule which lasted until 1919, were required to stand for re-election. It too comes out as statistically insignificant. But in other instances where MP's resigned their seat and then stood in the resulting by-election ('Re-election'), the incumbent party in the seat did particularly badly. This was probably because several such cases were of MP's who resigned in order to stand under a different party. Voters thus had to choose between deserting the party and deserting the man; no doubt many did the former.

Electorates whose choice at the general election was declared void by the courts showed their feelings by returning the same party (sometimes the same member) by an increased majority.

But the model so far makes the unlikely assumption that voters hold governments entirely responsible for the economic situation from the day they enter office. It is more likely that they will gradually shift responsibility from the outgoing to the incoming government as the latter's term of office lengthens. We accommodate this possibility by rewriting equation (1) as

$$V_{Bi} = \alpha_i + \sum_j \beta_j [w_j(T_B)(X_{jB} - X_j^*) + (1 - w_j(T_B))(X_j^* - X_{jB})] \qquad (4)$$

where T_B is the time that the current government has been in power at the date of the by-election the by-election and $w_j(T_B)$ and $(1 - w_j(T_B))$ are the weights of responsibility given to the new and the old government respectively for variable X_j at time T_B. (Since, so far as they hold the old government responsible, voters reverse their political reaction to the economic situation, $(X_{jB} - X_j^*)$ is reversed in the final term.)

And we have to do the same for general elections. The elections of 1885 and 1886 are two cases of a government facing the voters a few months after coming to power. It may well be the case that the electorate was still blaming or praising their predecessors for some or all of the economic situation. By analogy with (4) the appropriate equation is:

$$V_{Gi} = \alpha_i + \sum_j \beta_j [w_j(T_G)(X_{jG} - X_j^*) + (1 - w_j(T_G))(X_j^* - X_{jG})]$$

so that the swing at the by-election is

$$S_{Bi} = \gamma + \sum_j \beta_j \left\{ (X_j^* - X_{jB}) \pm (X_j^* - X_{jG}) + 2w_j(T_B)(X_{jB} - X_j^*) \pm 2w_j(T_G)(X_{jG} - X_j^*) \right\} + \sum_k \beta_k Z_{kBi}$$

(5)

where, once again, $\pm$ is negative (positive) when the government at the time of the by-election had also been in power (had not been in power) before the previous general election; and where, once again, we add an intercept and a series of control variables *Z*.

It remains to find a form for *w(T)*. But if voters shift responsibility for each economic variable to the new government at a constant rate (and it is hard to see why they should do otherwise), and the new government acquires sole responsibility for variable X_j after it has been in power for duration T_j^*, then:

$$w_j(T_B) = \min(T_B / T_j^*, 1) \qquad (6)$$

Combining this with equation (5) means that we now have to estimate β_j and T_j^* for each X_j.

Equation (5) involves placing the restriction $\beta_{2j} = 2\beta_{1j} \forall j$ on the more general form

$$S_{Bi} = \gamma + \sum_j \beta_{1j} \left[(X_j^* - X_{jB}) \pm (X_j^* - X_{jG}) \right] + \sum_j \beta_{2j} \left[w_j(T_B)(X_{jB} - X_j^*) \pm w_j(T_G)(X_{jG} - X_j^*) \right] + \sum_k \beta_k Z_{kBi}$$

To test the validity of these restrictions we carry out a series of F tests comparing the restricted and unrestricted models'[9] goodness of fit. In all specifications presented except one we are unable to reject the null hypothesis that the restrictions are consistent with the data. The single exception is the final regression in table 7, p-value 0.0015. The coefficients of interest in this case are, however, not significant at conventional levels and as such this failure does not affect our interpretation of the results.

Putting (6) into (5) makes it non-linear. In order to do a linear estimation, we find the T_j*'s, and hence $w_j(T)$'s, that minimise the root mean squared error. The macroeconomic variables (X_j) that we estimate in table 2 are again the price level, unemployment and the output gap.

TABLE 2 HERE

In column (1), the output gap is insignificant and (presumably) wrongly signed. It is also highly collinear with unemployment. Furthermore, we are interested in the overall effect of unemployment on the vote, not the effect of unemployment at a given output gap. We therefore use column (2) for our estimate of the effect of unemployment on the vote and drop Output Gap in the rest of our analysis.

Clearly the inclusion of duration effects has precipitated much economic voting lying hidden in table 1. Electoral honeymoons are short. It takes a new government only 235 days to be held fully responsible for the level of unemployment. After that each one percentage point in the unemployment rate produces a 0.42% swing against the government. Prices become

solely the new government's affair after 273 days in office, and thereafter a one percentage point rise in the price index inflicts a hostile swing of 0.21% on the incumbent. The unemployment figure is significant at the 1% level, the prices figure at 5%.

Given the negative correlation between unemployment and the output gap, it is unsurprising that the coefficient on the former should fall when the latter is dropped as a variable. Why the coefficient on prices should also fall is harder to explain, but it does not alter the fact that it is high prices, not low prices, that voters appear to dislike. Ideally this calls for disaggregation -- which voters disliked which high prices? Did occupational groups approve of high prices for the goods they produced themselves? However, our attempts to find significant disaggregated results have been uniformly unsuccessful. Splitting prices up into agricultural and industrial components deprives both of statistical significance. Given their strong joint significance when put together into the general price index, the interpretation must be that the relatively limited data with which we have to work requires a minimum level of aggregation. Nor did we get a significant result when we added an interactive variable designed to reveal how the agricultural / industrial mix in different constituencies might affect the relationship between the price level (or the agricultural price level) and the popularity of the government. This last is not all that surprising, given the rough and ready way we had to estimate occupational pattern in each constituency from census data presented at county and borough level -- and even this we have only from 1901 onwards, severely limiting our data set. It is disappointing that we cannot say more, but the message that, overall, voters punished governments for high prices is strongly significant and – as will be seen shortly – robust to different methods of estimation.

We now list the 27 by-elections in which, on the basis of the estimated coefficients derived in table 2, the winner would have been a different party had prices and unemployment been at their mean values. As can be seen, and as one might expect, the issue was usually whether governments would lose or manage to hold their seats. (The negative intercept in table 2 indicates that the fact of a by-election being a by-election is disadvantageous for the government of the day.) In six of the 27, however, the issue was whether or not the government could gain a seat from the opposition. In each case, the governing party is identified.

TABLE 3 HERE

So far we have used general election results only to derive by-election swings and the economic changes that helped to drive them. Given that, in the context of macroeconomic voting, each national general election result counts only as one observation, we do not have a large enough data set to look at the economic determinants of swings between general elections. However, if the state of the economy affects general election voting in the same way as it affects by-election voting, we can use our results in table 2 to project what each general election result would have been had prices and unemployment been at their average level that year. The 'if' may seem a large one. Yet it is not all that easy to see why economic motives should operate differently in general elections and by-elections. Undoubtedly voters who are dissatisfied with the government, but still prefer it to the opposition, are more inclined to vote against the government in a by-election when they can make their protest without putting the other party into power (Price and Sanders, 1998). But one would expect

this effect to show up in the intercept of equation (5) – which is indeed consistently negative. It is not obvious that any such effect would alter the coefficients on the economic variables.

All the same, we cannot be certain that it does not do so, and it is thus in a tentative spirit that we present our counterfactual exercise. 'Majority' here means majority over the other main party.

TABLE 4 HERE

So the state of the economy did not change the winner in any of these elections. In eight out of the 14, however, including the five consecutive elections from 1868 to 1886, the incumbent performed worse than it would have in average economic conditions. The biggest gap between the actual and the projected result is in 1868. The slump of 1866-8 had almost exactly coincided with the Derby / Disraeli minority Conservative government. The figures suggest that, even with the economy on an even keel, the Conservatives would have lost (as they did every other election between 1841 and 1874) but that the state of the economy handed the Liberals another 41 seats.

1868 did not feature the worst conditions under which an election was held. That distinction goes to the elections of 1885 and 1886, with unemployment rates of 9.3 and 10.2 percent respectively. However, in both these cases the government had been in power for about five months – only just long enough, according to our estimates, for the incumbent to pick up the lion's share of the odium. It is no surprise, therefore, to get an estimate that the economy

changed relatively few seats on either occasion but that such change as there was favoured the opposition.

A possibility that we have already raised is that voters do not judge governments according to whether unemployment and prices are above or below their long-term averages, but rather take the past few years, perhaps with the greatest weighting on the most recent ones, as their point of reference. In the next section we assume that X_j * is given by:

$$X_j *_s = (1-\lambda)\sum_{t=1}^{\infty} \lambda^{t-1} X_{j,s-t}$$

For λ we try the values 0.625, 0.8 and 0.9 because these give the result that 90% of the weighting is concentrated in approximately the last 5, 10 and 20 years respectively.

TABLE 5 HERE

Whatever λ is chosen, high prices and high unemployment continue to produce anti-government swings. Nor does varying λ have much effect on their coefficients. The one exception is the halving of the coefficient on prices when λ is raised from 0.625 to 0.8. Exceeding the average of prices over the last five years appears to lose a government more support than exceeding the average of prices over the last ten years. This does suggest that governments are judged against a fairly short-term background.

But did the strength of economic voting increase or decrease during our period? In particular, did the expansion of the electorate in 1867 and then in 1884 produce a new kind of voter more (or less) inclined to cast his vote with reference to the state of the economy? Since the 1867 Reform Act was principally concerned with borough constituencies, while the 1884 Act worked comparable changes for the counties, we have defined as 'pre-reform voters' all borough voters up to 1867 and all county electors up to 1884. (In table 6, and the subsequent table 7, coefficients on the political variables -- government seat, minority government, reason for by-election -- are very little different to those in previous tables and therefore, to save space, we omit these variables from our presentation of results.)

TABLE 6 HERE

For pre-reform voters, the coefficients on both unemployment and prices are small, wrongly signed and insignificant. It looks as if it was the enlargement of the electorate, first in the boroughs and then in the counties, which produced significant economic voting for the first time.

A natural next step is to ask if borough and county voters differed *per se.* The answer is yes, as column 2 of table 6 shows. County voters, like pre-reform voters, do not exhibit statistically significant economic voting.

Earlier we were discussing *grievance asymmetry*, whereby electors hand out more blame to the government in bad times than they give it credit in good. We now go on to test the

hypothesis that voters respond more to high unemployment and prices than to low unemployment and prices

Let

$$V_{Bi} = \alpha_i + \sum_j \beta_{1j} D_{j1}[w_j(T_B)(X_{jB} - X_j^*) + (1 - w_j(T_B))(X_j^* - X_{jB})]$$
$$+ \sum_j \beta_{2j} D_{j2}[w_j(T_B)(X_{jB} - X_j^*) + (1 - w_j(T_B))(X_j^* - X_{jB})]$$

where the dummy variable D_{j1} takes the value 1 ($D_{j2}=0$) when $X_{jB} > X_j^*$ and 0 ($D_{j2}=1$) when $X_{jB} < X_j^*$

Similarly, for the previous general election

$$V_{Gi} = \alpha_i \mp \sum_j \beta_{1j} D_{j1}[w_j(T_G)(X_{jG} - X_j^*) + (1 - w_j(T_G))(X_j^* - X_{jG})]$$
$$\mp \sum_j \beta_{2j} D_{j2}[w_j(T_G)(X_{jG} - X_j^*) + (1 - w_j(T_G))(X_j^* - X_{jG})]$$

Hence our equation for the swing (again putting in an intercept and control variables to represent non-economic factors) is

$$S_{Bi} = \gamma + \sum_j \beta_{1j} D_{j1} \left\{(X_j^* - X_{jB}) \pm (X_j^* - X_{jG}) + 2w_j(T_B)(X_{jB} - X_j^*) \pm 2w_j(T_G)(X_{jG} - X_j^*)\right\}$$
$$+ \sum_j \beta_{2j} D_{j2} \left\{(X_j^* - X_{jB}) \pm (X_j^* - X_{jG}) + 2w_j(T_B)(X_{jB} - X_j^*) \pm 2w_j(T_G)(X_{jG} - X_j^*)\right\} + \sum_k \beta_k Z_{kBi}$$

(7)

Again we represent *w(T)* as *min*(*T/T*, 1*) and find the T_j*'s which minimise the root mean square error. The results are in column (1) of table 7, and are strongly consistent with grievance asymmetry. Not only is the response of the vote to changes in prices and unemployment greater when these variables are above their long-term averages, the coefficients on the 'below average' variables are insignificant.

TABLE 7 HERE

But the question, again, is how voters might form benchmarks for prices and unemployment. We therefore again experiment with the moving average formulation

$$X_j *_s = (1-\lambda)\sum_{t=1}^{\infty} \lambda^{t-1} X_{j,s-t}$$

Again we try 0.625, 0.8 and 0.9 as values for λ. Since the results are very similar in all three cases, we present the results for λ=0.8 only (column 2 of table 7.) The evidence for grievance asymmetry is somewhat weaker in this formulation. Prices now lack a significant effect on votes whether we take the years of above-average or below-average prices. Unemployment, by contrast, now always has a significant effect on votes (though the significance remains greater when it is above average).

Our second form of possible grievance asymmetry was an asymmetric reaction to rising and falling variables. We therefore now test the proposition that unemployment and prices do a government more harm when they are rising than good when they are falling. Once again we

estimate equation (7), but this time D_{j1}=1 (D_{j2}=1) means that X_j is higher (lower) than it was the previous year.

Estimating this gives the results in column 3 of table 7. Rising and falling unemployment show almost exact symmetry. But the picture for prices is unexpected. Falling prices significantly help the government; rising prices (as opposed to a high level of prices) do not significantly damage it. This runs counter to the usual assumption in the grievance asymmetry literature that voters will respond more to deteriorating economic conditions than improving ones. (If we suddenly and conveniently classify rising prices as improvement and falling ones as deterioration, it gets even worse because the signs are now wrong.) And even if we were to take the rest of the literature as too modern to be relevant to Victorian and Edwardian voters, there would still be a puzzle here for which we have no ready explanation.

6. Conclusion

The limited power of pre-1914 governments over the economy did not stop politicians of the day for taking credit or apportioning blame for the economic picture. Did the voters respond? We examine the question by looking at the swings in 458 by-elections between 1857 and 1914. Simply regressing swings on unemployment, prices and national income produces largely insignificant results. But once we incorporate the possibility that voters held an outgoing government responsible for some time into its successor's term of office, the results change dramatically. We estimate that it took around a year for voters to transfer responsibility to a new government and that, after that, each 1% rise in the price level on average caused a hostile swing of 0.21%, while a one percentage point rise in the unemployment rate caused a hostile swing of 0.42%. Varying the length of the memories that

we attribute to voters in choosing a reference point for these two variables made little difference to the results. But when we divide constituencies into pre-reform (boroughs up to 1867 and counties up to 1884) and post-reform, we find that significant economic voting derives entirely from the latter. This casts doubt on the view of some historians that, if macroeconomic affairs exerted a stronger effect on elections as the nineteenth century progressed, that was due more to the increasingly national character of campaigns than to the enlarged electorate. We also test for grievance asymmetry – the idea that governments get more blame for bad economic news than they get credit for good. There is some evidence that existing high unemployment or prices makes voters punish governments particularly hard for any further rises.

NOTES

1 Figures taken from http://www.ukpublicspending.co.uk/ on 22 April 2010.

2 Bloom and Price (1975) reference a review article (Jordan, 1965) that cites results from a number of experiments in which positive attitudes do not affect behaviour to the extent that negative attitudes do. Grievance asymmetry or loss aversion as it is also known is also closely associated with prospect theory (Kahneman and Tversky, 1979) and has been demonstrated in many areas of decision making.

3 For the period 1885-1900 the average share of the total vote in Britain for the Liberals, Liberal Unionists and Conservative Party was 98.5%. This fell to 92% for the period 1906-10.

4 We exclude Irish constituencies as these constituencies did not reflect the political dynamics of the remainder of the United Kingdom.

5 Throughout we treat the Conservative party and the Liberal Unionist Party as one party. We believe this is reasonable as the Liberal Unionists formed an informal coalition with Conservative Party upon their formation in 1886, formed a formal coalition in 1895, and finally merged to form the Conservative and Unionist Party in 1912. Further, there are no seats in our sample in which a Conservative stood against a Liberal Unionist.

6 This results in 14 observations being lost. We do include elections where a Labour candidate stood and came third, but found no correlation in such seats between Labour's fortunes and either the state of the economy or the vote for other opposition parties. We therefore conclude that, as far as economic voting was concerned, Britain up to 1914 effectively had a two-party system, which is indeed our justification for using the equations we derived in the previous section to test the data.

7 Thus if, for example, in a two member seat three candidates stand from the same party, only the two that receive the highest share of the vote will be counted for the purposes of calculating the swing.

8 Our sample is also significantly biased towards this latter period because the further you go back in time the rarer it is that seats were contested. This is particularly true in county seats throughout Britain as well as borough seats in Scotland and Wales.

9 In the unrestricted model the first and second terms are entered separately and separate estimates of β_j are made.

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Table 1

Dependent	By-election	By-election	By-election	By-election

variable	swing to govt.	swing to govt.	swing to govt.	swing to govt.
intercept	-0.787	-0.717	-0.926	-1.158*
	(0.133)	(0.198)	(0.104)	(0.066)
Prices	0.012	---	---	-0.064
	(0.748)			(0.220)
Unemployment	---	-0.070	---	-0.506
		(0.656)		(0.789)
Output gap	---	---	0.496*	0.673*
			(0.063)	(0.055)
Govt. seat	-4.199***	-4.196***	-4.205***	-4.149***
	(0.000)	(0.000)	(0.000)	(0.000)
Minority govt.	3.125***	3.144***	2.797***	3.044***
	(0.000)	(0.000)	(0.000)	(0.000)
Peerage	0.074	0.080	-0.023	0.060
	(0.927)	(0.923)	(0.977)	(0.942)
Minister	1.496	1.565	1.815	1.915
	(0.275)	(0.240)	(0.188)	(0.159)
Resign	-0.888	-0.905*	-0.911*	-0.930*
	(0.103)	(0.097)	(0.089)	(0.080)
Void	2.133**	2.091**	2.270**	2.401**
	(0.048)	(0.037)	(0.037)	(0.037)
Death	0.617	0.732	1.285	1-056
	(0.735)	(0.717)	(0.547)	(0.577)
Re-election	-5.556**	-5.407**	-5.140**	-5.102**
	(0.013)	(0.018)	(0.019)	(0.022)
R^2	0.182	0.183	0.195	0.201
No. Observations	458	458	458	458

Table 2 (1) (2)

Dependent variable:	By-election swing to government	By-election swing to government
Intercept	-1.314**	-0.871
	(0.034)	(0.111)
Prices	-0.245**	-0.214**
	(0.034)	(0.015)
Unemployment	-0.596***	-0.421***
	(0.002)	(0.000)
Output gap	-0.723	--
	(0.206)	--
Govt. seat	-4.096***	-3.946***
	(0.000)	(0.000)
Minority govt.	3.789***	3.694***
	(0.000)	(0.000)
Peerage	0.313	0.278
	(0.725)	(0.750)
Minister	1.665	1.614
	(0.167)	(0.190)
Resign	-1.097**	-1.164**
	(0.044)	(0.035)
Void	2.320***	2.172***
	(0.002)	(0.001)
Death	-1.068	-1.572*
	(0.301)	(0.086)
Re-election	-4.738**	-5.349***
	(0.025)	(0.008)
T* (prices)	404 days	273 days
T* (unemployment)	333 days	235 days
T* (output gap)	642 days	---
R^2	0.226	0.236
No. Observations	458	458

Table 3

Government lose seat to opposition due to bad economic situation	Government hold seat due to good economic situation
Leeds 5/6/57 (Lib) Northants South 20/2/58 (Lib) Stoke 20/2/68 (Con) Bath 7/5/73 (Lib) Huddersfield 4/2/93 (Lib) Ayr District 30/1/04 (Con) Pudsey 20/6/08 (Lib) London, Bethnal Green N.W. 19/2/14 (Lib)	Hastings 6/10/64 (Lib) Devonport 22/6/65 (Lib) Evesham 9/7/80 (Lib) Northampton 4/3/82 (Lib) Lanarkshire, Partick 11/2/90 (Con) Dorset South 7/5/91 (Con) Manchester North-East 8/10/91 (Con) Bradford East 10/11/96 (Con) Romford 1/2/97 (Con) Liverpool Exchange 10/11/97 (Con) London, Deptford 15/11/97 (Con) London, St.Pancras E. 12/7/99 (Con) Edinburgh East 2/2/12 (Lib)
Government fail to gain seat from opposition due to bad economic situation	Government gain seat from opposition due to good economic situation
Lincoln 12/2/62 (Lib) King's Lynn 9/12/69 (Lib) Liverpool Exchange 26/1/87 (Con)	Hastings 2/7/83 (Lib) Doncaster 23/2/88 (Con) Durham 30/6/98 (Con)

Table 4

Election (incumbent)	Actual majority	Projected majority*	Election (incumbent)	Actual majority	Projected majority*
1857 (L)	Liberal 79	Liberal 113	1886 (L)**	Unionist 114	Unionist 92
1859 (L)	Liberal 43	Liberal 53	1892 (U)	Liberal 40	Liberal 78
1865 (L)	Liberal 67	Liberal 29	1895 (L)	Unionist 152	Unionist 192
1868 (C)	Liberal 128	Liberal 46	1900 (U)	Unionist 134	Unionist 94
1874 (L)	Cons. 46	Cons. 38	1906 (U)***	Liberal 356	Liberal 364
1880 (C)	Liberal 62	Liberal 42	Jan.1910 (L)	Liberal 124	Liberal 144
1885 (C)**	Liberal 84	Liberal 72	Dec.1910 (L)	Liberal 126	Liberal 126

* with unemployment and prices at their long-term averages

** Incumbent had held power for less than a year

*** The Liberals had taken office a month earlier and immediately called an election

Table 5

	λ=0.625	λ=0.8	λ=0.9
Dependent variable:	By-election swing to government	By-election swing to government	By-election swing to government
Intercept	-0.832	-0.755	-0.646
	(0.122)	(0.313)	(0.197)
Prices	-0.155**	-0.076***	-0.098***
	(0.018)	(0.001)	(0.000)
Unemployment	-0.359***	-0.385**	-0.406***
	(0.008)	(0.022)	(0.001)
Govt. seat	-4.438***	-4.374***	-4.358***
	(0.000)	(0.000)	(0.000)
Minority govt.	4.671***	5.905***	5.789***
	(0.000)	(0.000)	(0.000)
Peerage	0.554	0.643	0.668
	(0.545)	(0.444)	(0.467)
Minister	1.088	0.642	0.632
	(0.366)	(0.554)	(0.592)
Resign	-0.698	-0.871	-0.910
	(0.227)	(0.141)	(0.126)
Void	3.301***	3.351***	3.077***
	(0.000)	(0.000)	(0.000)
Death	-0.717	-1.659**	-1.775**
	(0.449)	(0.015)	(0.037)
Re-election	-4.858**	-5.056**	-5.164**
	(0.037)	(0.019)	(0.014)
T* (prices)	542 days	345 days	389 days
T* (unemployment)	568 days	423 days	279 days
R^2	0.220	0.249	0.247
No. Observations	429	429	429

Table 6	(1)	(2)
Dependent variable:	By-election swing to govt.	By-election swing to govt.
Intercept	-1.056*	-1.052*
	(0.056)	(0.071)
Prices pre reform	0.023	---
	(0.879)	
Prices post reform	-0.247**	---
	(0.021)	
Prices borough	---	-0.209*
		(0.070)
Prices county	---	-0.099
		(0.416)
Unemployment pre reform	0.212	---
	(0.350)	
Unemployment post reform	0.568***	---
	(0.000)	
Unemployment borough	---	-0.511***
		(0.001)
Unemployment county	---	-0.292
		(0.148)
T* (prices)	358 days	356 days
T* (unemployment)	275 days	291 days
R^2	0.238	0.223
No. of observations	458	458

Table 7 (1) (2) (3)

Dependent variable	By-election swing to govt.	By-election swing to govt. (moving average: $\lambda = 0.8$)	By-election swing to govt.
Intercept	-1.045*	-0.745	-1.002*
	(0.059)	(0.143)	(0.079)
Prices (above average)	-0.242***	-0.263	---
	(0.001)	(0.127)	---
Prices (below average)	0.197	-0.006	---
	(0.234)	(0.966)	---
Rise in prices	---	---	-0.037
			(0.854)
Fall in prices	---	---	0.160**
			(0.038)
Unemployment	-0.200**	-0.315***	---
(above average)	(0.014)	(0.000)	
Unemployment	0.112	-0.191*	
(below average)	(0.561)	(0.063)	---
Rise in unemployment	---	---	-0.407***
			(0.007)
Fall in unemployment	---	---	0.406***
			(0.008)
T* (prices)	386 days	441 days	353 days
T* (unemployment)	386 days	394 days	272 days
R^2	0.256	0.249	0.223
No. of Observations	458	458	458