Online Appendix to the Paper
It Takes Money to Make MPs: New Evidence from 150 Years of British Campaign Spending

Julia Cagé*[1] and Edgard Dewitte†[2]

[1]Sciences Po Paris and CEPR
[2]Sciences Po Paris

March 10, 2022

Contents

*Corresponding author. Sciences Po Paris (julia [dot] cage [at] sciencespo [dot] fr).
†Sciences Po Paris (edgard [dot] dewitte [at] sciencespo [dot] fr).

A Campaign expenditures: additional information

A.1 Spending categories: Definitions and examples

1885-2001 For most of our period of study, the main expenses categories reported were:

1. **Agents**: fees paid to election agents, sub-agents and polling agents. Agents are legally responsible for the conduct and financial management of campaigns; legitimate campaign spending can only be incurred and paid by (or with the express authorization of) the election agent. In addition, most agents also take on the task of organizing and leading the election campaign in the constituency.[1] Since 1918, candidates are allowed one agent only per campaign. Note that some agents provide their services for free, or are the candidates themselves, so that spending on this category can be null.

2. **Clerks & Messengers**: payments for clerks and messengers employed by the campaign. Clerks designate individuals with administrative roles. Messengers are individuals paid for conveying messages to campaigners in various parts of the constituency; before the development of the telephone, they were extremely numerous. See Section 3 for more details.

3. **Committee Rooms**: cost of hire of committee rooms. Committee rooms are the spaces used by candidates and their staff for campaigns' organization and management. They range from the back rooms of pubs to supporters' living rooms. When provided for free, their market value should nonetheless be accounted for in candidates' receipts and expenses (and hence are included their spending limit).

4. **Printing & Advertising**: expenses related to printing, advertising, publishing, issuing and distributing addresses and notices, and to stationery, postage, telecommunications, etc.

5. **Public meetings**: expenses relating to the holding of public meetings, including payments to invited speakers.

6. **Miscellaneous**: all expenses relating to miscellaneous matters not separately specified.

7. **Personal expenses**: expenses incurred by the candidate for her personal needs, including reasonable travel, food and accommodation expenses. These are not subject to the spending limit.

8. **Returning Officer** (until 1918): expenses incurred for the organization of the election (announcement, preparation of ballots, counting, etc.). They are split equally among all candidates, and do not enter the calculus of the spending limit.

[1] For a careful analysis of the role of election agents, see (Fisher et al., 2006).

1857-1865 During the first three elections in our sample, there was no pre-determined categorization of expenses, so that the level of detail in their reporting varies greatly from one constituency to another. For comparability, we thus created a set of categories based on the items we observed and the categories of the period that followed, and then manually attributed each item listed in candidates' returns to one of these categories. These are:

1. **Agents**: see above. Includes the following items in particular: "election agents", "professional agents" or "professional services", "legal agents", "agency fees".

2. **Clerks & Messengers**: see above.

3. **Other paid staff**: all other compensated staff that are not included in the above. These could be roles whose remuneration were forbidden by the 1883 CIPA, such as canvassers or voters' conveyors, but also roles related to the conduct of campaigns before the secret ballot, such as hustings' inspectors. The category also includes all staff-related expenses, such as refreshments or travels.

4. **Conveying electors to the polls**: all expenses incurred for the conveyance of voters to the polls, including the cost of hiring horses and carriages, and buying railway and omnibus tickets. These expenses were forbidden in 1883.

5. **Committee rooms**: see above. Includes the following items in particular: "hire of rooms", "use of furniture", "gas", "heating", "chaise-hire".

6. **Printing & Advertising**: see above. Includes the following items in particular: "stationery", "advertisements", "postage stamps", "copies of registers", "placards", "posting addresses", "newspapers".

7. **Organization of Elections**: all expenses incurred for the organization of the election / husting. These expenses are almost always allocated equally among candidates. These include:

    - *Expenses of the Sheriff / Returning Officer*, particularly the following: sheriff, undersheriff, mayor, town clerk, town crier, clerk of the peace, county clerk, officer attending court, crier of court, bell-ringers (found a description "bill for ringing bells on election day"), portreeve, messenger with writ, hall-keeper, poll-clerks, serjeant-at-mace/arms, police, constables, advertising accounts, copies of voter registers, printing/ advertising proclamations
    - *Expenses incurred at Polling places*, such as erecting polling booths or hustings.
    - *Auditor fees*, in particular the cost of publishing and advertising the accounts of elections expenses.

8. **Miscellaneous**: see above.

9. **Personal expenses**: see above.

Note that this *ad hoc* categorization is not without caveats: in particular, some items are too vague ("salaries") or too aggregated to be allocated to the proper category with certainty. This is particularly true for categories 1 to 3, which we thus decided, in the main analysis, to group as "Paid Staff". Similarly, given that election meetings were in their infancy, they are too rarely listed as a separate category to be reported as one (and their costs could in fact sometimes be included with committee rooms expenses).

2010-2017 Since the 2010 general election, a new classification has been used to categorize candidates' expenditures:[2]

1. **Accommodation and administrative costs**: this includes the rental costs of office space for the candidate's campaign; the cost of electricity bills, the provision of phone lines and internet access for the candidate's campaign; the costs of sending volunteers or party employees into a constituency where they are campaigning for the candidate, including their accommodation costs; etc.

2. **Advertising**: advertising of any nature (whatever the medium used). Expenses in respect of such advertising include agency fees, design costs and other costs in connection with preparing, producing, distributing or otherwise disseminating such advertising or anything incorporating such advertising and intended to be distributed for the purpose of disseminating it. Including:

    - Services, equipment, facilities or premises.
    - Specific costs in connection with producing or disseminating digital or electronic advertising material.

3. **Agents & staff**: the services of an election agent or any other person whose services are engaged in connection with the candidate's election.

4. **Public meetings**: expenses in respect of such meetings include costs incurred in connection with the attendance of persons at such meetings, the hire of premises for the purposes of such meetings or the provision of goods, services or facilities at them.

5. **Transport**: transportation (by any means) of persons to any place, including the costs of hiring a means of transport for a particular period.

6. **Unsolicited material**: unsolicited material addressed to electors (whether addressed to them by name or intended for delivery to households within any particular area).Expenses in respect of

[2] See e.g. $https://www.electoralcommission.org.uk/sites/default/files/pdf_file/Candidates-code-of-practice.pdf$.

such material include design costs and other costs in connection with preparing, producing or distributing such material (including the cost of postage). Including:

- The costs associated with targeting or identifying voters, including database costs and the cost of analyzing social media content.
- The costs associated with distributing unsolicited material to voters, including via digital means.
- Other costs in connection with the preparation, production or distribution of unsolicited material addressed to electors.

7. **Personal expenses**: personal expenses as used with respect to the expenditure of any candidate in relation to any election includes the reasonable travelling expenses of the candidate, and the reasonable expenses of living at hotels or elsewhere for the purposes of and in relation to the election.

Election returns of **1868**, **1874**, and **2005** do not include information on spending by categories. **1880** has unique categories: Agents & Staff ; Hire of Conveyanves ; Printing & Advertising ; All other Expenses.

Homogeneization To allow for long-term comparisons, we sometimes use in our analysis aggregate categories:

1. **All paid staff**: 1.-3. in 1857-1865; 1.-2. in 1885-2001; and 3. in 2010-2017.
2. **Printing & Advertising**: 4. in 1857-1865; 6. in 1885-2001; and 2. and 6. in 2010-2017.
3. **Public meetings**: missing in 1857-1865; 5. in 1885-2001; and 4. in 2010-2017.

A.2 Data reliability

As detailed in Section 2.2, following the *Corrupt and Illegal Practice Act 1883* (CIPA), the threat of punishment in cases of campaign spending misreporting increased (Rix, 2008). Examples of elections declared void are numerous (**?**): the 1910 Hartepool election, for instance, because of undeclared clerks services and conveyances of voters. The same thing happened at Berwick-upon-Tweed in 1923 because the winner's agent had agreed with the local printer to decrease by £100 his official bill. Examples of direct corruption also exist: the 1911 Hull election was canceled because the winning candidate had secretly distributed 250 bags of coal to the poor. Most of the times, these trials were initiated by rival candidates, which is evidence of a high level of peer-to-peer surveillance.

A.3 Spending limits

Since 1883, spending limits in the UK have always followed the same formula for constituency i at time t:

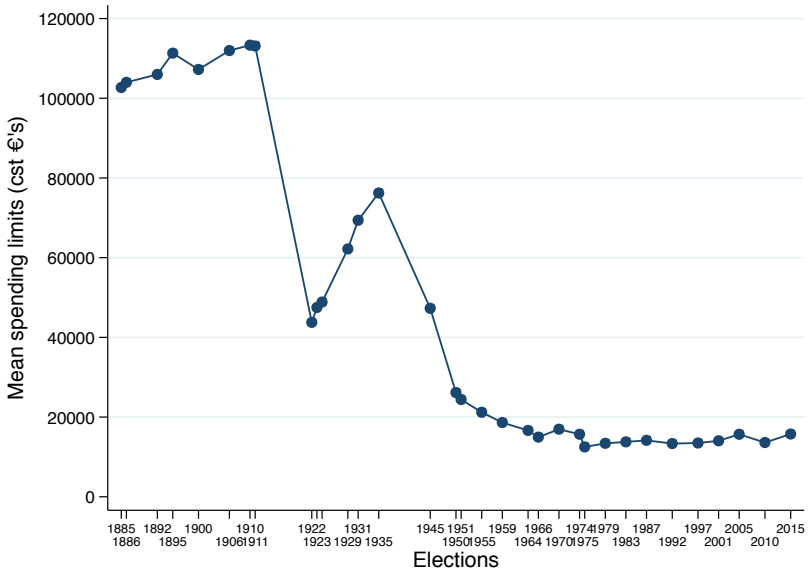
$$Limit_{it} = \alpha_t + \delta_t County_i + \beta_t Electors_{it} + \gamma_t Electors_{it} * County_i \quad (1)$$

where $Electors$ is the number of registered voters and $County$ indicates whether the constituency is a county rather than a borough. Counties have historically been granted higher spending limits due to their larger area). Personal expenses are excluded from the limit but have to be recorded.

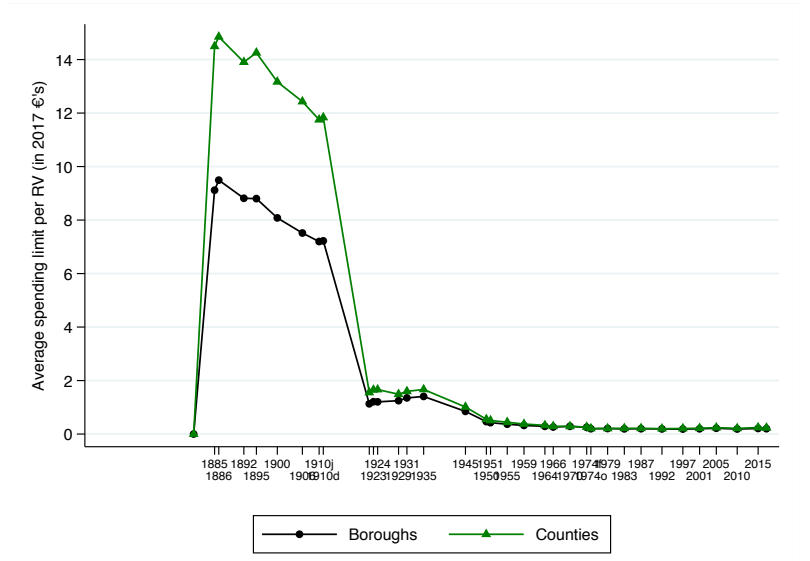
Figure A.1 reports the change in spending limits over time.

A major loophole of the 1883 legislation was that it did not tackle expenses incurred by independent third parties, such as local pressure groups, in promoting (or opposing) specific candidates. This was corrected by the RPA 1918, which ordered that these expenses had to be authorized by election agents, and counted towards candidates' spending limit (excluding amounts below 50 pence, then £5 after 1983 and £500 since 1997). An important exception, however, was made for newspapers, whose *editorial* activity remained free – but the buying of advertising space still counted as regulated expenses. This exception did not apply to other media, and throughout the century, both candidates and producers were careful not to organize broadcasts on specific (constituency-level) campaigns. Moreover, political advertising on radio and television was avoided since their early days, and was banned under the Broadcasting Act 1981.[3]

[3]Since 1924, national parties have received free broadcasting time on radio and TV. Initially informal and organized at the discretion of the broadcasters, allocation rules became more formally regulated over the century and are now decided jointly by OFCOM and the BBC under s.333 of the Communication Act 2003.



(a) Total spending



(b) Per registered voter

Notes: The figures plot changes in the spending limit over time. The spending limit is computed using equation (1).

Figure A.1: Changes in spending limit over time

B Political Parties

General elections in the UK are fought between individual candidates. However, most candidates choose to affiliate themselves with a political party while campaigning.[4]

Background National parties enjoyed great autonomy until the *Registration of Political Parties Act 1998* and, more importantly, the *PPERA 2000*, in the sense that little legislation addressed their status directly (Ewing, 1987). As organizations, they fell under the broad "unincorporated association" category, meaning they were mostly bound by their own internal rules, which constitutes a formal contract with each member. One consequence was that no transparency whatsoever was required with respect to their funding and expenses.[5] The aforementioned acts introduced formal registration and financial transparency. Before that, only the Labour Party and, to a lesser extent, the Conservative Party made their annual accounts public. We collected them to construct time series of their national election expenses.

History and Classification Throughout the 19th century, the two main parties were the Tories (now Conservatives) and the Whigs (the Liberals). In 1886, a faction broke away from the Liberal Party to form the Liberal Unionists, who eventually merged with the Conservatives in 1912. The Labour Party was created in 1900 by trade unions and socialist societies, but remained relatively minor in electoral importance before WWI. Benefiting from ideological dissensus and organizational failures among the Liberals in the following decade, the Labour party was able to capitalize on the newly enfranchised working class to drastically increase its electoral performances and form minority governments in 1923 and 1929. Since then, government control alternated between the Labour and the Conservatives; the Liberals, despite merging with Labour dissidents of the Social Democratic Party (SDP) in 1988 to form the Liberal Democratic Party ("Lib-Dems"), had to wait until 2010 to return to government, in an alliance with the Conservatives. As shown in online Appendix Figure H.4, these three parties have captured more than 95% of the votes at almost all general elections since 1857.

Smaller parties have nevertheless made their mark on British politics, especially in recent years. The Scottish National Party (SNP) and the Plaid Cymru (PC), both created in the inter-war period with the aim of defending local interests, in Scotland and Wales respectively, grew in importance over the course of the century and now enjoy, at least in the case of the SNP, significant influence over national politics. Similarly, the UK Independence Party (UKIP) was founded in 1991 (originally as

[4]Candidates were first allowed to display their party affiliation on the ballot paper in 1969.

[5]Another consequence was that they would not be eligible for direct public funding. Public funds were allocated to opposition parties in the Commons after 1974, and in the House of Lords since 1996, but were technically restricted to the conduct of parliamentary duties. Moreover, their amounts have always been very low. The *Capital Transfer Tax Act 1984* exempted from inheritance tax all donations to parties with at least two seats in the House. Since the Election Order 2002, a "Public Development Grant" of £2 million is split among parties with at least two seats in the House. Note also that there is no public reimbursement of campaign expenditures in the UK. For more details regarding the funding of parties, see Cagé (2018).

the Anti-Federalist League) with a strong Euroskeptic position, and became an important and heavily-mediatized political player over the last two decades, in particular over Brexit debates. Other parties in our dataset are listed below.

- The Green Party, formed in 1973 as the “PEOPLE Party" and as the “Ecology Party"between 1975 and 1985.
- The Communist Party, formed in 1920 from several small Marxist parties, in particular the British Socialist Party, founded in 1911, and derived from the Social Democratic Federation, the first organized socialist party established in 1881.
- The British National Party, a far-right party formed in 1982, in part by members of the National Front.
- Regularly, candidates who are members of one of the main parties and decide to run as “Independent Labour / Liberal / Conservative", in order to show their disagreement with the main party line or with the electoral alliance these parties have formed for the election.
- At the 1931 and 1935 general elections, the Conservative Party invited Labour and Liberal candidates to form a national government coalition. Those who accepted were known as “National Liberals" and “National Labour", to differentiate them from those who remained “loyal" to their party (and ran against them in some constituencies).
- All other parties, fielding very few candidates, are regrouped under an “Other" category, to avoid fixed effects with too few observations. The name of the party is nevertheless available in our dataset.

With the exception of the Liberals prior to 1885 (in some constituencies), parties never fielded more candidates than seats up for election – i.e. they did not pit their own candidates against each other. During a few elections, some of the above parties have formed (explicitly or implicitly) an electoral alliance, meaning they would not field candidates in the same constituency: the SDP with the Liberal Party, between 1983 and 1987 ; and the Liberal Unionists with the Conservative Party, between 1892 and 1912. We grouped them for the computation of fixed effects and aggregate votes.

C Constituencies Data

This section describes how we collected and assembled socio-demographic information about the constituencies in our sample for each general election between 1857 and 2017.

C.1 Details on data construction

The original source of the data are the UK Censuses, which were conducted every 10 years since 1801 (with the exception of 1941; and an additional one was undertaken in 1966). These censuses surveyed the whole UK population on specific demographic, social and economic conditions, and were made available soon after the aggregate statistics for varying administrative units.[6]. Assembling the data at the constituency level for each general election using this information presents four challenges.

The first lies in the fact that, before 1981, the data was published in paper format, and thus needed to be digitized and encoded. Researchers have already worked on parts of this endeavor, in particular the Great Britain Historical Database (GBHD) (Southall Humphrey and Gregory, 2000). We made use of these previous efforts as much as possible; and digitized the remaining necessary elements ourselves, which we will make available in a similar fashion. Below, we note the source of each dataset we used.

The second challenge is to adapt the data to constituency boundaries given that only total gendered population figures are provided at the constituency level before the 1966 census: all other variables are released for smaller (or sometimes larger) administrative levels, which do not map uniquely into constituency boundaries. When possible, we use crosswalks available in Census reports to build a mapping between the two geographies, as detailed below. When this mapping is too imperfect – or not feasible – to allow for meaningful measures, we use the smallest more aggregate entity (usually the county).

Third, constituencies themselves are regularly redrawn[7], meaning that we sometimes need information from the same census for two different set of constituencies (for instance, the 2001 census for both 1997 and 2010 constituencies). These are sometimes included in the census; when not, we collected information on the changes made to constituency boundaries over time and adapt the mappings accordingly, as detailed below.

Finally, as we build time-varying measures based on variations across censuses (e.g. we interpolate 2005 levels using the 2001 and 2011 censuses), we need to deal with the fact that the list and definition of available variables varies from one census to another. When relevant, we homogenize these variables by aggregating them, but, as detailed below, each period of interest will thus have its own set of variables.

[6]Individual-level information is released only 100 years after the Census; hence they are available up until 1921.

[7]The major redistricting of our period occurred before the 1885, 1918, 1950, 1955, 1974, 1983, 1997 and 2010 general elections. Hereafter, “1885 constituencies" refers to constituencies in effect at the 1885 general elections and up until the next redistricting.

- **Period 5 – 2001-2017**
  - *Mapping*: Censuses around this period provide information directly at the constituency level: the 2011 census for the 2010 constituencies; the 2001 census for the 2010 and 1995 constituencies; and the 1991 census for the 1995 constituencies. The process is thus straightforward.
  - *Sources*: Data comes from Nomis website https://www.nomisweb.co.uk/ .
  - *Variables*: total population; female population; age group; country of birth; household composition; religion; education; employment status (all and female only); occupation level and sector.
- **Period 4 – 1974-1997**
  - *Mapping*: The same is true for the 1974-1997 period: the 2001 census has data for the 1995 constituencies; the 1991 census for the 1995 and 1983 constituencies; the 1981 census for the 1983 and 1974 constituencies; and the 1971 census for the 1974 constituencies.
  - *Sources*: Data for 1981-2001 comes from Nomis website. Data for 1971 comes in part from Fox, A. D., Crewe, I. M. (1984). British Parliamentary Constituencies, 1979-1983. [data collection]. UK Data Service. SN: 1915, and in part from our encoding of paper format census.
  - *Variables*: total population; female population; age group; country of birth; household composition; education; employment status (all and female only); occupation level and sector.
- **Period 3 – 1950-1970**
  - *Mapping*: 1966 is the last year for which data other than population figures is provided at the constituency level (1955 constituencies). The 1951 and 1961 censuses have data at the *district* level (c.1300 districts). Luckily, the 1951 census also contains descriptions of each 1950 constituency in terms of census *wards* and *parishes* (c.8000), which are districts' building blocks. We use this information to build a 1950 constituencies to 1951 census districts crosswalk, using wards/parishes populations as weights when the same district maps into several constituencies. We then adapt this mapping to the 1955 constituencies using the *Report of the First Boundary Review*, which describes the changes that occurred during the 1955 redrawing of constituencies in terms of census districts, wards and parishes. Then, as some districts' boundaries also changed between the 1951 and 1961 censuses, we use 1961 census information on these "intercensal boundary changes" of districts (Table 4 of County Reports) to obtain a precise mapping for 1961 districts (to 1955 constituencies) as well.

- *Sources*: 1966 data comes in part from Crewe, I.M. (1977). British Parliamentary Constituencies, 1955-1974. [data collection]. UK Data Service. SN: 661, and in part from our encoding of paper format census. 1951 data comes from the GBHD (Southall Humphrey and Gregory, 2000).
- *Variables*: total population; female population; age group; country of birth; employment status (all and female only); occupation level and sector.

- **Period 2 – 1922-1945**
  - *Mapping*: Similar to above, the 1921 and 1931 censuses have data at the district level. Ball and Smith (2016) have built crosswalks of 1918 constituencies to 1931 census districts. We use 1931 census information on intercensal boundary changes of districts (Table 4 of County Reports) to build a similar 1918 constituencies to 1921 census districts mapping.
  - *Sources*: 1931 data thus comes from Ball and Smith (2016), and 1921 from the GBHD (Southall Humphrey and Gregory, 2000).
  - *Variables*: total population; female population; occupation level and sector.

- **Period 0 and 1 – 1857-1910**
  - *Mapping*: To the best of our knowledge, there exists no mapping of pre-1918 constituencies to smaller census units. We thus collected, aside from the usual population data at the constituency level, occupation variables at the administrative *county* level (c. 60), and assigned each constituency to the county in which it lies. Counties comprise between 2 (Brecon) and 128 (London) constituencies.
  - *Sources*: data comes from the GBHD (Southall Humphrey and Gregory, 2000).
  - *Variables*: total population; female population; occupation level (county) and sector (county).

C.2 Summary statistics

Table C.1: Summary statistics: constituencies - Period V (2001-2017). Demographics.

	2001-2017					
	Mean	Median	sd	Min	Max	N
Total Population	96,828	95,955	13,955	41,333	178,214	2,843
Female	0.510	0.510	0.009	0.455	0.538	2,843
Age Group						
Below 14 years old	0.178	0.178	0.023	0.087	0.296	2,843
15-29 years old	0.192	0.179	0.051	0.103	0.518	2,843
30-44 years old	0.209	0.208	0.032	0.120	0.328	2,843
45-64 years old	0.255	0.261	0.036	0.129	0.338	2,843
Above 65 years old	0.166	0.165	0.042	0.038	0.330	2,843
Country of Birth						
Born in UK	0.882	0.927	0.116	0.340	0.989	2,843
Born in other EU Country	0.030	0.020	0.030	0.003	0.251	2,843
Born in Rest of the World	0.110	0.065	0.114	0.009	0.659	2,843
Households statistics						
Average persons per room	2.273	2.305	0.240	1.293	2.855	2,843
Single Parents (Males)	0.003	0.003	0.001	0.000	0.006	2,843
Single Parents (Females)	0.027	0.026	0.008	0.012	0.064	2,843

Notes: The table presents summary statistics on constituencies' characteristics over the 2001-2017 period. An observation is a constituency-election. Age Groups and Countries of Birth data are expressed as share of the total population, Lone Parents as share of households. Variables are described in more details in the text.

Table C.2: Summary statistics: constituencies - Period V (2001-2017). Demographics.

	2001-2017					
	Mean	Median	sd	Min	Max	N
Religion						
Christian	0.626	0.630	0.126	0.165	0.880	2,843
Buddhist	0.004	0.003	0.003	0.000	0.047	2,843
Hindu	0.013	0.004	0.029	0.000	0.345	2,843
Jewish	0.004	0.001	0.016	0.000	0.219	2,843
Muslim	0.040	0.010	0.071	0.000	0.619	2,843
Sikh	0.007	0.001	0.018	0.000	0.218	2,843
Other	0.004	0.004	0.003	0.000	0.039	2,843
No Religion	0.230	0.224	0.093	0.054	0.578	2,843
Unknown	0.073	0.072	0.015	0.033	0.270	2,843
Level of Education						
No qualification	0.244	0.236	0.076	0.075	0.484	2,843
High-school degree (GSCE or A-level)	0.418	0.424	0.051	0.167	0.531	2,843
Higher education degree	0.256	0.243	0.097	0.073	0.644	2,843
Other qualifications	0.087	0.082	0.025	0.027	0.255	2,843

Notes: The table presents summary statistics on constituencies' characteristics over the 2001-2017 period. An observation is a constituency-election. Religion and Education data are expressed as share of the total population. Variables are described in more details in the text.

Table C.3: Summary statistics: constituencies - Period V (2001-2017). Employment status.

	2001-2017					
	Mean	Median	sd	Min	Max	N
All Adult Population						
Active	0.692	0.698	0.048	0.466	0.838	2,843
Active in Employment	0.620	0.627	0.059	0.358	0.774	2,843
Active Self-emp.	0.094	0.092	0.030	0.035	0.190	2,843
Unemp	0.039	0.037	0.017	0.007	0.111	2,843
Active Student	0.033	0.028	0.016	0.014	0.159	2,843
Inactive	0.308	0.302	0.048	0.162	0.534	2,843
Inactive Student	0.054	0.041	0.038	0.013	0.304	2,843
Inactive Permanently Sick	0.047	0.041	0.024	0.011	0.178	2,843
Inactive Retired	0.137	0.139	0.039	0.025	0.271	2,843
Inactive Other	0.069	0.066	0.028	0.014	0.260	2,843
Females only						
Active	0.640	0.648	0.053	0.364	0.808	2,843
Active in Employment	0.573	0.581	0.058	0.297	0.743	2,843
Active Self-emp.	0.054	0.050	0.024	0.012	0.147	2,843
Unemp.	0.031	0.029	0.013	0.008	0.085	2,843
Active Student	0.036	0.031	0.017	0.016	0.174	2,843
Inactive	0.360	0.352	0.053	0.192	0.636	2,843
Inactive Student	0.053	0.041	0.037	0.013	0.299	2,843
Inactive Permanently Sick	0.044	0.039	0.021	0.010	0.162	2,843
Inactive Retired	0.156	0.160	0.044	0.032	0.298	2,843
Inactive Other	0.106	0.101	0.045	0.020	0.392	2,843

Notes: The table presents summary statistics on constituencies' characteristics over the 2001-2017 period. An observation is a constituency-election. Data are expressed as share of the adult (Female) population. Variables are described in more details in the text.

Table C.4: Summary statistics: constituencies - Period V (2001-2017). Occupations and Sectors.

	2001-2017					
	Mean	Median	sd	Min	Max	N
Socio-Professional Class						
Managers and senior officials	0.114	0.109	0.039	0.042	0.330	2,843
Professional occupations	0.159	0.151	0.062	0.043	0.433	2,843
Technical occupations	0.130	0.125	0.032	0.055	0.269	2,843
Administrative and secretarial occupations	0.116	0.113	0.021	0.062	0.217	2,843
Skilled trades occupations	0.115	0.116	0.029	0.026	0.236	2,843
Personal service occupations	0.088	0.088	0.025	0.004	0.182	2,843
Sales and customer service occupations	0.084	0.083	0.018	0.028	0.177	2,843
Process, plant and machine operatives	0.076	0.073	0.029	0.011	0.206	2,843
Elementary occupations	0.118	0.116	0.032	0.037	0.236	2,843
Sector						
Agriculture	0.012	0.006	0.015	0.000	0.107	2,843
Energy	0.007	0.006	0.004	0.000	0.034	2,843
Mining	0.072	0.061	0.074	0.000	0.355	2,843
Construction	0.075	0.076	0.019	0.013	0.135	2,843
Manufacture	0.063	0.020	0.078	0.000	0.340	2,843
Services	0.577	0.545	0.182	0.186	0.942	2,843

Notes: The table presents summary statistics on constituencies' characteristics over the 2001-2017 period. An observation is a constituency-election. Data are expressed as share of the total adult population. Variables are described in more details in the text.

Table C.5: Summary statistics: constituencies - Period IV (1974-1997). Demographics.

	1974-1997					
	Mean	Median	sd	Min	Max	N
Total Population	87,674	88,176	11,812	34,722	155,112	3,789
Female	0.514	0.513	0.009	0.485	0.566	3,789
Age Group						
Below 14 years old	0.205	0.203	0.027	0.095	0.302	3,789
15-29 years old	0.209	0.207	0.025	0.128	0.358	3,789
30-44 years old	0.200	0.201	0.021	0.134	0.275	3,789
45-64 years old	0.229	0.229	0.020	0.158	0.287	3,789
Above 65 years old	0.152	0.148	0.033	0.068	0.320	3,789
Country of Birth						
Born in UK	0.932	0.957	0.072	0.528	0.994	3,789
Born in Rep. of Ireland	0.012	0.008	0.013	0.001	0.116	3,789
Born in non-EU European Country	0.012	0.008	0.012	0.001	0.140	3,789
Born in Rest of the World	0.055	0.033	0.061	0.004	0.421	3,789
Households statistics						
Average persons per room	1.938	1.931	0.181	1.373	3.729	3,789
Single Parents	0.019	0.018	0.008	0.006	0.067	3,789

Notes: The table presents summary statistics on constituencies' characteristics over the 1974-1997 period. An observation is a constituency-election. Age Groups and Countries of Birth data are expressed as share of the total population, Lone Parents as share of housholds. Variables are described in more details in the text.

Table C.6: Summary statistics: constituencies - Period IV (1974-1997). Occupations and Sectors.

	1974-1997					
	Mean	Median	sd	Min	Max	N
Employment						
Active	0.476	0.474	0.061	0.305	0.667	3,786
Active Self-emp.	0.069	0.065	0.028	0.022	0.259	3,786
Socio-Professional Class						
SEC1-3 occupations (high skilled)	0.337	0.331	0.090	0.119	0.706	3,786
SEC4-7 occupations (medium skilled)	0.434	0.443	0.065	0.168	0.584	3,786
SEC8-9 occupations (low skilled)	0.229	0.230	0.063	0.040	0.465	3,786
Education						
Higher education degree	0.111	0.101	0.057	0.014	0.485	3,786
Sector						
Primary	0.018	0.006	0.027	0.000	0.215	3,786
Secondary	0.272	0.260	0.091	0.060	0.607	3,786
Tertiary	0.540	0.515	0.153	0.218	0.926	3,786

Notes: The table presents summary statistics on constituencies' characteristics over the 1974-1997 period. An observation is a constituency-election. Data are expressed as share of the total adult population. Variables are described in more details in the text.

Table C.7: Summary statistics: constituencies - Period III (1950-1970). Demographics and Socio-economics status.

	1950-1970					
	Mean	Median	sd	Min	Max	N
Total Population	83,941	82,235	17,904	31,856	186,865	3,591
Female	0.518	0.516	0.016	0.475	0.571	3,591
Age Group						
Below 14 years old	0.224	0.225	0.025	0.138	0.297	3,591
15-29 years old	0.204	0.204	0.019	0.141	0.302	3,591
30-44 years old	0.203	0.204	0.022	0.145	0.254	3,591
45-64 years old	0.248	0.247	0.021	0.200	0.317	3,591
Above 65 years old	0.120	0.115	0.026	0.077	0.217	3,591
Country of Birth						
Born in UK	0.958	0.970	0.047	0.739	1.000	3,591
Born in Rep. of Ireland	0.014	0.009	0.015	0.000	0.082	3,591
Born in Rest of the World	0.028	0.019	0.034	0.000	0.191	3,591
Education						
Left school at 14 or under	0.726	0.740	0.088	0.465	0.870	3,591
Left school at 15	0.111	0.109	0.020	0.072	0.183	3,591
Left school at 16	0.080	0.078	0.028	0.028	0.155	3,591
Left school at 17 to 19	0.053	0.045	0.033	0.013	0.174	3,591
Higher education degree	0.030	0.025	0.018	0.006	0.124	3,591

Notes: The table presents summary statistics on constituencies' characteristics over the 1950-1970 period. An observation is a constituency-election. Country of Birth data are expressed as share of the total adult population, Households Statistics as share of the total number of households, and Occupation and Sector data as share of adult population. Variables are described in more details in the text.

Table C.8: Summary statistics: constituencies - Period III (1950-1970). Demographics and Socio-economics status.

	1950-1970					
	Mean	Median	sd	Min	Max	N
Occupation Category						
Managerial/Professional (SOC I)	0.101	0.081	0.077	0.008	0.347	3,591
Routine (SOC II)	0.163	0.155	0.051	0.071	0.307	3,591
Skilled Manual (SOC III)	0.454	0.457	0.082	0.237	0.626	3,591
Partly-Skilled Manual (SOC IV)	0.174	0.169	0.053	0.077	0.332	3,591
Unskilled Manual (SOC V)	0.107	0.099	0.043	0.029	0.252	3,591
Sector						
Primary	0.044	0.010	0.067	0.000	0.302	3,591
Secondary	0.438	0.435	0.133	0.172	0.695	3,591
Tertiary	0.487	0.485	0.117	0.252	0.767	3,591

Notes: The table presents summary statistics on constituencies' characteristics over the 1950-1970 period. An observation is a constituency-election. Country of Birth data are expressed as share of the total adult population, Households Statistics as share of the total number of households, and Occupation and Sector data as share of adult population. Variables are described in more details in the text.

Table C.9: Summary statistics: constituencies - Period II (1922-1945). Demographics and Occupations.

	1922-1945					
	Mean	Median	sd	Min	Max	N
Total Population	78,198	73,759	22,173	7,209	274,318	3,308
Occupation category						
Occupied	0.471	0.460	0.051	0.340	0.694	3,308
fishermen	0.002	0.000	0.007	0.000	0.100	3,308
in agricultural occupations	0.072	0.017	0.102	0.000	0.483	3,308
in mining and quarrying occupations	0.052	0.003	0.115	0.000	0.659	3,308
workers in the treatment mine products	0.001	0.001	0.002	0.000	0.032	3,308
makers of bricks, pottery and glass	0.005	0.002	0.022	0.000	0.342	3,308
workers in chemical processes	0.003	0.002	0.005	0.000	0.075	3,308
metal workers	0.077	0.057	0.064	0.000	0.459	3,308
workers in precious metals and electro plate	0.002	0.000	0.006	0.000	0.042	3,308
electricians	0.011	0.009	0.007	0.001	0.061	3,308
makers of clocks and scientific instruments	0.001	0.001	0.001	0.000	0.012	3,308
in workers in skins and leather	0.004	0.002	0.006	0.000	0.094	3,308
textile workers	0.043	0.003	0.100	0.000	0.650	3,308
makers of textile goods and articles of dress	0.044	0.029	0.050	0.000	0.494	3,308
makers of foods, drinks, and tobacco	0.014	0.012	0.008	0.000	0.097	3,308
workers in wood and furniture	0.028	0.027	0.012	0.000	0.145	3,308
workers in paper and books	0.008	0.004	0.011	0.000	0.084	3,308
printers and photographers	0.016	0.016	0.012	0.000	0.085	3,308
builders	0.035	0.029	0.024	0.004	0.274	3,308
painters and decorators	0.014	0.010	0.016	0.000	0.290	3,308
workers in other materials	0.004	0.002	0.005	0.000	0.042	3,308
workers in mixed or undefined materials	0.009	0.005	0.010	0.000	0.098	3,308
employed in transport and communication	0.088	0.077	0.039	0.026	0.272	3,308
in commercial and finance occupations	0.107	0.105	0.030	0.030	0.233	3,308
employed in public administration and defence	0.020	0.010	0.037	0.000	0.450	3,308
in professional occupations	0.039	0.037	0.015	0.009	0.115	3,308
engaged in entertainments and sport	0.006	0.005	0.004	0.000	0.034	3,308
engaged in personal service	0.126	0.116	0.059	0.033	0.461	3,308
clerks and draughtsmen; typists	0.069	0.059	0.043	0.008	0.297	3,308
warehousemen, storekeepers and packers	0.021	0.017	0.016	0.000	0.114	3,308
engine drivers and motor attendants	0.008	0.006	0.006	0.000	0.045	3,308
Agriculture	0.074	0.019	0.103	0.000	0.484	3,308
Light Production	0.254	0.234	0.104	0.059	0.958	3,308
Industrial Production	0.126	0.053	0.163	0.000	0.680	3,308
Services	0.455	0.448	0.137	0.175	0.821	3,308

Notes: The table presents summary statistics on constituencies' characteristics over the 1922-1945 period. An observation is a constituency-election. Female and Occupied populations data are expressed as share of the total adult population, Occupation categories data as share of occupied population. Variables are described in more details in the text.

Table C.10: Summary statistics: constituencies - Period I (1885-1910). Demographics and Occupations.

	1885-1910d					
	Mean	Median	sd	Min	Max	N
Total Population	68,353	67,392	27,952	4,365	312,864	3,694

Notes: The table presents summary statistics on constituencies' characteristics over the 1885-1910 period. An observation is a constituency-election. Variables are described in more details in the text.

Table C.11: Summary statistics: **administrative counties** - Period I (1885-1910). Occupations.

	1885-1910d					
	Mean	Median	sd	Min	Max	N
Total population	725,184	515,041	798,645	19,684	4,767,832	485
Occupation Category						
Occupied	0.430	0.427	0.020	0.377	0.490	485
Males	0.515	0.485	0.365	-0.319	5.564	485
Occupied	0.714	0.712	0.042	0.593	0.834	485
in agriculture, forestry and fishing	0.177	0.183	0.100	0.004	0.495	485
in mining and quarrying	0.059	0.023	0.066	0.003	0.329	485
in food, drink and tobacco	0.054	0.053	0.011	0.027	0.100	485
in chemicals and allied industries	0.006	0.004	0.005	0.001	0.034	485
in metal manufacture	0.031	0.023	0.022	0.006	0.113	485
in mechanical engineering	0.016	0.011	0.013	0.001	0.064	485
in instrument engineering	0.002	0.001	0.002	0.001	0.017	485
in electrical engineering	0.002	0.001	0.002	0.000	0.015	485
in shipbuilding and marine engineering	0.006	0.003	0.010	0.000	0.061	485
in vehicles	0.007	0.006	0.007	0.001	0.067	485
in metal goods not elsewhere specified	0.009	0.005	0.017	0.001	0.116	485
textile	0.051	0.023	0.070	0.008	0.321	485
leather goods and fur	0.005	0.004	0.003	0.001	0.021	485
clothing and footwear	0.074	0.062	0.045	0.035	0.334	485
bricks, pottery, glass, cement, etc	0.009	0.006	0.014	0.000	0.110	485
timber, furniture etc.	0.014	0.012	0.009	0.005	0.073	485
paper, printing and publishing	0.013	0.011	0.009	0.003	0.057	485
manufacturing industries	0.003	0.001	0.004	0.000	0.019	485
in construction	0.069	0.069	0.012	0.048	0.116	485
in gas, electricity and water	0.003	0.003	0.002	0.000	0.027	485
in transport and communication	0.066	0.061	0.019	0.033	0.157	485
in distributive trades.	0.009	0.009	0.002	0.005	0.018	485
in finance and business	0.006	0.005	0.003	0.003	0.022	485
in professional and scientific services	0.039	0.039	0.009	0.024	0.071	485
in miscellaneous services.	0.178	0.178	0.047	0.094	0.323	485
in public administration and defence	0.025	0.016	0.025	0.007	0.168	485

Notes: The table presents summary statistics on administrative counties' characteristics over the 1885-1910 period. An observation is an administrative county-election. Occupation categories data are expressed as a share of occupied population. Variables are described in more details in the text.

Table C.12: Summary statistics: constituencies - Period 0 (1857-1880). Demographics and Occupations.

	1857-1880					
	Mean	Median	sd	Min	Max	N
Total Population	81,512	37,210	134,737	1,736	2,142,503	1,106

Notes: The table presents summary statistics on constituencies' characteristics over the 1857-1880 period. An observation is a constituency-election. Variables are described in more details in the text.

Table C.13: Summary statistics: **administrative counties** - Period 0 (1857-1880). Occupations.

	1857-1880					
	Mean	Median	sd	Min	Max	N
Total population	522,196	346,999	630,638	53,810	4,126,649	272
Occupation Category						
Occupied	0.455	0.441	0.071	0.375	0.893	272
Males	0.499	0.489	0.069	0.457	0.949	272
Occupied	0.717	0.707	0.101	0.546	1.329	272
in agriculture, forestry and fishing	0.247	0.236	0.118	0.036	0.606	272
in mining and quarrying	0.039	0.015	0.050	0.002	0.231	272
in food, drink and tobacco	0.044	0.044	0.008	0.020	0.069	272
in chemicals and allied industries	0.004	0.003	0.003	0.001	0.019	272
in metal manufacture	0.030	0.019	0.023	0.010	0.116	272
in mechanical engineering	0.010	0.007	0.008	0.001	0.040	272
in instrument engineering	0.002	0.001	0.002	0.001	0.017	272
in shipbuilding and marine engineering	0.004	0.002	0.006	0.000	0.033	272
in vehicles	0.005	0.005	0.002	0.001	0.011	272
in metal goods not elsewhere specified	0.009	0.003	0.018	0.000	0.098	272
textile	0.080	0.038	0.092	0.007	0.366	272
leather goods and fur	0.006	0.005	0.002	0.001	0.014	272
clothing and footwear	0.091	0.079	0.044	0.043	0.351	272
bricks, pottery, glass, cement, etc	0.009	0.006	0.015	0.000	0.107	272
timber, furniture etc.	0.015	0.014	0.009	0.000	0.085	272
paper, printing and publishing	0.008	0.007	0.007	0.001	0.050	272
manufacturing industries	0.002	0.001	0.003	0.000	0.023	272
in construction	0.062	0.062	0.012	0.036	0.118	272
in gas, electricity and water	0.001	0.001	0.001	0.000	0.004	272
in transport and communication	0.042	0.037	0.017	0.015	0.095	272
in distributive trades.	0.008	0.007	0.002	0.004	0.014	272
in finance and business	0.002	0.002	0.001	0.001	0.007	272
in professional and scientific services	0.029	0.029	0.008	0.017	0.058	272
in miscellaneous services.	0.168	0.168	0.044	0.088	0.310	272
in public administration and defence	0.020	0.010	0.025	0.004	0.139	272

Notes: The table presents summary statistics on administrative counties' characteristics over the 1857-1880 period. An observation is an administrative county-election. Occupation categories data are expressed as a share of occupied population. Variables are described in more details in the text.

D Broadband Internet: Data Construction and Empirical Strategy

To perform our analysis of how the introduction of the Internet impacted the correlation between campaign spending and electoral results, we follow Gavazza et al. (2019) and rely on their data on broadband Internet penetration in England and Wales, which they obtained from Ofcom, the UK media regulator. Since 2005, Ofcom collects the share of households with cable Internet subscriptions for each of the $5,587$ UK Local Exchanges (the telephone network nodes, LEs hereafter), as well as the list of the postcodes covered by these LEs (their "catchment area"). Gavazza et al. (2019) perform their analysis at the ward level (census enumeration "CAS" wards) by using postcodes-to-wards lookup tables and assuming each postcode within an LE catchment area has the same Internet penetration level. We start by following this procedure, and merge the resulting table with the ward-level rain data from MET, also provided by Gavazza et al. (2019).

We then aggregate the variables at the level of the 2005 and 2010 constituencies (as a reminder, a redistricting occurred in England and Wales in between the two elections). Because we do not know of any official crosswalk tables between CAS wards (or postcodes) and constituencies, we rely on GIS maps to assign the centroid of each ward (c. 8500) to a 2005 and a 2010 constituency (c. 500).[8] We compute each constituency level of Internet penetration (rain) as the population-weighted average of each constituent ward penetration (rain). Table D.1 provides summary statistics on our main variables of interest at this constituency level. On average, the household broadband penetration in a constituency during our period of interest is 49.1%, with a standard deviation of 14.

We then reproduce the identification strategy of Gavazza et al. (2019), which uses rain as an instrument for Internet penetration. We estimate the impact of rain on Internet penetration at the constituency level using:

$$\text{Internet}_{m(r)t} = \alpha + \beta \text{rain}_{m(r)t} + \mathbf{Y'_{m(r)t}}\delta + \omega_r + \xi_t + \epsilon_{m(r)t} \tag{2}$$

where t index the election (2005 and 2010) and m the constituencies (lying within region r). $\text{Internet}_{m(r)t}$ is the share of households connected to broadband Internet within the constituency, as described above. $\text{rain}_{m(r)t}$, is the yearly rainfall in constituency m in year t, measured in millimeters (mm).[9] $\mathbf{Y'_{m(r)t}}$ is, as before, a vector of constituency-level census controls (summarized in Table D.1), ω_r are region fixed effects[10] and ξ_t year fixed effects.

Columns (1) and (2) of Table D.2 report the results of this estimation: consistently with Gavazza

[8] Though this mapping is imperfect, we are nevertheless able to measure the precision of the process by comparing the official population of constituencies (which we gathered as part of our constituencies' data collection) with that obtained by adding the population of all wards we included in each constituency: 80% of constituencies are within a 10% error margin. Dropping the outliers does not alter our findings.

[9] More precisely, consistently with Gavazza et al. (2019), we use a quadratic functional form for rain to capture the effect of severe weather events.

[10] The objective is to mimic Gavazza et al. (2019) specification which uses variation across wards within Local Authorities (i.e. they have LA fixed effects), for lack of enough temporal variation within the same wards to have time FE (in our cases, the redistricting of many constituencies and the large time period between the two elections generate the same constraint).

Table D.1: Summary statistics: Internet

	Mean	Median	sd	Min	Max	N
Internet (%)	49.1	49.2	13.9	18.5	90.6	1,054
Yearly rain (mm)	691.0	663.8	172.3	370.2	1,689.8	1,054
Share Spending (%)	18.4	10.7	17.9	0.0	80.3	1,054
Turnout (%)	63.2	64.1	6.5	37.2	77.3	1,054
Total population	96,659	95,732	11,295	67,866	154,797	1,054
Number of candidates running	5.8	6.0	1.5	3.0	15.0	1,054
Nb. consecutive GEs won by incumbent party	4.27	3.00	2.59	1.00	10.00	1,054
Margin btw 1st and 2nd cand. at last election	0.20	0.18	0.13	0.00	0.69	1,054
Uncontested at last election	0.00	0.00	0.00	0.00	0.00	1,054
Total spending in Constit (cst €per elector)	0.40	0.40	0.14	0.05	1.52	1,054
Sh. female population	0.51	0.51	0.01	0.47	0.53	1,054
Sh. Pop. 15-29	0.19	0.17	0.05	0.10	0.45	1,054
Sh. Higher-Education degree	0.24	0.23	0.09	0.08	0.64	1,054
Sh. Born in UK	0.89	0.93	0.11	0.42	0.99	1,054
Sh. Unemp	0.03	0.03	0.02	0.01	0.09	1,054
Sh. Employed in agriculture	0.01	0.01	0.01	0.00	0.08	1,054

Notes: The table presents summary statistics on Internet penetration and rain. An observation is a constituency/election. The time period is 2005-2010.

et al. (2019), we find that places with more rainfall in the previous year have lower Internet penetration. In Columns (3) and (4), we show that their main results also hold at our constituency level: instrumented Internet penetration is negatively correlated with turnout.

We are interested in determining whether constituencies where both candidates and citizens gained access to broadband Internet technology between 2005 and 2010 exhibit a change in the sensitivity of electoral results to differences in campaign spending among candidates. We thus estimate:

$$\ln\left(\frac{s_{cmt}}{s_{0mt}}\right) = \alpha + \beta_1 \text{spending}_{cmt} + \beta_2 \text{broadband internet}_{mt} + \beta_3 \text{spending * internet}_{mt} + \mathbf{X'_{mt}}\gamma + \mathbf{Y'_{ct}}\delta + \mathbf{Z'_{c}}\theta + \zeta_m + \omega_{jt} + \epsilon_{cjmt} \quad (3)$$

where broadband internet$_{mt}$ is the predicted broadband Internet penetration obtained from equation 2 (the rest is similar to equation (4) in Section 5). Table 5 reports the results, which are discussed in the main text.

Table D.2: The impact of broadband Internet on turnout, 2005-2010

	Broadband Internet		Turnout	
Rain	-0.028***	-0.018***		
	(0.008)	(0.006)		
Broadband Internet			-132.973***	-52.150*
			(49.267)	(29.277)
Region FE	✓	✓	✓	✓
Election FE	✓	✓	✓	✓
District-level controls		✓		✓
R-sq (within)	0.01	0.45		
Observations	1,052	1,052	1,052	1,052
F-stat for Weak identification			17.0	8.6
Underidentification (p-value)			0.0	0.0
Mean DepVar	0.5	0.5	63.3	63.3
Sd DepVar	0.1	0.1	6.5	6.5

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a constituency-election. Time period is 2005-2010. The dependent variable is the broadband internet penetration. Standard errors are clustered at the district level. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

E A conditional logit model for analyzing the correlation between campaign spending and electoral results

Let vote share$_{cmt}$ denote the proportion of the vote in district m ($m = 1, ..., M$) and election t for candidate c ($c = 1, ..., C$).[11] As noted by Katz and King (1999), two fundamental features of multiparty voting data are that each proportion falls within the unit interval:

$$\text{vote share}_{cmt} \in [0, 1] \text{ for all } m \text{ and } c \tag{4}$$

and that the set of vote proportions for all the parties in a district sums to one:

$$\sum_{c=1}^{C} \text{vote share}_{cmt} = 1 \text{ for all } m, \tag{5}$$

i.e., within a district, candidates' vote shares are interdependent. A good statistical model of multiparty voting data should thus satisfy both equations (4) and (5).

To estimate the average effect of candidates' expenditures on vote shares, we rely on the literature on discrete choice models.[12] We extend the Conditional Logit model (see e.g. Alvarez and Nagler, 1998), which can accommodate characteristics of the choices (i.e. the candidates) available to the voter. Formally, for a choice among c ($c = 1, ..., C$) candidates with observed characteristics $\mathbf{X}_c$ (among which her spending, but also her party or other personal characteristics), the utility of an individual i choosing the candidate c is $U_{ic} = \mathbf{X}_{ic}\beta + \epsilon_{ic}$, where the ϵ_{ic} are drawn from a type-I extreme value distribution and are uncorrelated across choices and individuals. We can then define the probability that an individual i chooses candidate c by:

$$P_{ic} = \frac{exp(\mathbf{X}_{ic}\beta)}{\sum_k exp(\mathbf{X}_{ik}\beta)}$$

To estimate this probability, discrete choice models take its log ratio with a reference choice probability P_{i0}, so that:

$$\ln(P_{ic}) - \ln(P_{i0}) = (\mathbf{X}_{ic} - \mathbf{X}_{i0})\beta + e_c$$

Given that only aggregate voting data is available (we do not have information on the voting choice of each individual voter), our strategy, in the spirit of Berry et al. (1995), is to approximate this probability with the proportions associated with each choice: in our context, the number of votes obtained by each candidate c, s_c.

[11] This section strongly relies on (Bekkouche et al., 2020).

[12] As a matter of fact, these models have been extensively developed by the applied IO literature, which faces empirical challenges similar to ours when it comes to estimating the impact of product characteristics (mostly price) on interdependent, aggregate, market share (see e.g. Berry et al., 1995; Nevo, 2000). Much like these settings, this approach also allows us to give some structure to how we think about the effect of campaign spending at the individual level.

$$\ln(s_c) - \ln(s_0) = (\mathbf{X}_c - \mathbf{X}_0)\beta + e_c \tag{6}$$

This gives us, for each district, $C-1$ estimable equations (6). Because we want to estimate the coefficient β over all candidates and districts, we define the choice 0 as the "outside option" of electors, which, in non-compulsory voting systems, is to abstain. We assume, without loss of information, that $\mathbf{X}_0$ is equal to zero.[13] We thus estimate the following model:

$$\ln\left(\frac{s_{cmt}}{s_{0mt}}\right) = \alpha + \beta \text{spending share}_{cmt} + \mathbf{X_{mct}}\delta + \mathbf{W_{mt}}\gamma + \mathbf{Z_c}\kappa + \zeta_m + \omega_{jt} + \epsilon_{cjmt} \tag{7}$$

where c indexes the candidates, j the political parties, t the electoral years and m the electoral districts. $\ln\left(\frac{s_{cmt}}{s_{0mt}}\right)$ is the logarithm of the ratio of the number of votes obtained by candidate c in district m in election t over the abstention in district m in election t.[14]

Campaign spending is measured by spending share$_{cmt}$, i.e. candidate c share of the district m total spending in electoral year t (or, as an alternative, her absolute spending per elector). The vector $\mathbf{X}_{cmt}$ contains the other time-varying candidates' characteristics which could affect voters' choices (such as incumbency or previous political mandates), and the vector $\mathbf{Z}_c$ the candidates' characteristics that are constant over time (such as their gender).

To account for the fact that voters' preferences can depend on their own characteristics or those of the district they live in, the vector $\mathbf{W}_{mt}$ contains the time-varying district-level covariates described above and ζ_m denotes fixed effects for electoral districts. We also capture the national popularity of political parties and the election-specific factors with ω_{jt}, party-election fixed effects. Standard errors are clustered at the district level.

[13] Note that it still allows abstention to vary depending on other candidates' and districts' characteristics, which we will control for.

[14] While this outcome variable might not seem intuitive at first sight, we argue that it is not harder to interpret than having another party as the reference category, a common practice with this conditional logit framework. Most importantly, it allows us to estimate the average impact of spending on votes across *all parties* (including the one that would have been chosen as "reference") and in *all districts* (including those where the "reference party" would not have run).

F Robustness checks

Table F.1: Robustness check: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), 1885-2017

	1885-2017			
	(1)	(2)	(3)	(4)
Share of constituency total spending	0.027***	0.023***	0.019***	0.012***
	(0.000)	(0.000)	(0.000)	(0.000)
Constit FE	✓	✓	✓	
Election-Party FE	✓	✓	✓	✓
Candidate FE				✓
Constit-level controls		✓	✓	✓
Candidate-level controls		✓	✓	✓
Candidates	All	All	Mtp times	Mtp times
R-sq (within)	0.27	0.33	0.32	0.15
Observations	63,747	63,747	44,188	44,184
Cluster (Constit)	3,012	3,012	2,996	2,996
Mean DepVar	-0.7	-0.7	-0.3	-0.3
Sd DepVar	1.6	1.6	1.4	1.4

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate-election. The dependent variable is the logarithm of the ratio of the number of votes obtained by a candidate over abstention. All the estimations include district fixed effects, election fixed effects, and election-party fixed effects. Columns (1) to (3) also control for party fixed effects, and Column (4) for candidates fixed effects. Standard errors are clustered at the district level. The district-level controls are listed in the text. The candidate-level controls include the gender, and an indicator variable equal to one if the candidate is the incumbent and to zero otherwise. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

Table F.2: Robustness check: Effect of candidates' share of total spending on vote share (logarithm of the ratio of the number of votes over abstention), in one-seat constituencies only, 1857-2017

	1857-2017			
	(1)	(2)	(3)	(4)
Share of constituency total spending	0.027***	0.022***	0.019***	0.011***
	(0.000)	(0.000)	(0.000)	(0.000)
Constit FE	✓	✓	✓	
Election-Party FE	✓	✓	✓	✓
Candidate FE				✓
Constit-level controls		✓	✓	✓
Candidate-level controls		✓	✓	✓
Candidates	All	All	Mtp times	Mtp times
R-sq (within)	0.27	0.33	0.32	0.12
Observations	63,624	63,616	43,837	43,823
Cluster (Constit)	3,142	3,141	3,091	3,091
Mean DepVar	-0.7	-0.7	-0.2	-0.3
Sd DepVar	1.6	1.6	1.4	1.4

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. Time period is 1857-2017. An observation is a candidate-election. The dependent variable is the logarithm of the ratio of the number of votes obtained by a candidate over abstention. All the estimations include election-party fixed effects. Columns (1) to (3) also control for district fixed effects and Columns (4) for candidates fixed effects. Standard errors are clustered at the district level. Variables are described in more detail in the text.

Table F.3: Robustness check: Effect of candidates' absolute spending (per voter) on vote share (logarithm of the ratio of the number of votes over abstention), 1857-2017

	1857-2017							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total Spending (per elec.)	0.0097***	0.0234***	0.0090***	0.0225***	0.0082***	0.0209***	0.0121***	0.0261***
	(0.0010)	(0.0023)	(0.0011)	(0.0022)	(0.0011)	(0.0020)	(0.0015)	(0.0018)
Total spending squared		-0.0001***		-0.0001***		-0.0001***		-0.0001***
		(0.0000)		(0.0000)		(0.0000)		(0.0000)
Constit FE	✓	✓	✓	✓	✓	✓		
Election-Party FE	✓	✓	✓	✓	✓	✓	✓	✓
Candidate FE							✓	✓
Constit-level controls			✓	✓	✓	✓	✓	✓
Candidate-level controls			✓	✓	✓	✓	✓	✓
Candidates	All	All	All	All	Mtp times	Mtp times	Mtp times	Mtp times
R-sq (within)	0.01	0.01	0.16	0.16	0.16	0.16	0.11	0.12
Observations	66,777	66,777	66,683	66,683	46,346	46,346	46,327	46,327
Cluster (Constit)	3,357	3,357	3,354	3,354	3,295	3,295	3,295	3,295
Mean DepVar	-0.7	-0.7	-0.7	-0.7	-0.2	-0.2	-0.2	-0.2
Sd DepVar	1.6	1.6	1.6	1.6	1.3	1.3	1.3	1.3

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate/election. All the estimations include district fixed effects and election-party fixed effects. Columns (3) to (6) also control for constituency and candidate-level controls, and Columns (7) and (8) for candidates fixed effects. Standard errors are clustered at the district level. The district-level controls are described in Section 2.4. The candidate-level controls include the gender, an indicator variable equal to one if the candidate is the incumbent and to zero otherwise, and their political party. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

Table F.4: Robustness check: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), 1857-2017, Accounting for spatial correlation

	(1)	(2)	(3)	(4)	(5)
Share of constituency total spending	[0.010221,0.011826]	[0.010237,0.011810]	[0.010098,0.011949]	[0.010058,0.011989]	[0.010081,0.011966]
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Election-Party FE	✓	✓	✓	✓	✓
Candidate FE	✓	✓	✓	✓	✓
Constit-level controls	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓
Candidates	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times
Cluster	Constituencies	Spatial correction	Spatial correction	Spatial-Temporal	Spatial-Temporal
Distance cutoff		50km	100km	100km	100km
Temporal correlation				5 years	5 years
HAC correction					✓
Observations	43,167	43,167	43,167	43,167	43,167

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate-election. The dependent variable is the logarithm of the ratio of the number of votes obtained by a candidate over abstention. All the estimations include election-party fixed effects and candidates fixed effects. Each constituency is defined by the latitude and the longitude of its centroid. We report the 95% confidence intervals in brackets, and the p-values in parentheses. In Column (1), for the sake of comparison, we report the results of the estimation when the standard errors are clustered at the level of the constituency (corresponding to Table 2 Column (4), with candidate and election-party fixed effects). In Column (2), we control for spatial autocorrelation with a distance cutoff of 50 kilometers, using the spatial correction proposed by Conley (1999). This means that the error of each constituency at a given election is assumed to be correlated with the ones of all the constituencies observed at the same election that are located within a radius of 50 kilometers from it (Colella et al., 2020). In columns (3) to (5), we use a distance cutoff of 100 kilometers. Next, in Column (4), we also take into account correlation over time: more precisely, we account both for spatial correlation between observations of the same year and for temporal correlation between observations from the same constituency. We assume that two observations from the same candidate are assumed to be correlated only if they are observed with less than 5 years difference. Finally, we compute Heteroscedasticity-Autocorrelation-Consistent (HAC) standard errors, following Newey and West (1987) We see that, whatever these corrections, our estimated correlation is statistically significant at the one-percent level.

Table F.5: Robustness check: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), 1857-2017, Clustering the standard errors at the candidate level and controlling for region-year fixed effects

	1857-2017				
	(1)	(2)	(3)	(4)	(5)
Share of constituency total spending	0.025***	0.021***	0.018***	0.011***	0.011***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constit FE	✓	✓	✓		
Election-Party FE	✓	✓	✓	✓	✓
Candidate FE				✓	✓
Region-Year FE					✓
Constit-level controls		✓	✓	✓	✓
Candidate-level controls		✓	✓	✓	✓
Candidates	All	All	Mtp times	Mtp times	Mtp times
R-sq (within)	0.24	0.30	0.29	0.15	0.15
Observations	66,777	66,683	46,346	46,327	46,325
Cluster (Candidates)	34,045	34,006	13,734	13,715	13,715
Mean DepVar	-0.7	-0.7	-0.2	-0.2	-0.2
Sd DepVar	1.6	1.6	1.3	1.3	1.3

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate-election. The dependent variable is the logarithm of the ratio of the number of votes obtained by a candidate over abstention. All the estimations include election-party fixed effects. Columns (1) to (3) also control for district fixed effects, Column (4) for candidate fixed effects, and Column (5) for candidate fixed effects as well as election-region fixed effects Standard errors are clustered at the candidate level. The district-level controls are listed in the text. The candidate-level controls include the gender, and an indicator variable equal to one if the candidate is the incumbent and to zero otherwise. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

G Additional tables

Table G.1: Summary statistics: Number of candidates running, 1857-2017

	Number of candidates					
	Mean	Median	sd	Min	Max	N
The pre-modern period						
1857	1.3	1.0	0.4	1	3	331
1859	1.3	1.0	0.4	1	2	328
1865	1.4	1.5	0.4	1	3	333
1868	1.7	2.0	0.5	1	4	349
1874	1.7	2.0	0.6	1	6	347
1880	1.8	2.0	0.4	1	3	347
The (news)paper-only epoch						
1885	2.0	2.0	0.3	1	4	537
1886	1.7	2.0	0.5	1	3	536
1892	2.0	2.0	0.3	1	4	537
1895	1.8	2.0	0.5	1	3	537
1900	1.7	2.0	0.5	1	4	537
1906	2.0	2.0	0.4	1	4	537
1910	2.1	2.0	0.3	1	3	537
1911	1.9	2.0	0.4	1	4	536
1918	2.4	2.0	0.9	1	6	579
The radio days						
1922	2.4	2.0	0.7	1	5	579
1923	2.4	2.0	0.6	1	4	579
1924	2.4	2.0	0.6	1	4	579
1929	2.9	3.0	0.5	1	4	579
1931	2.1	2.0	0.6	1	4	579
1935	2.2	2.0	0.6	1	4	579
1945	2.7	3.0	0.7	1	5	604
The early television time						
1950	3.0	3.0	0.6	2	5	613
1951	2.2	2.0	0.4	2	4	613
1955	2.2	2.0	0.5	2	4	618
1959	2.4	2.0	0.6	2	4	618
1964	2.8	3.0	0.6	2	5	618
1966	2.7	3.0	0.6	2	6	618
1970	2.9	3.0	0.7	2	6	618
The mass-media age						
1974	3.3	3.0	0.7	2	7	623
1975	3.5	3.0	0.7	3	6	623
1979	4.0	4.0	0.9	2	9	623
1983	3.9	4.0	1.0	3	11	633
1987	3.6	3.0	0.7	3	7	633
1992	4.5	4.0	1.1	3	10	634
1997	5.6	5.0	1.4	3	10	641
The Internet era						
2001	5.0	5.0	1.2	2	9	641
2005	5.5	5.0	1.4	3	15	628
2010	6.2	6.0	1.4	3	12	632
2015	6.1	6.0	1.2	3	13	632
2017	5.1	5.0	1.1	3	13	632

Notes: The table presents summary statistics on the number of candidates running in the general elections. The observations are at the constituency level. Note that the minimum number of candidates is always 2 given that in our analysis we have dropped the uncontested constituencies (see the text for details).

Table G.2: Summary statistics: campaign spending of Conservative, Liberal and Labour candidates only

	Spending (cst 2017 €)					
	Mean	Median	sd	Min	Max	N
Total spending per candidate						
1857-1885	141,157	81,316	157,915	0	1,603,151	3,323
1885-1910d	128,201	118,924	54,384	2,489	587,285	7,679
1922-1945	37,131	36,075	17,015	2,022	155,565	9,156
1950-1970	16,154	15,925	5,971	0	33,663	10,500
1974-1997	8,888	9,439	3,994	0	38,536	13,017
2001-2017	7,554	7,188	5,041	0	32,598	9,299
— Normalized by Average Annual Earnings						
1857-1885	27.24	15.63	30.67	0	345.22	3,323
1885-1910d	11.63	10.53	5.26	0	53.16	7,679
1922-1945	4.25	4.14	1.97	0	15.57	9,156
1950-1970	1.39	1.23	0.67	0	3.46	10,500
1974-1997	0.47	0.49	0.22	0	1.97	13,017
2001-2017	0.27	0.26	0.18	0	1.20	9,299
Total spending per constituency						
1857-1885	602,367	419,183	542,492	19,652	3,198,625	349
1885-1910d	345,693	350,253	135,460	100,199	1,163,060	537
1922-1945	129,320	124,909	42,671	32,359	443,076	617
1950-1970	60,382	60,439	12,991	26,760	101,022	653
1974-1997	34,263	34,394	8,835	10,636	68,598	1,065
2001-2017	33,080	32,832	10,397	10,109	104,861	781
Total Spending per candidate & per voter						
1857-1885	26.48	14.16	35.30	0	372.98	3,323
1885-1910d	12.16	11.67	5.36	1	52.97	7,679
1922-1945	0.88	0.84	0.45	0	2.17	9,156
1950-1970	0.29	0.28	0.12	0	0.95	10,500
1974-1997	0.14	0.15	0.06	0	0.56	13,017
2001-2017	0.11	0.10	0.07	0	0.59	9,299
Spending as a share of the legal maximum						
1857-1885	.	.	.	.	.	0
1885-1910d	0.74	0.79	0.23	0	1.49	7,679
1922-1945	0.57	0.57	0.26	0	1.25	9,156
1950-1970	0.75	0.81	0.22	0	1.11	10,500
1974-1997	0.64	0.69	0.28	0	1.23	13,017
2001-2017	0.50	0.48	0.33	0	1.45	9,299

Notes: The table presents summary statistics on spending by candidates of the three main parties – the Conservative, the Liberal and the Labour Parties – running in general elections. For the “total spending per candidate" and the total spending “per candidate & per voter" variables, an observation is a candidate/election. For the “total spending per constituency" variable, an observation is an electoral constituency / election.

Table G.3: Summary statistics: campaign spending of constituencies' top 2 candidates only

	Spending (cst 2017 €)					
	Mean	Median	sd	Min	Max	N
Total spending per candidate						
1857-1885	139,101	82,188	153,433	0	1,603,151	2,255
1885-1910d	128,943	119,953	54,822	2,489	587,285	7,385
1922-1945	38,554	37,757	16,992	243	155,565	7,769
1950-1970	17,279	16,846	5,473	948	33,663	8,632
1974-1997	10,510	11,121	3,233	677	38,536	8,820
2001-2017	9,846	10,851	4,360	0	32,598	6,255
— Normalized by Average Annual Earnings						
1857-1885	26.88	15.70	30.20	0	345.22	2,255
1885-1910d	11.72	10.61	5.30	0	53.16	7,385
1922-1945	4.41	4.31	1.96	0	15.57	7,769
1950-1970	1.48	1.32	0.65	0	3.46	8,632
1974-1997	0.56	0.57	0.18	0	1.97	8,820
2001-2017	0.36	0.39	0.16	0	1.20	6,255
Total spending per constituency						
1857-1885	602,367	419,183	542,492	19,652	3,198,625	349
1885-1910d	345,693	350,253	135,460	100,199	1,163,060	537
1922-1945	129,320	124,909	42,671	32,359	443,076	617
1950-1970	60,382	60,439	12,991	26,760	101,022	653
1974-1997	34,263	34,394	8,835	10,636	68,598	1,065
2001-2017	33,080	32,832	10,397	10,109	104,861	781
Total Spending per candidate & per voter						
1857-1885	32.90	18.75	40.07	0	372.98	2,255
1885-1910d	12.54	12.00	5.16	1	52.97	7,385
1922-1945	0.92	0.90	0.45	0	2.39	7,769
1950-1970	0.31	0.30	0.11	0	0.95	8,632
1974-1997	0.16	0.17	0.05	0	0.56	8,820
2001-2017	0.14	0.16	0.06	0	0.59	6,255
Spending as a share of the legal maximum						
1857-1885	.	.	.	.	.	0
1885-1910d	0.75	0.80	0.22	0	1.49	7,385
1922-1945	0.60	0.60	0.26	0	1.32	7,769
1950-1970	0.80	0.86	0.17	0	1.11	8,632
1974-1997	0.76	0.83	0.22	0	1.23	8,820
2001-2017	0.65	0.73	0.28	0	1.45	6,255

Notes: The table presents summary statistics on spending by candidates who arrive in either the first or the second position in the constituency in terms of number of votes received. For the "total spending per candidate" and the total spending "per candidate & per voter" variables, an observation is a candidate/election. For the "total spending per constituency" variable, an observation is an electoral constituency / election.

Table G.4: Summary statistics: total spending per candidate

	Spending (cst 2017 €)					
	Mean	Median	sd	Min	Max	N
Total spending per candidate						
1857	82,343	35,434	116,863	0	848,929	344
1859	72,767	44,277	86,680	94	899,016	303
1865	142,524	73,476	168,240	0	1,532,009	472
1868	166,225	98,809	172,553	0	1,603,151	696
1874	121,047	75,097	133,231	0	990,510	710
1880	186,762	125,674	174,212	0	1,471,712	803
1885	126,413	118,458	49,774	21,508	309,227	1,126
1886	99,370	89,698	45,174	2,489	246,645	820
1892	121,725	115,499	48,216	16,651	273,135	1,061
1895	119,842	111,620	50,483	16,624	289,385	903
1900	123,988	116,127	51,867	24,463	295,979	793
1906	138,953	129,645	57,513	28,072	511,669	1,106
1910	143,884	137,454	62,108	26,239	587,285	1,155
1911	129,422	119,607	58,199	20,940	581,525	948
1922	39,436	39,515	14,384	2,609	95,805	1,357
1923	40,109	40,577	16,060	4,760	97,702	1,373
1924	38,107	38,687	15,892	1,880	84,268	1,357
1929	42,449	41,974	18,731	3,275	141,044	1,683
1931	34,075	32,878	18,074	2,298	125,256	1,206
1935	37,366	35,025	21,102	1,400	155,565	1,282
1945	26,330	25,442	10,618	243	78,107	1,629
1950	20,240	21,949	7,236	0	33,663	1,845
1951	20,539	21,270	5,497	0	32,708	1,356
1955	16,710	17,404	5,031	695	27,034	1,381
1959	15,404	16,020	4,530	0	27,071	1,507
1964	13,916	14,688	4,425	118	25,901	1,717
1966	11,776	12,464	4,197	70	24,242	1,678
1970	11,377	11,833	4,871	14	25,249	1,792
1974	9,526	9,709	4,508	10	34,260	2,067
1975	7,692	7,913	3,864	8	16,023	2,193
1979	6,577	6,266	4,407	5	17,649	2,463
1983	7,326	7,619	4,360	0	16,723	2,463
1987	8,782	9,623	4,431	0	38,536	2,233
1992	6,625	5,735	4,615	0	19,281	2,833
1997	5,788	4,553	4,578	0	16,920	3,555
2001	5,561	3,561	4,883	0	23,185	3,186
2005	5,511	3,160	5,210	0	32,598	3,433
2010	4,467	1,969	4,776	0	22,265	3,764
2015	4,677	2,067	5,178	0	24,384	3,441
2017	4,858	2,278	5,087	0	23,114	3,146

Notes: The table presents summary statistics on spending by candidates running in general elections. An observation is a candidate/election.

Table G.5: Summary statistics: total spending per candidate and per voter

	Spending (cst 2017 €)					
	Mean	Median	sd	Min	Max	N
Per candidate & per voter						
1857	22.98	14.03	28.87	0.00	201.1	344
1859	29.74	16.55	39.22	0.10	242.8	303
1865	41.24	25.36	48.06	0.00	373.0	472
1868	23.97	13.09	32.07	0.00	323.7	696
1874	16.91	9.12	21.53	0.00	167.9	710
1880	28.56	14.07	36.64	0.00	278.2	803
1885	14.18	13.94	6.12	1.12	53.0	1,126
1886	11.27	11.05	5.23	0.57	30.1	820
1892	12.50	12.06	5.31	1.17	36.6	1,061
1895	11.92	11.24	5.62	0.61	33.8	903
1900	11.73	10.96	5.33	1.30	41.9	793
1906	11.97	11.32	5.24	1.03	30.8	1,106
1910	11.56	11.07	4.91	1.04	31.0	1,155
1911	10.58	9.93	4.74	1.27	30.2	948
1922	1.12	1.16	0.42	0.09	2.4	1,357
1923	1.12	1.16	0.46	0.07	2.2	1,373
1924	1.05	1.08	0.45	0.04	2.0	1,357
1929	0.88	0.88	0.39	0.05	1.8	1,683
1931	0.69	0.66	0.37	0.04	1.8	1,206
1935	0.73	0.68	0.41	0.02	1.9	1,282
1945	0.51	0.51	0.21	0.01	1.2	1,629
1950	0.38	0.40	0.14	0.00	1.0	1,845
1951	0.38	0.39	0.11	0.00	0.8	1,356
1955	0.31	0.32	0.10	0.01	0.7	1,381
1959	0.28	0.29	0.09	0.00	0.6	1,507
1964	0.25	0.26	0.08	0.00	0.6	1,717
1966	0.21	0.22	0.08	0.00	0.5	1,678
1970	0.19	0.20	0.09	0.00	0.7	1,792
1974	0.16	0.16	0.08	0.00	0.6	2,067
1975	0.13	0.13	0.07	0.00	0.4	2,193
1979	0.11	0.10	0.07	0.00	0.4	2,463
1983	0.11	0.12	0.07	0.00	0.5	2,463
1987	0.13	0.15	0.07	0.00	0.5	2,233
1992	0.10	0.09	0.07	0.00	0.4	2,833
1997	0.09	0.07	0.07	0.00	0.4	3,555
2001	0.08	0.05	0.07	0.00	0.5	3,186
2005	0.08	0.05	0.08	0.00	0.6	3,433
2010	0.06	0.03	0.07	0.00	0.3	3,764
2015	0.07	0.03	0.07	0.00	0.4	3,441
2017	0.07	0.03	0.07	0.00	0.4	3,146

Notes: The table presents summary statistics on spending by candidates running in general elections. An observation is a candidate/election.

Table G.6: Summary statistics: total spending per voter

	Spending (cst 2017 €)					
	Mean	Median	sd	Min	Max	N
Total spending per voter						
1857	232,181	117,378	298,075	9,696	1,473,405	122
1859	206,060	136,049	217,932	13,759	1,441,544	107
1865	417,833	221,777	488,555	3,366	3,198,625	161
1868	480,052	253,292	475,042	19,824	2,314,893	241
1874	356,612	214,589	406,793	7,431	2,988,802	241
1880	518,928	377,987	466,746	34,897	2,750,324	289
1885	271,644	274,281	101,946	68,990	853,640	524
1886	208,398	187,029	94,454	25,535	692,542	391
1892	257,272	253,223	94,475	67,596	609,950	502
1895	259,513	248,191	102,706	39,639	836,048	417
1900	261,497	245,302	105,536	53,411	684,172	376
1906	303,121	301,460	123,185	79,905	917,578	507
1910	312,969	318,186	133,941	99,307	1,163,060	531
1911	275,095	265,634	124,133	73,463	1,153,530	446
1922	99,841	93,142	40,909	28,278	352,970	536
1923	101,604	98,694	37,646	32,190	398,063	542
1924	93,850	88,655	35,720	27,292	340,605	551
1929	124,031	122,319	41,038	35,425	443,076	576
1931	77,684	72,140	30,436	24,707	285,561	529
1935	87,256	80,115	35,966	27,261	304,798	549
1945	71,249	69,127	27,439	11,528	280,190	602
1950	60,918	60,793	12,709	24,234	101,022	613
1951	45,434	45,006	9,657	20,528	83,566	613
1955	37,341	36,482	9,030	13,749	70,699	618
1959	37,563	36,662	9,763	13,925	78,383	618
1964	38,662	37,674	10,483	13,864	74,935	618
1966	31,975	30,720	8,476	8,988	58,947	618
1970	32,990	32,158	9,674	9,495	71,889	618
1974	31,604	31,722	8,653	10,370	65,991	623
1975	27,078	27,511	6,949	9,337	44,927	623
1979	26,002	25,813	7,051	6,460	49,643	623
1983	28,504	28,612	7,388	9,624	51,895	633
1987	30,979	31,561	7,680	8,902	55,062	633
1992	29,604	30,335	8,135	11,406	56,207	634
1997	32,098	31,979	9,706	10,255	68,598	641
2001	27,640	27,244	8,708	7,699	58,920	641
2005	30,127	29,661	10,378	7,072	104,861	628
2010	26,603	26,693	9,098	3,236	61,246	632
2015	26,168	25,349	10,525	1,675	69,532	615
2017	24,181	23,945	8,663	6,325	51,612	632

Notes: The table presents summary statistics on spending by candidates running in general elections. An observation is a constituency/election.

Table G.7: Summary statistics: candidates' characteristics

(a) **All**

	Mean	SD	Min	Max	N
Gender (male=1)	0.88	0.32	0	1	66,808
Incumbent	0.27	0.45	0	1	66,808
Elected before	0.03	0.17	0	1	66,808
Titles					
Nobility title	0.06	0.23	0	1	66,808
Grade in the army	0.04	0.19	0	1	66,808
Civilian honor	0.02	0.14	0	1	66,808
Minister of a religion	0.00	0.05	0	1	66,808
Political parties					
Conservative Party	0.31	0.46	0	1	66,808
Liberal Party	0.25	0.43	0	1	66,808
Labour Party	0.23	0.42	0	1	66,808
SNP	0.01	0.12	0	1	66,808
UKIP	0.04	0.19	0	1	66,808
Other	0.16	0.37	0	1	66,808

(b) **With biographical information**

	Mean	SD	Min	Max	N
Age	45	11.30	18	88	37,790
Undergrad. degree or higher	0.83	0.37	0	1	37,790
Oxbridge Graduate	0.26	0.44	0	1	37,790
High-skilled (SEC1-3) occupation	0.88	0.32	0	1	37,790
Local Political Activity	0.55	0.50	0	1	37,790
Trade Union Affiliate	0.31	0.46	0	1	37,790
Frontbencher (in last parliament)	0.05	0.22	0	1	37,790

Notes: The table presents summary statistics on candidates' characteristics. An observation is a candidate-election. The time period is 1857-2017. Variables are described in more details in the text. Data on biographical information come from Cagé and Dewitte (2020).

Table G.8: Summary statistics: constituency-level electoral controls, 1857-2017

	1857-2017					
	Mean	Median	sd	Min	Max	N
Controls always included						
Number of candidates running	3.3	3.0	1.5	2	15	20,546
Nb. consecutive GEs won by incumb. party	3.0	2.0	2.3	0	12	20,546
1st-2nd margin at last election	0.12	0.14	0.31	-1.0	1.0	20,546
Seat uncontested at last election	0.06	0.00	0.23	0	1	20,546
Total population	80,951	78,091	36,930	1,736	2,142,503	20,546
Controls included in some specifications						
Number of registered electors	48,237	53,390	25,793	174	258,712	20,546
Total spending per reg. vot.	9.6	0.8	31.5	0	648	20,546
Turnout	74.6	75.5	9.2	26	100	20,546

Notes: The table presents summary statistics on the constituencies' characteristics that are included over the whole 1857-2017 time period. An observation is a constituency-election. Variables are described in more details in the text.

Table G.9: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), depending on the time period

	1857-1880		1885-1910d		1922-1945		1950-1970		1974-1997		2001-2017	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Share of total spending	0.006***	0.005***	0.004***	0.003***	0.015***	0.008***	0.021***	0.009***	0.032***	0.017***	0.025***	0.012***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constit FE	✓		✓		✓		✓		✓		✓	
Election-Party FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate FE		✓		✓		✓		✓		✓		✓
Constit-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidates	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times
R-sq (within)	0.15	0.24	0.11	0.29	0.34	0.26	0.45	0.38	0.40	0.34	0.38	0.29
Observations	2,936	1,791	7,685	6,089	8,424	6,171	9,324	6,786	15,122	8,795	15,246	7,983
Cluster (Constit)	342	300	522	522	513	507	517	517	894	885	673	673
Mean DepVar	-0.0	0.0	0.7	0.8	0.0	0.2	0.1	0.4	-1.0	-0.4	-2.0	-1.5
Sd DepVar	1.1	1.0	0.7	0.7	0.7	0.6	0.9	0.8	1.7	1.3	1.6	1.5

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate/election. All the estimations include district fixed effects, and election-party fixed effects. Odd columns also control for party fixed effects, and even columns for candidates fixed effects. Standard errors are clustered at the district level. The district-level controls are listed in the text. The candidate-level controls include the gender, an indicator variable equal to one if the candidate is the incumbent and to zero otherwise, their political party, and their political party interacted with time. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

Table G.10: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), depending on the time period, reporting all the controls.

	1857-1880		1885-1910d		1922-1945		1950-1970		1974-1997		2001-2017	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Share of total spending	0.006***	0.005***	0.004***	0.003***	0.015***	0.008***	0.021***	0.009***	0.032***	0.017***	0.025***	0.012***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Candidate-level controls												
Gender (female=1)	0.000		0.000		-0.149***		-0.037*		-0.043***		0.021*	
	(.)		(.)		(0.028)		(0.020)		(0.015)		(0.011)	
Incumbent	0.197***	0.018	0.208***	-0.043***	0.325***	0.027*	0.340***	0.090***	0.324***	0.069***	0.279***	0.077***
	(0.021)	(0.055)	(0.011)	(0.015)	(0.014)	(0.016)	(0.014)	(0.013)	(0.013)	(0.013)	(0.016)	(0.022)
Elected before	0.091**	0.039	0.106***	-0.012	0.230***	-0.046*	0.204***	0.054**	0.295***	0.071**	0.558***	0.213***
	(0.044)	(0.096)	(0.019)	(0.029)	(0.018)	(0.025)	(0.027)	(0.027)	(0.031)	(0.028)	(0.071)	(0.080)
Grade in the army	-0.020**	-0.002	-0.007**	0.007	-0.013***	-0.006	-0.004	0.005	0.036	-0.031***	-0.100	0.000
	(0.009)	(0.030)	(0.003)	(0.008)	(0.003)	(0.006)	(0.005)	(0.005)	(0.055)	(0.009)	(0.075)	(.)
Nobility title	-0.021***	0.036*	-0.005*	0.004	-0.019***	0.005	-0.011**	0.005	-0.007	-0.005	0.031	0.000
	(0.007)	(0.020)	(0.003)	(0.007)	(0.004)	(0.008)	(0.005)	(0.005)	(0.010)	(0.008)	(0.022)	(.)
Candidate has a civilian honor (D)	0.124	0.163	-0.013	-0.041	0.070***	-0.044	0.028	-0.021	0.075	0.089*	0.000	0.000
	(0.114)	(0.381)	(0.033)	(0.054)	(0.020)	(0.037)	(0.018)	(0.019)	(0.046)	(0.053)	(.)	(.)
Candidate is a minister of a religion (D)	-0.515***	0.000	-0.714**	-2.603***	-0.052	-0.191	0.144	0.000	0.133**	-0.103	0.411***	0.000
	(0.146)	(.)	(0.341)	(0.256)	(0.098)	(0.170)	(0.146)	(.)	(0.058)	(0.088)	(0.043)	(.)
Electoral environment												
Total population	-0.000***	-0.000**	0.000	-0.000***	0.000**	-0.000***	0.000***	0.000	-0.000	-0.000	0.000***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Number of candidates running	-0.152***	-0.134**	-0.191***	-0.173***	-0.191***	-0.182***	-0.009	-0.028***	-0.051***	-0.029***	-0.054***	-0.027***
	(0.045)	(0.052)	(0.045)	(0.031)	(0.016)	(0.018)	(0.012)	(0.010)	(0.006)	(0.005)	(0.005)	(0.005)
Nb. consecutive GEs won by incumbent party	-0.004	-0.003	-0.013***	-0.013***	0.001	-0.006	0.000	-0.008***	0.008***	0.000	0.002	0.004
	(0.018)	(0.021)	(0.003)	(0.005)	(0.004)	(0.006)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Margin btw 1st and 2nd cand. at last election	0.023	-0.123	-0.481***	-0.534***	-0.172***	-0.212***	-0.305***	-0.843***	-0.121**	-0.396***	0.241***	0.041
	(0.146)	(0.177)	(0.066)	(0.081)	(0.034)	(0.049)	(0.049)	(0.050)	(0.054)	(0.059)	(0.053)	(0.073)
uncontested_last	-0.049	-0.264	-0.580***	-0.696***	-0.256***	-0.281***	-0.298**	-1.129***	0.000	0.000	0.000	0.000
	(0.172)	(0.194)	(0.076)	(0.093)	(0.050)	(0.067)	(0.122)	(0.078)	(.)	(.)	(.)	(.)
Total spending in Constit (cst €per elector)	0.002***	0.002***	0.022***	0.023***	0.183***	0.159***	0.380***	0.377***	0.529***	0.626***	0.364***	0.197**
	(0.000)	(0.000)	(0.002)	(0.003)	(0.015)	(0.016)	(0.034)	(0.040)	(0.058)	(0.072)	(0.070)	(0.081)
Census												
Total population (County-level)	-0.000	0.000	-0.000***	0.000*								
	(0.000)	(0.000)	(0.000)	(0.000)								
Sh. pop. occupied (County-level)	-13.680**	-6.628	0.410	2.875*								
	(6.492)	(4.239)	(1.736)	(1.658)								
Sh. male population (County-level)	7.714	4.216	0.040*	0.056***								
	(6.817)	(4.844)	(0.023)	(0.018)								
Sh. males emp. occupied (County-level)	-0.341	-0.154	3.181**	1.539								
	(6.693)	(2.110)	(1.454)	(0.996)								
Sh. emp. in agriculture, forestry and fishing (County-level)	-9.353**	-0.045	-0.778	-3.022*								
	(3.817)	(4.269)	(1.678)	(1.671)								
Sh. emp. in mining and quarrying (County-level)	-10.165**	-2.384	-4.433***	-2.675								
	(4.783)	(4.369)	(1.461)	(1.754)								
Sh. emp. in food, drink and tobacco (County-level)	-14.034	-9.865	-7.531***	3.889								
	(22.042)	(16.565)	(2.847)	(3.033)								
Sh. emp. in chemicals and allied industries (County-level)	115.254*	-26.471	-5.363	-1.849								
	(59.913)	(32.113)	(9.574)	(5.176)								
Sh. emp. in metal manufacture (County-level)	-13.983**	-0.467	-7.313***	-3.740								
	(6.850)	(6.973)	(2.615)	(2.667)								
Sh. emp. in mechanical engineering (County-level)	8.495	19.549	-2.023	-3.569								
	(18.718)	(14.543)	(3.205)	(2.833)								
Sh. emp. in instrument engineering (County-level)	63.026	103.214*	79.623***	10.584								
	(192.506)	(54.906)	(15.727)	(14.931)								
Sh. emp. in shipbuilding and marine engineering (County-level)	-55.675***	-39.131**	1.782	2.121								
	(21.055)	(19.774)	(3.552)	(3.113)								
Sh. emp. in vehicles (County-level)	-7.042	23.187	5.853	14.104***								
	(43.168)	(35.348)	(4.509)	(4.200)								
Sh. emp. in metal goods not elsewhere specified (County-level)	-4.396	-3.910	0.397	-3.986								
	(15.406)	(5.939)	(2.475)	(2.653)								
Sh. emp. textile (County-level)	-8.798	1.847	-0.032	-2.082								
	(6.800)	(4.294)	(1.831)	(1.759)								
Sh. emp. leather goods and fur (County-level)	-77.792*	-46.307	-4.293	-5.275								
	(40.168)	(42.799)	(10.564)	(8.348)								
Sh. emp. clothing and footwear (County-level)	0.181	7.908	-1.225	-1.681								
	(6.658)	(6.565)	(1.872)	(1.807)								
Sh. emp. bricks, pottery, glass, cement, etc (County-level)	4.018	-1.303	-2.612	-0.559								
	(11.873)	(6.220)	(2.863)	(2.543)								
Sh. emp. timber, furniture etc. (County-level)	-4.189	5.840	-12.990*	-9.603**								
	(8.525)	(8.764)	(7.346)	(4.406)								
Sh. emp. paper, printing and publishing (County-level)	66.190*	-0.868	5.415	-9.134*								
	(36.087)	(17.605)	(5.999)	(4.699)								
Sh. emp. manufacturing industries (County-level)	-85.747**	-46.409	2.035	-5.988								
	(39.047)	(34.893)	(7.741)	(6.796)								
Sh. emp. in construction (County-level)	-16.664**	0.523	-0.451	0.584								
	(7.518)	(7.039)	(2.632)	(2.949)								
Sh. emp. in gas, electricity and water (County-level)	-415.440***	-200.111*	5.659	-13.592								
	(127.671)	(120.881)	(5.583)	(9.309)								
Sh. emp. in transport and communication (County-level)	3.463	1.907	-3.565	-4.644								
	(8.235)	(8.128)	(2.754)	(2.952)								
Sh. emp. in distributive trades. (County-level)	-109.225	-42.074	-10.471	-25.029***								
	(72.652)	(47.449)	(9.834)	(9.120)								
Sh. emp. in insurance, banking, finance and business (County-level)	77.024	-0.701	6.845	45.284***								
	(126.688)	(121.022)	(14.796)	(16.487)								
Sh. emp. in professional and scientific services (County-level)	-28.992	-13.967	-18.346***	-27.293***								
	(35.123)	(28.503)	(6.002)	(6.955)								
Sh. emp. in miscellaneous services. (County-level)	-6.302	3.760	-0.436	1.209								
	(6.054)	(5.224)	(1.916)	(2.152)								
Sh. emp. in public administration and defence (County-level)	-13.079**	-2.067	-5.424***	-4.712**								
	(5.439)	(4.960)	(1.900)	(2.178)								
Constit FE	✓		✓		✓		✓		✓		✓	
Election-Party FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate FE		✓		✓		✓		✓		✓		✓
Constit-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidates	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times
R-sq (within)	0.15	0.24	0.17	0.29	0.34	0.26	0.45	0.38	0.40	0.34	0.38	0.29
Observations	2,936	1,791	7,685	6,089	8,424	6,171	9,324	6,786	15,122	8,795	15,246	7,983
Cluster (Constit)	342	300	522	522	513	507	517	517	894	885	673	673
Mean DepVar	-0.0	0.0	0.7	0.8	0.0	0.2	0.1	0.4	-1.0	-0.4	-2.0	-1.5
Sd DepVar	1.1	1.0	0.7	0.7	0.7	0.6	0.9	0.8	1.7	1.3	1.6	1.5

Notes: See Table G.9 above.

Table G.11: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), depending on the time period, reporting all the controls (continued).

	1857-1880		1885-1910d		1922-1945		1950-1970		1974-1997		2001-2017	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Sh. female population					-0.362	0.732	2.588***	-0.043	-4.052*	0.244	1.986	-2.383
					(0.754)	(1.139)	(0.793)	(0.973)	(2.111)	(1.762)	(1.771)	(1.910)
Sh. occupied People					1.521***	0.349						
					(0.546)	(0.494)						
Sh. of female electorate					-0.005	0.101						
					(0.504)	(0.824)						
Sh. occupied people in agricultural occupations					0.955*	0.598						
					(0.555)	(0.463)						
Sh. occupied people in mining and quarrying occupations					1.193***	0.410						
					(0.459)	(0.381)						
Sh. occupied people workers in the treatment of non-metalliferous mine and quarr					-7.301**	-1.505						
					(3.376)	(4.115)						
Sh. occupied people makers of bricks, pottery and glass					0.857	1.370						
					(0.710)	(0.928)						
Sh. occupied people workers in chemical processes					2.529	4.211**						
					(1.820)	(1.863)						
Sh. occupied people metal workers					2.698***	2.564***						
					(0.482)	(0.501)						
Sh. occupied people workers in precious metals and electro plate					-6.174**	-5.087**						
					(2.398)	(2.392)						
Sh. occupied people electricians					2.494	1.270						
					(2.738)	(2.280)						
Sh. occupied people makers of watches, clocks, and scientific instruments					-8.335	8.442						
					(16.163)	(13.253)						
Sh. occupied people in workers in skins and leather					9.957**	0.192						
					(3.935)	(2.151)						
Sh. occupied people textile workers					0.671	1.464***						
					(0.481)	(0.395)						
Sh. occupied people makers of textile goods and articles of dress					3.243***	0.866**						
					(0.913)	(0.435)						
Sh. occupied people makers of foods, drinks, and tobacco					3.883***	8.692***						
					(1.366)	(1.591)						
Sh. occupied people workers in wood and furniture					1.120	0.721						
					(2.115)	(1.574)						
Sh. occupied people workers in paper and books					3.182**	-0.052						
					(1.607)	(1.619)						
Sh. occupied people printers and photographers					-1.740	-2.466						
					(1.412)	(1.684)						
Sh. occupied people builders					1.871**	0.252						
					(0.841)	(0.927)						
Sh. occupied people painters and decorators					1.387	-1.062						
					(0.867)	(1.357)						
Sh. occupied people workers in other materials					-2.584	-3.413						
					(2.075)	(2.637)						
Sh. occupied people workers in mixed or undefined materials					-3.236***	-2.830**						
					(1.185)	(1.370)						
Sh. occupied people persons employed in transport and communication					0.570	-0.108						
					(0.951)	(0.624)						
Sh. occupied people in commercial, finance, and insurance occupations					-0.813	3.465***						
					(1.171)	(0.997)						
Sh. occupied people employed in public administration and defence					1.502*	0.211						
					(0.796)	(0.551)						
Sh. occupied people in professional occupations					4.998*	4.305*						
					(2.582)	(2.249)						
Sh. occupied people engaged in entertainments and sport					2.861	-10.846**						
					(5.192)	(5.371)						
Sh. occupied people engaged in personal service					1.754*	-1.314**						
					(0.927)	(0.586)						
Sh. occupied people clerks and draughtsmen; typists					3.948***	-0.277						
					(0.752)	(0.606)						
Sh. occupied people warehousemen, storekeepers and packers					1.336	-5.865***						
					(2.240)	(1.718)						
Sh. occupied people stationary engine drivers, dynamo and motor attendants					0.768	3.614						
					(4.936)	(5.491)						
Constit FE	✓		✓		✓		✓		✓		✓	
Election-Party FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate FE		✓		✓		✓		✓		✓		✓
Constit-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidates	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times
R-sq (within)	0.15	0.24	0.17	0.29	0.34	0.26	0.45	0.38	0.40	0.34	0.38	0.29
Observations	2,936	1,791	7,685	6,089	8,424	6,171	9,324	6,786	15,122	8,795	15,246	7,983
Cluster (Constit)	342	300	522	522	513	507	517	517	894	885	673	673
Mean DepVar	-0.0	0.0	0.7	0.8	0.0	0.2	0.1	0.4	-1.0	-0.4	-2.0	-1.5
Sd DepVar	1.1	1.0	0.7	0.7	0.7	0.6	0.9	0.8	1.7	1.3	1.6	1.5

Notes: See Table G.9 above.

Table G.12: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), depending on the time period, reporting all the controls (continued).

	1857-1880		1885-1910d		1922-1945		1950-1970		1974-1997		2001-2017	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Sh. female population					-0.362	0.732	2.588***	-0.043	-4.052*	0.244	1.986	-2.383
					(0.754)	(1.139)	(0.793)	(0.973)	(2.111)	(1.762)	(1.771)	(1.910)
Sh. Pop. 15-29							-0.807	-1.629*	-4.185***	-4.103***	1.066	-3.423***
							(0.683)	(0.861)	(0.985)	(0.923)	(0.967)	(0.987)
Sh. Pop. 30-44							2.386***	0.708	-6.784***	-5.034***	0.929	-4.022**
							(0.895)	(0.998)	(1.589)	(1.476)	(1.506)	(1.632)
Sh. Pop. 45-64							-0.600	0.223	-2.188**	-2.773***	1.680	-1.943
							(0.552)	(0.657)	(0.983)	(0.900)	(1.150)	(1.333)
Sh. Pop. 65plus							0.155	-0.287	-1.868	-4.103***	-0.398	0.247
							(0.631)	(0.654)	(1.179)	(1.115)	(1.449)	(1.527)
Sh. Born in UK							0.603**	2.163***	0.395	-2.233*	-0.644	1.018***
							(0.276)	(0.230)	(2.242)	(1.280)	(0.573)	(0.380)
Sh. in Routine Occup.							-1.857***	-2.123***				
							(0.259)	(0.357)				
Sh. in Skilled Manual Occup.							-1.021***	-1.189***				
							(0.205)	(0.275)				
Sh. in Partly-Skilled Manual Occup.							-0.753**	-1.432***				
							(0.306)	(0.325)				
Sh. in Unskilled Manual Occup.							-1.135***	-2.126***				
							(0.347)	(0.385)				
Sh. in Secondary Sector							-0.089	0.503***	-0.754**	-0.081		
							(0.110)	(0.095)	(0.309)	(0.319)		
Sh. in Tertiary Sector							0.196**	-0.349***	-0.673**	-0.830**		
							(0.097)	(0.103)	(0.289)	(0.325)		
Constit FE	✓		✓		✓		✓		✓		✓	
Election-Party FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate FE		✓		✓		✓		✓		✓		✓
Constit-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidates	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times
R-sq (within)	0.15	0.24	0.17	0.29	0.34	0.26	0.45	0.38	0.40	0.34	0.38	0.29
Observations	2,936	1,791	7,685	6,089	8,424	6,171	9,324	6,786	15,122	8,795	15,246	7,983
Cluster (Constit)	342	300	522	522	513	507	517	517	894	885	673	673
Mean DepVar	-0.0	0.0	0.7	0.8	0.0	0.2	0.1	0.4	-1.0	-0.4	-2.0	-1.5
Sd DepVar	1.1	1.0	0.7	0.7	0.7	0.6	0.9	0.8	1.7	1.3	1.6	1.5

Notes: See Table G.9 above.

Table G.13: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), depending on the time period, reporting all the controls (continued).

	1857-1880		1885-1910d		1922-1945		1950-1970		1974-1997		2001-2017	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Sh. female population					-0.362	0.732	2.588***	-0.043	-4.052*	0.244	1.986	-2.383
					(0.754)	(1.139)	(0.793)	(0.973)	(2.111)	(1.762)	(1.771)	(1.910)
Sh. Pop. 15-29							-0.807	-1.629*	-4.185***	-4.103***	1.066	-3.423***
							(0.683)	(0.861)	(0.985)	(0.923)	(0.967)	(0.987)
Sh. Pop. 30-44							2.386***	0.708	-6.784***	-5.034***	0.929	-4.022**
							(0.895)	(0.998)	(1.589)	(1.476)	(1.506)	(1.632)
Sh. Pop. 45-64							-0.600	0.223	-2.188**	-2.773***	1.680	-1.943
							(0.552)	(0.657)	(0.983)	(0.900)	(1.150)	(1.333)
Sh. Pop. 65plus							0.155	-0.287	-1.868	-4.103***	-0.398	0.247
							(0.631)	(0.654)	(1.179)	(1.115)	(1.449)	(1.527)
Sh. Born in UK							0.603**	2.163***	0.395	-2.233*	-0.644	1.018***
							(0.276)	(0.230)	(2.242)	(1.280)	(0.573)	(0.380)
Sh. Higher-Education degree							0.946	0.091	-0.135	-0.011	-0.896*	-1.119*
							(1.744)	(1.295)	(0.137)	(0.163)	(0.540)	(0.578)
Sh. in Secondary Sector							-0.089	0.503***	-0.754**	-0.081		
							(0.110)	(0.095)	(0.309)	(0.319)		
Sh. in Tertiary Sector							0.196**	-0.349***	-0.673**	-0.830**		
							(0.097)	(0.103)	(0.289)	(0.325)		
Sh. Born in non-EU European Country									2.780	-3.049***		
									(1.781)	(1.163)		
Sh. Born in Rest of the World									0.036	-3.398**		
									(2.454)	(1.419)		
Average persons per room									-0.283*	-0.005	0.442***	0.192
									(0.157)	(0.078)	(0.150)	(0.173)
Nb. Households									0.000	0.000		
									(0.000)	(0.000)		
Sh. Lone Parents									-10.341***	-15.368***		
									(2.320)	(2.393)		
Sh.Pop. Active Unemp									0.071	-0.758		
									(0.487)	(0.535)		
Sh. Active (Females)									0.940***	0.528		
									(0.353)	(0.337)		
Sh. Active Self-emp.									0.487	0.592		
									(0.734)	(0.626)		
Sh. in SEC1-3 occupations (high skilled)									1.626***	1.817***	-0.199	-0.004
									(0.329)	(0.293)	(0.717)	(0.607)
Sh. in SEC4-7 occupations (medium skilled)									1.391***	1.307***	-1.077	-0.087
									(0.366)	(0.350)	(0.730)	(0.734)
Sh. Born in other UE Country											-0.283	1.019
											(0.694)	(0.988)
Sh. Religion Christian											-0.169	-0.937***
											(0.337)	(0.288)
Sh. Religion Jewish											-0.956	-2.817***
											(1.565)	(0.977)
Sh. Religion Muslim											-1.083*	-0.574*
											(0.610)	(0.346)
Sh. No qualification											1.315	-2.844***
											(1.093)	(0.735)
Sh. High-School degree (GSCE or A-level)											-1.188*	-1.875***
											(0.688)	(0.690)
Sh. Active in Employment											0.792*	0.801*
											(0.476)	(0.457)
Sh. Inactive Retired											-0.105	-1.772
											(0.959)	(1.121)
Sh. Lone Parents (Females)											-5.891**	-9.144***
											(2.693)	(2.732)
Sh. Employed in energy											0.337	-2.511
											(1.641)	(2.067)
Sh. Employed in mining											-2.357***	-1.502***
											(0.393)	(0.376)
Sh. Employed in manufacture											-1.972***	-0.722*
											(0.420)	(0.409)
Sh. Employed in service											-0.334*	-0.756***
											(0.180)	(0.244)
Constit FE	✓		✓		✓		✓		✓		✓	
Election-Party FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate FE		✓		✓		✓		✓		✓		✓
Constit-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidates	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times
R-sq (within)	0.15	0.24	0.17	0.29	0.34	0.26	0.45	0.38	0.40	0.34	0.38	0.29
Observations	2,936	1,791	7,685	6,089	8,424	6,171	9,324	6,786	15,122	8,795	15,246	7,983
Cluster (Constit)	342	300	522	522	513	507	517	517	894	885	673	673
Mean DepVar	-0.0	0.0	0.7	0.8	0.0	0.2	0.1	0.4	-1.0	-0.4	-2.0	-1.5
Sd DepVar	1.1	1.0	0.7	0.7	0.7	0.6	0.9	0.8	1.7	1.3	1.6	1.5

Notes: See Table G.9 above.

Table G.14: Effect of candidates' share of total spending on vote share (logarithm of the ratio of the number of votes over abstention), depending on the expenses categories, 1885-2017, with Constituency fixed effects

	1885-2017				
	(1)	(2)	(3)	(4)	(5)
Printing & Advertising	0.0201***				0.0167***
	(0.0004)				(0.0004)
Agents & Other Paid Staff		0.0051***			0.0019***
		(0.0001)			(0.0001)
Meetings			0.0039***		0.0016***
			(0.0001)		(0.0001)
Other expenditures				0.0071***	0.0024***
				(0.0002)	(0.0001)
Constit FE	✓	✓	✓	✓	✓
Election-Party FE	✓	✓	✓	✓	✓
Constit-level controls	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓
Candidates	All	All	All	All	All
R-sq (within)	0.31	0.20	0.19	0.22	0.33
Observations	60,349	60,349	60,349	60,349	60,349
Cluster (Constit)	3,012	3,012	3,012	3,012	3,012
Mean DepVar	-0.6	-0.6	-0.6	-0.6	-0.6
Sd DepVar	1.6	1.6	1.6	1.6	1.6

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. Time period is 1885-2017, with the exception of 2005. An observation is a candidate-election. The dependent variable is the logarithm of the ratio of the number of votes obtained by a candidate over abstention. All the estimations include election-party fixed effects and constituency fixed effects. Standard errors are clustered at the district level. Variables are described in more detail in the text.

Table G.15: Robustness check: Effect of candidates' absolute spending (per voter) on vote share, depending on the time period

	1857-1880		1885-1910d		1922-1945		1950-1970		1974-1997		2001-2017	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Total spending (per elec.)	0.016***	0.017***	0.098***	0.083***	1.558***	1.111***	5.399***	3.649***	14.110***	8.280***	12.563***	8.054***
	(0.002)	(0.002)	(0.010)	(0.014)	(0.094)	(0.105)	(0.258)	(0.237)	(0.420)	(0.479)	(0.386)	(0.424)
Total spending squared	-0.000***	-0.000***	-0.003***	-0.002***	-0.380***	-0.256***	-3.872***	-2.905***	-24.513***	-12.149***	-24.374***	-14.624***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.040)	(0.046)	(0.361)	(0.341)	(1.610)	(1.267)	(1.587)	(1.457)
Election FE												
Constit FE	✓		✓		✓		✓		✓		✓	
Party FE												
Election-Party FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate FE		✓		✓		✓		✓		✓		✓
Constit-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidates	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times
R-sq (within)	0.17	0.28	0.17	0.30	0.39	0.31	0.49	0.43	0.48	0.39	0.46	0.37
Observations	2,936	1,791	7,685	6,089	8,424	6,171	9,324	6,786	15,122	8,795	15,246	7,983
Cluster (Constit)	342	300	522	522	513	507	517	517	894	885	673	673
Mean DepVar	-0.0	0.0	0.7	0.8	0.0	0.2	0.1	0.4	-1.0	-0.4	-2.0	-1.5
Sd DepVar	1.1	1.0	0.7	0.7	0.7	0.6	0.9	0.8	1.7	1.3	1.6	1.5

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate/election. All the estimations include district fixed effects and election-party fixed effects. Columns (3) to (6) also control for constituency and candidate-level controls, and Columns (7) and (8) for candidates fixed effects. Standard errors are clustered at the district level. The district-level controls are described in Section 2.4. The candidate-level controls include the gender, an indicator variable equal to one if the candidate is the incumbent and to zero otherwise, and their political party. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

Table G.16: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), 1857-2017, Heterogeneity depending on the regions – Controlling for constituency fixed effects

	East Midlands	East of England	London	North East England	North West England	South East England	South West England	West Midlands	Yorkshire	Wales	Scotland	Other
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Share of total spending	0.018***	0.023***	0.027***	0.017***	0.018***	0.028***	0.030***	0.020***	0.022***	0.027***	0.024***	0.013***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
Constit FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Election-Party FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate FE												
Constit-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidates	All	All	All	All	All	All	All	All	All	All	All	All
R-sq (within)	0.28	0.26	0.29	0.28	0.30	0.29	0.32	0.32	0.34	0.34	0.36	0.30
Observations	3,740	2,166	4,806	1,424	7,489	4,895	4,145	5,254	2,773	3,903	8,756	14,503
Cluster (Constit)	166	87	152	60	401	159	169	259	115	164	492	910
Mean DepVar	-0.6	-1.3	-2.0	-1.4	-0.4	-1.6	-0.8	-0.7	-1.6	-0.7	-0.7	0.2
Sd DepVar	1.6	1.7	1.9	1.5	1.6	1.7	1.7	1.6	1.7	1.6	1.5	0.9

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate-election. The dependent variable is the logarithm of the ratio of the number of votes obtained by a candidate over abstention. All the estimations include district fixed effects and election-party fixed effects. Standard errors are clustered at the district level. The district-level controls are listed in the text. The candidate-level controls include the gender, and an indicator variable equal to one if the candidate is the incumbent and to zero otherwise. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

Table G.17: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), 1857-2017, Heterogeneity depending on the regions – Controlling for candidate fixed effects

	East Midlands	East of England	London	North East England	North West England	South East England	South West England	West Midlands	Yorkshire	Wales	Scotland	Other
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Share of total spending	0.004***	0.004*	0.010***	0.007***	0.007***	0.010***	0.010***	0.007***	0.010***	0.008***	0.010***	0.005***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Constit FE												
Election-Party FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Constit-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidates	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times
R-sq (within)	0.06	0.08	0.09	0.20	0.11	0.13	0.13	0.11	0.20	0.10	0.16	0.14
Observations	2,498	1,332	2,567	856	5,325	3,025	2,771	3,436	1,737	2,532	5,127	10,897
Cluster (Constit)	189	113	164	72	443	212	215	293	141	189	431	909
Mean DepVar	-0.1	-0.5	-1.3	-0.8	0.0	-0.8	-0.1	-0.2	-0.8	-0.2	-0.2	0.3
Sd DepVar	1.3	1.3	1.7	1.3	1.3	1.5	1.3	1.3	1.5	1.4	1.2	0.7

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate-election. The dependent variable is the logarithm of the ratio of the number of votes obtained by a candidate over abstention. All the estimations include candidate fixed effects and election-party fixed effects. Standard errors are clustered at the district level. The district-level controls are listed in the text. The candidate-level controls include an indicator variable equal to one if the candidate is the incumbent and to zero otherwise. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

Table G.18: Robustness check: Effect of candidates' share of total spending on vote share, depending on the time period, for only first 4 candidates (in terms of vote shares)

	1857-1880		1885-1911		1922-1945		1950-1970		1974-1997		2001-2017	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Share of total spending	0.006***	0.005***	0.004***	0.003***	0.015***	0.008***	0.021***	0.010***	0.029***	0.017***	0.022***	0.011***
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constit FE	✓		✓		✓		✓		✓		✓	
Election-Party FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate FE		✓		✓		✓		✓		✓		✓
Constit-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Candidates	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times	All	Mtp times
R-sq (within)	0.08	0.15	0.11	0.26	0.34	0.25	0.45	0.37	0.51	0.40	0.56	0.37
Observations	2,840	1,646	7,661	6,060	8,368	6,142	9,309	6,777	13,493	8,239	11,072	6,194
Cluster (Constit)	339	291	522	522	513	507	517	517	894	878	673	673
Mean DepVar	0.0	0.1	0.7	0.8	0.0	0.2	0.1	0.4	-0.6	-0.2	-1.2	-0.9
Sd DepVar	1.0	1.0	0.7	0.6	0.7	0.6	0.9	0.8	1.3	0.9	1.1	1.0

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate/election. All the estimations include election-party fixed effects. Odd columns also control for district fixed effects and even columns for candidate fixed effects. Standard errors are clustered at the district level. The district-level controls are listed in the text. The candidate-level controls include the gender, an indicator variable equal to one if the candidate is the incumbent and to zero otherwise, their political party, and their political party interacted with time. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

Table G.19: Effect of candidates' share of total spending on vote share (logarithm of the ratio of the number of votes over abstention), depending on the expenses categories, 1857-2017

	1857-2017			
	(1)	(2)	(3)	(4)
Printing & Advertising	0.0091***			0.0076***
	(0.0003)			(0.0003)
Agents & Other Paid Staff		0.0024***		0.0013***
		(0.0001)		(0.0001)
Other expenditures			0.0018***	0.0009***
			(0.0001)	(0.0001)
Election-Party FE	✓	✓	✓	✓
Candidate FE	✓	✓	✓	✓
Constit-level controls	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓
Candidates	Mtp times	Mtp times	Mtp times	Mtp times
R-sq (within)	0.13	0.11	0.11	0.14
Observations	43,643	43,643	43,643	43,643
Cluster (Constit)	3,340	3,340	3,340	3,340
Mean DepVar	-0.1	-0.1	-0.1	-0.1
Sd DepVar	1.3	1.3	1.3	1.3

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. Time period is 1857-2017, with the exception of 2005. An observation is a candidate-election. The dependent variable is the logarithm of the ratio of the number of votes obtained by a candidate over abstention. All the estimations include district fixed effects, election fixed effects, election-party fixed effects, and candidates fixed effects. Standard errors are clustered at the district level. Variables are described in more detail in the text.

Table G.20: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), depending on the closeness of the election (measured by the winner margin at previous elections) and on the time period

	1857-2017		1857-1880	1885-1911	1922-1945	1950-1970	1974-1997	2001-2017
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Share of constituency total spending	0.011***	0.013***	0.003	0.003**	0.008***	0.013***	0.024***	0.019***
	(0.000)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Safe at previous election	-0.067***	0.031*	-0.051	-0.015	0.009	0.120***	0.066*	0.081***
	(0.006)	(0.018)	(0.142)	(0.097)	(0.039)	(0.043)	(0.037)	(0.031)
Very Safe at previous election	-0.152***	-0.004	-0.189	-0.063	-0.039	0.040	0.112***	0.123***
	(0.008)	(0.019)	(0.305)	(0.089)	(0.038)	(0.044)	(0.041)	(0.033)
Uncontested at previous election	-0.144***	-0.105*	-0.372***	-0.288**	0.093	0.836**		
	(0.019)	(0.063)	(0.132)	(0.128)	(0.089)	(0.371)		
Safe * Spending		-0.003***	0.002	-0.002	-0.001	-0.005***	-0.003***	-0.003***
		(0.000)	(0.003)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Very Safe * Spending		-0.004***	0.002	-0.003	-0.001	-0.006***	-0.007***	-0.006***
		(0.000)	(0.006)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Uncontested * Spending		-0.001	0.005**	0.003	-0.004**	-0.023*		
		(0.001)	(0.003)	(0.003)	(0.002)	(0.012)		
Constit FE								
Election-Party FE	✓	✓	✓	✓	✓	✓	✓	✓
Candidate FE	✓	✓	✓	✓	✓	✓	✓	✓
Constit-level controls	✓	✓	✓	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓	✓	✓	✓
Candidates	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times
R-sq (within)	0.14	0.15	0.19	0.22	0.14	0.19	0.21	0.16
Observations	46,392	46,392	1,791	6,262	7,279	8,252	10,493	8,788
Cluster (Constit)	3,341	3,341	300	537	601	653	1,056	777
Mean DepVar	-0.2	-0.2	0.0	0.8	0.2	0.3	-0.5	-1.5
Sd DepVar	1.3	1.3	1.0	0.6	0.6	0.8	1.3	1.5

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate-election. The dependent variable is the logarithm of the ratio of the number of votes obtained by a candidate over abstention. All the estimations include district fixed effects, election fixed effects, and election-party fixed effects. Columns (2) and (3) also control for party fixed effects, and Column (4) for candidates fixed effects. Standard errors are clustered at the district level. The district-level controls are listed in the text. The candidate-level controls include the gender, and an indicator variable equal to one if the candidate is the incumbent and to zero otherwise. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

Table G.21: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), Depending on the effective number of candidates at the previous election and on the time period, 1857-2017

	1857-2017	1857-1880	1885-1911	1922-1945	1950-1970	1974-1997	2001-2017
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Share of total spending	0.007***	0.008***	0.006*	0.008***	0.001	0.008***	0.007***
	(0.001)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
Effective number of parties	-0.056***	0.148	0.019	0.001	-0.156***	-0.075	-0.070**
	(0.019)	(0.094)	(0.081)	(0.029)	(0.057)	(0.046)	(0.034)
Effective # parties * Share spending	0.002***	-0.002	-0.002	-0.000	0.004***	0.004***	0.003***
	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constit FE							
Election-Party FE	✓	✓	✓	✓	✓	✓	✓
Candidate FE	✓	✓	✓	✓	✓	✓	✓
Constit-level controls	✓	✓	✓	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓	✓	✓	✓
Candidates	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times	Mtp times
R-sq (within)	0.15	0.18	0.22	0.14	0.21	0.22	0.16
Observations	45,941	1,755	6,239	7,249	8,160	10,480	8,600
Cluster (Constit)	3,296	293	537	579	653	1,055	771
Mean DepVar	-0.2	0.1	0.8	0.2	0.3	-0.5	-1.5
Sd DepVar	1.3	1.0	0.7	0.6	0.8	1.3	1.5

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate-election. The dependent variable is the logarithm of the ratio of the number of votes obtained by a candidate over abstention. All the estimations include election-party fixed effects and candidates fixed effects. Standard errors are clustered at the district level. The district-level controls are listed in the text. The candidate-level controls include an indicator variable equal to one if the candidate is the incumbent and to zero otherwise. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

Table G.22: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), Depending on the strength of partisanship, 1964-2017

	1964-2017			
	(1)	(2)	(3)	(4)
Share of total spending	0.026***	0.025***	0.013***	0.012***
	(0.001)	(0.003)	(0.001)	(0.005)
Strength of party identification		-0.048		-0.104
		(0.065)		(0.102)
Strength identification * Share spending		0.001		0.001
		(0.002)		(0.003)
Constit FE	✓	✓		
Election-Party FE	✓	✓	✓	✓
Candidate FE			✓	✓
Constit-level controls	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓
Candidates	All	All	Mtp times	Mtp times
R-sq (within)	0.38	0.38	0.17	0.17
Observations	10,496	10,496	4,308	4,308
Cluster (Constit)	856	856	768	768
Mean DepVar	-1.4	-1.4	-0.6	-0.6
Sd DepVar	1.7	1.7	1.4	1.4

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate/election. All the estimations include election-party fixed effects. Columns (1) and (2) also control for district fixed effects, and Columns (3) and (4) for candidate fixed effects. Standard errors are clustered at the district level. The district-level controls are listed in the text. The candidate-level controls include the gender, an indicator variable equal to one if the candidate is the incumbent and to zero otherwise, and their political party. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

Table G.23: Relationship between candidates' share of total spending and vote share (logarithm of the ratio of the number of votes over abstention), Depending on youth presence before and after the 1969 lower voting age reform, 1964 - October 1974

	1964-1974(Oct)			
Share of total spending	0.024***	0.020***	0.013***	0.015***
	(0.001)	(0.002)	(0.001)	(0.002)
Young Constit 1966 (Dummy)			-0.093***	0.053
			(0.020)	(0.081)
Young * Post 1970		-0.143**		-0.165*
		(0.068)		(0.095)
Spending * Young		0.001		-0.004**
		(0.002)		(0.002)
Spending * Post		0.001		-0.003*
		(0.001)		(0.002)
Spending * Young * Post		0.004**		0.005**
		(0.002)		(0.002)
Constit FE	✓	✓		
Election-Party FE	✓	✓	✓	✓
Candidate FE			✓	✓
Constit-level controls	✓	✓	✓	✓
Candidate-level controls	✓	✓	✓	✓
Candidates	All	All	Mtp times	Mtp times
R-sq (within)	0.43	0.43	0.19	0.20
Observations	9,426	9,426	7,070	7,070
Cluster (Constit)	1,241	1,241	1,241	1,241
Mean DepVar	-0.3	-0.3	-0.1	-0.1
Sd DepVar	1.1	1.1	0.9	0.9

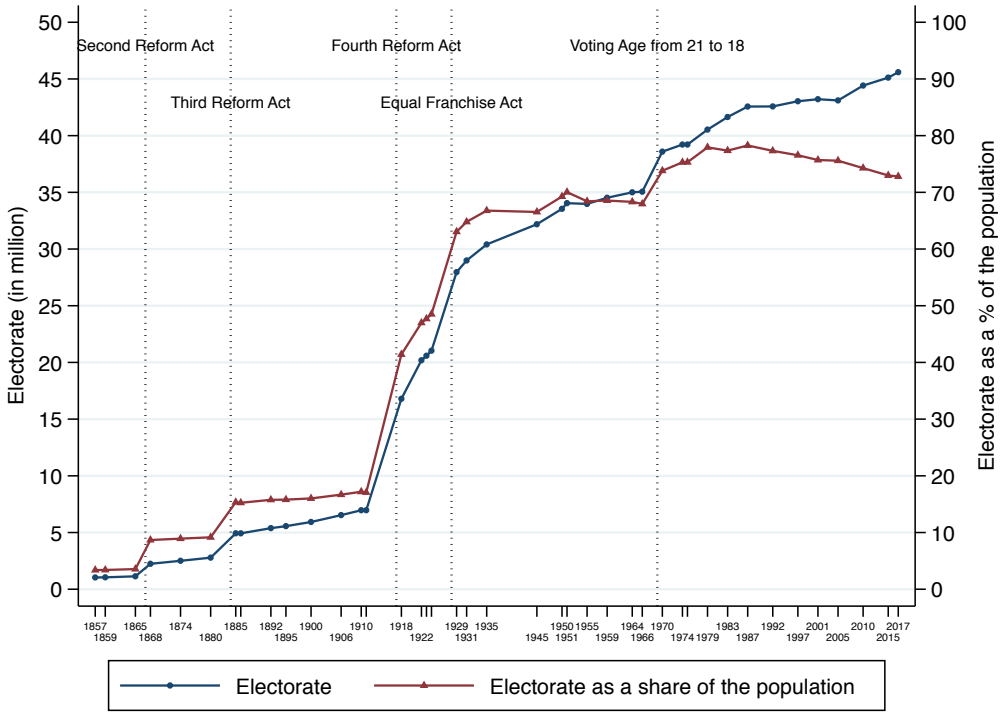
Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a candidate-election. The dependent variable is the logarithm of the ratio of the number of votes obtained by a candidate over abstention. All the estimations include election-party fixed effects. Columns (1) and (2) also control for district fixed effects, and Columns (3) and (4) for candidates fixed effects. Standard errors are clustered at the district level. A "Young constituency" is one with an above median 1966 share of 15-24 year olds. The district-level controls are listed in the text. The candidate-level controls include the gender, and an indicator variable equal to one if the candidate is the incumbent and to zero otherwise. Coefficients for the controls are not reported for the sake of space. Variables are described in more detail in the text.

Table G.24: Local radio: Comparison of Control and Treated constituencies

	Control (Radio in 1980)	Treated (Radio in 1975-6)	Difference/se
Total population	87,503	87,208	295
			(2,317)
Number of candidates running	3.3	3.5	-0.2
			(0.1)
Nb. consecutive GEs won by incumbent party	1.0	1.0	0.0
			(0.0)
Margin btw 1st and 2nd cand. at last election	0.15	0.14	0.01
			(0.02)
Total spending in Constit (cst €per elector)	0.43	0.44	-0.02
			(0.02)
Share of total spending represented by the winner	39.9	40.2	-0.4
			(1.3)
Share of total votes obtained by the winner	47.8	47.4	0.3
			(1.1)
Vote share obtained by Labour Party	33.6	39.4	-5.8**
			(2.4)
Vote share obtained by Conservative Party	41.7	37.6	4.1**
			(1.8)
Observations	143		

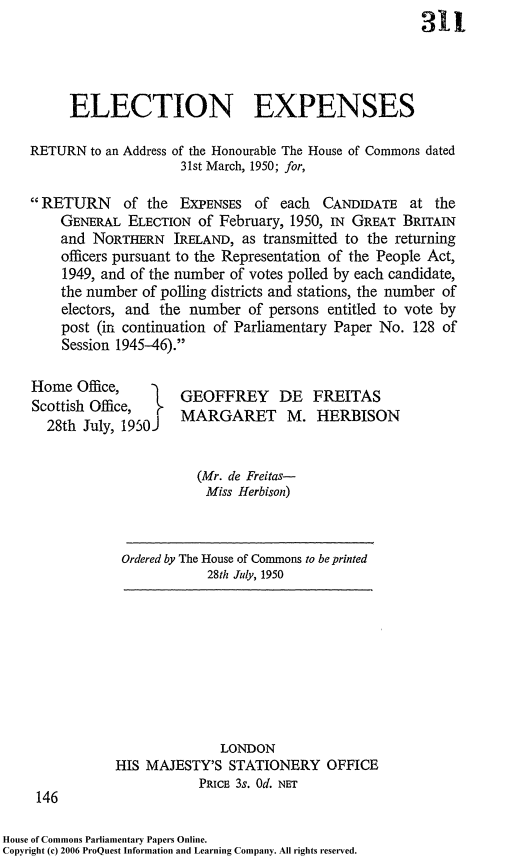
Notes: The table compares constituencies “treated" by local radio (receiving full or partial coverage between October 1974 and April 1976) with “control" constituencies (receiving local radio between April 1980 and December 1980) on the mean value of a set of electoral variables. The third column computes the difference between mean of the “Control" and the “Treated" columns, with stars denoting the p-value of t-test on this difference being equal to 0 (* p<0.10, ** p<0.05, *** p<0.01).

H Additional figures



Notes: The figure plots the evolution of the number of electors in millions and as a share of the total population in England, Wales and Scotland at each General Election since 1857. The numbers do not include Ireland given Ireland is not part of our analysis. Population figures come from the decennial censuses. Electorate figures comes the election expenses returns.

Figure H.1: British Electorate, 1857-2017



311

ELECTION EXPENSES

RETURN to an Address of the Honourable The House of Commons dated 31st March, 1950; *for*,

"RETURN of the EXPENSES of each CANDIDATE at the GENERAL ELECTION of February, 1950, IN GREAT BRITAIN and NORTHERN IRELAND, as transmitted to the returning officers pursuant to the Representation of the People Act, 1949, and of the number of votes polled by each candidate, the number of polling districts and stations, the number of electors, and the number of persons entitled to vote by post (in continuation of Parliamentary Paper No. 128 of Session 1945–46)."

Home Office,
Scottish Office,
28th July, 1950

GEOFFREY DE FREITAS
MARGARET M. HERBISON

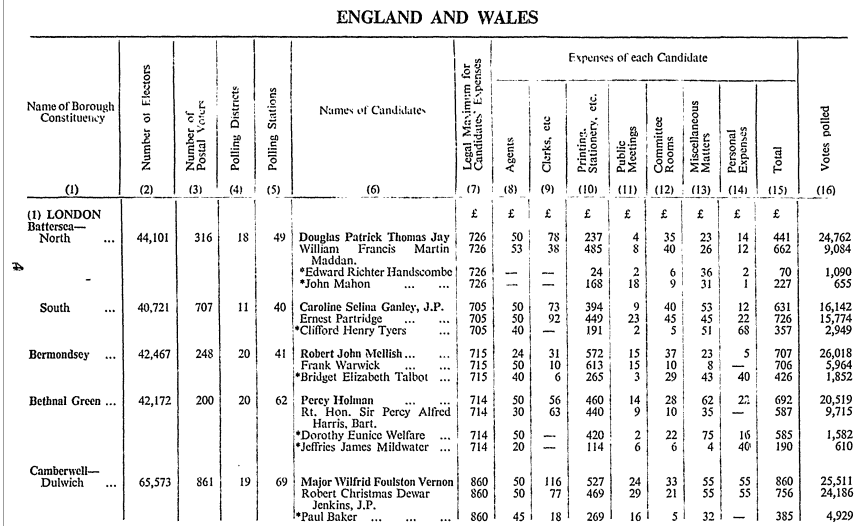
(*Mr. de Freitas—Miss Herbison*)

Ordered by The House of Commons *to be printed*
28*th July*, 1950

LONDON
HIS MAJESTY'S STATIONERY OFFICE
PRICE 3*s*. 0*d*. NET

146

(a) Front page



ENGLAND AND WALES

Name of Borough Constituency	Number of Electors	Number of Postal Voters	Polling Districts	Polling Stations	Names of Candidates	Legal Maximum for Candidates' Expenses	Expenses of each Candidate: Agents	Clerks, etc	Printing, Stationery, etc.	Public Meetings	Committee Rooms	Miscellaneous Matters	Personal Expenses	Total	Votes polled
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
						£	£	£	£	£	£	£	£	£	
(1) LONDON															
Battersea—North ...	44,101	316	18	49	Douglas Patrick Thomas Jay	726	50	78	237	4	35	23	14	441	24,762
					William Francis Martin Maddan	726	53	38	485	8	40	26	12	662	9,084
					*Edward Richter Handscombe	726	—	—	24	2	6	36	2	70	1,090
					*John Mahon	726	—	—	168	18	9	31	1	227	655
South ...	40,721	707	11	40	Caroline Selina Ganley, J.P.	705	50	73	394	9	40	53	12	631	16,142
					Ernest Partridge	705	50	92	449	23	45	45	22	726	15,774
					*Clifford Henry Tyers ...	705	40	—	191	2	5	51	68	357	2,949
Bermondsey ...	42,467	248	20	41	Robert John Mellish	715	24	31	572	15	37	23	5	707	26,018
					Frank Warwick	715	50	10	613	15	10	8	—	706	5,964
					*Bridget Elizabeth Talbot ...	715	40	6	265	3	29	43	40	426	1,852
Bethnal Green ...	42,172	200	20	62	Percy Holman	714	50	56	460	14	28	62	22	692	20,519
					Rt. Hon. Sir Percy Alfred Harris, Bart.	714	30	63	440	9	10	35	—	587	9,715
					*Dorothy Eunice Welfare ...	714	50	—	420	2	22	75	16	585	1,582
					*Jeffries James Mildwater ...	714	20	—	114	6	6	4	40	190	610
Camberwell—Dulwich ...	65,573	861	19	69	Major Wilfrid Foulston Vernon	860	50	116	527	24	33	55	55	860	25,511
					Robert Christmas Dewar Jenkins, J.P.	860	50	77	469	29	21	55	55	756	24,186
					*Paul Baker	860	45	18	269	16	5	32	—	385	4,929

(b) Data entry example

Notes: The figure reproduces two pages of the "Return of expenses of each candidate at the General Election" we ditigize to build the new dataset used in this paper.

Figure H.2: Data on Election Expenses: Illustration from the 1950 "Election Expenses" Report

DURHAM—Southern Division—*continued.*

PAYMENTS made by the Election Auditor on account of the Honourable *Harry George Vane*, commonly called Lord *Harry Vane*, M.P.

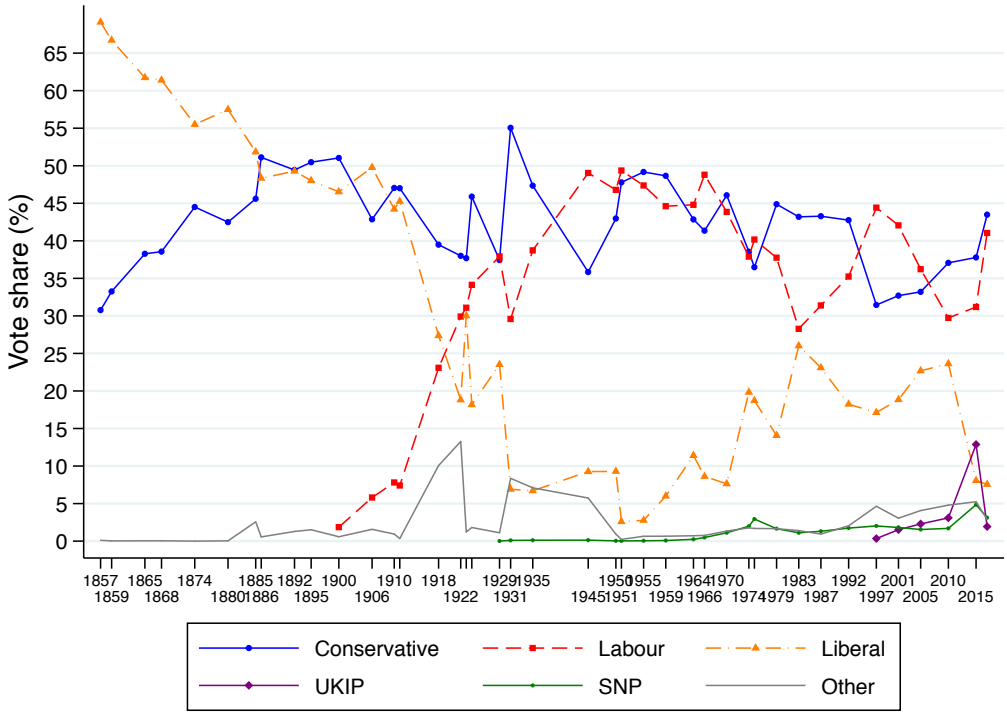
	£.	s.	d.
BARNARDCASTLE BILLS:			
Board for committee-room	–	15	–
Painting same	1	5	–
Committee-room, conveyances, horses, and tavern bill	41	19	6
Conveyances and horses	46	13	6
Messenger	2	5	–
Printing, stationery, and advertising	13	15	11
Messengers, agents' clerks, telegraph, and travelling expenses	15	16	6
Conveying voters	1	10	–
Committee-room, conveyances, and horses	50	7	–
Horses, and drivers' refreshment	1	12	6
Clerk	3	–	–
Messengers and horse	4	12	6
BISHOP AUCKLAND BILLS:			
Committee-room, tavern bills, and horses' keep	49	2	–
Committee-room and runners' expenses	9	5	–
Canvassing	6	8	6
Horse keep, tavern bill, and messengers	8	11	9
Runners' refreshment	4	–	–
Printing and stationery	13	7	5
Blacksmith's work	–	9	–
Clerk and agent	8	17	–
Furniture for committee-room	–	10	–
Canvassing and horse-hire	4	4	–
Attending committee	1	1	–
Refreshment for horses and drivers	3	10	–
Cleaning committee-room	1	15	–
Canvassing	1	16	6
Horse-hire	25	1	9
Hay and corn	2	3	6
Canvassing and expenses	–	16	–
Inspecting runners	1	1	–
Horse keep	2	–	–
Refreshment to drivers	–	10	9
Keep of horses	4	4	–
Horses and carriages	28	14	–
Messenger	–	15	–
Hay and corn for horses	1	8	10
Ostler's charges	4	–	–
Horse keep and driver	1	5	–
Committee-room and poll-clerks	12	12	–
Carpenter's work, use of furniture, and men with carriages	12	10	6
Expenses of horses and drivers	2	7	–
Messenger and attendant	14	–	–
Postboy	2	15	–
Horses, hay and corn, omnibus, carriage, and tavern bill	60	4	3
Travelling expenses	3	3	–
Clerk, check-clerk, and distributing bills	1	16	3
Inspecting runners	1	1	–
Committee-room	2	5	–
Horses fed	–	5	–
Clerks, canvassers, runners, conveyances, horses, and tavern expenses	47	–	–
Canvassing and agency	15	9	6
DARLINGTON BILLS:			
Railway fares for voters	33	10	11
Runners, messengers, check-clerks, and inspectors	21	3	–
Erecting balcony	1	12	6
Hire of room	3	3	–
Hotel bill	40	–	–
Printing and stationery	26	19	7
Stationery, printing, and advertising	40	–	11
Writing clerk	3	15	–
Mr. Robinson's clerk	1	1	–
Carriages and horses, inn expenses, and committee-rooms	156	17	11

	£.	s.	d.
Darlington Bills—*continued.*			
Cab and horses	1	12	6
Horse-hire and expenses	2	16	–
HARTLEPOOL BILLS:			
Committee-rooms and tavern bill	20	16	–
Printing and advertising	13	13	7
Carriages, hay and corn, and drivers	22	11	6
Printing	–	16	–
Canvassing and clerk	6	6	–
Labourers, messengers, billstickers	10	7	–
MIDDLETON-IN-TEESDALE BILLS:			
Committee-room and inn expenses	15	9	6
Conveyances for voters	4	9	3
Inn expenses	2	3	10
Carriages and express horses	14	3	6
Omnibus hire	5	–	–
SEDGEFIELD BILLS:			
Canvassing and expenses	31	15	4
Horse-hire and expenses	31	18	8
Gig-hire	1	–	–
Carriage, driver, and refreshments	10	2	9
Canvassing and expenses	13	16	–
Canvassing and clerk	4	1	–
Horse-hire	12	12	–
Phaeton and driver	3	15	–
Horse hire	1	10	–
Railway expenses	–	11	6
Stationery	–	16	2
Committee-room and inn expenses	28	18	–
Committee-clerks, tally and check-clerks, and canvassers	36	2	–
Canvassing, expenses, &c.	1	5	6
STANHOPE BILLS:			
Canvassing and attending polling-booths	10	10	–
Horse-hire	9	9	–
Hay and corn	–	13	–
Telegraphic messages	–	7	6
Horse-hire, committee-rooms, and tavern expenses	22	19	6
Conveyances, horses, and drivers' expenses	76	16	–
Inn expenses	–	7	6
Conveyances	4	6	–
Horse-hire, runner, and inn expenses	4	7	6
Carriages	15	–	–
Runner	–	10	–
Inn expenses	11	10	9
Flannel and tape	–	1	6
Keep of horses	1	7	6
Use of Town-hall	–	7	–
Printing	3	17	–
Inn bill and committee-room	28	16	5
Express messenger	1	15	–
Canvassing	16	10	–
Horse-hire	–	12	6
Innkeeper's charges, billsticker, and canvassing	12	13	–
Inn charges and gig-hire	10	5	6
Hay and corn	–	18	–
Keep of horses	16	3	6
Horse-hire	2	–	–
Expenses of horse	1	16	–
Canvassing and other expenses	–	15	8
STOCKTON BILLS:			
Printing	5	4	3
Messengers	12	13	6
Committee-rooms, horses and carriages, and hotel expenses	106	10	–
Inspector, check-clerks, and committee-clerks	7	4	–

(*continued*)

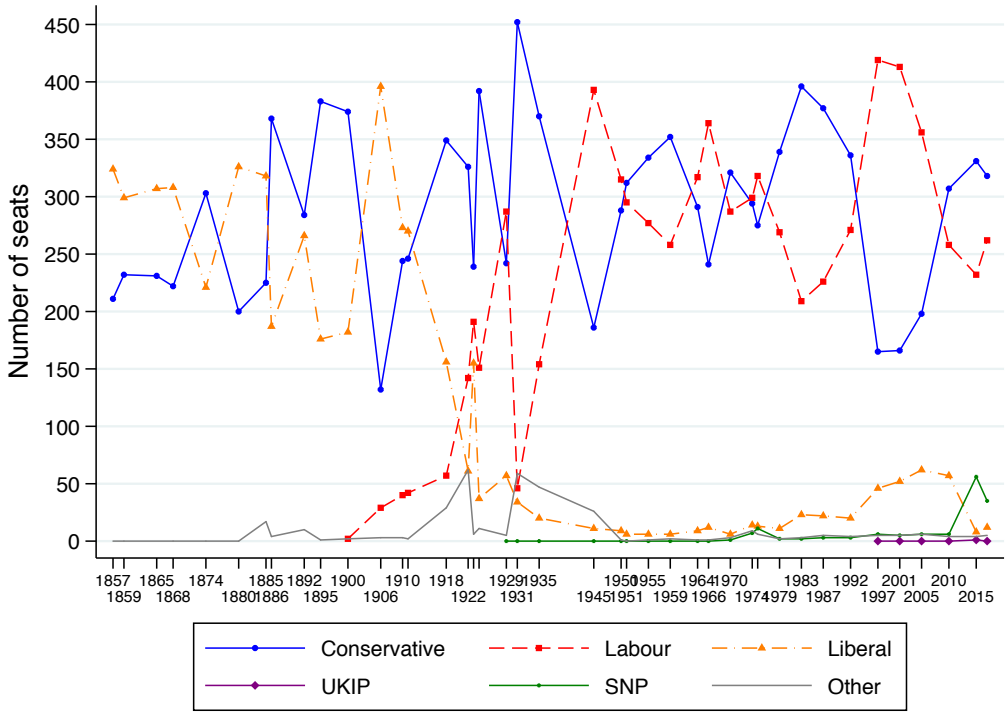
Notes: The figure provides an example of a particularly detailed election report (Harry Vane, Durham Southern) of 1857.

Figure H.3: Data on Election Expenses: Illustration from the 1857 "Election Expenses" Report



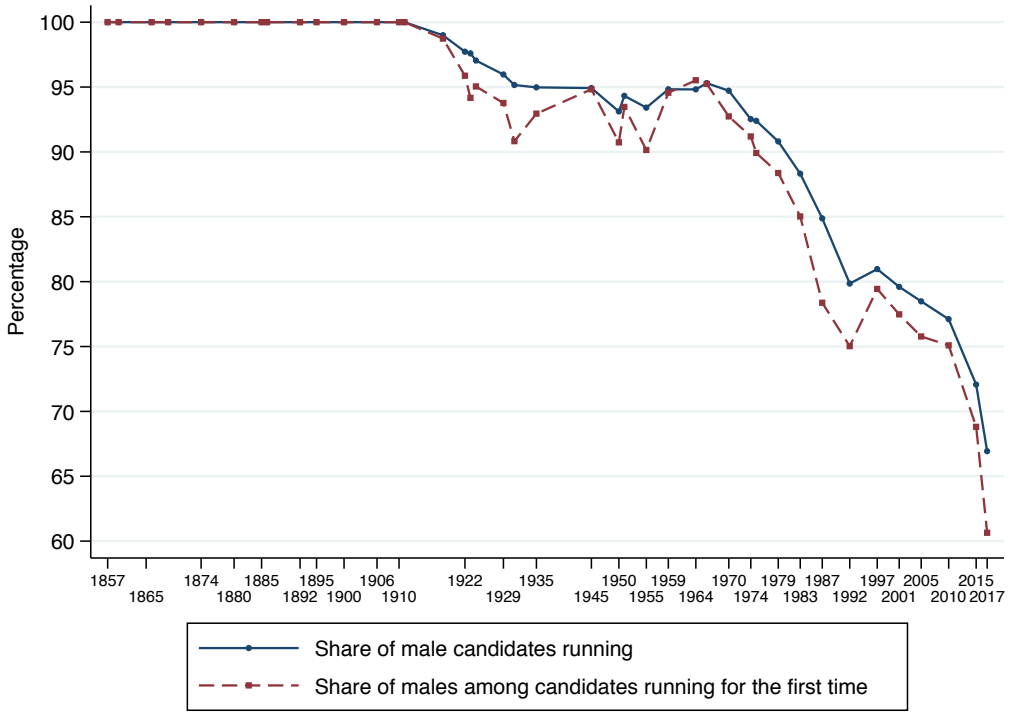
Notes: The figure plots the vote shares obtained by the three main political parties in the United Kingdom at all the general elections since 1857. See online Appendix section B for more details.

Figure H.4: Vote shares obtained by the main political parties the general elections since 1857



Notes: The figure plots the number of seats obtained by the three main political parties in the United Kingdom at all the general elections since 1857. See online Appendix section B for more details.

Figure H.5: Seats obtained by the main political parties the general elections since 1857



Notes: The figure plots the share of male candidates running in each election (blue line with circle symbols) and the share of males among the candidates running for the first time (dashed red line with square symbols).

Figure H.6: Candidate characteristics: share of males

ARUNDEL						No change
Electorate % Turnout	79,241	77.1%	1992	78,683	71.2%	1987
*Marshall, Sir Michael (C)	35,405	58.0%	-3.4%	34,356	61.3%	C
Walsh, Dr J M M (LD)	15,542	25.5%	-2.2%	15,476	27.6%	L/All
Nash, R A (Lab)	8,321	13.6%	+2.6%	6,177	11.0%	Lab
Renson, Mrs D (Lib)	1,103	1.8%				
Corbin, R (Grn)	693	1.1%				
C to LD swing 0.6%	61,064		32.5%	56,009		33.7%
		C maj	19,863		C maj	18,880

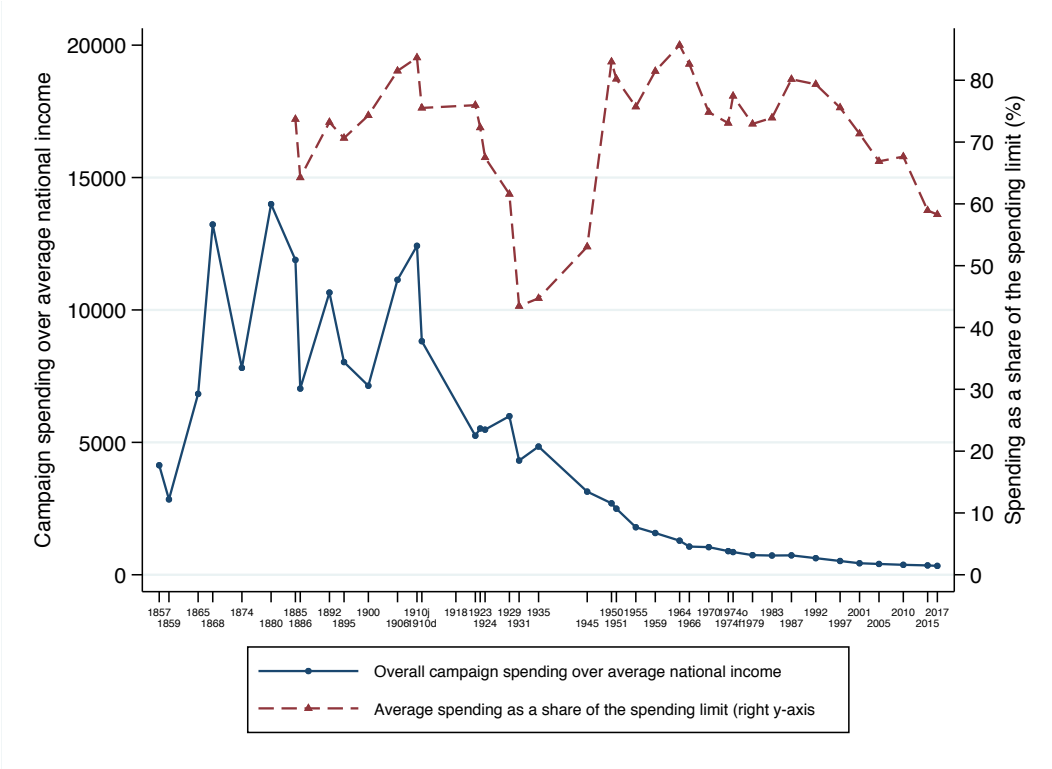
Sir Michael Marshall was Under Sec of State for Industry, 1979-81. Mbr, Select Cmte on Defence, 1982-7. Chmn (1987-) and vice-chmn (1982-7), Parly Information Tech Cmte. Chmn (1987-90), jt vice-chmn (1982-7) and still mbr, exec cmte, British Gp, IPU; Jt vice-chmn, Interparly Cl against Anti-Semitism, 1991- . Elected in Feb 1974; contested Hartlepool, 1970. Chmn, Direct Business Satellite Systems Ltd, 1984-90; managing partner, Marshall Consultants; non-exec director, Integrated Information Tech Ltd, 1984-8. Chmn, all-pty space cmte. Parly adviser to British Aerospace plc, 1989- ; BAe, Space and Communications Div, 1982-9; Cable and Wireless, 1982- ; Comsat; Soc of West End Theatre, 1984- ; Wm Holdings plc, 1988- . B Jun 21 1930; ed Bradfield Coll; Harvard and Stanford Univs. Mbr, Lloyd's.

Dr James Walsh, general practitioner, contested this seat 1987 and 1983; Hove 1979 and Oct 1974, and Sussex W in 1989, 1984 and 1979 Euro elections. Mbr W Sussex CC, 1985- ; Arun DC, 1976- ; Littlehampton TC, 1976- (mayor, 1989-90). B Jan 11 1943; ed Wimbledon Coll; London Hospital Medical Sch.

Roger Nash, teacher; mbr, Bognor TC (ldr Lab gp); Arun DC, 1986-7. Director of holiday business in France. B Apr 14 1948; ed Kent, Leicester and Sussex Univs. NUT.

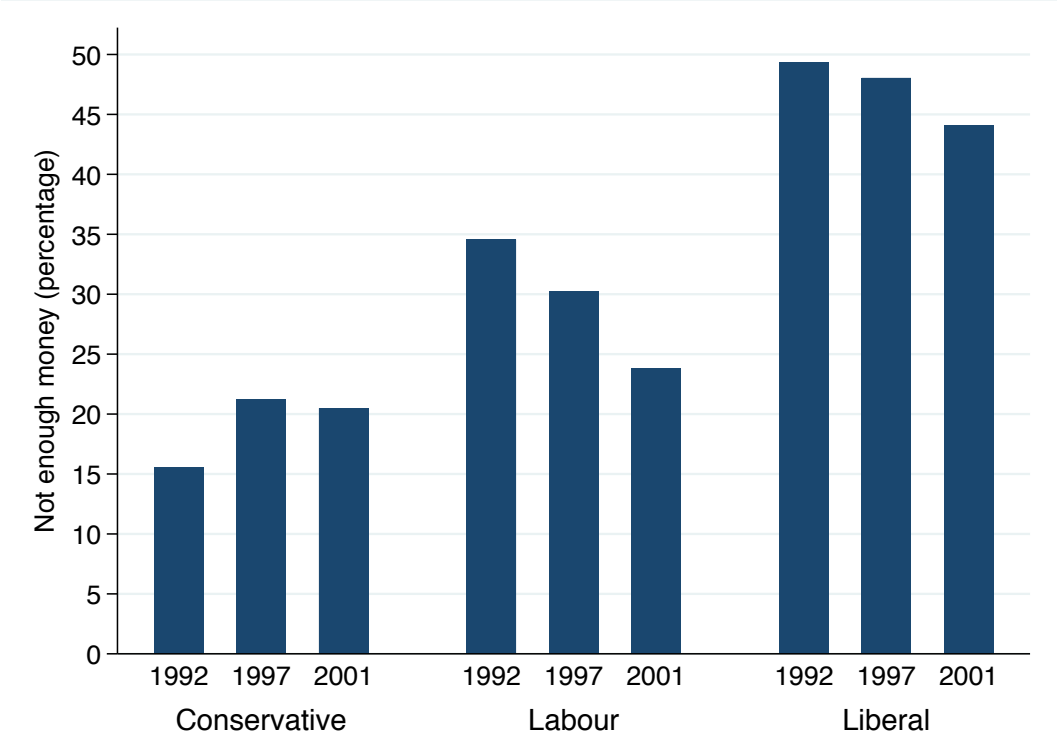
Notes: The figure provides an example of the format of the *Times Guide to the House of Commons* data for the year 1992.

Figure H.7: *Times Guide to the House of Commons*: illustration



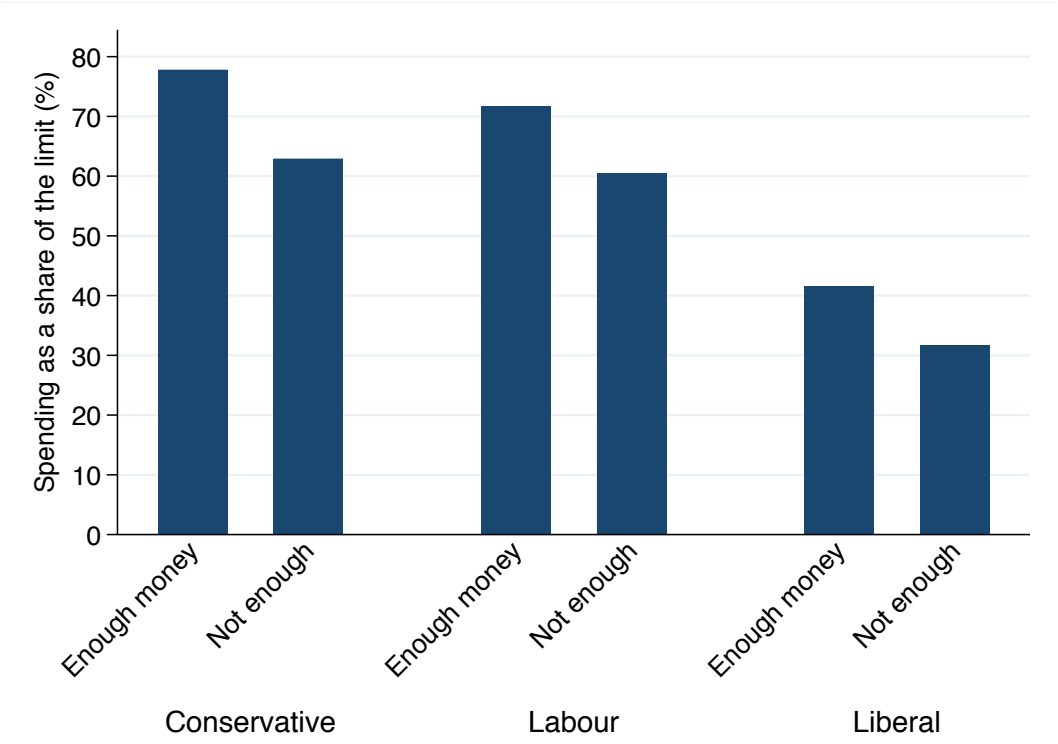
Notes: The figure plots the long-run evolution of campaign spending of the top-2 candidates in each constituency-election. The dotted blue line reports the evolution of the overall campaign spending (summed over all candidates at the general elections in a given year) over the average national income between 1857 and 2017, and the red dashed line with triangles reports the evolution of the average amount spent by candidates as a share of the spending limit. Data on the average national income are from the World Inequality Database.

Figure H.8: Long-run evolution of campaign spending of major candidates



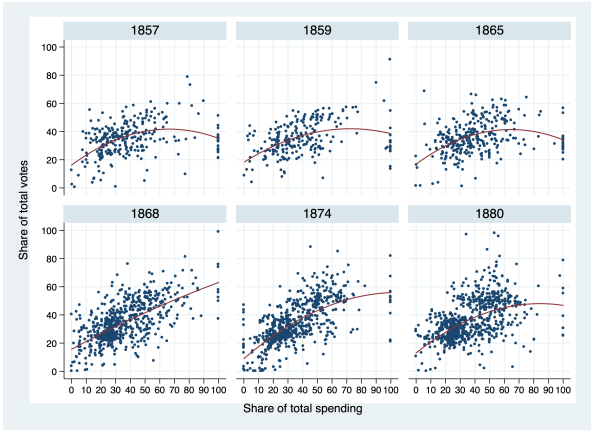
Notes: The figure plots the share of candidates' election agents declaring they had insufficient fund to run the campaign. The survey data come from Denver et al. (2003) and Fisher and Denver (2009).

Figure H.9: Share of candidates' election agents declaring they had insufficient fund to run the campaign

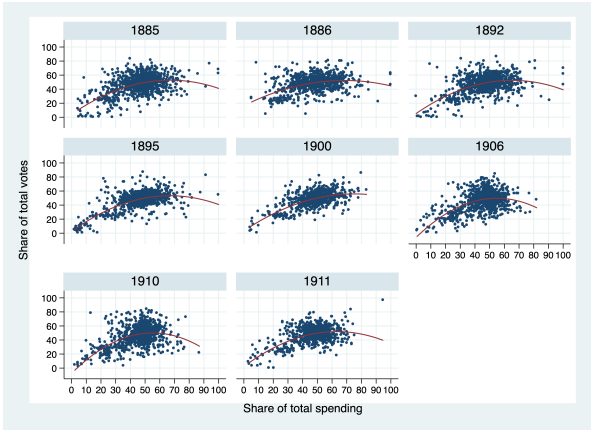


Notes: The figure plots the candidate spending as a share of the spending limit depending on whether candidates' election agents declare that they have insufficient fund to run the campaign. The time period is 1992-2005. The survey data come from Denver et al. (2003) and Fisher and Denver (2009).

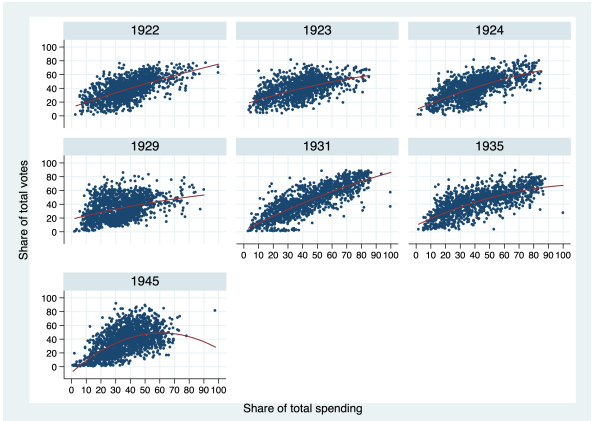
Figure H.10: Spending as a share of the limits depending on whether candidates' election agents declare that they have insufficient fund to run the campaign, 1992-2005



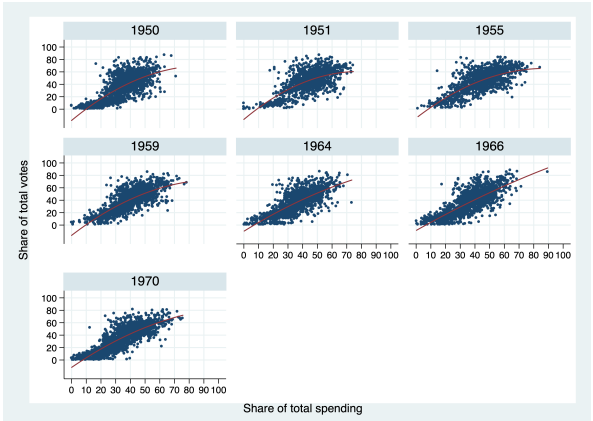
(a) 1857-1880



(b) 1885-1910



(c) 1922-1945



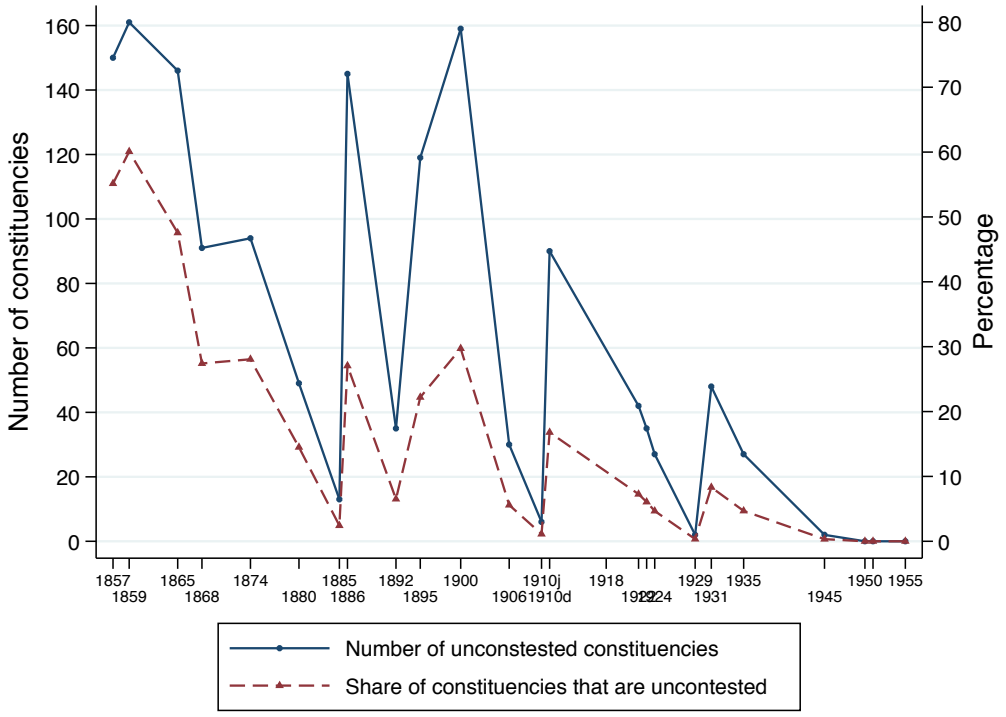
(d) 1950-1970

(e) 1974-1997

(f) 2001-2017

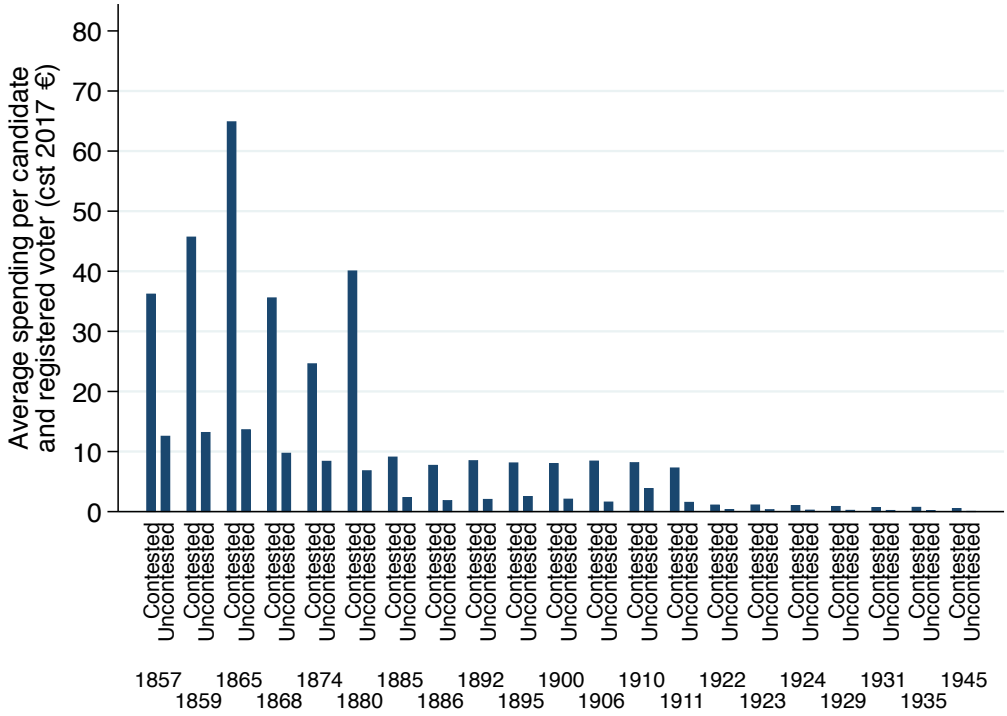
Notes: The figure plots the relationship between the proportions of total spending and total votes received by candidate by district, for the 1857-1880 elections (H.11a) for the 1885-1910 elections (H.11b), the 1922-1945 elections (H.11c), the 1950-1970 elections (H.11d), the 1974-1997 elections (H.11e) and the post-2001 elections (H.11f).

Figure H.11: Correlation between shares of total spending and total votes, 1857-2017



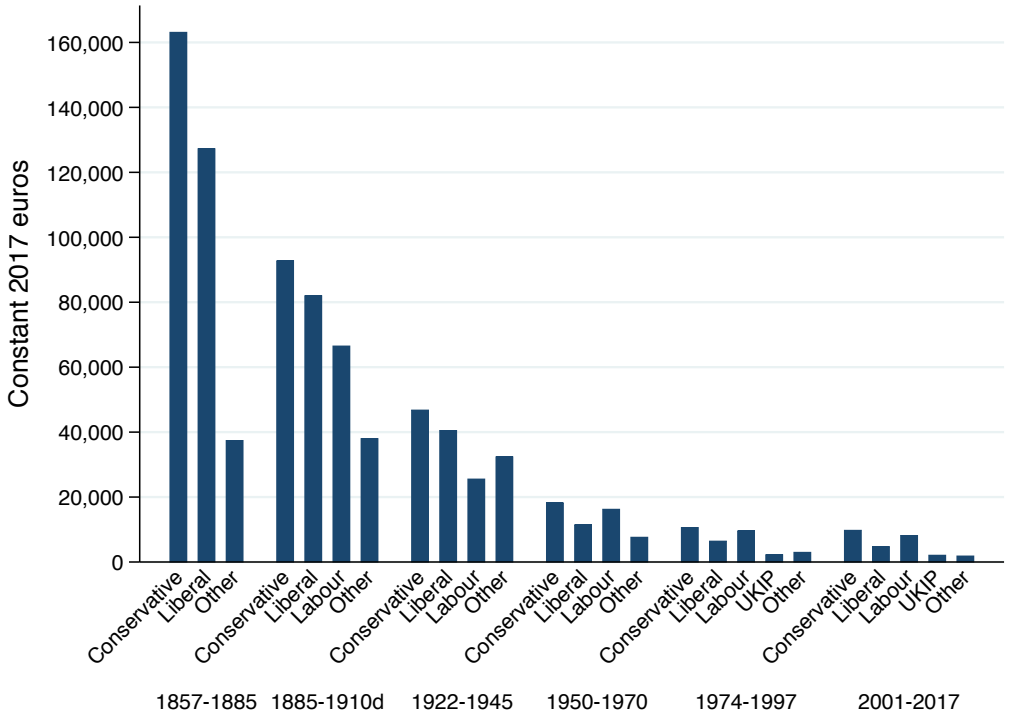
Notes: The figure plots the evolution of the number of uncontested constituencies and their share (over the total number of constituencies) over time.

Figure H.12: Evolution of the number and share of uncontested constituencies, 1857-1955



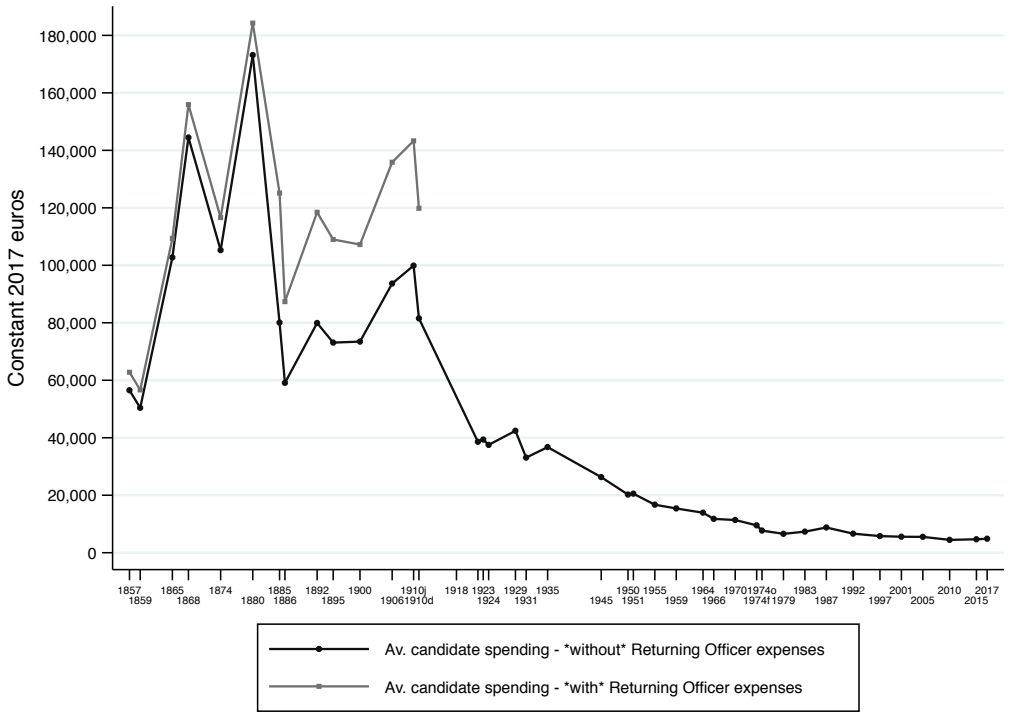
Notes: The figure plots the evolution of the average candidate spending in contested and uncontested districts.

Figure H.13: Contested vs. uncontested constituencies: Average candidate spending, depending on the time period



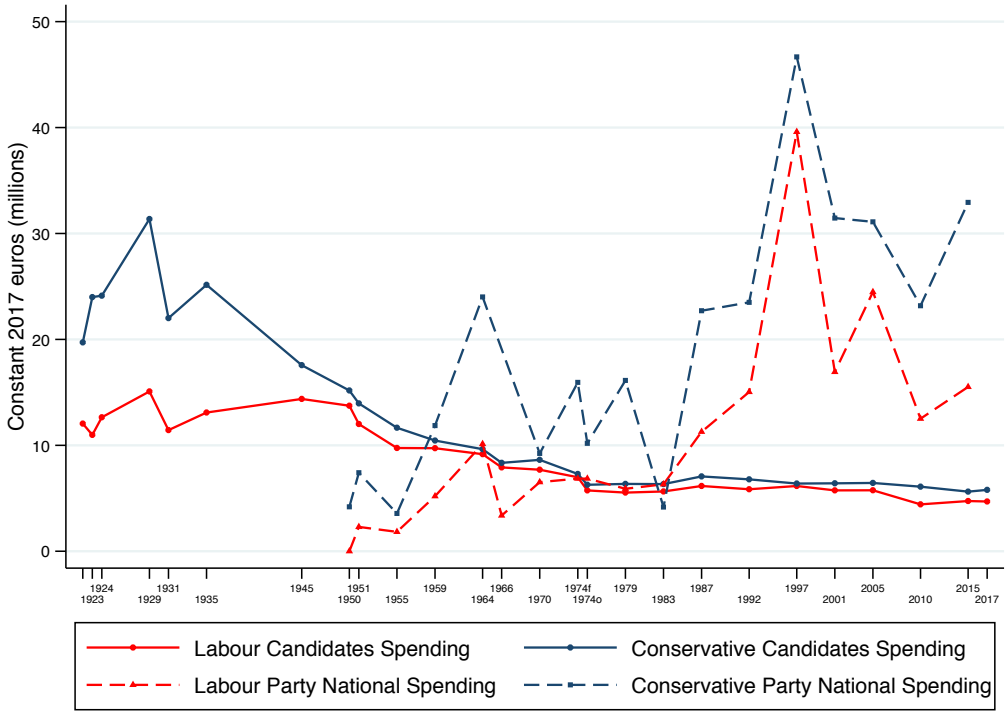
Notes: The figure plots the average total spending of the candidates, depending on the time period and the political party to which they are affiliated. We focus on the four main political parties: Conservative, Labour, Liberal, and UKIP, and classify the candidates from the other parties in an “Other" category.

Figure H.14: Total spending per candidate, depending on the time period and their political party



Notes: The figure plots the average total spending per candidate for each general election, including / excluding the returning officer expenses (i.e. the cost of organizing the elections).

Figure H.15: Total spending per candidate with and without Returning Officers' expenses, at each general election.



Notes: The figure plots the total spending of all candidates from the Labour / Conservative Party at each general election, and the reported spending of the Labour and Conservative parties for the national campaigns (figures for national party spending come from their published annual accounts).

Figure H.16: Evolution of the total spending of all the candidates from the Labour and Conservative Party at each general election (summed at the national level over all candidates) and the national campaign spending of the Labour and Conservative parties

WHITBY (YORKSHIRE).

ABSTRACT of the Expenses incurred by or on behalf of each Candidate at the last General Election.

ABSTRACT of the Statement of Accounts on behalf of *Charles Bagnall*, Esq., M.P.

	£.	s.	d.
Accounts Admitted and Paid:			
John Buchannan, esq., returning officer	60	11	7
Attorneys	105	–	–
Carriage proprietors and innkeepers	109	4	8
Printers and stationers	37	8	5
Stephenson and Son; sundry disbursements	48	1	1
Accounts Disputed and not Paid:	£.	s.	d.
Attorneys	99	1	8
Carriage proprietor	10	5	–
Agent, not an attorney	9	16	6
	119	3	2
Paid for preparing and advertising this abstract	1	13	–
£.	481	1	11

Appleton Stephenson,
Thomas Stephenson, } Agents.

ABSTRACT of the Statement of Accounts on behalf of *Harry Stephen Thompson*, Esq.

	£.	s.	d.
Attorneys	363	10	–
Agents, not attorneys	73	15	–
Carriage proprietors	68	8	–
Printers and stationers	85	3	11
Innkeepers	49	6	11
Inspectors, check clerks, messengers, &c.	12	7	6
Sundries, including returning officer's account, railway passes, &c.	211	10	2
Preparing and advertising this abstract	1	10	–
£.	866	6	6

Thomas Dotchon, Agent.
John Buchannan, Returning Officer.

ACCOUNT sent in by the Returning Officer to each person who was a Candidate at the last General Election, showing each Item in detail.

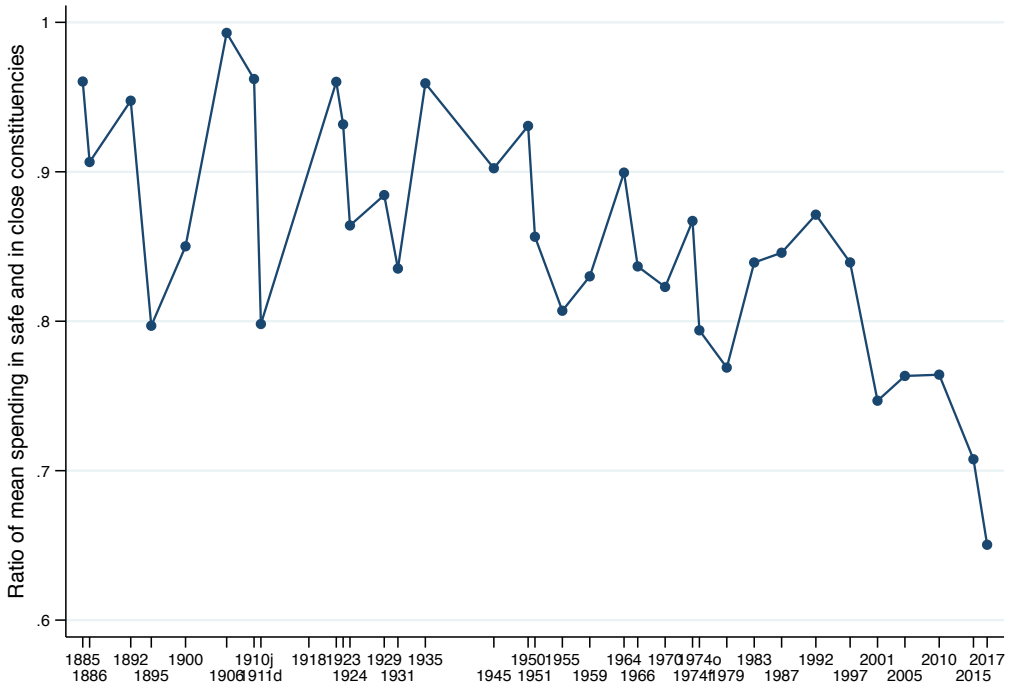
ACCOUNT sent in to *Charles Bagnall*, Esq., M.P.

Returning Officer's Charges.

7 July 1865:	£.	s.	d.
Attending on postmaster to receive Her Majesty's writ for the election of a burgess to serve in Parliament for the borough of Whitby, and giving him certificate of receipt thereof	–	6	8
Attending on the agents of the different candidates, and conferring as to the day to be appointed for the nomination	–	13	4
Preparing proclamation according to the provision of "The Corrupt Practices Prevention Act, 1854," making copy thereof for printer, attending him therewith, and afterwards to correct proof	–	6	8
Attending proclaiming the writ and day of nomination in the borough	2	2	–
Paid officers and expenses of proclamation	2	2	–
Going through the whole of the register of electors, and apportioning the number of voters to each of the three polling booths, in order to a compliance with the statutory provisions	1	1	–
Drawing special notice, showing the division of the register and situation of each booth, and the electors to poll thereat respectively, and attending thereon	–	13	4

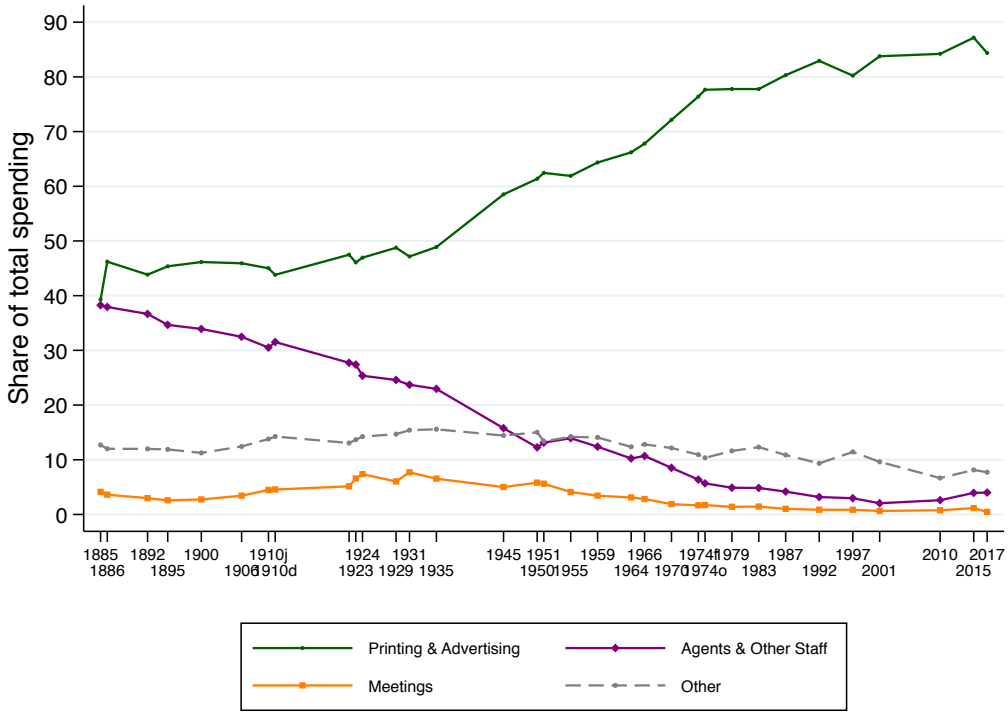
Notes: The figure provides an example of a detailed Returning Officer spending report (Wiltshire, 1865).

Figure H.17: Data on Election Expenses: Illustration from the 1865 "Election Expenses" Report



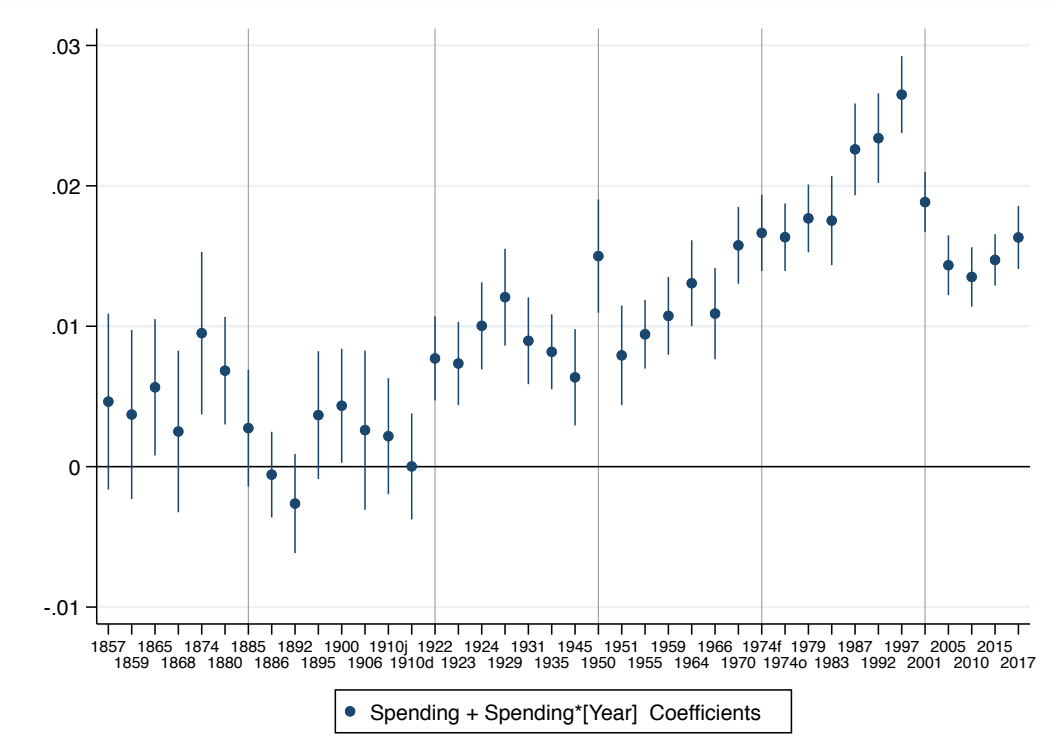
Notes: The figures plots, for each election, the ratio of the average spending (as the share of the spending limit) in safe constituencies over close ones.

Figure H.18: Spending and election closeness: 1950-2017



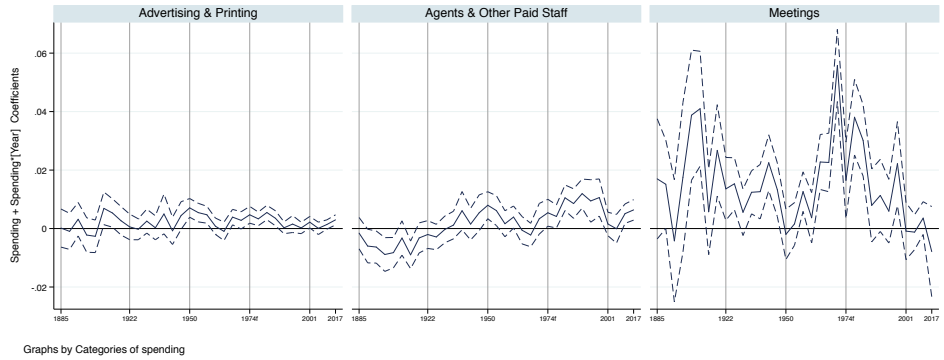
Notes: The figure plots the average share of candidates' total expenses spent on each expenses category, at every general election over the 1885-2017 time period.

Figure H.19: Electoral expenses by category over time: Aggregate categories, 1885-2017



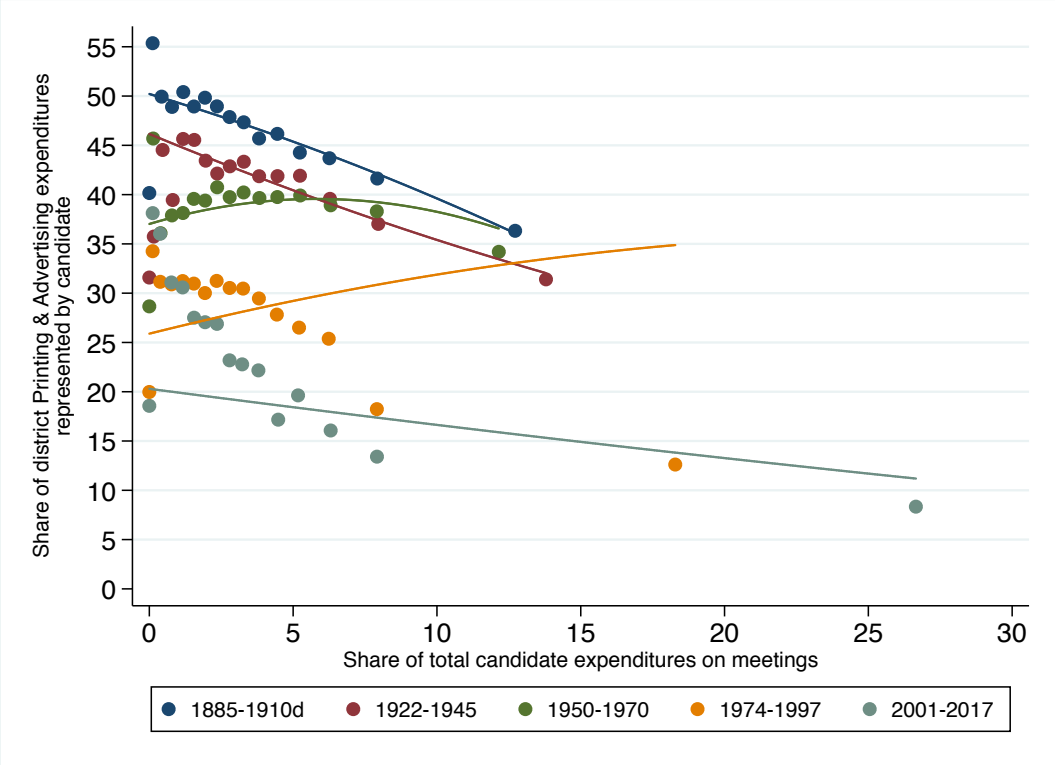
Notes: The figure plots, for each election year, the point estimates and 95% confidence intervals of the linear combination of the share of spending coefficient and its interaction with an election-year dummy (the coefficients $\beta + \beta_t$ in a version of the equation (3) where all constituency- and candidate-level controls are interacted with an election fixed effect). Vertical lines indicate the time periods described in Section 3.

Figure H.20: Evolution of the relationship between the candidates' share of the constituency total spending and their vote share, 1857-2017



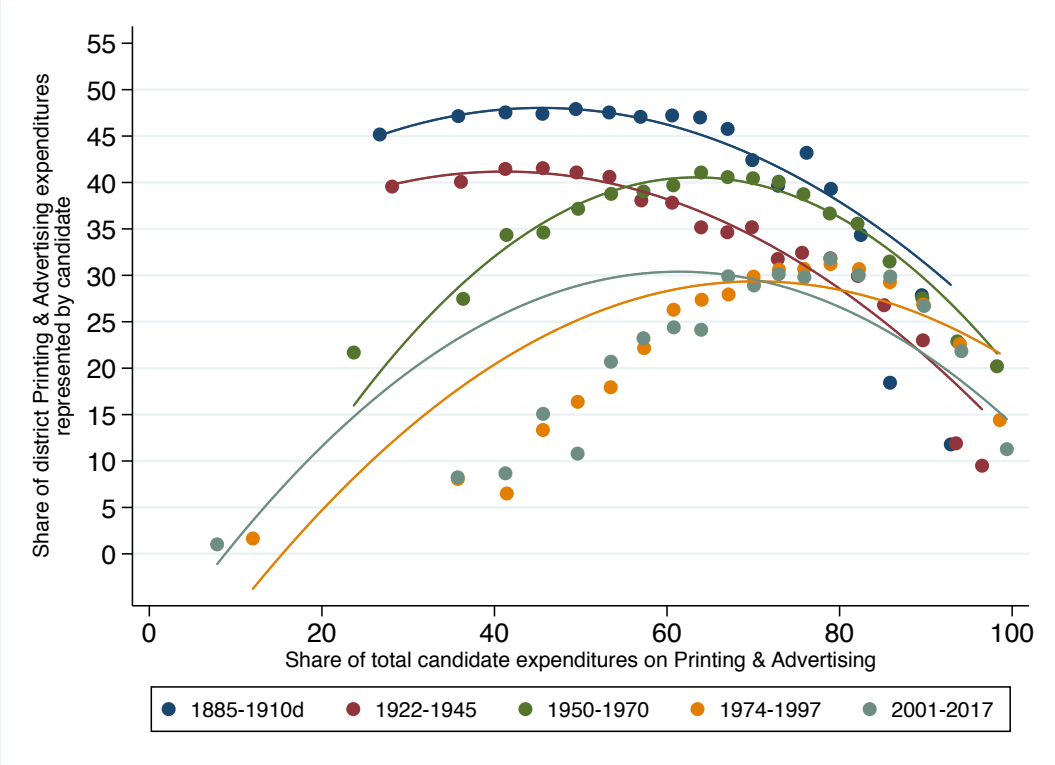
Notes: The figure plots, for each election, the point estimates and 95% confidence intervals of the linear combination of spending-category (as the share of the candidate spending in this category over her total spending) coefficient and its interaction with an election-year indicator variable.

Figure H.21: Evolution of the relationship between campaign spending and votes, depending on the expenses categories, 1885-2017



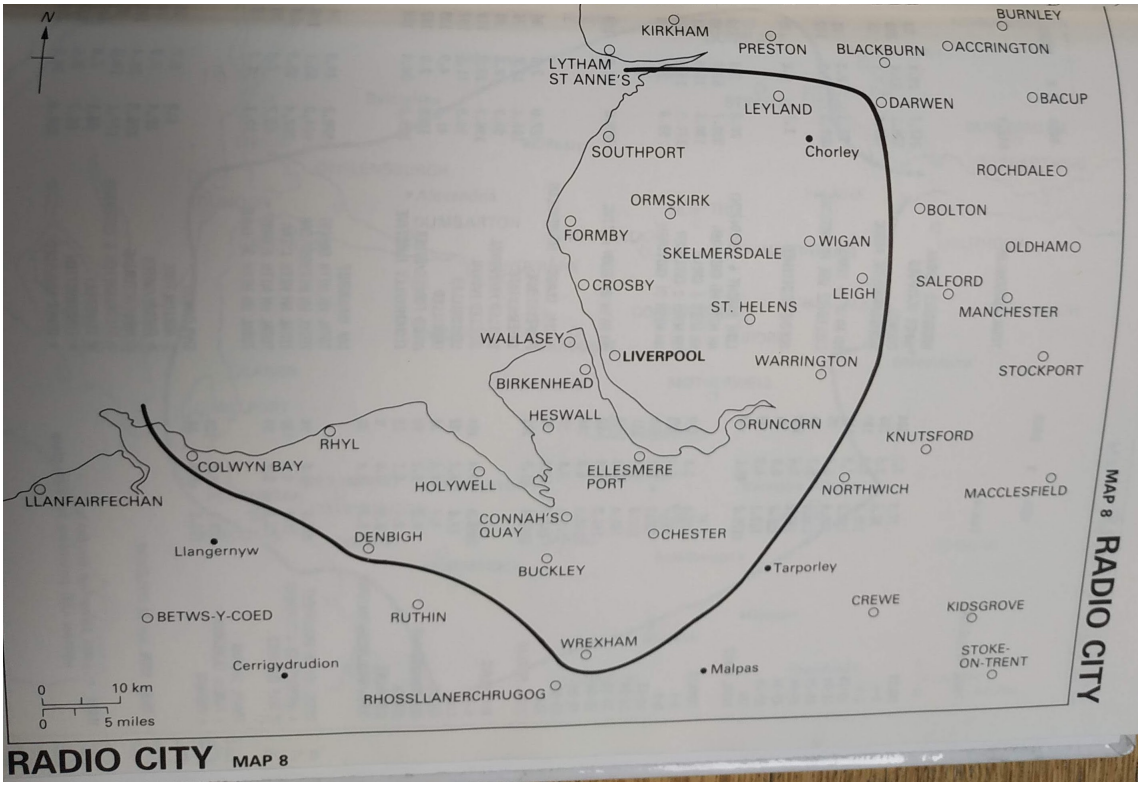
Notes: The figure uses a binned scatterplot to report non-parametrically the relationship between the share of candidate expenditures on meetings and the share of district printing and advertising expenditures represented by candidate. It does so separately for the 1885-1910, 1922-1945, 1950-1970, 1974-1997, and 2001-2017 time periods.

Figure H.22: Relationship between the share of total candidate expenditures on meetings and the share of district printing and advertising expenditures represented by candidate, depending on the time period



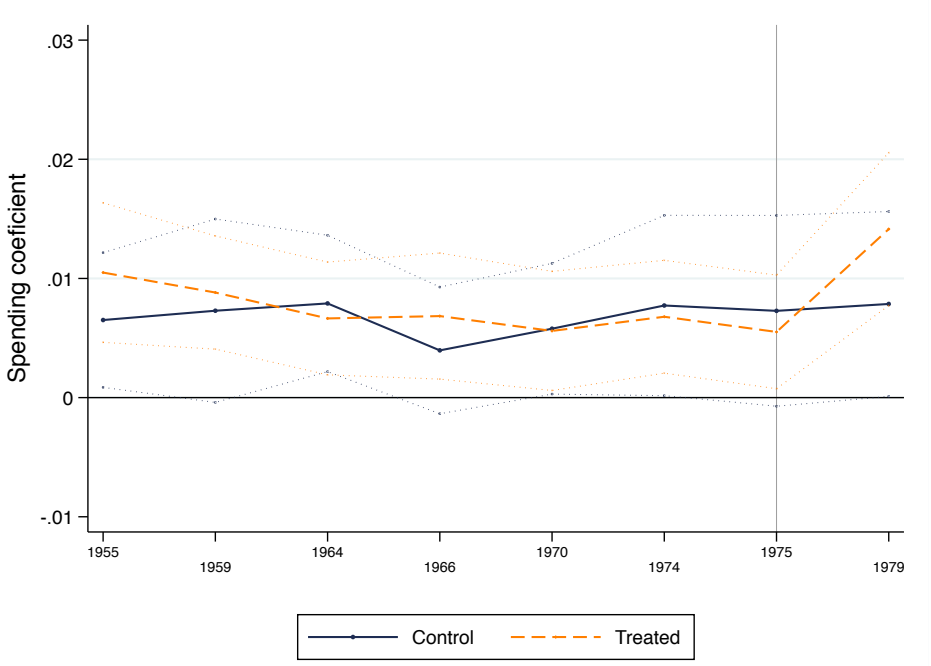
Notes: The figure uses a binned scatterplot to report non-parametrically the relationship between the share of candidate expenditures on printing and advertising, and the share of district printing and advertising expenditures represented by candidate. It does so separately for the 1885-1910, 1922-1945, 1950-1970, 1974-1997, and 2001-2017 time periods.

Figure H.23: Relationship between the share of total candidate expenditures on meetings and the share of district printing and advertising expenditures represented by candidate, depending on the time period



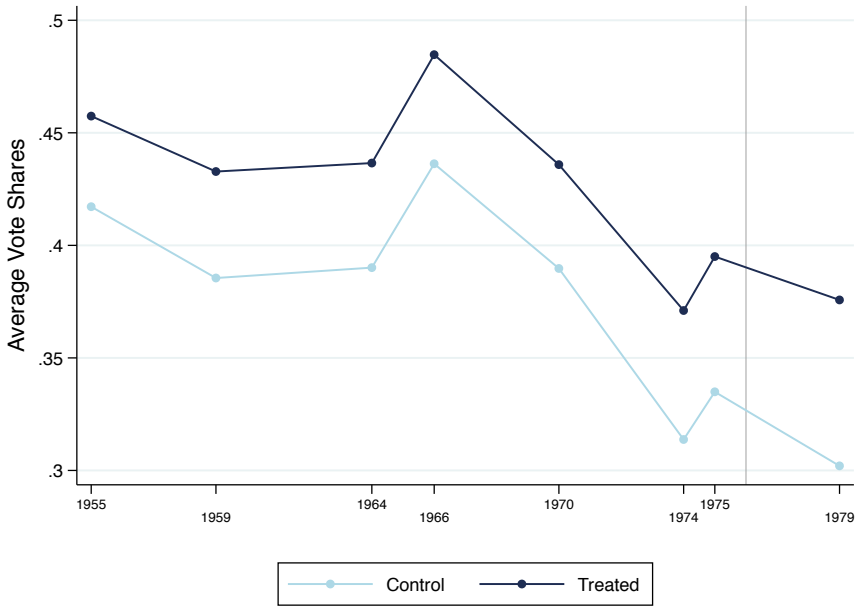
Notes: The figure displays the coverage of Radio City in 1985.

Figure H.24: Data on Radio Coverage: Illustration from the 1985 Radio Atlas published by the Radio Marketing Bureau

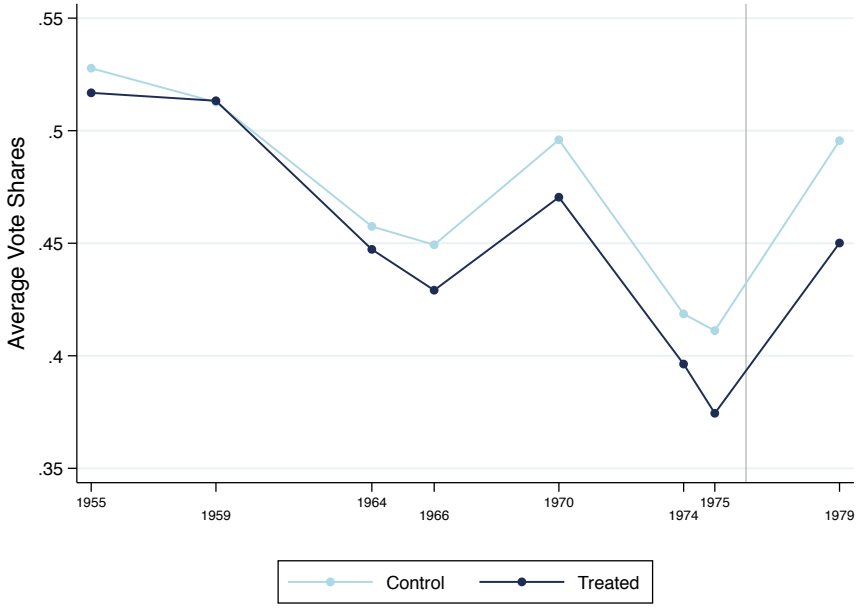


Notes: The figure plots, for each election year, the point estimates and 95% confidence intervals of the linear combination of the share of spending coefficient and its interaction with an election-year dummy (the coefficients $\beta + \beta_t$ in equation (3)). The relationship is estimated separately for constituencies that received local radio in 1975-1976 (Treated) and those that received it in 1980 (Control).

Figure H.25: Evolution of the relationship between candidates' share of total spending and vote share, 1955-1979, depending on radio presence in 1975-1980



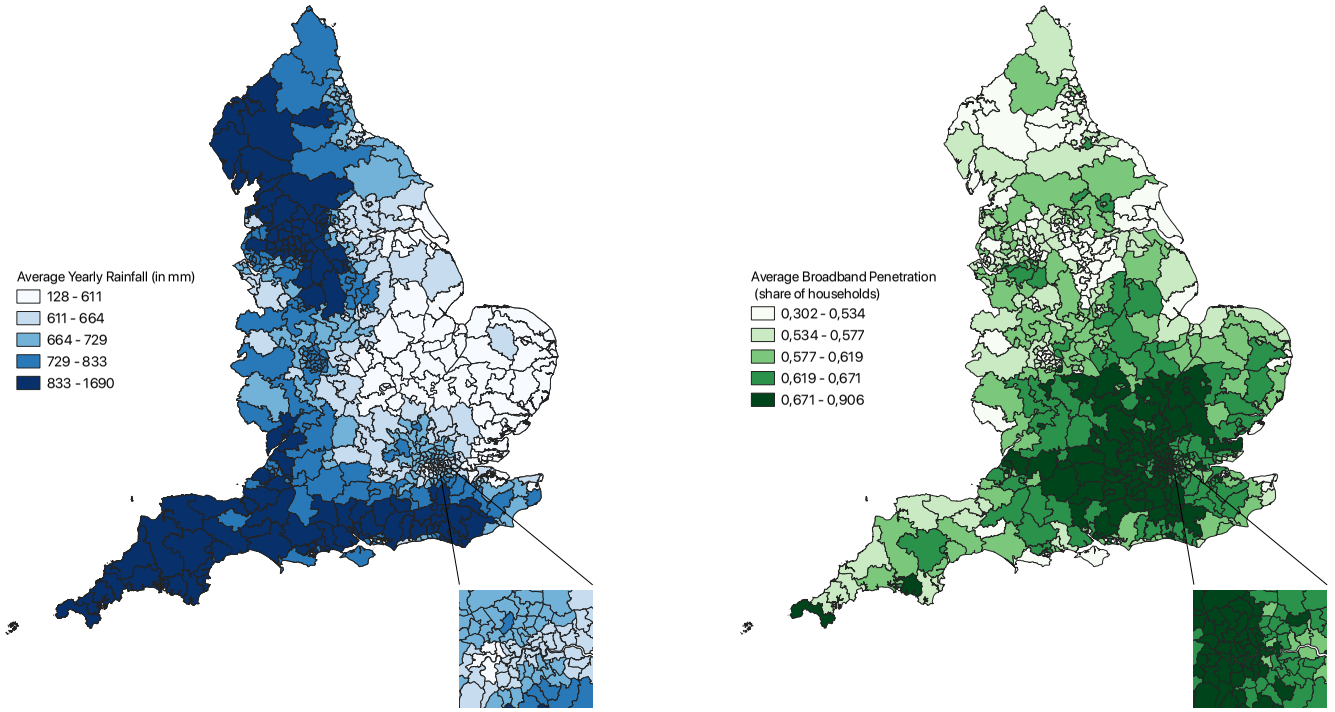
(a) **Labour Party candidates**



(b) **Conservative Party candidates**

Notes: The figures plot, for each election, the average vote shares received by candidates from the Labour (upper) and Conservative (bottom) parties for constituencies that received local radio in 1975-1976 (Treated) and those that received it in 1980 (Control).

Figure H.26: Evolution of average candidates' vote share, 1955-1979, depending on their party and on radio presence in 1975-1980

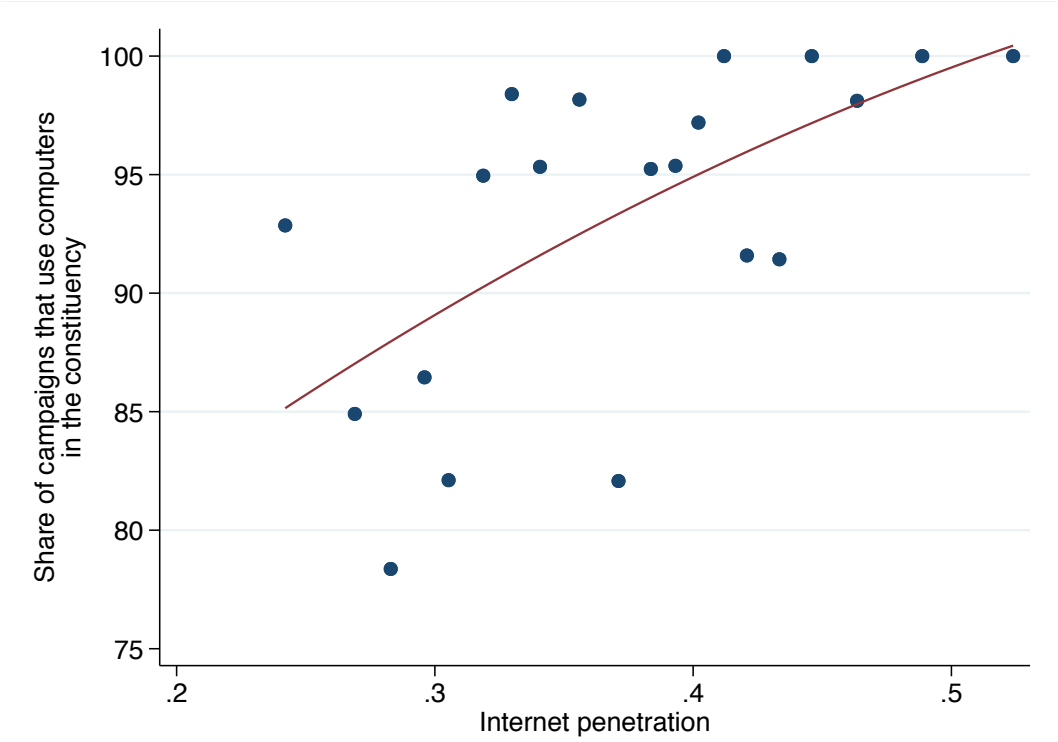


(a) Yearly Rainfall, 2009

(b) Internet penetration, January 2010

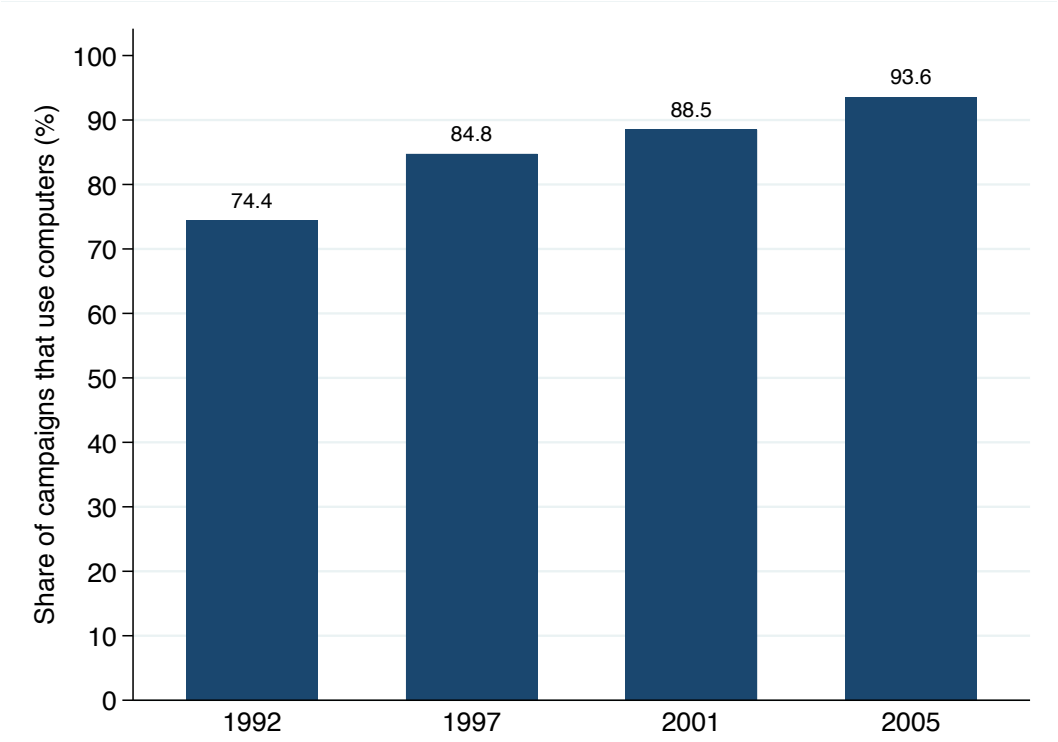
Notes: This figure illustrates the relationship between rainfall and broadband internet penetration at the constituency level. Internet penetration and rainfall original data come from Gavazza et al. (2019), and were aggregated at the constituency-level using the Office for National Statistics (ONS) postcodes information. See the text for more details.

Figure H.27: Relationship between rainfall and broadband Internet penetration in England, 2010



Notes: The figure uses a binned scatterplot to report non-parametrically the relationship between the share of the campaigns in a constituency that use a computer and the Internet penetration in the constituency. The year is 2005. Data on Internet penetration is from Gavazza et al. (2019), and survey data on the use of computers from Denver et al. (2003) and Fisher and Denver (2009). The datasets are described in more details in the text.

Figure H.28: Relationship between the share of the campaigns in a constituency that use a computer and the Internet penetration in the constituency, 2005

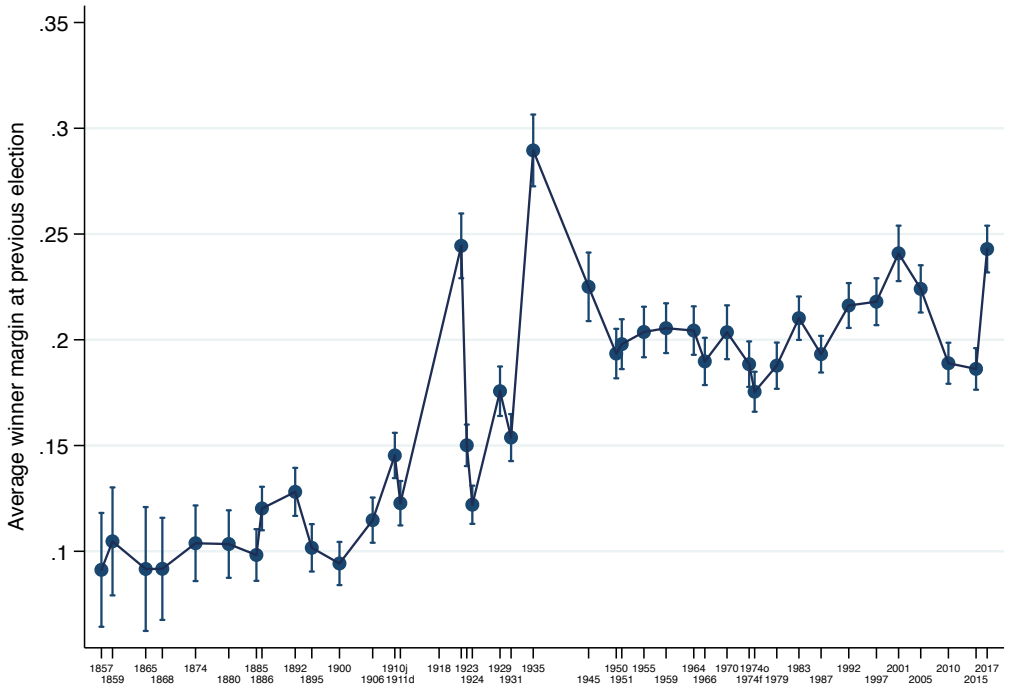


Notes: The figure reports the evolution of the share of campaigns that use computers. Survey data on the use of computers is from Denver et al. (2003) and Fisher and Denver (2009). The datasets are described in more details in the text.

Figure H.29: Share of campaigns that use computers, 1992-2005

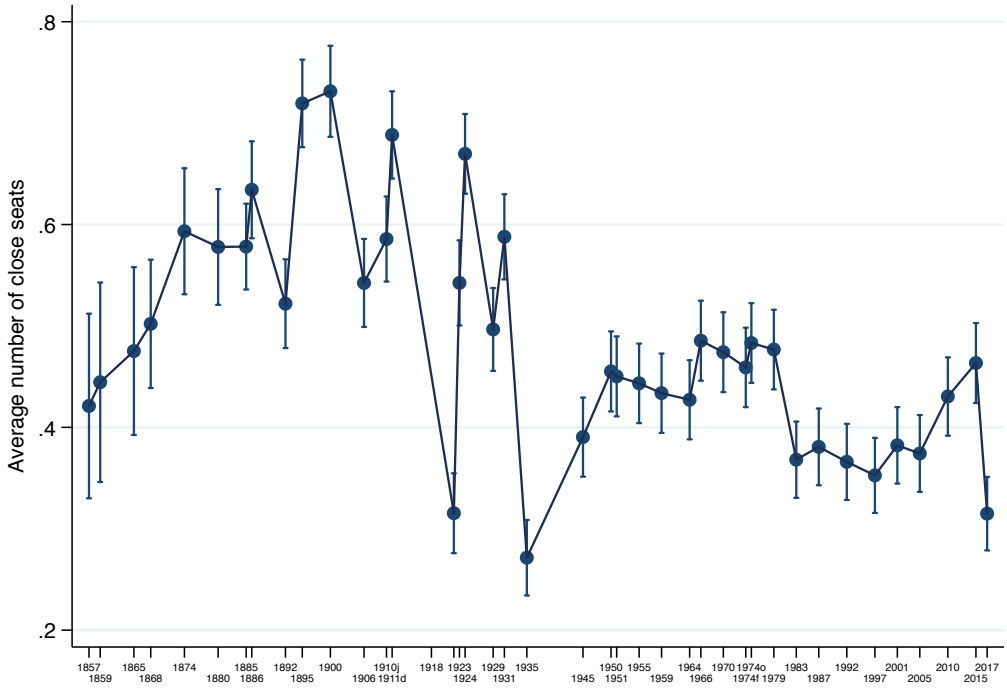
Notes: The figure plots, for each election year, the point estimates and 95% confidence intervals of the linear combination of the spending coefficient, its interaction with an election-year indicator variable, and their interaction with a "close constituency" indicator variable, equal to one when the winner margin at the previous election is below the all-year median (15.2%). Vertical lines indicate the time periods described in Section 3.

Figure H.30: Evolution of the relationship between candidates' share of total spending and vote share, 1857-2017, depending on the closeness of the seat



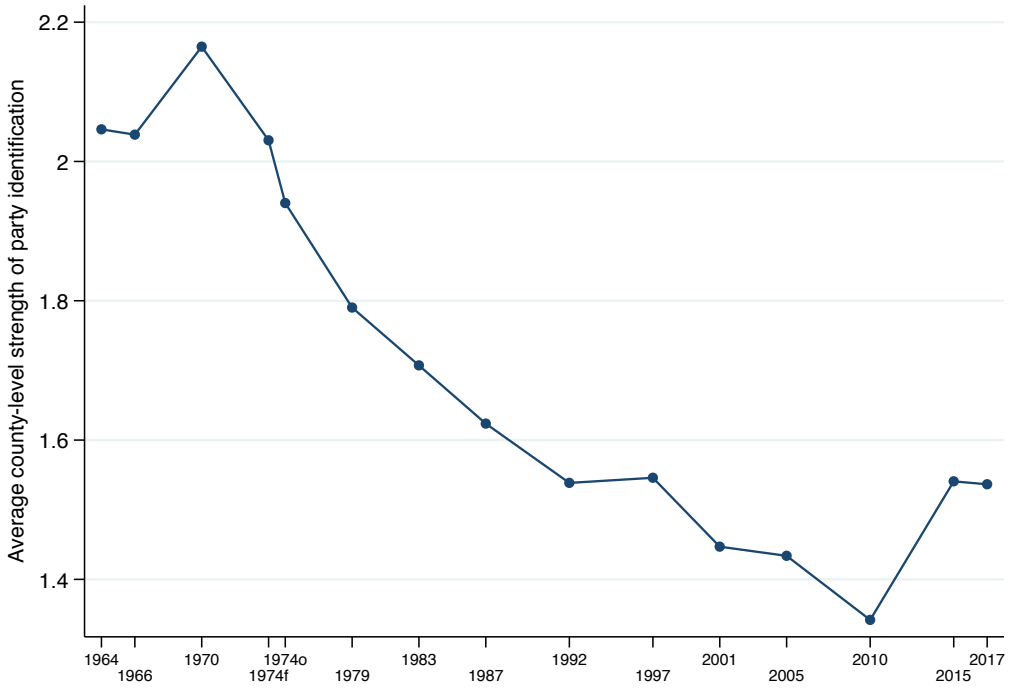
Notes: The figures plots the average difference in votes between the candidates finishing first and second in the constituency at the previous election.The time period is 1857-2017.

Figure H.31: Average winning party's margin at the previous election, 1857-2017



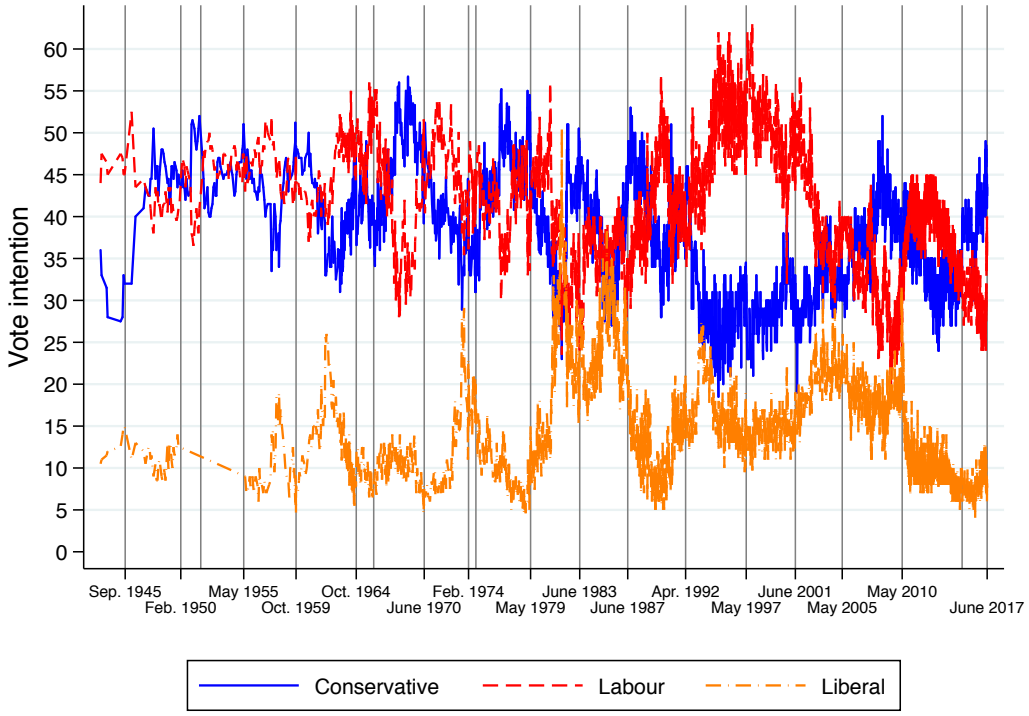
Notes: The figure plots, for each election year, the share of constituencies with a winner margin at the previous election that is below the all-year median (15.2%).

Figure H.32: Share of close-election constituencies, 1857-2017



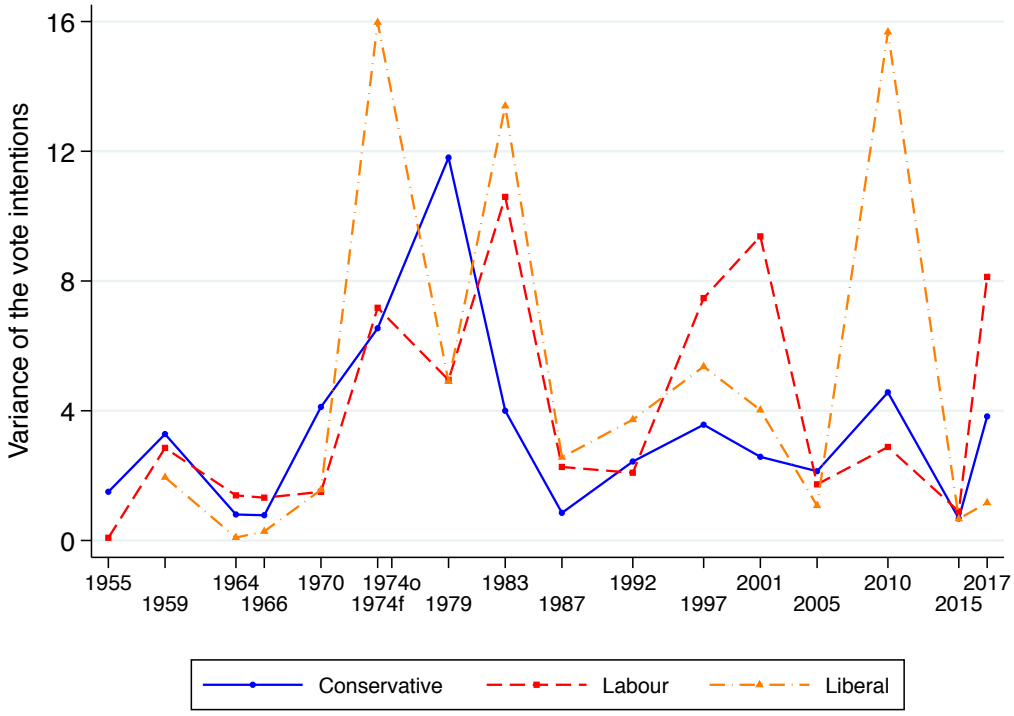
Notes: The figures plots, for each year, the average strength of party identification across British counties, with "no identification" corresponding to 0 and "very strongly" to 3. The data come from the British Election Studies.

Figure H.33: Average strength of party identification, 1964-2017



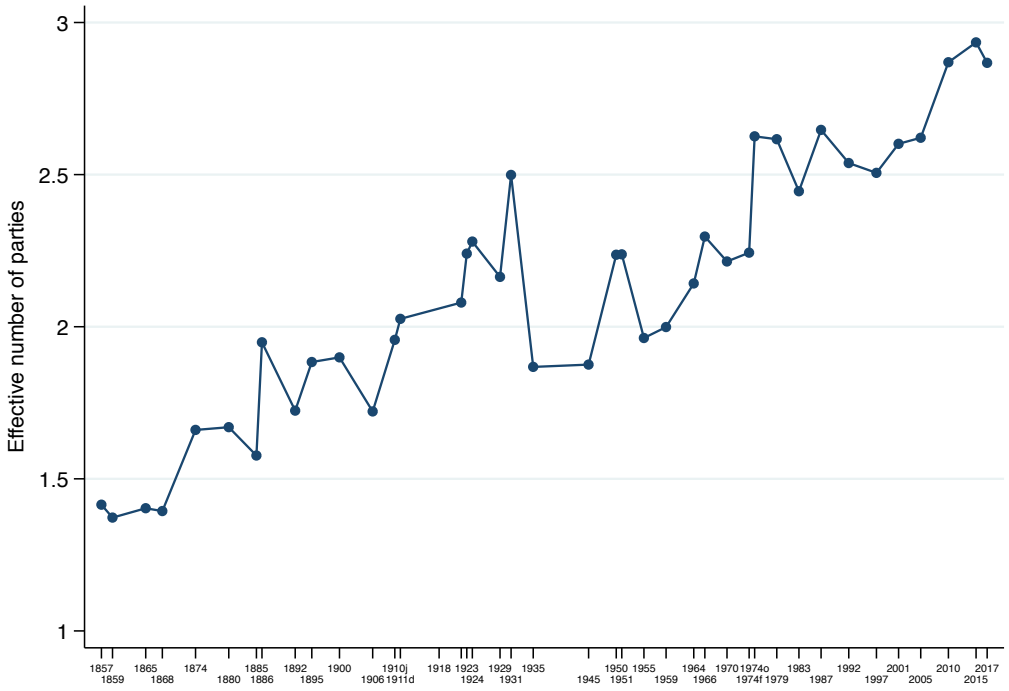
Notes: The figures plots, for each election, the voting intention during the electoral cycle for the three main parties: Conservative, Labour, and Liberal. The raw data are from Wlezien et al. (2013) and the "dataset on polls and the timeline of elections".

Figure H.34: Voting intention during the electoral cycle, 1945-2017



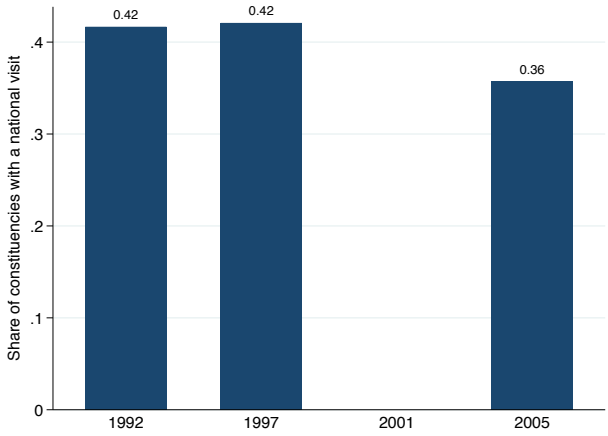
Notes: The figures plots, for each election, the variance of daily reports of voting intention during the electoral cycle for the main three parties: Conservative, Labour, and Liberal. The raw data are from Wlezien et al. (2013) and the "dataset on polls and the timeline of elections".

Figure H.35: Variance of daily reports of voting intention, 1955-2017

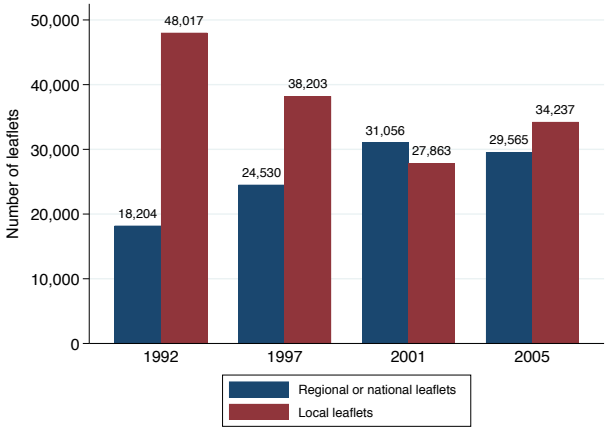


Notes: The figure plots for each general election the average "effective number of parties", as defined by Laakso and Taagepera (1979), running in the constituency at the previous election.

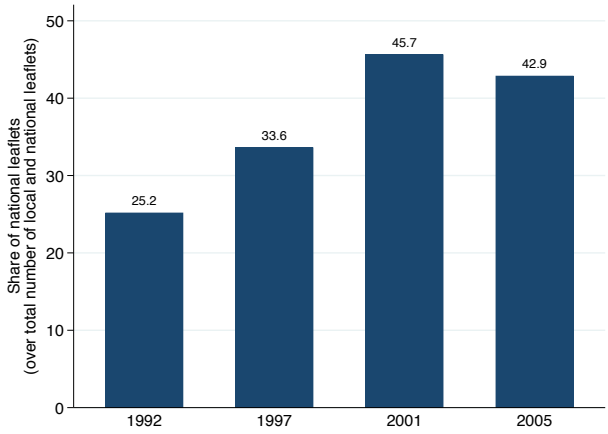
Figure H.36: Evolution of the average effective number of parties running in each constituency



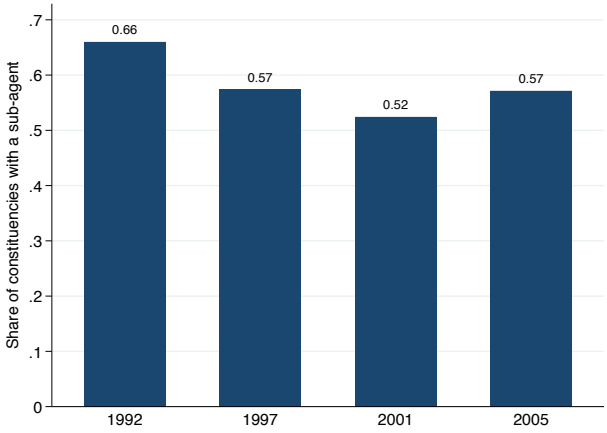
(a) Visits by leading figures



(b) Number of local vs. national leaflets



(c) Share of national leaflets



(d) Sub-agents

Notes: The figure plots the evolution of four different measures of the relative importance of national vs. constituency campaigning: the share of constituencies receiving at least one visit by a leading national figure (sub-Figure H.37a); the number of regional or national leaflets vs. the number of local leaflets distributed in the constituency during the campaign (sub-Figure H.37b); the share of national leaflets (sub-Figure H.37d), and the share of constituencies with a sub-agent hired by the national party (sub-Figure H.37d). Survey data are from Denver et al. (2003) and Fisher and Denver (2009). The datasets are described in more details in the text.

Figure H.37: Constituency vs. national campaigning, using survey data, 1992-2005

References

Alvarez, R. M. and Nagler, J. (1998). When Politics and Models Collide: Estimating Models of Multiparty Elections. *American Journal of Political Science*, 42(1):55–96.

Ball, S. R. and Smith, J. G. (2016). British Parliamentary Election Results, 1885-1973, with Socio-Economic Links to 1931 Census.

Bekkouche, Y., Cagé, J., and Dewitte, E. (2020). The Heterogeneous Price of a Vote: Evidence from Multiparty Systems, 1993-2017. CEPR Discussion Papers 15150, C.E.P.R. Discussion Papers.

Berry, S., Levinsohn, J., and Pakes, A. (1995). Automobile Prices in Market Equilibrium. *Econometrica*, 63(4):841–890.

Cagé, J. (2018). *Le prix de la démocratie*. Fayard (English version: The Price of Democracy, Harvard University Press, 2020).

Cagé, J. and Dewitte, E. (2020). The Rising Demand for Representation: Lessons from 100 Years of Political Selection in the UK. Working paper.

Colella, F., Lalive, R., Sakalli, S., and Thoenig, M. (2020). ACREG: Stata module to perform Arbitrary Correlation Regression. Statistical Software Components, Boston College Department of Economics.

Conley, T. G. (1999). GMM estimation with cross sectional dependence. *Journal of Econometrics*, 92(1):1–45.

Denver, D., Hands, G., Fisher, J., and MacAllister, I. (2003). Constituency Campaigning in Britain 1992-2001. *Party Politics*, 9(5):541–559.

Ewing, K. D. (1987). *The Funding of Political Parties in Britain*. Cambridge University Press.

Fisher, J. and Denver, D. (2009). Evaluating the electoral effects of traditional and modern modes of constituency campaigning in Britain 1992-2005. *Parliamentary Affairs*, 62(2):196–210.

Fisher, J., Denver, D., and Hands, G. (2006). Unsung Heroes: Constituency Election Agents in British General Elections. *The British Journal of Politics and International Relations*, 8(4):569–586.

Gavazza, A., Nardotto, M., and Valletti, T. (2019). Internet and Politics: Evidence from U.K. Local Elections and Local Government Policies. *The Review of Economic Studies*, 86(5):2092–2135.

Katz, J. N. and King, G. (1999). A Statistical Model for Multiparty Electoral Data. *The American Political Science Review*, 93(1):15–32.

Laakso, M. and Taagepera, R. (1979). "Effective" Number of Parties: A Measure with Application to West Europe. *Comparative Political Studies*, 12(1):3–27.

Nevo, A. (2000). A Practitioner's Guide to Estimation of Random-Coefficients Logit Models of Demand. *Journal of economics & management strategy*, 9(4):513–548.

Newey, W. K. and West, K. D. (1987). A Simple, Positive Semi-Definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix. *Econometrica*, 55(3):703–708.

Rix, K. (2008). The elimination of corrupt practices in british elections ? Reassessing the impact of the 1883 corrupt practices act. *English Historical Review*, 123(500):65–97.

Southall Humphrey, G. D. and Gregory, I. (2000). The Great Britain Historical Database. *Historical Social Research / Historische Sozialforschung*, 25(3/4 (93/94)):181–186.

Wlezien, C., Jennings, W., Fisher, S., Ford, R., and Pickup, M. (2013). Polls and the Vote in Britain. *Political Studies*, $61(1_suppl) : 66 - -91$.