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Abstract

Much of what we know about the alignment of voters with parties comes from mass surveys of the electorate in the postwar period or from aggregate electoral data. Using individual elector level panel data from the 19th century UK poll books, we reassess the development of a party-centred electorate in the United Kingdom. We show that (i) the electorate was party-centred by the time of the extension of the franchise in 1867; (ii) a decline in candidate-centred voting is largely attributable to changes in the behaviour of the working class and (iii) the enfranchised working class aligned with the Liberal left. This early alignment of the working class with the left cannot entirely be explained by a decrease in vote buying. The evidence suggests instead that the alignment was based on the programmatic appeal of the Liberals. We argue that these facts can plausibly explain the subsequent development of the party system.

1 Introduction

A central element in the political development of a country is the connection between voters and those who represent them. This connection can take different forms: it may exist due to patronage, vote buying, or coercion; be based on the personal characteristics or beliefs of the candidate; or arise due to an affiliation between voters and particular parties. An important distinction is that between candidate-centred systems and party-oriented ones. In the latter, voters are loyal to their preferred party and cast their votes without regard to the personal characteristics, beliefs, or favours offered by candidates.

These patterns of development vary across countries and over time. In the United States parties that emerged as loose coalitions or caucuses of legislators (Aldrich 1995), developed into the well-oiled machines of the early nineteenth century that delivered patronage. As these weakened in the latter part of the century, due in part to civil service reform as well as the introduction of primary elections, a candidate centred system emerged (Folke, Hirano, and Snyder 2011). Duverger (1959, p. 28) noted a different pattern of party development in European parliamentary democracies where "first there is the creation of parliamentary groups, then the appearance of electoral committees, and finally the establishment of a permanent connection between these two elements." According to Duverger the key factors that lead to the emergence of such party-oriented systems were the extension of popular suffrage, the role of parliamentary prerogatives, and (later, and in some countries) the emergence of organized mass parties on the left who connected with working class voters on the basis of ideology. Indeed, recent work by Hidalgo (2010) shows that extension of the franchise in Brazil is causally related to the votes shares of parties with clear ideological profiles. Moreover, Fujiwara and Wantchekon (2013) show that party-oriented systems, based on parties with clear ideological programmes, can have positive welfare effects.

It is important then to understand when and why such parties emerge and what are the institutional (and other) determinants. Much of what we know about the alignment of

voters with parties in the developed world comes from mass surveys of the electorate, developed and implemented in the postwar period, or from aggregate electoral data. The problem with the former, is that it limits our understanding to changes in party alignment that occurred after the development of techniques designed to measure such change. The problem with the latter, is the commonly understood problem of ecological inference: we can not be sure how aggregate patterns observed in the data relate to individual-level behaviour.

In this paper we provide a resolution to this problem by analysing historical individual-level data on actual voting behaviour. Before the establishment of the Ballot Act in 1872, voting in Parliamentary elections in the United Kingdom was public. Often the name of each voter and how they voted was recorded in poll books. In addition, these poll books sometimes provided information, such as electors' addresses and occupations. Due to recent work by historians, some poll books have become available electronically. Here we construct voter level panel data from a sample of 19th century borough constituencies. Analysing these remarkable data, using appropriate estimation techniques, provides a unique micro view of the emerging relationship between voters and political parties in Victorian England.

Our analysis of these data enhances the understanding of party development in several ways. First, we provide new evidence on the timing of emergence of a party-oriented electorate in the United Kingdom. Our results corroborate those in the seminal work by Cox (1984, 1986, 1987) that are based on aggregate data from UK elections and show that cohesive parties with close links to the electorate preceded the major (late) Victorian franchise reforms and coincided with a period during which the executive took control of prerogative. Second, analysis of our data shows that the driving force behind this partisan alignment was the skilled working classes, who had been enfranchised in 1832. Moreover, and third we show that this group aligned with the then left Liberal Party.

We also shed light on mechanisms that might explain these patterns in our data, showing that the increase partisan attachment amongst the electorate can largely be attributed to a

decrease in vote buying or clientelism. We find, however, that working class voters aligned with the Liberal Party for reasons other than patronage which, as shown by Stokes et al. (2013) and Camp, Dixit, and Stokes (2014), was in decline during this period. In fact, our data is consistent with claims made by Stokes and coauthors and by Cox that the alignment of the working class had more to do with the programmatic appeal of the Liberal Party.

These results and what they tell us about party alignment in Victorian England have broad relevance. To our knowledge ours is the first analysis of individual-level data which confirms that class alignment occurred prior to the enfranchisement of the (unskilled) working classes and several decades before the development of mass parties that organised sections of the electorate. In fact the pre-1867 Liberal Party under Palmerston was a quintessential "cadre party" as defined by Duverger. It was a loose amalgamation of different parliamentary factions who voted together in parliament and stood on a common legislative programme, albeit a sparse one. Critically it had no organisational basis within the electorate. The central lesson then is that class alignment occurred prior to the development of organised mass parties.

A further lesson involves the dynamic relationship between party support and programmatic development. That working class voters should align with the left party at such an early point in Britain's political development might seem surprising. Palmerston's Liberal Party preceded the period of Progressive Liberalism and can not be compared to Gladstone's Liberal Party in terms of its programme or legislative achievements. Nor, of course, was it a party of the workers in the sense that the Labour Party of the interwar years was to become. And yet is seems plausible that the alignment of the skilled working class with the Liberal Party set the stage for subsequent developments. More generally, our data analysis suggests a simultaneous relationship between a party's support base and its programmatic appeal. Working class alignment with the Liberal Party that existed already in the Mid-Victorian era laid the basis for the subsequent progressive platforms of the Liberal Party that, in turn, cemented its support amongst working class voters.[1]

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[1]For microfounded models of the the relationship between policies and support bases see Krasa (2017)

There are several reasons to believe that our insights hold more generally. Extending our analysis to aggregate data from a large sample of constituencies we find that voter eligibility is negatively correlated with proxies for the share of unskilled working classes in the population, whose voting patterns in the aggregate data closely resemble our findings in the restricted sample. The aggregate data thus suggests that our findings might generalise to these segments of the Victorian voting population and so provide an accurate picture of partisan alignment in Britain at that time.

Moreover, it seems likely that our insights travel beyond 19th century Britain to a broader set of parliamentary democracies. Institutional features such as the centralisation of agenda-setting power within the executive gave shape to British parliamentary democracy. They stimulated the development of parties standing on coherent programmes outlining their plans for government and were mimicked elsewhere. That these features are correlated with partisan and class alignment in the United Kingdom suggests that similar historical patterns exist elsewhere. As described by Strøm (2000), the conceptual essence of Parliamentary government is a "historical evolution" – an accident of 19th century Britain that spread to other parts of the world."

Finally, it is worth remembering that 19th century Britain was a developing country and so our insights might extend over time to those countries that are developing today. Indeed our finding that a relationship between parties and voters coincided with the development of programmatic parties without national bases of organisation chimes with recent work in political development mentioned earlier. These lessons may be informative in understanding how developing countries today could move from a clientelistic system to one with programmatic parties (Hicken 2011, Stokes 2005, Wantchekon 2003).

Our paper is organized as follows. We first discuss the institutional setting and introduce our data. In Section 3, we present our main results. Section 4 discusses some sensitivity and validity checks. In Section 5, we analyse mechanisms that might explain our findings. We discuss the external validity of our results in Section 6 and conclude in Section 7.

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and Howell, Krasa, and Polborn (2017).

2 Institutional Setting and Data

2.1 Victorian Era British Political Landscape

Elections in Britain in the Victorian period under investigation took place under the first-past-the-post voting system that is still in place. Whilst some constituencies were single-member districts, most constituencies elected two candidates and a few elected three and four. From around 1850 constituency elections were contested by candidates who aligned with one of two major parties, the Conservatives and the Liberals. The Liberals brought together a loose coalition of (mainly) Whigs, Radicals, and Peelites (a faction that had broken from the Conservatives) and by 1860 formed a cohesive parliamentary block. The Whigs were far being a "party" in the sense of having a clear programme. Nevertheless, candidates who stood on a platform of reducing crown patronage, expressed sympathy towards nonconformists, and supported the interests of merchants and bankers, were labelled as Whigs. For convenience, for our analysis of the years prior to the formation of a cohesive Liberal Party identity we refer to candidates who are either Whig or Radical as Liberal.

In the period of analysis, the key institutional reforms were the Great Reform Acts. The first of these, introduced in 1832, introduced several measures that mitigated malapportionment: increasing representation in the industrialized cities, and taking away seats from the so-called rotten boroughs with small voting populations. The act also increased the male franchise to around 650,000. The Representation of the Peoples Act, otherwise known as the Second Reform Act, was passed by Parliament on August 15th, 1867. The Second Reform Act, that became law in England and Wales in 1867, extended the franchise in the boroughs to all males over the age of 21 who were inhabitant occupiers, whether house-owners or tenants, and to male lodgers whose rent was at least 10 pounds per year. A residence of at least one year in the borough was required and women were still unable to vote. In counties, the franchise was extended to holders of life

interests, copyholds and leases of sixty years and more worth 5 pounds per annum (from a previous threshold of 10) and to tenants occupying land worth 12 pounds (from a previous threshold of 50 pounds per annum).

2.2   Poll Book Data

Prior to the next major reform, The Ballot Act of 1872, individual voting records of registered voters were public and recorded in so called poll books. This historical fact provides a novel and reliable window into actual individual political behaviour. Using these data, we can answer questions previously addressed using less detailed aggregate or less reliable survey data. While Andrews (1998) shows that poll book data may contain some errors, they are so rare that they will be insignificant to any empirical analysis. The main limitations are, in fact, that the information content of the poll books are somewhat limited and that they are currently available electronically only for a very few districts. Therefore, the generalizability of the analysis is limited. Nevertheless, and as we shall see, the fact that we can confirm the very general findings of Cox (1984, 1986, 1987) alleviates these concerns.

Previously, poll book data have been used mainly in historical research (Drake 1971; Speck and Gray 1970; Mitchell and Cornford 1977; Phillips and Wetherell 1995), where the empirical analysis has been very elementary in nature. Accordingly, in a more recent work Andrews (1998) states that "some work has been done on poll books but in general this has been confined to an overview of poll books, or as illustration of a point in another argument". Indeed, Andrews' own work (Andrews 1998) is rare in that it utilizes the data in detail and shows that voters in Sandwich change the party they vote quite often over time. He supplements this with evidence from other historical records such as candidates' accounts to conclude that extensive vote buying took place. Nevertheless, that said, the empirical analysis even in Andrews (1998) is rather crude and indeed no statistical inference is conducted.

Our focus is on the period after the First Reform Act of 1832 and before The Ballot Act

of 1872. We use only poll books that contain information on occupation and cover the transition period from candidate to party-oriented system, that is, 1857-1868 as discussed by Cox (1986). Given these restrictions, we make use of poll books for a varying number of general elections held in three boroughs: Ashford (four elections in 1852-1868; Drake and Pearce 1992), Sandwich (eight elections in 1832-1868; Andrews 2001) and Guildford (eight elections in 1832-1865; Sykes 1977). Digitized versions of the poll book content are provided by the UK Data Archive (Ashford, UK Data Archive Study Number 2948; Sandwich, 4170; Guildford, 977). All poll books record voters' names and votes. Moreover, Sandwich and Guildford poll books include also occupations of the voters. For Ashford, we obtain the occupation information for a fraction of the voters by linking the data with censuses conducted around the period, directories that also contain occupational information for some of the voters and lists of landowners. We use a fuzzy merging algorithm, allowing minor differences in spelling of the first and last names, to link three censuses (1841, 1851 and 1861), directories from 1851, 1855, 1867 and 1874 and lists of land owners to the poll book data. After this, we assign each voter occupational and class information from the closest available source. We were not able to track other poll books that would both contain information on occupation and cover more than one election during our period of interest. An example of the typical content included in our poll books is illustrated below in Figure 1 which shows two pages from Sandwich poll book for parliamentary elections held in 1857.

We have further classified the occupations in working and middle classes in order to evaluate class differences in voting behaviour. Our classification follows Best (1972) and Clapham (2009), where the main classification criteria is a typical income of each occupation. Table 1 illustrates the occupational composition of the working and middle classes by showing ten most common professions within each class in our data. These ten professions always account for at least half of the voters in the respective group and hence provide fairly comprehensive picture of the classification and the occupations in the data. While all possible classifications may have their issues and one may need to compromise

REMARKS.	NAME.	PROFESSION.	RESIDENCE.	P.	H.	M.	L.
	James, Thomas	Clerk	Deal				
	Jarvis, Luke	Publican	do				
	Job, Thomas	Pilot	do				
	Jones, Edward	Chemist	do				
	Jones, Wm. Bentick	Pilot	do				
	Kelsey, James H. G.	Gardener	do				
	Kemball, Joseph Bird	Draper	do				
	Kennett, John	Hair Dresser	do				
	Kent, Frederick	Inn Keeper	do				
	Keys, Richard	Gentleman	do				
	Kidner, Thomas	Victualler	do				
	King, James Jordan	Hair Dresser	do				
	King, Stephen	Schoolmaster	do				
	Kingsford, William	Baker	do				
	Knight, James	Minister	do				
	Ladd, William	Farmer	do				
	Langley, Morris	Auctioneer	do				
	Lawrence, George	Clerk	do				
	Leeson, Jas. Seymour	Surgeon	do				
	Long, George	Cordwainer	do				
	Long, Edmund F.	Shoemaker	do				
	Lowndes, Robt. Ramll.	Victualler	do				
	Lush, James Robert	Schoolmaster	do				
	Mackie, William B.	Pilot	do				
	Mackie, Robert Moon	Painter	do				
	Malcome, Russell	Banker's Clerk	do				
	Marsh, Willm. Bailey	Baker	do				
	Marsh, William	Gentleman	do				
	Marsh, Simon	Victualler	do				
	Marsh, Harry W. G.	Ship Agent	do				
	Marsh, James	Victualler	do				
	Martin, James C.	Law Clerk	do				
	Mac Diarmid, John B.	Chemist	do				
	McLeod, Beutley	Brewer	do				
	Mercer, George	Solicitor	do				
	Millen, John Bullock	Pilot	do				
	Moat, George Manger	Carpenter	do				
	Moat, Thomas	Blacksmith	do				
	Mockett, Thos. H. W.	Gardener	do				
	Mockett, Joshua	Victualler	do				
	Mockett, Stn. Foster	Victualler	do				
	Moon, George Wm.	Pilot	do				
	Morse, Edward Geo.	Chemist & Surgeon	do				
	Mose, William James	Coach Maker	do				
	Moses, Joseph	Gentleman	do				
	Moulton, Morris	Pilot	do				
	Mourilyan, Joseph	Gentleman	do				
	Mowle, Richard	Pilot	do				
	Mowle, Thomas Ralph	Pilot	do				
	Mowll, Richard	Pilot	do				
	Mummery, Wm. R.	Currier	do				
	Munday, George	Gentleman	do				

REMARKS.	NAME.	PROFESSION.	RESIDENCE.	P.	H.	M.	L.
	Myhill, Wm. Popkiss	Baker	Deal				
	Myhill, Valentine C	Pilot	do				
	Myhill, George	Baker	do				

BOOTH B, COMPARTMENT, No. 2.—Voters in respect of Property occupied within the Parish of Deal, whose surnames commence with the letters from N to Y, (both inclusive):—and for Voters in respect of Property occupied within the Parish of Walmer.

REMARKS.	NAME.	PROFESSION.	RESIDENCE.	P.	H.	M.	L.
	Neal, Robert	Gentleman	Deal				
	Nethersole, William	Wine Merchant	do				
	Nethersole, John	Wine Merchant	do				
	Newing, John	Labourer	do				
	Newing, Willm. Hards	Gardener	do				
	Newing, Stepn. Danl.	Baker	do				
	Newton, James	Pilot	do				
	Norman, J. Henry	Gentleman	do				
	Norris, Tom	Pilot	do				
	Norris, Stephen	Pilot	do				
	Norris, Thos. Dixon	Pilot	do				
	Norris, James	Pilot	do				
	Norris, LeonardPattn.	Victualler	do				
	Norris, James Henry	Draper	do				
	Norris, Stephen, senr.	Gentleman	do				
	Nott, Edw. Bunberry	Capt. R. N.	do				
	Oatridge, William	Mariner	do				
	Packer, Osmond	Draper	do				
	Pain, Luke	Baker	do				
	Pain, John	Pilot	do				
	Pain, Thomas	Clothier	do				
	Pain, Edmund	Gentleman	do				
	Pain, Thomas Henry	Cooper	do				
	Pain, Edmund	Clothier	do				
	Palmer, George	Pilot	do				
	Parker, Stephen Edw.	Victualler	do				
	Parker, David	Butcher	do				
	Parker, Thomas	Gentleman	do				
	Parker, Thomas	Butcher	do				
	Parsons, Henry Wm.	Gentleman	do				
	Parsons, Henry Saul	Baker	do				
	Paul, Bennet	Gentleman	do				
	Paul, Thomas	Gentleman	do				
	Payne, Iden	Minister	do				
	Pearce, William	Gentleman	do				
	Pegden, Vincent	Watchmaker	do				
	Petley, Robert	Schoolmaster	do				
	Pettit, William	Gentleman	do				
	Philpott, William	Victualler	do				
	Philpot, George	Victualler	do				
	Pittock, Wm. Edgar	Tailor	do				
	Pordige, Robert	Pilot	do				

Source: See data documentation for Andrews (2001).

Figure 1. Pages from Sandwich poll book, 1857.

for example between income and social criteria, Table 1 does not reveal any striking misclassifications, at least from a purely subjective and intuitive perspective.

Table 2 summarizes voting behaviour by class and district. In Sandwich and Guildford working class tends to give more split votes but party preferences are similar across classes. In Ashford, the working class gives less split votes and votes more for the Liberals than the middle class. However, this difference between constituencies will turn out to be mainly a result of different election years rather than within election year geographic differences.

Table 1. Ten most common occupations by class and district.

	Panel A: Ashford			
	Middle class ($N = 250$)		**Working class ($N = 328$)**	
Rank	Occupation	N	Occupation	N
1	Grocer	30	Farmer	31
2	Gentry	17	Draper	24
3	Clerk	14	Carpenter	21
4	Merchant	13	Labourer	18
5	Engineer	12	Butcher	16
6	Doctor	11	Shoe maker	16
7	Lawyer	11	Tailor	15
8	Religion	11	Baker	14
9	Chemist	10	Cabinet maker	11
10	House proprietor	9	Coach builder	10

	Panel B: Guildford			
	Middle class ($N = 1210$)		**Working class ($N = 2097$)**	
Rank	Occupation	N	Occupation	N
1	Gentleman	230	Carpenter	174
2	Dealer	150	Shoe maker	157
3	Grocer	133	Baker	123
4	Merchant	72	Tailor	119
5	Doctor	50	Labourer	105
6	Lawyer	48	Butcher	92
7	Innkeeper	46	Blacksmith	72
8	Victualler	43	Brick layer	71
9	Publican	40	Brewer	61
10	Clerk	39	Gardener	56

	Panel C: Sandwich			
	Middle class ($N = 3182$)		**Working class ($N = 4086$)**	
Rank	Occupation	N	Occupation	N
1	Gentry	935	Pilot	379
2	Victualler	305	Mariner	327
3	Grocer	290	Labourer	260
4	Military	211	Shoe maker	208
5	Dealer	128	Carpenter	204
6	Publican	108	Farmer	201
7	Merchant	103	Butcher	187
8	Doctor	95	Gardener	173
9	Clerk	85	Tailor	162
10	Teacher	83	Painter	137

Table 2. Aggregate level party votes by district and class.

Panel A: Ashford, parliamentary county elections (1852-1865)					
	Middle class ($N = 250$)		Working class ($N = 328$)		
	Mean	Std. dev.	Mean	Std. dev.	Difference
Liberal	0.432	0.496	0.579	0.494	-0.147***
Conservative	0.216	0.412	0.159	0.366	0.057*
Split	0.200	0.401	0.149	0.357	0.051
No vote	0.152	0.360	0.113	0.317	0.039
Panel B: Guildford, parliamentary borough elections (1832-1868)					
	Middle class ($N = 1210$)		Working class ($N = 2097$)		
	Mean	Std. dev.	Mean	Std. dev.	Difference
Liberal	0.392	0.488	0.368	0.482	0.024
Conservative	0.358	0.480	0.299	0.458	0.059***
Split	0.250	0.433	0.333	0.472	-0.083***
No vote			N/A		
Panel C: Sandwich, parliamentary borough elections (1832-1868)					
	Middle class ($N = 3182$)		Working class ($N = 4086$)		
	Mean	Std. dev.	Mean	Std. dev.	Difference
Liberal	0.455	0.498	0.442	0.497	0.013
Conservative	0.334	0.472	0.362	0.481	-0.029**
Split	0.079	0.270	0.118	0.323	-0.040***
No vote	0.132	0.338	0.075	0.264	0.057***

Notes: Class is unknown for 239, 95 and 46 voters in Ashford, Guildford and Sandwich, respectively. *, ** and *** denote statistically significant difference in means at 10%, 5% and 1% levels, respectively.

3   Regression Analysis

In this section, we describe the relationships in our data using regression analysis. The unit of observation is an individual voter in one election. Most voters are observed and identified over many elections.

3.1   Partisan Alignment

Political parties with close ties to the electorate are a key feature in the historical development of parliamentary democracies. When and why did such connections arise? The question is difficult to address since, as noted by Duverger, and as noted earlier, there are a myriad of factors that are correlated with and so can plausibly explain the emergence of a partisan electorate. One approach, that we follow here was pioneered by Cox who looked at within country variation to disentangle the effects of institutional change that may be correlated with party development. His analysis of Victorian England remains a seminal study for understanding the role of parties in parliamentary systems more generally.

Since Cox's study it has been understood that cohesive parties with close links to the electorate preceded the major reforms to the franchise in the late Victorian period, namely the Second Reform Act of 1867 that enfranchised the unskilled working classes, the Corrupt Practices Act of 1883 that made it harder for candidates to bribe voters, and the 1884 Reform Act that extended suffrage in the rural counties. In a sequence of papers and a monograph Cox (1984, 1986, 1987) used descriptive analysis of a long (and wide) panel of aggregate (district) level data to show that the party orientation of Victorian voters occurred a decade or so before these defining institutional changes, thus challenging the conventional wisdom (see for example Nossiter 1975) that Victorian voters aligned with political parties because of those reforms. He highlighted instead the decline in parliamentary prerogative in the mid-Victorian period that, when combined with the centralisation of decision-making authority within a cabinet and the Prime Minister's

power of dissolution and use of the confidence vote, weakened the role of the individual MP. A party-oriented electorate developed as voters used their votes to control the executive and choose between rival teams: an incumbent government and (Her Majesty's Loyal) opposition.[2]

The institutional developments that Cox describes as bolstering the development of cohesive parties with close links to the electorate are, of course, found in other parliamentary democracies and so have been the subject of a large body of theoretical and empirical research (Huber 1996; Diermeier and Feddersen 1998).

Despite the seminal nature of Cox's claims, they rest on the use of aggregate data from constituency elections in nineteenth century Britain. These constituencies differ in many ways, making it hard to support a causal claim that informal institutional change that preceded the major reforms of the late nineteenth century had an effect on the emergence of a party-oriented electorate. Our contribution is in being able, for the first time, to use individual level voting data, recording actual individual-level voting returns, in order to address these issues.

Revisiting Cox's question on the timing of key changes in the English electorate, we adopt his measure of a party-oriented electorate. During this period most English constituencies elected two MPs (under plurality rule). Cox's intuitive argument was that party-oriented voters would not split their votes between Liberals and Conservatives. Split votes do not affect the seat allocation between parties. They do, however, affect which candidates are elected within a party. Cox showed that split level voting (his key indicator of a candidate-centred electorate) declined dramatically during 1857–1868, and so before the first election under the new extended franchise (in 1868).

We can check whether regression analysis of our individual-level data corroborates those earlier findings. Our micro-level analysis allows us to go much further, however, in

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[2]Recent work by Eggers and Spirling (2016a) using micro-level data on parliamentary votes confirm that parties became cohesive in this period and that this is due to changes in individual behaviour. Eggers and Spirling (2016b) study speech patterns in parliament to show the centralisation of agenda-setting power by the executive and the emergence of a shadow cabinet.

exploring which behavioural voting patterns underpin the decline in split level voting and the apparent emergence of a partisan electorate. The use of aggregate historical data to draw inferences about party alignment within the electorate is problematic. Very different behavioural patterns could be associated with the same vote share, making any inference difficult to sustain. For example, a party might obtain 50% of the vote share when half of all voters cast both votes for that party or when each elector casts a split vote. A more specific problem – that we discuss in Section 6 – arises due to the fact that, when franchise restrictions are in place, we cannot accurately infer the population of eligible voters.

Cox's main finding was that split level voting had declined by 1865 and almost to the level that persisted from 1868 onwards, thus prior to the major institutional change in 1867. However, during the election year 1857 split voting was as common as in the previous era. In 1859 split voting was lower than in 1857, but still within the variation of the previous era. We use these findings to split our sample into two periods: the first contains elections before 1865; the second, those during and after 1865. We use this classification to conduct difference-in-difference estimation (DID) that allows us to assess whether in the critical periods the response of the working class was different to that of the middle class. From this perspective, working class be seen as the treatment group and middle class as the control group in the DID. While our main concern is to provide descriptive results on the timing of changes in political behaviour for different classes, one could give a causal interpretation to these results if standard DID assumptions are met. The common trend assumption means that absent a general shift (from candidate-oriented to a party-oriented system) the outcome of interest for the working class and middle class would have evolved with the same trends. Moreover, a causal interpretation would require that any change in the behaviour of the working class in the post-treatment period did not cause a response in the behaviour of the middle class, i.e. there should be no spill-overs caused by the effect of interest. If both of these assumptions hold, a causal claim could be made. However, if not, then DID regressions and graphical illustrations (typical to the DID) still provide a useful way of describing the phenomenon of interest. Our benchmark specification is as follows:

$$y_{it} = \alpha_t + \beta_1 1[\textit{Working class}]_{it} + \beta_2 1[\textit{Year} \geq 1865]_t$$
$$+ \beta_3 1[\textit{Working class}]_{it} \times 1[\textit{Year} \geq 1865]_t + \varepsilon_{it}. \tag{1}$$

We estimate (1) either separately for each constitution or using a pooled data from all of them, restricting the sample to those voters who turn out to vote. We use either no controls or election year fixed effects. Note that when we include the election year fixed effects, we omit $1[\textit{Year} \geq 1865]_t$ as this is already captured by the year dummies for 1865 and 1868. For Guildford, we also observe more detailed location (parish) information within the constituency and therefore include that locality fixed effect. With the pooled data, we control for the election-constituency fixed effects.

The regression results for split voting are presented in Table 3. From the separate regressions we find that working class status is a strong and robust predictor of split voting prior to the 1865 elections (the coefficient related to the variable $1[\textit{Working class}]$). In Guildford and Sandwich this result is highly significant, but it is imprecise in Ashford. However, in elections during and subsequent to 1865 we observe that split voting goes down for all voters (the coefficient related to the variable $1[\textit{Year} \geq 1865]$). This result is highly significant in all constituencies and exactly in line with the Cox aggregate level results.

Our data allows us to go further in assessing heterogeneous effects. In particular, we observe that subsequent to 1865, the split voting goes down even more for the working class than the middle class (the coefficient related to the $1[\textit{Working class}] \times 1[\textit{Year} \geq 1865]$ variable). This main effect of interest is present and robust within all constituencies, but statistically significant only for Sandwich. The pooled analysis confirms these findings and all the results are highly significant in the pooled analysis.

As to the interpretation of the coefficients, let us look at specification (6) as an example. In Sandwich and prior to 1865, 10.4% ($\textit{Constant} = 0.104$) of the non-working class voters

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gave split votes and 14.8% of the working class did so ($Constant + 0.044$). After and during 1865, 6.3% of the non-working class voters gave split votes ($Constant - 0.045$) and 6.1% of the working class did the same (sum of all the reported coefficients). Therefore, while we observe that split voting decreased across classes the decrease was relatively large amongst the working class. More specifically, the reduction in split voting amongst the working class was large enough to bring them to the same level observed in the middle class.

In order to visualize the estimation exercise of Table 3, we plot the share of split votes among the two classes over time (Figure 2). Our discussion of these results is based on the bottom-right graph that uses the pooled data. However, for completeness, we also report separately the individual constituency graphs that deliver the same main message (albeit with more noise due to obvious sample size reasons).

Doing so we first observe that the split vote share has reasonably common pre-treatment trends for working and other classes prior to the 1865 elections. This indirectly implies that the common trend assumption may be realistic and so might allow some causal claims to be made concerning the main association of interest reported in Table 3. The second key observation is that prior to 1865 split voting is always more common among the working class than the middle class. The third key observation is that for the 1865 election, split voting is about as common in both the groups and in 1868 slightly less common among the working than the middle class. Finally, and critically we note that the decrease in the split vote share among the working class was in place already in 1865 and not only in 1868. This is important because the 1868 elections were affected by the franchise extension of 1867 (Berlinski, Dewan, and Van Coppenolle 2014). Thus we observe that the decline in split ticket voting amongst the working class precedes the main institutional change of the Victorian era.

In Appendix Figure A1, we illustrate the same findings further by plotting over time the class means of the residuals from a regression where split voting is predicted with only the election year fixed effects. The graphs focus on the relative differences between the classes, while cleaning out the variation due to time in the occurrence of split voting. The graphs

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show quite clearly the extent to which the behaviour of working class voters converges with that of middle class ones with respect to split voting. Our results thus corroborate Cox's findings and go further in showing that the development of a party-centred electorate in Victorian England owes much to the change in behaviour of the English working classes.

3.2 Party Alignment

We have shown that a partisan electorate emerged in the United Kingdom in the period prior to the major institutional reforms and that the main driving force was a change in the voting behaviour of working class voters. What effect did this have on the emerging party system? The existence of the classic two-party class based system based on alignment of the British working class with the left Labour Party (and the corresponding alignment of the middle classes with the Conservatives) is shown through survey evidence from the postwar period (Butler and Stokes 1969)–much of the subsequent literature documented its decline. In the absence of survey data from earlier periods it is hard to show the origins of class alignment, although there is some evidence that the two-party class based model was already in evidence in the interwar period and by the time Labour replaced the Liberals as the main party of the left.[3] It is plausible but not proven that a two party class based system, albeit it one of a different form, emerged much earlier in Britain.[4]

In Table 4, we analyse how party voting behaviour changes over time.[5] We ask whether the working class voted Liberal more often than other classes prior to the 1865 election and whether they did so in 1865 and 1868 elections. The analysis is identical to the previous DID

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[3]Estimates showing this effect, and using corrected district level aggregate data, were presented in earlier work by Carles Boix at the 2001 meetings of the Midwest Political Science Association.

[4]As noted by Cox (1987, p. 162):

"At some point between the elector in 1851 who observed that, 'as a tenant-farmer, I well know that when we are given to understand which way our landlord means to vote, and are canvassed by his steward and lawyer, we quite understand which way we are expected to go,' and the elector in 1951 who asserted, rather more succinctly, 'I would vote for a pig if my party put one up,' voting behaviour had clearly changed considerably."

[5]Our conclusions are robust to assigning the outcome variable value 0.5 if a voter casts a split vote between the parties, although this tones down the magnitude of the estimates slightly.

Table 3. Regression results on splitting the vote.

	Panel A: Ashford		
	(1)	(2)	
1[Working class]	-0.057	-0.057	
	[0.085]	[0.085]	
1[Year≥1865]	-0.574***		
	[0.064]		
1[Working class] ×1[Year≥1865]	0.036	0.037	
	[0.086]	[0.087]	
Constant	0.623***	0.629***	
	[0.062]	[0.070]	
N	502	502	
R^2	0.40	0.41	
	Panel B: Guildford		
	(3)	(4)	(5)
1[Working class]	0.088***	0.094***	0.091***
	[0.020]	[0.020]	[0.020]
1[Year≥1865]	-0.166***		
	[0.026]		
1[Working class] ×1[Year≥1865]	-0.052	-0.057*	-0.049
	[0.034]	[0.033]	[0.033]
Constant	0.282***	0.441***	0.259***
	[0.016]	[0.031]	[0.066]
N	3307	3307	3307
R^2	0.03	0.14	0.15
	Panel C: Sandwich		
	(6)	(7)	
1[Working class]	0.044***	0.041***	
	[0.010]	[0.010]	
1[Year≥1865]	-0.047***		
	[0.011]		
1[Working class] ×1[Year≥1865]	-0.040**	-0.037**	
	[0.016]	[0.016]	
Constant	0.104***	0.168***	
	[0.008]	[0.015]	
N	6541	6541	
R^2	0.01	0.04	
	Panel D: All constituencies			
	(8)	(9)	(10)	(11)
1[Working class]	0.064***	0.063***	0.057***	0.057***
	[0.011]	[0.011]	[0.010]	[0.010]
1[Year≥1865]	-0.104***			
	[0.011]			
1[Working class] ×1[Year≥1865]	-0.054***	-0.053***	-0.058***	-0.049***
	[0.015]	[0.014]	[0.014]	[0.014]
Constant	0.172***	0.234***	0.181***	0.158***
	[0.008]	[0.014]	[0.014]	[0.015]
N	10350	10350	10350	10350
R^2	0.03	0.06	0.12	0.16
Election year FE	No	Yes	Yes	Yes
Parish/Constituency FE	No	No	Yes	No
Election year-Constituency FE	No	No	No	Yes

Notes: Only general elections are included. Outcome is a dummy for casting a split vote. Estimates are conditional on voting. Robust standard errors clustered by voter are reported in brackets. *, ** and *** denote statistical significance at 10%, 5% and 1% level, respectively.
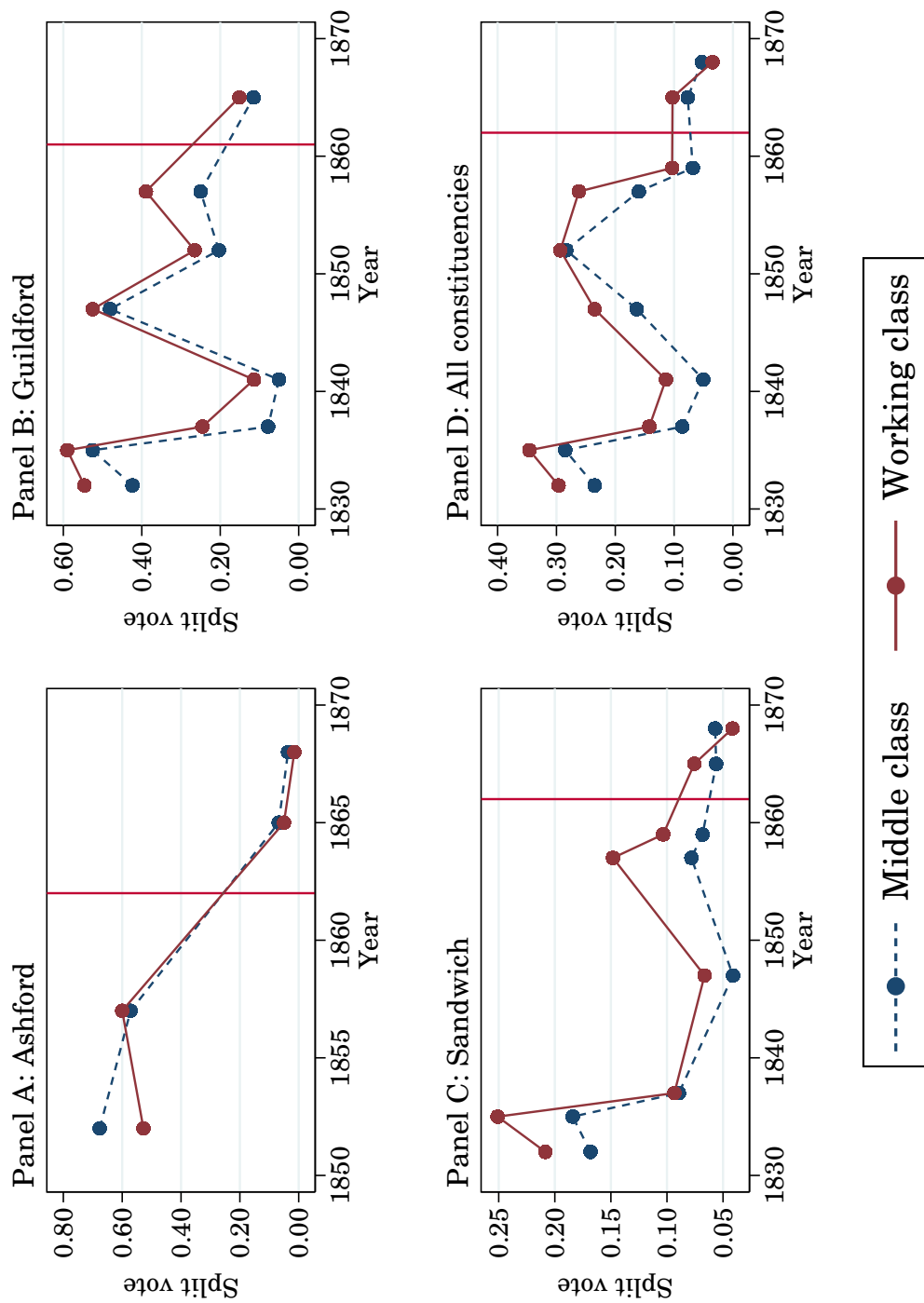
Figure 2. Graphical representation of the DID analysis on split voting.

analysis on split voting bar the difference in outcome variable. Again, the main coefficient of interest relates to the interaction variable between working class status and the latter time period. This can be seen as a difference-in-differences estimate of left voting amongst the working class in the post 1865 era.

Consistent with the results on split ticketing, we find that during the earlier period, working class status is a predictor of casting split votes or voting Conservative rather than Liberal in Guildford and in Sandwich. For Ashford there is also a positive correlation but this finding is not statistically significant. In Ashford, in the 1865 and 1868 elections, the Liberal party became much more popular among the middle class than in the earlier period and this change is statistically significant. In Sandwich and Guilford there is not much change in the popularity of the Liberals among the middle class. However, in the latter period, and in all three constituencies, the popularity of the Liberals amongst the working class increased. This effect of main interest is robust when including controls within all the constituencies, and the effect is of similar magnitude across constituencies.

In order to interpret these coefficients, we again look at specification (6) in Table 4. Prior to 1865 52.2% (*Constant*) of the middle class voters voted Liberal in Sandwich and 45.2% of the working class did so (*Constant* − 0.070). After and during 1865, 53.1% of the non-working class voters voted Liberal (*Constant* + 0.009) whereas 56.8% of the working class did so (sum of all the reported coefficients). Thus, whereas the middle class Liberal support stayed the same, there was a substantial change in the behaviour of the working class. In sum, we observe an emerging alignment between the working class and the Liberal Party that, as in the decline in split ticket voting, predates the major institutional reforms of the late Victorian era.

We visualize the estimation exercise of Table 4 in Figure 3 and and Appendix Figure A2. When comparing pre-treatment trends between classes with those concerning split voting (Figure 2) it is less clear that (with respect to class voting) there are indeed common trends. This makes a causal interpretation of our findings with respect to the timing of the class basis of partisan voting hard to defend. The second key observation is that typically the

Liberals were more popular among the middle class than the working class in the earlier period, whereas in all constituencies the opposite was true in the latter period. The increase in the Liberal vote share among the working class took place already in 1865 and not only in 1868, that is, already before the 1867 reform.

In the Appendix A, we repeat the estimations using a sample of by-elections in Guildford (1858 and 1866) and Sandwich (1841, 1852, 1859 and 1866). In such elections, the constituents were electing only one candidate to replace a politician whose term was terminated prematurely (for example, due to the politician passing away). Therefore, the voters did not have the possibility to cast split votes and the analysis allows us to verify that the observed change in Liberal voting is also present nevertheless. Table A1 demonstrates that the voting behaviour of the working class voters changed very similarly after 1865 even in by-elections.

Analysis of our data thus reveals that the probability of left (Liberal) voting was already significantly higher amongst working class voters in 1865, prior to the introduction of the Second Reform Act and the introduction of the Secret Ballot in 1872 that was introduced in part as a way of reducing the political power of patrons over tenants.[6] With respect to British politics this finding is significant in providing the first solid evidence that support for the Liberal Party amongst the enfranchised skilled working class predates the emergence of the more progressive or New Liberalism and was established already during the Mid-Victorian era. That the genesis of the British two party class based system was already in place at this time suggests that subsequent developments are related to this fact. For example, it seems plausible that the emergence of a Liberal Party under Gladstone with a radical programme of reform that appealed to the newly enfranchised working class built on an existing alliance between workers and Liberals and, in turn, reinforced this relationship.

In sum, we find evidence that two empirical trends – the party orientation of voters and the class basis of party voting – predate the defining institutional changes of the Victorian

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[6]Studies of the introduction of the Secret Ballot elsewhere shows strong evidence of its impact on the voting behaviour of relatively poor voters (Baland and Robinson 2008).

era. Later we shall try and explore which mechanisms can explain these facts. Before doing so we check how sensitive is our analysis to different specifications.

4 Additional Sensitivity Analysis

As already noted, any causal claims that could be made with respect to the behaviour of working class voters, based on our DID estimates, rest on the assumption of common pre-treatment trends. In Figure 4, we formally test for common pre-treatment trends for both main outcomes using the pooled data from all the constituencies. We achieve this by estimating the following model which resembles a typical dynamic difference-in-differences specification:

$$y_{it} = \gamma + \delta_1 1[Working\ class]_{it} + \sum_t \left\{ \delta_{2t} Year_t + \delta_{3t} Year_t \times 1[Working\ class]_{it} \right\} + \zeta_{it}. \quad (2)$$

Figure 4 reports only the δ_{3t} coefficients for each t. We set the base year to 1859, i.e. the last year before our treatment period. The last two coefficients (1865 and 1868) relate to the actual treatment period of interest. That actual result of interest seems to be robust to allowing a different coefficient for each year, since three out of four coefficients are statistically significant. If, however, the coefficients related to years prior to 1865 were shown to be statistically significant then the hypothesis of common pre-treatment trends would be rejected. In one out of 14 cases is this in fact the case. While this may be an indication of potential issues, it may also be due to multiple testing.

We explore the robustness of our main results to alternative social class divisions by reclassifying the voters mimicking Eriksson and Goldthorpe's (1992) five-class scheme as closely as possible (see also Ganzeboom and Treiman 1996). First, we show in Table 5 that the decline in split votes comes mainly from skilled workers and petty bourgeoisie, all mostly belonging to the working class. Second, we verify in Table 6 that the alignment with

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Table 4. Regression results on the association between working class status and voting for the Liberals for pre- and post-1865 elections.

	Panel A: Ashford			
	(1)	(2)		
1[Working class]	0.112	0.111		
	[0.077]	[0.077]		
1[Year≥1865]	0.430***			
	[0.065]			
1[Working class] ×1[Year≥1865]	0.008	0.007		
	[0.089]	[0.089]		
Constant	0.217***	0.200***		
	[0.054]	[0.055]		
N	502	502		
R²	0.18	0.18		
	Panel B: Guildford			
	(3)	(4)	(5)	
1[Working class]	-0.043	-0.037	-0.033	
	[0.028]	[0.028]	[0.028]	
1[Year≥1865]	0.013			
	[0.036]			
1[Working class] ×1[Year≥1865]	0.117***	0.111**	0.101**	
	[0.045]	[0.045]	[0.046]	
Constant	0.389***	0.418***	0.794***	
	[0.024]	[0.034]	[0.100]	
N	3307	3307	3307	
R²	0.01	0.08	0.09	
	Panel C: Sandwich			
	(6)	(7)		
1[Working class]	-0.070***	-0.063***		
	[0.020]	[0.020]		
1[Year≥1865]	0.009			
	[0.024]			
1[Working class] ×1[Year≥1865]	0.107***	0.101***		
	[0.032]	[0.032]		
Constant	0.522***	0.528***		
	[0.016]	[0.021]		
N	6541	6541		
R²	0.01	0.04		
	Panel D: All constituencies			
	(8)	(9)	(10)	(11)
1[Working class]	-0.062***	-0.060***	-0.055***	-0.051***
	[0.016]	[0.016]	[0.016]	[0.016]
1[Year≥1865]	0.047**			
	[0.020]			
1[Working class] ×1[Year≥1865]	0.118***	0.118***	0.118***	0.108***
	[0.026]	[0.025]	[0.025]	[0.025]
Constant	0.473***	0.501***	0.538***	0.520***
	[0.013]	[0.018]	[0.018]	[0.020]
N	10350	10350	10350	10350
R²	0.01	0.03	0.05	0.08
Election year FE	No	Yes	Yes	Yes
Parish/Constituency FE	No	No	Yes	No
Election year-Constituency FE	No	No	No	Yes

Notes: Only general elections are included. Outcome is a dummy for casting a Liberal vote. Estimates are conditional on voting. Robust standard errors clustered by voter are reported in brackets. *, ** and *** denote statistical significance at 10%, 5% and 1% level, respectively.
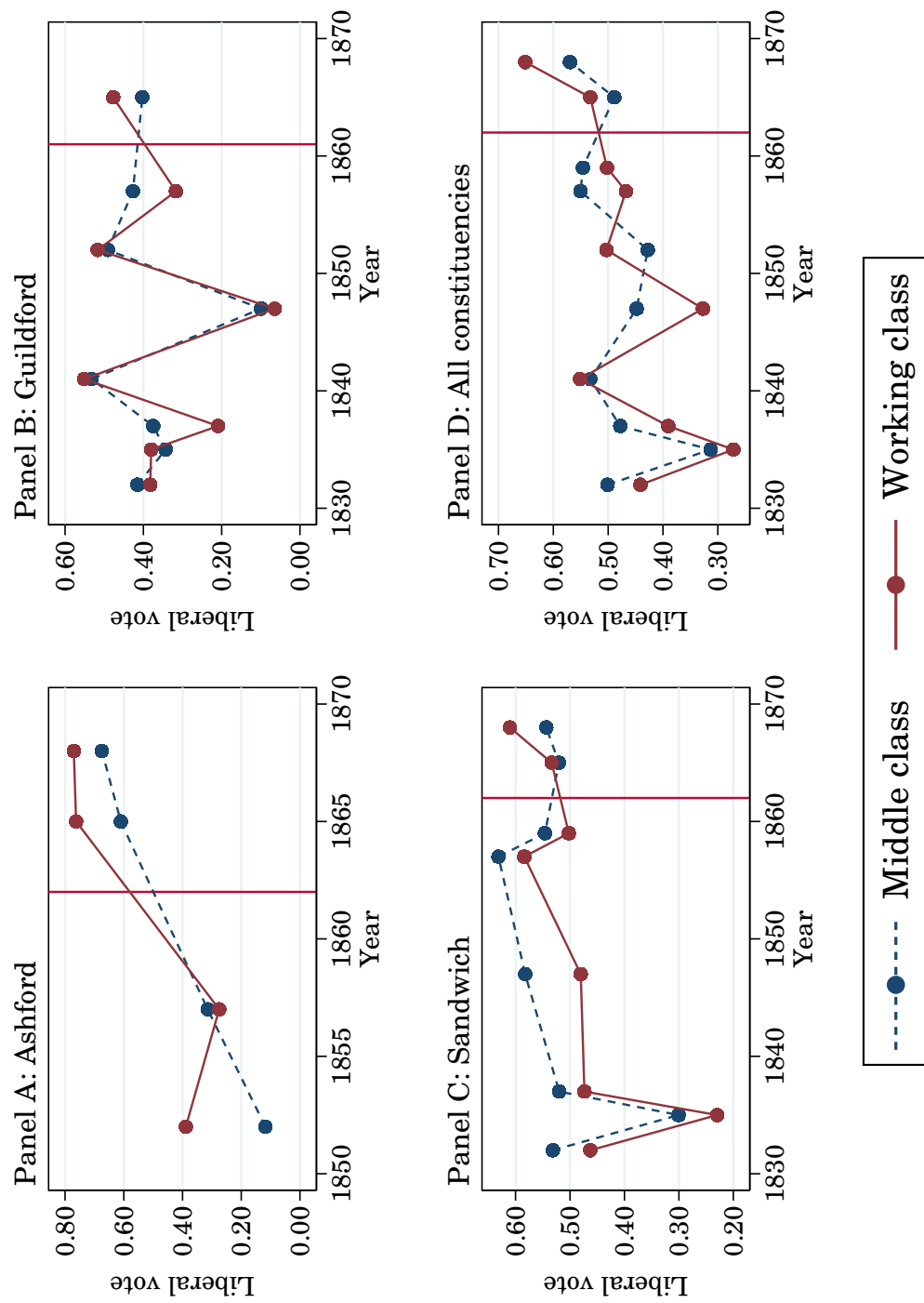
Figure 3. Graphical representation of the DID analysis on voting for Liberals.

the Liberals happens among the non-skilled workers, skilled workers and petty bourgeoisie. In Appendix Tables A4 and A5 we demonstrate how our middle and working classes and different occupations map into the Eriksson-Goldthorpe classification.

We provide additional analysis in Appendix A. In Table A2, we study whether the results are robust to excluding those voters from the sample who voted for the first time in 1868 elections in Ashford or Sandwich.[7] While the fact that original poll book data for Sandwich excluded voters enfranchised in 1867 implies that results concerning Sandwich should not be attributed to the reform, there are some voters who were eligible to vote before but did not exercise their right to do so. The results remain the same after excluding these voters from the estimation sample.

We observe some of the voters multiple times and some of them move between social classes. Thus, it is possible to include voter fixed effects in our estimations.[8] We study the robustness of our results to including these fixed effects in Table A3. The results concerning split voting are very similar even after the voter fixed effects are included. However, the coefficient of the interaction term is slightly toned down in the case of Liberal voting once the fixed effects are introduced.

Finally, we check that the elections are similar across years. In Table A6, we report the available candidates for each election. For Ashford we report the election results from the entire constituency of Kent Eastern, of which, Ashford is part of. In all the constituencies there are either three or four candidates in every election. There is no striking difference between the pre- and post-treatment years, and thus, changes in available candidates are unlike to explain our findings.

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[7]See also Berlinski and Dewan (2011) who study the political consequences of franchise extension. They show that there is no evidence relating Liberal support to changes in the franchise rules, although the Second Reform Act did affect electoral competition and candidate selection.

[8]We include only voters who are observed at least twice in this analysis. This changes our estimation sample slightly.

Panel A: Split vote

Panel B: Liberal vote
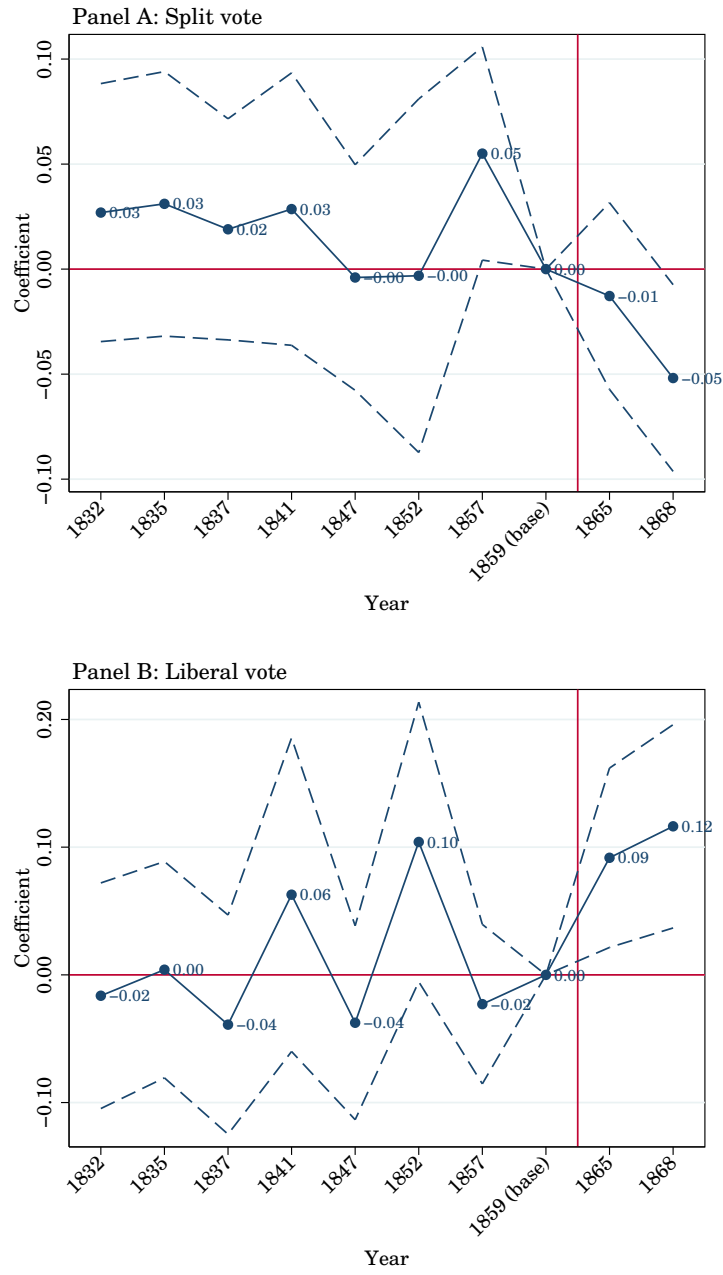
Notes: Figure shows point estimates for each years relative to 1859. Dashed lines are 95% confidence intervals. Regressions control for election, constituency and consituency-election fixed effects.

Figure 4. Coefficients from dynamic difference-in-differences estimation.

Table 5. Split voting using Eriksson-Goldthorpe classification.

	(1)	(2)	(3)	(4)
1[Non-skilled worker]	0.055**	0.063**	0.078***	0.074***
	[0.028]	[0.027]	[0.025]	[0.023]
1[Skilled worker]	0.055***	0.051***	0.049***	0.053***
	[0.016]	[0.016]	[0.015]	[0.014]
1[Farm worker]	0.130***	0.137***	0.112***	0.096**
	[0.037]	[0.036]	[0.037]	[0.038]
1[Petty bourgeoisie]	0.067***	0.066***	0.055***	0.055***
	[0.012]	[0.012]	[0.011]	[0.011]
1[Year≥1865]	-0.101***			
	[0.011]			
1[Non-skilled worker] ×1[Year≥1865]	-0.011	-0.018	-0.019	-0.025
	[0.039]	[0.038]	[0.037]	[0.035]
1[Skilled worker] ×1[Year≥1865]	-0.042*	-0.038	-0.048**	-0.041*
	[0.024]	[0.024]	[0.024]	[0.023]
1[Farm worker] ×1[Year≥1865]	-0.140***	-0.145***	-0.139***	-0.099*
	[0.050]	[0.049]	[0.053]	[0.051]
1[Petty bourgeoisie] ×1[Year≥1865]	-0.064***	-0.065***	-0.066***	-0.057***
	[0.016]	[0.016]	[0.016]	[0.015]
Constant	0.170***	0.233***	0.181***	0.159***
	[0.008]	[0.014]	[0.014]	[0.015]
N	10350	10350	10350	10350
R^2	0.03	0.06	0.12	0.16
Election year FE	No	Yes	Yes	Yes
Parish/Constituency FE	No	No	No	Yes
Election year-Constituency FE	No	No	No	Yes

Notes: Only general elections are included. Outcome is a dummy for casting a split vote. Estimates are conditional on voting. Data from all three constituencies are pooled together. Robust standard errors clustered by voter are reported in brackets. *, ** and *** denote statistical significance at 10%, 5% and 1% levels, respectively.

Table 6. Liberal voting using Eriksson-Goldthorpe classification.

	(1)	(2)	(3)	(4)
1[Non-skilled worker]	-0.068*	-0.069*	-0.083**	-0.075**
	[0.038]	[0.038]	[0.037]	[0.037]
1[Skilled worker]	-0.096***	-0.089***	-0.087***	-0.082***
	[0.023]	[0.024]	[0.023]	[0.023]
1[Farm worker]	-0.112***	-0.127***	-0.112***	-0.105**
	[0.043]	[0.043]	[0.043]	[0.043]
1[Petty bourgeoisie]	-0.051***	-0.051***	-0.042**	-0.040**
	[0.018]	[0.018]	[0.018]	[0.018]
1[Year$\geq$1865]	0.045**			
	[0.020]			
1[Non-skilled worker] $\times$1[Year$\geq$1865]	0.079	0.079	0.084	0.082
	[0.055]	[0.055]	[0.055]	[0.054]
1[Skilled worker] $\times$1[Year$\geq$1865]	0.124***	0.117***	0.119***	0.108***
	[0.040]	[0.040]	[0.040]	[0.039]
1[Farm worker] $\times$1[Year$\geq$1865]	0.185***	0.194***	0.174**	0.142**
	[0.069]	[0.068]	[0.068]	[0.067]
1[Petty bourgeoisie] $\times$1[Year$\geq$1865]	0.116***	0.119***	0.118***	0.111***
	[0.028]	[0.028]	[0.028]	[0.028]
Constant	0.475***	0.504***	0.540***	0.523***
	[0.013]	[0.018]	[0.018]	[0.020]
N	10350	10350	10350	10350
R^2	0.01	0.04	0.05	0.08
Election year FE	No	Yes	Yes	Yes
Parish/Constituency FE	No	No	No	Yes
Election year-Constituency FE	No	No	No	Yes

Notes: Only general elections are included. Outcome is a dummy for casting a Liberal vote. Estimates are conditional on voting. Data from all three constituencies are pooled together. Robust standard errors clustered by voter are reported in brackets. *, ** and *** denote statistical significance at 10%, 5% and 1% levels, respectively.

5   Ideological Appeal or Decline in Vote Buying?

What explains the development of emergence of a party-oriented electorate at this time? Or, as Duverger asked "how did we pass from the system of 1850 to that of 1950"? Having shown that a key factor (already in Mid-Victorian England) was an alignment of the working classes with the Liberal Party, we next try to understand the mechanisms that lie behind that alignment. According to Duverger the key factors that lead to the emergence of party-oriented systems were the extension of popular suffrage, the role of parliamentary prerogatives, and the emergence of organized mass parties on the left who connected with working class voters on the basis of ideology.

We have shown that two empirical trends – the party orientation of voters and the class basis of party voting – predate the major franchise reform of 1867. By extension it can not be the case that organized mass parties played a role, for they did not exist at that time. As shown by (Hanham 1959), the process of developing national party organizations able to support country-wide candidacies and campaigning activities did not begin until after the Reform Act of 1867. Prior to this, political parties in the United Kingdom were quintessential cadre parties, as defined by Duverger, namely coalitions of legislators who voted together on issues and stood for election on a common programme. The need for parties to develop coherent programmes was enhanced by the decline in parliamentary prerogative and centralisation of executive power that occurred a decade or so prior to the major institutional reforms. It is plausible then that, on the basis of such programmes, and even in the absence of mass party organization, an ideological affinity emerged between the skilled working classes and the Liberal Party.

However, there is another plausible explanation that relates to the fact that 19th century elections were characterized by the presence of vote buying. Political parties and candidates offered voters money or other types of benefits in exchange for their votes and even gathered information on voters' debts, crimes and infidelities to gain leverage over them (Stokes et al. 2013; Camp, Dixit, and Stokes 2014). As shown in several studies, the

introduction of the secret ballot in 1872 led to a substantial decrease in vote buying (Cox 1987; Kam 2017). Camp, Dixit, and Stokes (2014) argue that the changes in political and economic environment before the ballot reform were also important. As larger groups were enfranchised and the median income of the electorate increased, bribing voters became more expensive and less beneficial for the candidates. Closely related to these arguments, Cox (1987) links the decline of vote buying in 19th century England with the growth of electoral districts which also meant that a fixed amount of money would buy a smaller proportion of votes. Moreover, Cox argues that the power of individual MPs was declining during the 19th century. For instance, while individual MPs were previously processing private bills which conferred, for example, divorces, canals and railroads, these among some other responsibilities were moved to courts and bureaus. As local lords could benefit less from having their own MP, also the incentives to buy votes became smaller.

The argument that vote buying was a problem in Mid-Victorian England but became less so towards the 1872 reform raises an important question: Was the decline in split voting and working class alignment with the Liberals merely due to vote buying becoming less common? We can shed some light on this question by focussing on the behaviour of occupational groups that were particularly susceptible to vote buying.[9]

To identify these occupational groups, we define a procedure that that builds upon arguments made in previous research that radical inconsistencies or volatility in voting behaviour across different elections can be treated as an indication of vote buying (see Andrews 1998).[10]

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[9]The previous literature on Victorian voting behaviour has argued that some occupational groups were more prone to vote buying than others (Andrews 1998). For instance, local lords could pressure small entrepreneurs such as shopkeepers by threatening with boycotts if they did not cast at least one vote for the lord's candidate (Cox 1987). Hence, it is justifiable to define the vulnerability to vote buying at the occupational instead of the individual-level. Another rationale for this choice is that an individual voter changing his voting decisions once or twice may be entirely normal but a large fraction of voters in a whole occupational group changing its voting behaviour would lead one to suspect vote buying. Moreover, more than one election would probably be needed to define the likeliness of being affected by vote buying at the individual level. This would mean unnecessary loss of some data.

[10]Andrews (1998) writes that radical changes in voting behaviour is not itself an indication of vote buying. However, he also notes that certain occupational groups were more likely to switch their electoral behaviour across elections and speculates that these voters were a group of people who "might be very glad of the additional income that a well-placed bribe, however neatly colored, might provide".

First, we define a dummy for changing voting behaviour from the previous election for each voter. This dummy gets value one if a voter switches from Conservative (Liberal) to Liberal (Conservative) or split vote or from split vote to Conservative or Liberal vote. Then, we compute the average of this measure for all occupations using data from the period before 1865, i.e. our pre-treatment period. The measure serves as a proxy for the propensity to be affected by vote buying. Finally, we define a dummy for belonging to a group likely affected by vote buying by splitting the sample by different thresholds (50th and 75th percentile) in the average volatility measure.

The group of volatile voters includes both working and middle class. A slight majority, roughly three out of five, of these volatile voters belong to the former. Voters classified as volatile often work as, for instance, small entrepreneurs such as shoe makers, dealers, innkeepers and tailors and laborers. Indeed, these occupations overlap partially with those groups that Andrews (1998) suspects were more likely affected by vote buying in Sandwich.

We employ the pooled data set consisting of all three constituencies and estimate equations of form

$$y_{it} = \lambda + \theta_1 1[Working\ class]_{it} + \theta_2 1[Volatile\ voter]_{it} + \theta_3 1[Year \geq 1865]_t +$$

$$\theta_4 1[Working\ class]_{it} \times 1[Year \geq 1865]_t + \theta_5 1[Year \geq 1865]_t \times 1[Volatile\ voter]_{it} + \eta_{it}.$$

$$(3)$$

Contrary to our previous estimations, we redefine the working class dummy so that the class includes only consistent voters (who are less likely to be affected by vote buying). We can then interpret the coefficients for the group dummies and their year interactions as effects relative to those amongst middle class voters who were consistent in their voting behaviour.

The estimation results are shown in Tables 7 (split voting) and 8 (Liberal votes). The first conclusions that we can draw from these tables are in line with results discussed in previous sections. First, we find that being a consistent working class voter is a strong and

robust predictor of split and Liberal voting prior to the 1865 elections (the coefficient related to the Working class variable), the coefficients being statistically significant and positive and negative, respectively. Second, split voting goes down for all voters (the coefficient related to $1[Year \geq 1865]_t$) in elections during and subsequent to 1865.

Here, however, our question of interest is what happens to working class and volatile voters' behaviour in 1865 and after, i.e. the coefficients related to the interaction terms. First, it appears that being a consistent working class voter is only weakly associated with split voting after 1865. The estimated coefficients are rather small, around $2 - 3\%$, and barely significant in some specifications. On the contrary, most of the decrease in split voting comes from volatile voters who change their voting behaviour. The estimates are much larger in absolute terms and statistically highly significant. This is perhaps what one would expect to see, if we have indeed classified those groups affected by vote buying properly and vote buying became less common during our post-treatment period.

In Appendix Tables A7 and A8, we re-estimate equation 3 but split the group of volatile voters into volatile working class voters and volatile middle class voters, and contrast their and consistent working class voters' outcomes to those of consistently voting members of the middle class. These tables show that the effects for the volatile voters mainly come from the volatile working class voters changing their behaviour.

Furthermore, however, we observe that both the consistent working class and volatile working class voters aligned with the Liberals. The estimates are positive and statistically significant and slightly larger for the volatile voters. We can conclude then that working class alignment with the Liberals cannot be completely explained by a decline in vote buying. This suggests that other factors were important also. While we do not directly observe the effect, the patterns in our data are consistent with claims that working class voters were attracted to the programmatic appeal of the Liberal Party. Stokes et al have argued that the diminishing role of agents reduced the advantages of vote buying and so led parties to develop different (ideological) appeals that targeted groups of voters rather than individual ones. Such programmatic appeals can be seen as a coordinated partisan

response to the institutional and socio-demographic changes that broke the stranglehold of the brokers and aligned groups (or classes) of voters with parties on the basis of ideology. Recently, others have argued (alongside Stokes) that such programmatic appeals are a critical element in political and economic development (see for example, Acemoglu and Robinson 2012, Chapter 11). For example, Fujiwara and Wantchekon (2013) argue that programmatic appeals can enhance welfare and use evidence from Benin that such appeals are also optimal for candidates under some circumstances. We view our analysis as complimentary to that of Stokes. Whereas she provides case study evidence that parties were incentivised to develop ideological appeals, ours is (we believe) the first quantitative analysis that is consistent with the claim that voters responded to such appeals.

6 External Validity

The advantages of using rich data such as ours means that we can avoid some pitfalls when making inferences from more aggregated data. Nevertheless, a limitation of the poll book data is that they are available for only three constituencies. In this section we assess those potential pitfalls (of using aggregate data) while analysing whether some of our findings may generalise to a larger sample.

In order to do so we use aggregate constituency level data from Eggers and Spirling data set.[11] We merge this data with that from the 1861 census obtained from the UK Data Archive (Gatley et al. 2000). Besides limiting the data to those constituencies that we could link with the census info, we restrict the sample to constituencies that are present for more than five elections between 1835 and 1868 (we omit the entire year 1832, because the data are relatively scarce then). Moreover, we only include constituencies that are present in both our before and after periods. These restrictions are needed to ensure comparison of how voting behaviour evolves in the same constituencies over time. We are left with 117 constituencies.

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[11]These data are available online in `http://andy.egge.rs/data.html`; see, for example, Eggers and Spirling (2014).

Table 7. Role of vote buying, split votes.

	50th percentile				75th percentile			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1[Working class]	0.046***	0.044***	0.047***	0.049***	0.000	0.002	0.009	0.009
	[0.014]	[0.014]	[0.013]	[0.013]	[0.013]	[0.012]	[0.011]	[0.011]
1[Year≥1865]	-0.097***				-0.131***			
	[0.014]				[0.010]			
1[Working class] ×1[Year≥1865]	-0.021	-0.019	-0.026	-0.024	0.012	0.011	0.008	0.006
	[0.019]	[0.019]	[0.019]	[0.018]	[0.017]	[0.017]	[0.017]	[0.016]
1[Volatile voter]	0.094***	0.088***	0.079***	0.079***	0.066***	0.065***	0.054***	0.050***
	[0.013]	[0.013]	[0.012]	[0.011]	[0.014]	[0.013]	[0.013]	[0.013]
1[Volatile voter] ×1[Year≥1865]	-0.070***	-0.064***	-0.075***	-0.057***	-0.053***	-0.051***	-0.059***	-0.036**
	[0.018]	[0.017]	[0.017]	[0.017]	[0.019]	[0.019]	[0.019]	[0.018]
Constant	0.152***	0.215***	0.162***	0.138***	0.197***	0.258***	0.202***	0.180***
	[0.010]	[0.016]	[0.015]	[0.016]	[0.007]	[0.014]	[0.013]	[0.014]
N	10350	10350	10350	10350	10350	10350	10350	10350
R^2	0.03	0.06	0.12	0.16	0.03	0.06	0.12	0.15
Election year FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Parish/Constituency FE	No	No	Yes	No	No	No	Yes	No
Election year-Constituency FE	No	No	No	Yes	No	No	No	Yes

Notes: Only general elections are included. The outcome is dummy for casting a split vote. Estimates are conditional on voting. Data from all three constituencies are pooled together. Robust standard errors clustered by voter are reported in brackets. *, ** and *** denote statistical significance at 10%, 5% and 1% levels, respectively.

Table 8. Role of vote buying, Liberal votes.

	50th percentile				75th percentile			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1[Working class]	-0.066***	-0.064***	-0.066***	-0.063***	-0.046**	-0.048**	-0.053***	-0.051***
	[0.023]	[0.023]	[0.023]	[0.023]	[0.019]	[0.019]	[0.019]	[0.019]
1[Year≥1865]	0.069***				0.097***			
	[0.026]				[0.018]			
1[Working class] ×1[Year≥1865]	0.062*	0.060*	0.062*	0.056	0.034	0.034	0.036	0.034
	[0.036]	[0.036]	[0.036]	[0.035]	[0.031]	[0.030]	[0.030]	[0.030]
1[Volatile voter]	-0.037*	-0.034*	-0.026	-0.022	-0.019	-0.026	-0.018	-0.012
	[0.020]	[0.020]	[0.020]	[0.020]	[0.018]	[0.019]	[0.018]	[0.018]
1[Volatile voter] ×1[Year≥1865]	0.060*	0.059*	0.058*	0.042	0.040	0.044	0.042	0.022
	[0.031]	[0.031]	[0.031]	[0.031]	[0.030]	[0.030]	[0.030]	[0.029]
Constant	0.472***	0.499***	0.536***	0.518***	0.452***	0.482***	0.523***	0.505***
	[0.018]	[0.022]	[0.022]	[0.023]	[0.011]	[0.016]	[0.017]	[0.019]
N	10350	10350	10350	10350	10350	10350	10350	10350
R^2	0.01	0.03	0.05	0.08	0.01	0.03	0.05	0.08
Election year FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Parish/Constituency FE	No	No	Yes	No	No	No	Yes	No
Election year-Constituency FE	No	No	No	Yes	No	No	No	Yes

Notes: Only general elections are included. The outcome is dummy for casting a Liberal vote. Estimates are conditional on voting. Data from all three constituencies are pooled together. Robust standard errors clustered by voter are reported in brackets. *, ** and *** denote statistical significance at 10%, 5% and 1% levels, respectively.

First, we analyse how these 117 constituencies compare to those used in the main analysis. In Figure 5, we report a histogram of working class shares while marking the location of our three constituencies, based on poll book data and the census, by vertical red lines. We use the 1861 census information to measure the working class share in these constituencies, and include only constituencies which have elections in 1859. The census is available for Guildford, but not for Sandwich. For Ashford, we use the census information from Kent, which Ashford is a part of.

Based on both of these measures, we observe that our three constituencies have fewer working class residents than is typical in the entire sample. If it were the case that the areas with a larger share of working class were more likely to vote Liberal (we show that this is so) then this suggests that our estimates represent bounds for the alignment of the working class and Liberals.

The closest we can come to our voter-level DID analysis is to compare how voting behaviour evolves in constituencies that have a large working class share relative to constituencies that have a smaller share. Accordingly, the first limitation of the aggregate data when compared to voter level data is that the analysis takes places between rather than within constituencies. This leads us to a second and further issue with the aggregate data: The share of working class measure is available only for the one census year (and we have no idea how that evolves over time). A third issue is that the occupation information in the census follows a more aggregate classification than the poll book information.

Perhaps the most important issue concerning use of aggregate data, however, is that we do not have information on the share of eligible voters, neither overall nor (and in particular) within each occupation. This is reflected, for example, in Figure 5 that shows the working class shares based on census measures are much larger than the respective shares in the poll book data. This is important since it implies that we cannot separate whether a (possible) correlation between working class share and the Liberal vote share is driven by voter alignment or by the eligibility to vote. For example, comparing across constituencies using aggregate data one might find that working class share is negatively correlated with

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Liberal vote share, even though, at the individual level, working class voters are more likely to vote Liberal. This is due to the possibility that, because of franchise restrictions, as the share of working class in a constituency goes up then the share of middle class voters goes up also.

To address this issue, we group the working class into on average low skilled occupations of agriculture, mining, domestic service and labourer, and into on average high skilled occupations of building, manufacturing and transportation. The latter group will contain a larger share of eligible voters. We construct a proxy of voter eligibility share as the total votes in constituency divided by the number of adult males who gain wages in year 1861. Since women and men who received no wages were disenfranchised the numerator is never larger than the denominator. In Figure 7, we show that the share of low-skilled working class is indeed negatively correlated with eligibility, whereas the share of high-skilled is positively correlated. For the sake of clarity, the figures show binned averages within twenty bins with equal number of observations and linear fits.

In Figure 8, we conduct graphically the aggregate level attempt to mimic our difference-in-difference analysis. We report how Liberal vote share evolves in municipalities in two groups with above or below median share of low (high) skilled working class. Given the limitations imposed by the data, lacking clear common pre-treatment trends, and given that none of the estimated effects turn out to be statistically significant (not reported), these figures should be taken merely as tentative descriptive evidence. In Panel A, the pattern is opposite to the micro-level findings, while Panel B shows a similar pattern. Given this, the main results of this paper concerning the alignment of the working class with the left seems more likely to generalize to the behaviour of low skilled working class. However, given the limitation of this analysis, one should not draw too strong a conclusion one way or the other.
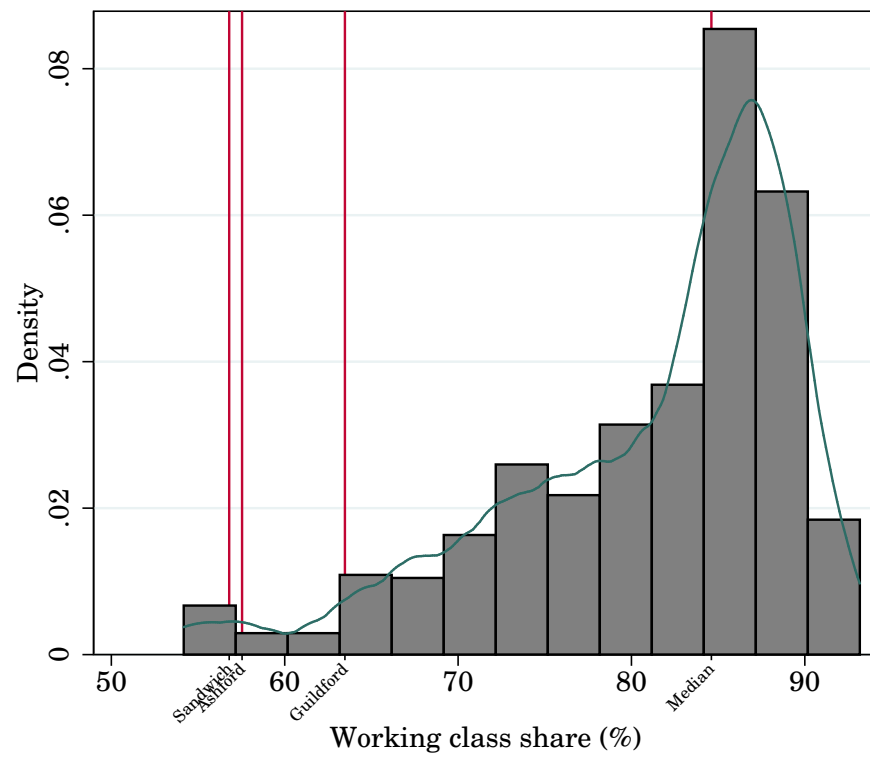
Figure 5. Histogram of working class share among the wage earning adult male population for year 1861 census and 1859 poll books.
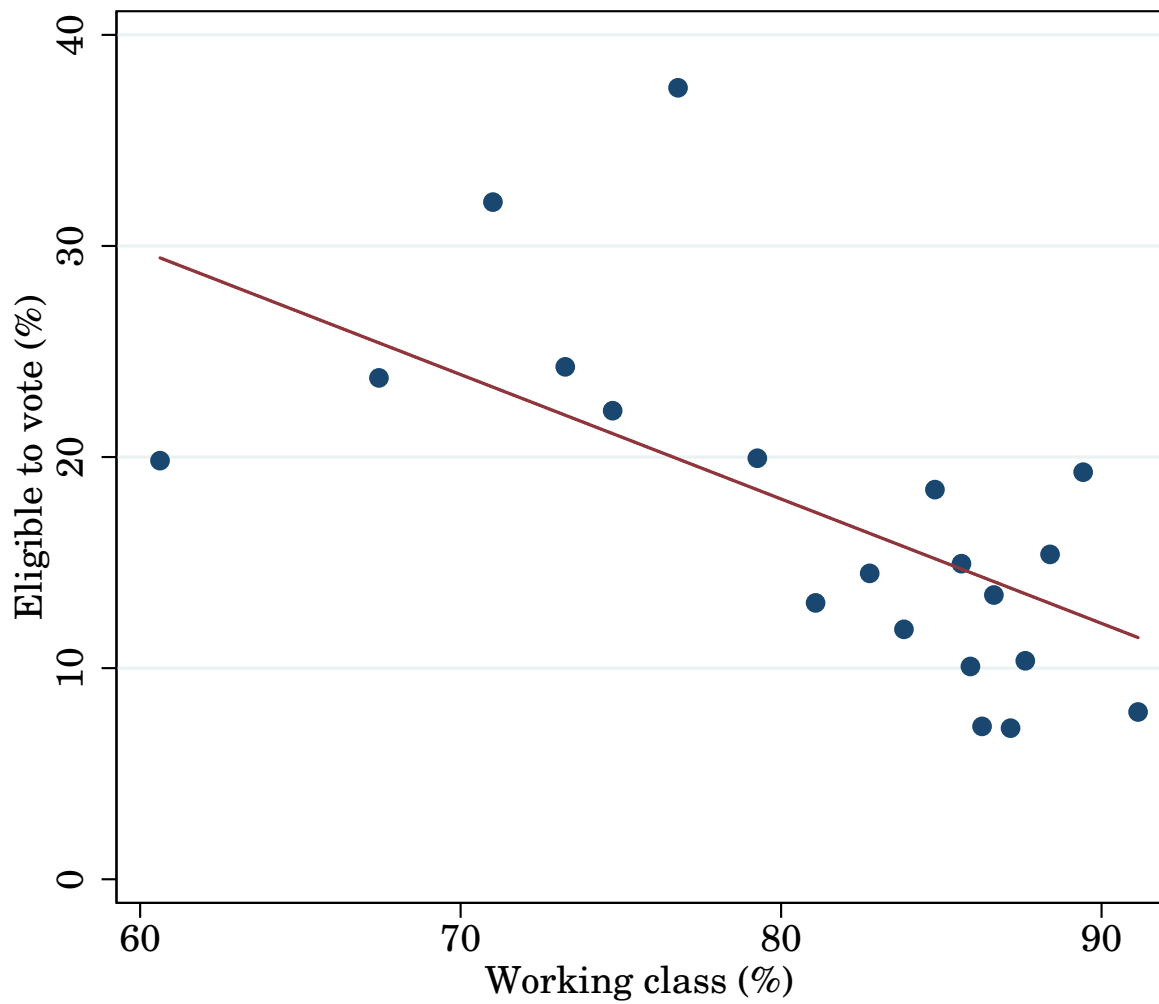
Figure 6. Constituency level scatter plot for year 1861 census and 1859 elections for eligibility share and low skilled working class occupations' share.
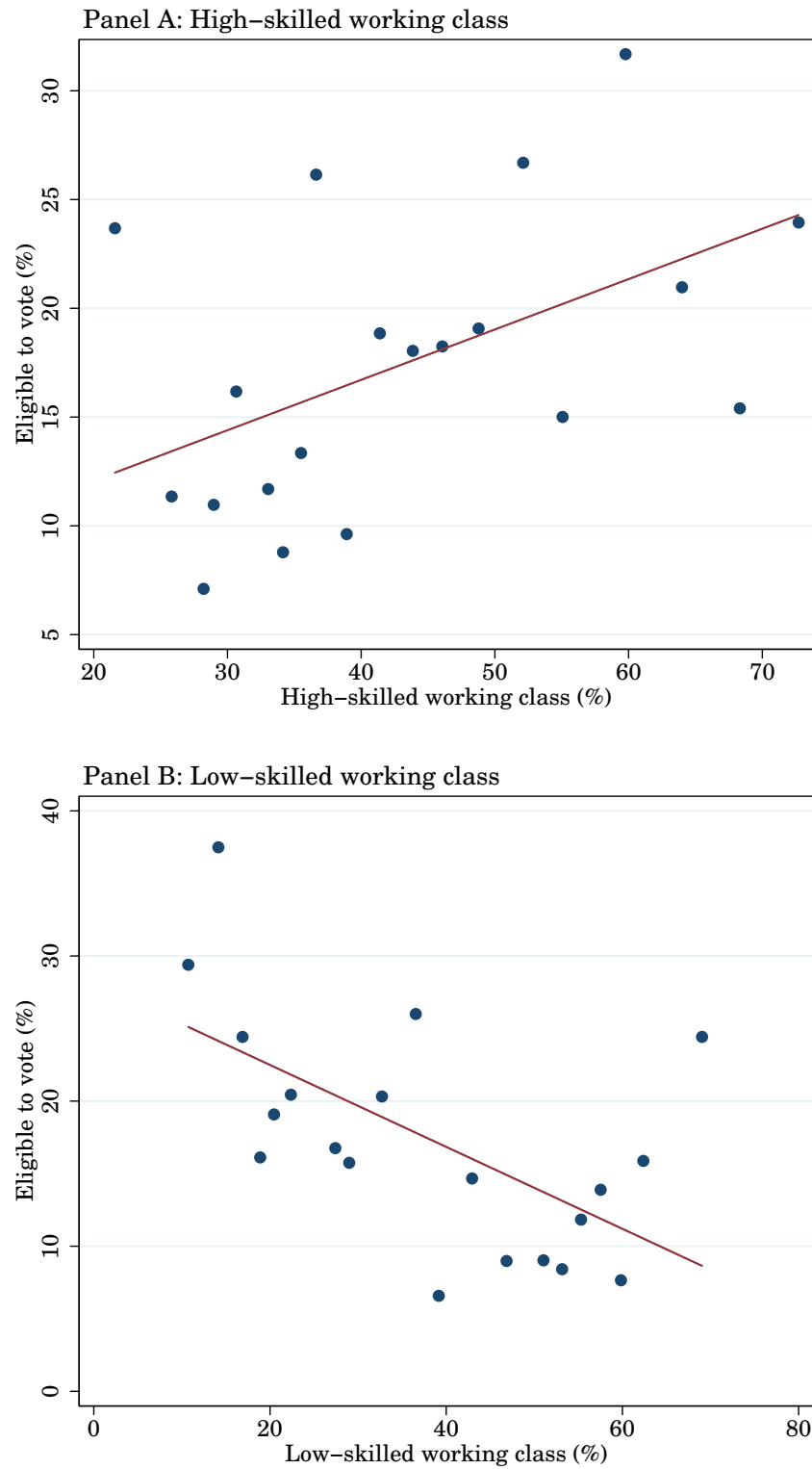
Figure 7. Constituency level scatter plot for year 1861 and 1859 elections for eligibility share and high- and low-skilled working class occupations' share.
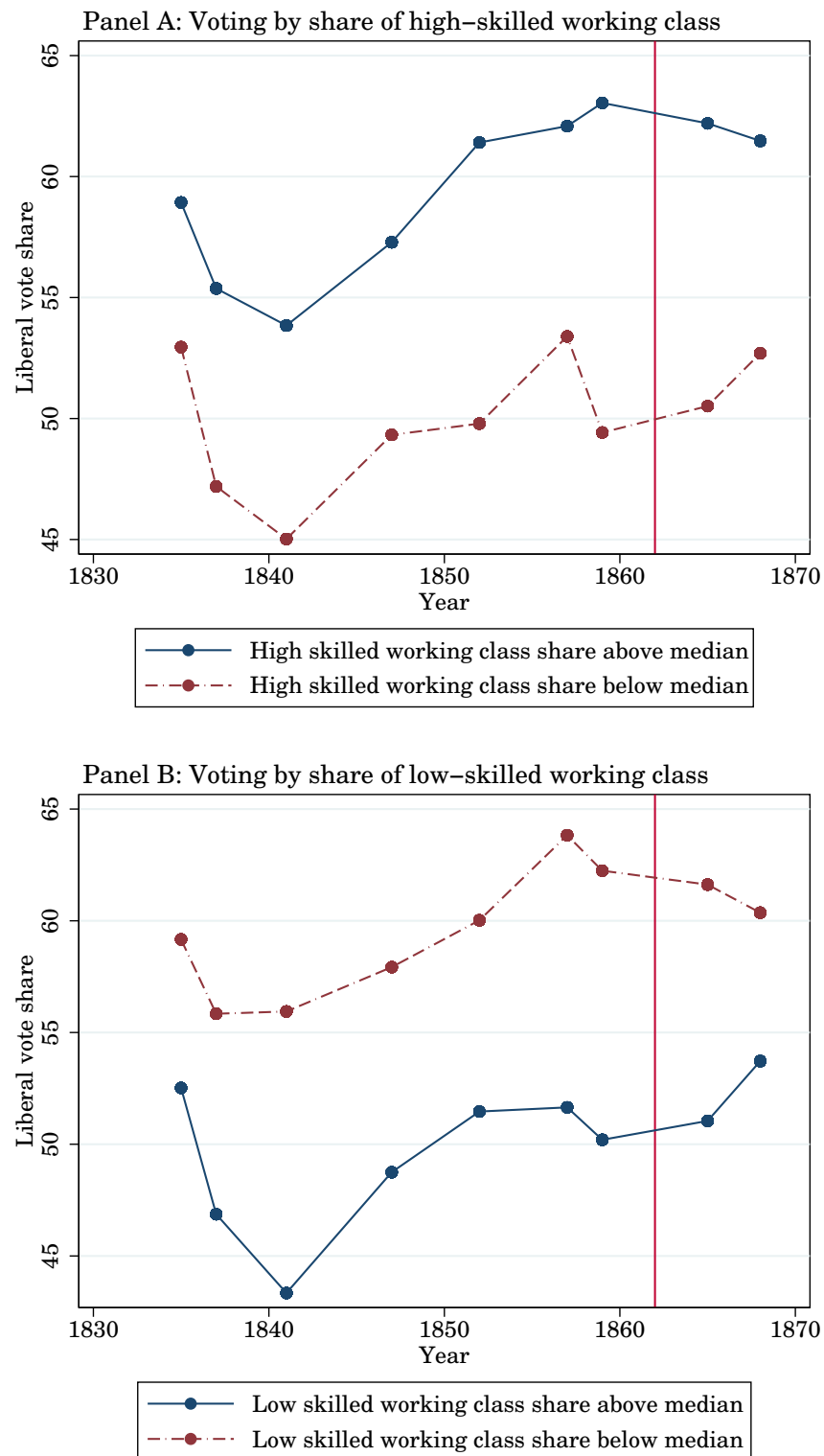
Figure 8. Liberal vote share in constituencies with above and below median share of high- and low-skilled working class occupations among the wage earning adult male population.

7 Conclusions

In this paper we have presented new evidence concerning the emergence of party-oriented systems in which voters, or classes of voters, align with parties on the basis of ideology. Recent work on developing countries has reinvigorated debates surrounding how and why such parties emerge and what are the welfare consequences. However, very little is actually known about how such parties emerged in the developed world. Much of what we know about the alignment of voters with parties comes from mass surveys of the electorate in the postwar period or from aggregate electoral data. Since techniques to evaluate them were established after party-oriented systems emerged, surveys will do little to help us understand the genesis of such systems and possible path dependency. Inferences drawn from aggregate data are also subject to several caveats and this is particularly so when assessing voting data when franchise restrictions are in place. Indeed, as we have shown, when assessing the propensity of specific groups to vote for particular parties, we are unable to separate whether correlations are driven by voter alignment or by the eligibility to vote within that group.

Our paper has instead shed new light on the emergence of party-oriented systems using individual elector level panel data from the 19th century UK poll books. Evidence based on this data shows that the electorate was party-centred by the time of major franchise reform and that the decline in candidate-centred voting is largely attributable to changes in the behaviour of the working class who aligned with the Liberal left. Furthermore, the evidence suggests that this alignment was based on programmatic appeal.

Although our data is rich, the sample is relatively small and this raises concerns about external validity. Future work should then seek to replicate these findings in a broader sample of constituencies. Nevertheless, analysis of the aggregate data suggests that our findings do generalise to the broader sample of constituencies and so provide an accurate picture of party alignment in Victorian Britain.

More general lessons stem from our analysis and these are relevant both to

understanding party development in the developed and developing world. With respect to the former, our analysis suggests that the genesis of Britain's class based two-party system can be found almost a century before the survey based evidence of its existence (and subsequent decline). Indeed, as we have argued, it is plausible that the early orientation of working class voters to the Liberals stimulated the later development of class alignment and that similar historical patterns exist elsewhere. Intriguingly, the emergence of the observed pattern of partisan and class alignment occurred in the absence of parties with any semblance of organisation within the electorate and seems to have been formed on the basis of programmatic appeal. This speaks to recent findings by Wantchekon (2003) and Fujiwara and Wantchekon (2013) who present evidence that programmatic politics can be a viable alternative to clientelistic forms of engagement in the developing world where party organisation is thin on the ground.

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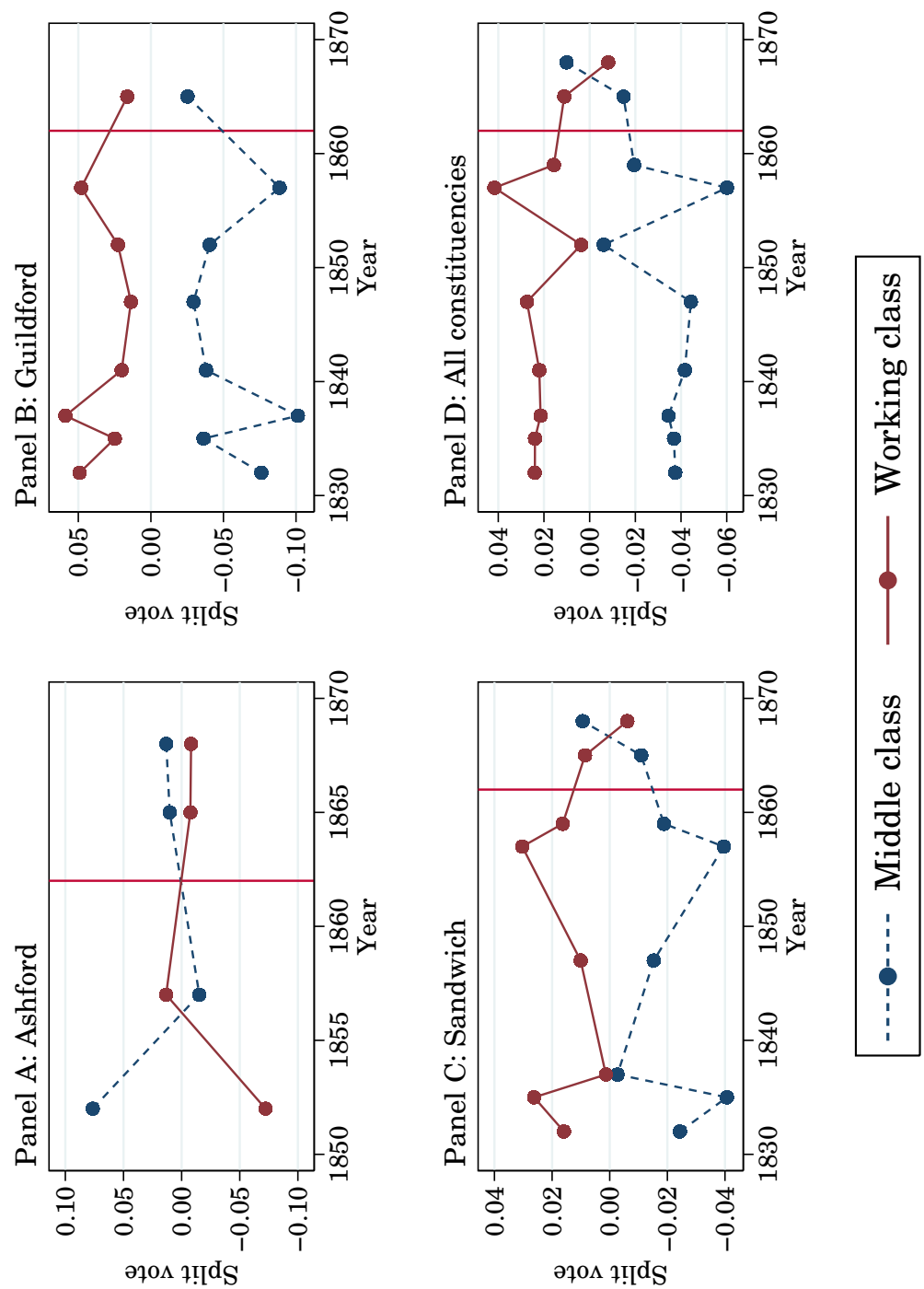
Figure A1. Graphical representation of the DID analysis on split voting residuals.
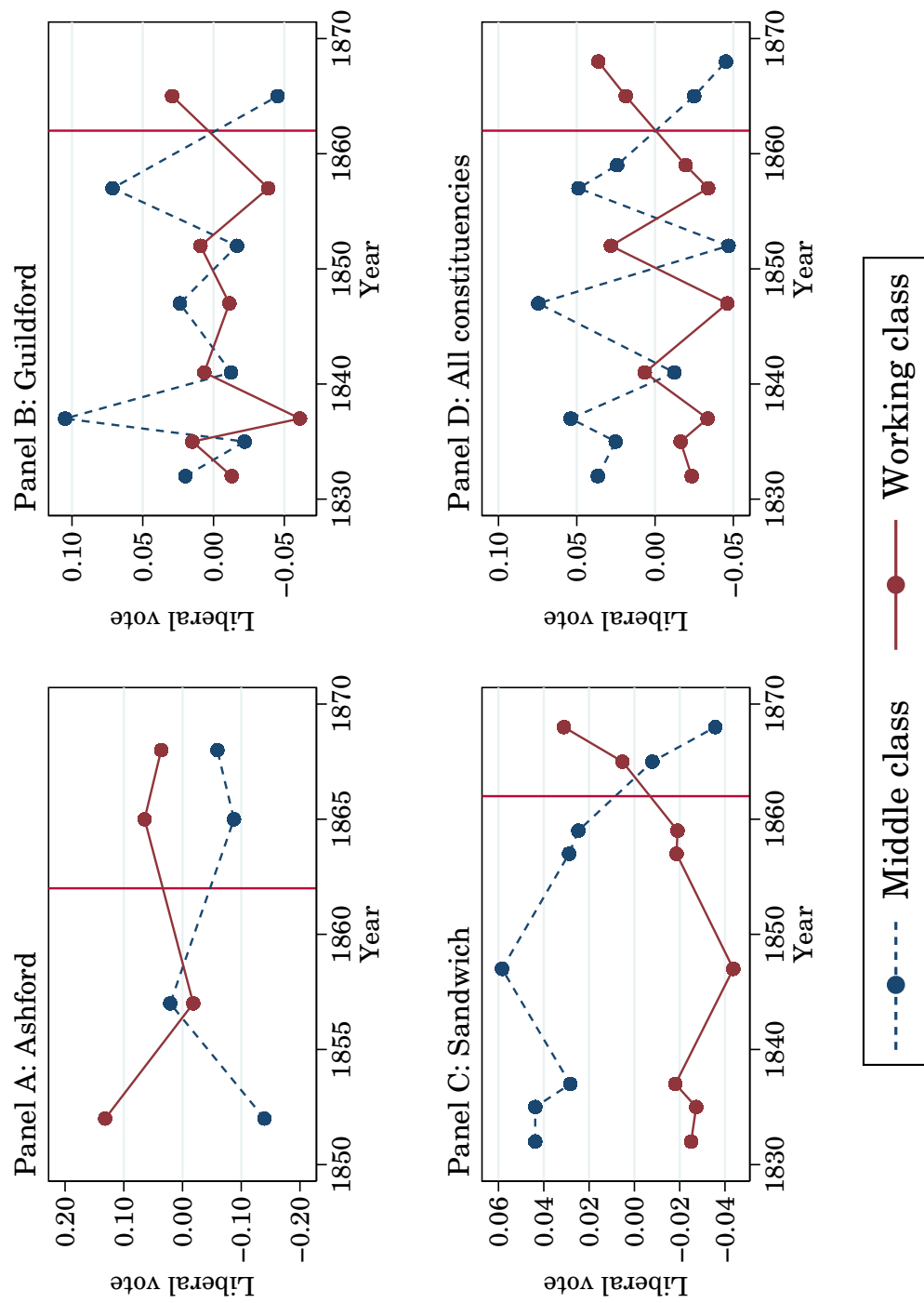
Figure A2. Graphical representation of the DID analysis on voting for Liberals residuals.

Table A1. Regression results using data from by-elections.

	(1)	(2)	(3)	(4)
1[Working class]	-0.063***	-0.050**	-0.050**	-0.050**
	[0.023]	[0.022]	[0.022]	[0.022]
1[Year$\geq$1865]	-0.105***			
	[0.022]			
1[Working class] $\times$1[Year$\geq$1865]	0.149***	0.134***	0.135***	0.135***
	[0.029]	[0.029]	[0.029]	[0.029]
Constant	0.548***	0.501***	0.501***	0.501***
	[0.018]	[0.023]	[0.023]	[0.023]
N	5167	5167	5167	5167
R^2	0.01	0.04	0.04	0.04
Election year FE	No	Yes	Yes	Yes
Constituency FE	No	No	Yes	No

Notes: Only by-elections in Guildford (1858 and 1866) and Sandwich (1841, 1852, 1859 and 1866) are included. Outcome is a dummy for casting a liberal vote. Estimates are conditional on voting. Robust standard errors clustered by voter are reported in brackets. *, ** and *** denote statistical significance at 10%, 5% and 1% levels, respectively.

Table A2. Regression results excluding the first-time voters in 1868.

	Split vote				Liberal vote			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1[Working class]	0.064***	0.063***	0.057***	0.057***	-0.062***	-0.060***	-0.055***	-0.051***
	[0.011]	[0.011]	[0.010]	[0.010]	[0.016]	[0.016]	[0.016]	[0.016]
1[Year≥1865]	-0.104***				0.046**			
	[0.011]				[0.020]			
1[Working class] ×1[Year≥1865]	-0.048***	-0.048***	-0.051***	-0.044***	0.102***	0.103***	0.104***	0.097***
	[0.015]	[0.015]	[0.015]	[0.014]	[0.026]	[0.026]	[0.026]	[0.026]
Constant	0.172***	0.234***	0.180***	0.158***	0.473***	0.501***	0.539***	0.520***
	[0.008]	[0.014]	[0.014]	[0.015]	[0.013]	[0.018]	[0.018]	[0.020]
N	10160	10160	10160	10160	10160	10160	10160	10160
R^2	0.03	0.06	0.12	0.15	0.01	0.03	0.05	0.07
Election year FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Parish/Constituency FE	No	No	No	Yes	No	No	No	Yes
Election year-Constituency FE	No	No	No	Yes	No	No	No	Yes

Notes: Only general elections are included. Voters who vote for the first time after the Reform Act of 1867 are omitted. Estimates are conditional on voting. Data from all three constituencies are pooled together. Robust standard errors clustered by voter are reported in brackets. *, ** and *** denote statistical significance at 10%, 5% and 1% levels, respectively.

Table A3. Regression results including voter fixed effects.

	Split vote			Liberal vote		
	(1)	(2)	(3)	(4)	(5)	(6)
1[Working class]	0.067***	0.039	0.049**	-0.102***	-0.073***	-0.064**
	[0.024]	[0.024]	[0.023]	[0.026]	[0.026]	[0.026]
1[Year≥1865]	-0.073***			-0.008		
	[0.016]			[0.017]		
1[Working class] ×1[Year≥1865]	-0.049**	-0.044**	-0.038*	0.047**	0.044*	0.036
	[0.021]	[0.022]	[0.020]	[0.023]	[0.023]	[0.023]
Constant	0.161***	0.280***	0.262***	0.519***	0.509***	0.513***
	[0.015]	[0.021]	[0.021]	[0.016]	[0.023]	[0.023]
N	8904	8904	8904	8904	8904	8904
R^2	0.01	0.08	0.12	0.00	0.08	0.12
Election year FE	No	Yes	Yes	No	Yes	Yes
Election year-Constituency FE	No	No	Yes	No	No	Yes

Notes: Only general elections are included. Only voters who are observed at least twice are included in the estimation sample. All regressions include voter fixed effects. Estimates are conditional on voting. Data from all three constituencies are pooled together. Robust standard errors clustered by voter are reported in brackets. * , ** and *** denote statistical significance at 10%, 5% and 1% levels, respectively.

Table A4. 10 most common occupations and different classifications.

	Panel A: Ashford	
Eriksson-Goldthorpe class	Middle class ($N = 250$)	Working class ($N = 328$)
White-collar workers ($N = 208$)	Grocer, gentry, clerk, merchant, doctor, lawyer, priest, chemist, house proprietor	
Petty bourgeoisie ($N = 35$)		Draper
Farm workers ($N = 33$)		Farmer
Skilled workers ($N = 172$)		Carpenter, butcher, shoe maker, tailor, baker, cabinet maker, coach builder,
Non-skilled workers ($N = 54$)		Labourer
	Panel B: Guildford	
Eriksson-Goldthorpe class	Middle class ($N = 1210$)	Working class ($N = 2097$)
White-collar workers ($N = 1167$)	Gentleman, dealer, grocer, merchant, doctor, lawyer, innkeeper, victualler, publican, clerk	
Petty bourgeoisie ($N = 95$)		
Farm workers ($N = 98$)		Gardener
Skilled workers ($N = 1492$)		Carpenter, shoe maker, baker, tailor, butcher
Non-skilled workers ($N = 455$)		Labourer
	Panel C: Sandwich	
Eriksson-Goldthorpe class	Middle class ($N = 3182$)	Working class ($N = 4068$)
White-collar workers ($N = 2699$)	Gentry, victualler, grocer, military officer, dealer, publican, merchant, doctor, clerk, worker in education	
Petty bourgeoisie ($N = 146$)		
Farm workers ($N = 373$)		Farmer, gardener
Skilled workers ($N = 2418$)		Pilot, shoe maker, carpenter, butcher, tailor, painter
Non-skilled workers ($N = 905$)		Labourer, mariner

Table A5. 10 most common occupations and different classifications.

Eriksson-Goldthorpe class	Middle class	Working class
Farm worlkers	0	504
Non-skilled workers	0	1414
Petty bourgeoisie	110	166
Skilled workers	0	4082
White-collar workers	4074	0

Table A6. Candidates in elections.

Panel A: Kent, Eastern (Ashford)

Election	Electors	Candidates	Party	Votes
1852	7119	Sir E. C. Dering, Bt.	L	3063
		W. Deedes	C	2879
		Sir B. W. Bridges, Bt.	C	2356
1857	8000	Sir B. W. Bridges, Bt.	C	2379
		Sir E. C. Dering, Bt.	L	2358
		W. Deedes	C	2216
		E. A. Acheson	L	127
1865	8250	Sir B. W. Bridges, Bt.	C	3208
		Sir E. C. Dering, Bt.	L	3195
		Sir N. J. Knatchbull, Bt.	C	2919
1868	13107	E. L. Pemberton	C	5231
		Hon. G. W. Milles	C	5104
		H. J. Tufton	L	4685
		Sir J. Croft, Bt.	L	4579

Panel B: Guildford

Election	Electors	Candidates	Party	Votes
1832	342	J. Mangles	L	299
		C. B. Wall	C	180
		Hon. C. F. Norton	L	138
1835	537	J. Mangles	L	299
		C. B. Wall	C	214
		H. A. C. Austen	L	131
1837	425	C. B. Wall	C	252
		Hon. J. Y. Scarlett	C	188
		J. Mangles	L	159
1841	486	R. D. Mangles	L	242
		C. B. Wall	L	221
		Hon. J. Y. Scarlett	C	177
		H. Currie	C	161
1847	585	H. Currie	C	336
		R. D. Mangles	L	242
		T. L. Thurlow	C	184
1852	648	R. D. Mangles	L	270
		J. Bell	L	251
		T. L. Thurlow	C	184
1857	666	R. D. Mangles	L	349
		W. Bovill	C	338
		J. Bell	L	167
1865	667	G. J. H. M. E. Onslow	L	333
		W. Bovill	C	318
		W. W. Pocock	L	228

Panel C: Sandwich

Election	Electors	Candidates	Party	Votes
1832	916	J. Marryat	L	495
		Sir E. T. Troubridge, Bt.	L	485
		S. G. Price	C	361
		Sir E. W. C. R. Owen	C	265
1835	934	S. G. Price	C	551
		Sir E. T. Troubridge, Bt.	L	405
		Sir E. W. C. R. Owen	C	389
1837	911	Sir E. T. Troubridge, Bt.	L	416
		Sir J. R. Carnac, Bt.	L	401
		S. G. Price	C	370
		Sir B. W. Bridges, Bt.	C	330
1847	943	Lord Clarence Paget	L	459
		C. W. Grenfell	L	437
		Lord Charles Clinton	C	392
1857	1008	E. H. K. Hugessen	L	547
		Lord Clarence Paget	L	503
		J. McGregor	C	322
		J. Lang	L	24
1859	1030	E. H. K. Hugessen	L	497
		Lord Clarence Paget	L	458
		Sir J. Fergusson, Bt.	C	404
		W. D. Lewis	C	328
1865	1054	E. H. K. Hugessen	L	494
		Lord Clarence Paget	L	477
		C. Capper	C	413
1868	1906	E. H. K. Hugessen	L	933
		H. A. Brassey	L	923
		H. Worms	C	710

Notes: C = Conservative, L = Liberal, Hon. = honourable, Bt. = baronet. Source: Craig (1977).

Table A7. Role of vote buying, split votes.

	50th percentile				75th percentile			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1[Working class]	0.046***	0.044***	0.047***	0.049***	0.046***	0.044***	0.047***	0.049***
	[0.014]	[0.014]	[0.013]	[0.013]	[0.014]	[0.014]	[0.013]	[0.013]
1[Year≥1865]	-0.097***				-0.097***			
	[0.014]				[0.014]			
1[Working class] ×1[Year≥1865]	-0.021	-0.019	-0.027	-0.024	-0.021	-0.019	-0.027	-0.024
	[0.019]	[0.019]	[0.019]	[0.018]	[0.019]	[0.019]	[0.019]	[0.018]
1[Volatile working class]	0.047***	0.041***	0.041***	0.043***	0.047***	0.041***	0.041***	0.043***
	[0.016]	[0.016]	[0.015]	[0.014]	[0.016]	[0.016]	[0.015]	[0.014]
1[Volatile middle class]	0.116***	0.110***	0.097***	0.096***	0.116***	0.110***	0.097***	0.096***
	[0.014]	[0.014]	[0.013]	[0.013]	[0.014]	[0.014]	[0.013]	[0.013]
1[Volatile middle class] ×1[Year≥1865]	-0.020	-0.013	-0.023	-0.015	-0.020	-0.013	-0.023	-0.015
	[0.022]	[0.021]	[0.022]	[0.021]	[0.022]	[0.021]	[0.022]	[0.021]
1[Volatile working class] ×1[Year≥1865]	-0.094***	-0.090***	-0.101***	-0.079***	-0.094***	-0.090***	-0.101***	-0.079***
	[0.020]	[0.019]	[0.019]	[0.019]	[0.020]	[0.019]	[0.019]	[0.019]
Constant	0.152***	0.215***	0.163***	0.139***	0.152***	0.215***	0.163***	0.139***
	[0.010]	[0.016]	[0.015]	[0.016]	[0.010]	[0.016]	[0.015]	[0.016]
N	10350	10350	10350	10350	10350	10350	10350	10350
R^2	0.03	0.07	0.12	0.16	0.03	0.07	0.12	0.16
Election year FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Parish/Constituency FE	No	No	Yes	No	No	No	Yes	No
Election year-Constituency FE	No	No	No	Yes	No	No	No	Yes

Notes: Only general elections are included. The outcome is dummy for casting a split vote. Estimates are conditional on voting. Data from all three constituencies are pooled together. Robust standard errors clustered by voter are reported in brackets. *, ** and *** denote statistical significance at 10%, 5% and 1% levels, respectively.

Table A8. Role of vote buying, liberal votes.

	50th percentile				75th percentile			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1[Working class]	-0.066***	-0.064***	-0.066***	-0.063***	-0.066***	-0.064***	-0.066***	-0.063***
	[0.023]	[0.023]	[0.023]	[0.023]	[0.023]	[0.023]	[0.023]	[0.023]
1[Year≥1865]	0.069***				0.069***			
	[0.026]				[0.026]			
1[Working class] ×1[Year≥1865]	0.064*	0.061*	0.064*	0.056	0.064*	0.061*	0.064*	0.056
	[0.036]	[0.036]	[0.036]	[0.035]	[0.036]	[0.036]	[0.036]	[0.035]
1[Volatile working class]	0.003	0.006	0.006	0.007	0.003	0.006	0.006	0.007
	[0.025]	[0.025]	[0.024]	[0.024]	[0.025]	[0.025]	[0.024]	[0.024]
1[Volatile middle class]	-0.057***	-0.053**	-0.042**	-0.037*	-0.057***	-0.053**	-0.042**	-0.037*
	[0.021]	[0.021]	[0.021]	[0.021]	[0.021]	[0.021]	[0.021]	[0.021]
1[Volatile middle class] ×1[Year≥1865]	-0.050	-0.052	-0.051	-0.058	-0.050	-0.052	-0.051	-0.058
	[0.039]	[0.039]	[0.039]	[0.038]	[0.039]	[0.039]	[0.039]	[0.038]
1[Volatile working class] ×1[Year≥1865]	0.123***	0.123***	0.122***	0.103***	0.123***	0.123***	0.122***	0.103***
	[0.034]	[0.034]	[0.034]	[0.034]	[0.034]	[0.034]	[0.034]	[0.034]
Constant	0.472***	0.499***	0.536***	0.517***	0.472***	0.499***	0.536***	0.517***
	[0.018]	[0.022]	[0.022]	[0.023]	[0.018]	[0.022]	[0.022]	[0.023]
N	10350	10350	10350	10350	10350	10350	10350	10350
R^2	0.01	0.04	0.05	0.08	0.01	0.04	0.05	0.08
Election year FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Parish/Constituency FE	No	No	Yes	No	No	No	Yes	No
Election year-Constituency FE	No	No	No	Yes	No	No	No	Yes

Notes: Only general elections are included. The outcome is dummy for casting a liberal vote. Estimates are conditional on voting. Data from all three constituencies are pooled together. Robust standard errors clustered by voter are reported in brackets. *, ** and *** denote statistical significance at 10%, 5% and 1% levels, respectively.