

## When Does Money Matter for Elections?

### RÉSUMÉ

Cet article étudie les campagnes électorales sur le long terme, à travers le prisme de leurs dépenses. En particulier, nous investiguons l'impact des évolutions majeures dans les technologies de l'information et les contextes électoraux sur les niveaux, allocations et influences des dépenses des candidats. Pour ce faire, nous construisons un nouvel ensemble de données exhaustif sur les élections générales au Royaume-Uni de 1857 à 2017, qui comprend des informations sur les dépenses de campagne (détaillées par catégories de dépenses), les résultats électoraux et les caractéristiques socio-démographiques de 69042 candidats-élections-circonscriptions. Nous commençons par apporter de nouveaux éclairages sur l'histoire des campagnes politiques britanniques, en documentant notamment l'importance croissante du matériel publicitaire (y compris via des moyens numériques), au détriment du personnel rémunéré et des meetings électoraux. À l'aide d'un modèle à effets fixes, nous montrons ensuite qu'il existe une forte corrélation positive entre les dépenses des candidats et les résultats électoraux de ceux-ci, et que, dans l'ensemble, la magnitude de cette relation a fortement augmenté depuis les années 1880, pour atteindre un pic dans le dernier quart du XXe siècle. Nous liions ces transformations à des changements dans les stratégies de campagne et à l'introduction de nouvelles technologies de l'information. Nous montrons en particulier que l'expansion de la radio locale et de l'ADSL a augmenté la sensibilité des résultats électoraux aux différences de dépenses de campagne.

#### Julia Cagé\*

julia.cage@sciencespo.fr  
Associate professor at  
Sciences Po's Department of  
Economics and co-director of  
LIEPP's Evaluation of  
democracy research group

#### Edgard Dewitte\*

edgard.dewitte@sciencespo.fr  
Doctoral fellow in Economics at  
Sciences Po's Department of  
Economics and LIEPP affiliate

### ABSTRACT

This paper studies electoral campaigns over the long run, through the lens of their spending. In particular, we ask whether changing media technologies and electoral environments have impacted patterns of campaign spending, and their correlation with electoral results. To do so, we build a novel exhaustive dataset on general elections in the United Kingdom from 1857 to 2017, which includes information on campaign spending (itemized by expense categories), electoral outcomes and socio-demographic characteristics for 69,042 election-constituency-candidates. We start by providing new insights on the history of British political campaigns, documenting in particular the growing importance of advertising material (including via digital means), to the detriment of paid staff and electoral meetings. Using a saturated fixed effects model, we then show that there is a strong positive correlation between expenditures and votes, and that overall the magnitude of this relationship has strongly increased since the 1880s, peaking in the last quarter of the 20th century. We link these transformations to changes in the conduct of campaigns, and to the introduction of new information technologies. We show in particular that the expansion of local radio and broadband Internet increased the sensitivity of the electoral results to differences in campaign spending.

\* Les auteurs adhèrent à  
la charte de déontologie du LIEPP  
disponible en ligne et n'ont déclaré  
aucun conflit d'intérêt potentiel.

How to cite this publication:

Cagé, Julia, Edgar Dewitte, *When Does Money Matter for Elections?*, *LIEPP Policy Brief*, n°58, 2022-03-10.



## Introduction

Political scandals are often good indicators of the underlying tensions of our democratic systems. Fake invoicing and hidden spending, as occurred during the 2012 Sarkozy campaign in France (the so-called “Bygmalion affair”), and the criminal convictions that followed, illustrate our fears of seeing elections captured by private interests. Data leakages, such as the information of millions of Facebook users sold by Cambridge Analytica to the Brexit and Trump campaigns, and the public outrage they generated, fuel our apprehension towards the new forms of political campaigning.

As a matter of fact, a large academic literature has shown that candidates’ money, and the many campaigning tools it buys, can improve their electoral performance (see e.g. Da Silveira and De Mello 2011; Ben-Bassat, Dahan, and Klor 2015; Avis et al. 2017; Spenkuch and Toniatti 2018; Bekkouche, Cagé, and Dewitte 2022). But a striking feature of this research is its lack of historical perspective. Are our fears indeed more justified today than they were in the past? Campaigns have existed as long as elections have been held; have their patterns and influences changed over time? More specifically, how have evolutions in the electoral environments and regulations affected the relationship between candidates’ expenditures and electoral results?

In a recent research paper (Cagé and Dewitte, 2021), we rely on the fact that the UK was the very first country worldwide to regulate campaign finance more than 150 years ago to investigate the role played by money in campaigns over the very long run. We show that, while the amounts spent on candidates’ campaigns have decreased dramatically since 1880, the correlation between this spending and the votes candidates received has in fact risen, leading to ambiguous conclusions regarding the importance of money in elections. This evolution is, we argue, in part due to the introduction of decentralized media technologies, such as local radio or the Internet. It shows that these elements need to be taken into account when designing relevant campaign finance regulations.

## 1. Data and Methodology

### 1.1. A new dataset on elections and campaign expenditures available over the long run

We create a new, exhaustive dataset on campaign expenditures and electoral results at the candidate level in the UK for all the general elections between 1857 and 2017. Our dataset covers 40 elections, in 20,085 election-constituencies, for a total of 34,398 unique candidates. The main data sources are reports published after every general election since 1854 in UK government records (the Parliamentary Papers), which include information, for each candidate, on all the expenses incurred during her campaign, detailed into a number of different spending categories (printing and advertising, public

meetings, transport, etc.).

We complement these data with detailed candidate and constituency characteristics using a variety of archival sources. Candidates’ biographical information comes mostly from The Times Guide to the House of Commons, and has been collected as part of the LIEPP project “Inégalités et Demandes de Représentation” (Binard, Boring, Cagé and Dewitte, 2020). They include the age, gender, education, occupation and past political mandates of the candidate. Constituency information comes from the Decennial Censuses; and is comprised of both demographic (gender, age) and socio-economic variables (employment, social classes).

### 1.2. Fixed Effects and Natural Experiments

The first part of our analysis builds on the rich descriptive evidence of our new dataset. Then, we study the impact of spending on votes by estimating the following equation:

$$\ln\left(\frac{s_{cmt}}{s_{omt}}\right) = \alpha + \beta \text{ spending}_{cmt} + \mathbf{X}'_{mt}\gamma + \mathbf{Y}'_{ct}\delta + \xi_c + \omega_{jt} + \epsilon_{cjmt}$$

which is micro-founded by a conditional logit model (see frame). The left-hand-side variable 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  $t$ . Our main explanatory variable, spending, is the share of the district  $m$  total spending represented by the candidate  $c$  in electoral year  $t$ .  $\mathbf{X}$  and  $\mathbf{Y}$  are vectors of time-varying covariates for constituencies (demographics, age structure and socio-economic measures) and candidates (age, occupation and political mandates).

In addition, the historical depth of our data allows us to control for party-election ( $\omega$ ), constituency ( $\xi$ ) and, most importantly, candidate ( $\xi$ ) fixed effects. In other words, we exploit variations in the spending of the same candidate over time and constituencies (controlling for national party popularity and local specificities), thereby effectively capturing time-invariant unobserved candidate dimensions (such as, arguably, quality or charisma). It allows to (partially) shield from potential cofounders that would otherwise make the relationship between spending and votes highly endogenous.<sup>[1]</sup> Finally, to see how the  $\beta$  coefficient varies over time, we interact the spending variable with indicator variables for elections, and plot the coefficients (see Figure 3).

Finally, we conjecture that the variation observed through these interaction terms are, at least in part, related to the introduction of new media

[1] A large literature has tried to deal with this endogeneity, using different empirical strategies. The most recent research produces estimates that are in line with those of our saturated fixed-effect specifications. Besides, note that the goal of our research was not to provide an exact point-estimate of the causal impact of money on votes, but to study how this relationship has evolved over time and geography, and depending on the campaign strategies. We believe this is relevant for at least two reasons. First, if one accepts that at least part of the spending-votes relationship is causal, the question as to when, where and why it is statistically significantly positive turns out to be important. Second, it has been shown that a large numbers of actors of electoral campaigns take the correlation at face value – orthogonally to its degree of causality – with practical consequences that makes it an interesting object of analysis in itself.

## Technical note: Estimating the determinants of candidate-level vote shares in multi-party constituencies

Obtaining statistically consistent estimates of the impact of an independent variable (e.g. campaign spending) on candidates' vote shares within the same constituency is complicated by the fact that these shares are highly correlated (they need to sum up to 1). In our article, we rely on Bekkouche et al. (2022) and solve this issue by adapting a discrete choice model (Conditional Logit) to the use of aggregate voting data. In these models, regression coefficients are interpreted as relative probabilities of choosing each alternative compared to a baseline category. In our context, we take as a reference category a choice that is available to every voter: abstention. Our point estimates  $\beta$  are thus to be interpreted as "the variation (in percent) in the votes-on-abstention ratio, of a one-percentage-point increase, by a candidate, in the share of total constituency spending she incurs".

technologies. To test this hypothesis, we exploit historical events that generated plausibly exogenous shifts in the spread of these technologies (what social scientists call "natural experiments"). For local radio, we follow Gentkow (2006) and Angelucci, Cagé and Sinkinson (2021) and analyze a freeze in the distribution of independent radio licenses that occurred between 1976 and 1980. The assumption is that, absent the freeze, radio stations that obtained their license in 1980 would have done so soon after 1976, and thus be comparable to radio stations that obtained it right before the freeze. One can thus look at the differential in spending effects between those two groups during the freeze to estimate the impact of "having access to local radio". The logic is the same for broadband Internet, but comparing places which, in the same region, had different rain levels during the previous year – a factor that Gavazza et al. (2019) have shown – decreases access to broadband Internet.

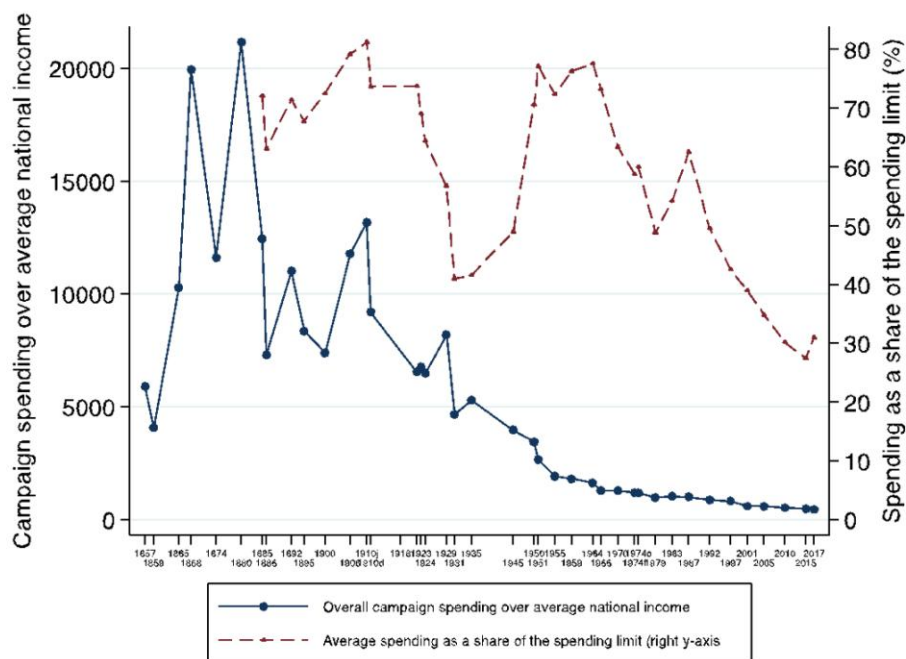
## 2. Findings

Over the 19th, 20th and 21st centuries, the way candidates campaign has changed radically, in particular with the appearance of new modes of communication, broadcasting technologies and electoral regulations: our findings bring quantitative evidence to these statements (2.1) and show how they affected the changing relationship between candidates' spending and their vote shares (2.2).

### 2.1. A dive into the history of British campaigns, through the lens of election expenses

The first key stylized fact of our descriptive exercise is the dramatic decrease in the average amount spent by campaigns (whether in total, per candidate or per registered voter) over the last century. Figure 1 displays the overall amount spent on general elections (i.e. summed over all the

Figure 1. Long-run evolution of campaign spending



Notes : The figures plot the long-run evolution of campaign spending. The blue lines with dots report 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.

candidates) since 1857, normalizing it by the adult average national income. While in the 19th century as much as the equivalent of 20,000 adults' average income was spent on campaigning, this number went down to 500 in recent years (i.e. less than one annual income per electoral district). One of the key drivers of this general pattern is without a doubt the introduction and tightening of campaign spending limits, as documented by Fourinaies (2021). However, it is worth noting that a significant share of the candidates spends much less than the legal maximum, particularly in recent years. While the average spending as a share of the legal maximum was equal to 75% of the limit on average in 1885-1911, it is only one third of the limit in the recent period.

As such, the second key stylized fact we observe is the radical change in the composition of candidates' spending (Figure 2), with a progressive shift away from paid staff (such as agents or messengers) towards advertisement services and material (leaflets, posters, etc.). This is again in accordance with qualitative evidence. In the mid-19th century, candidates used staff to target each elector individually through canvassing, conveying and monitoring – something that was made possible by the very small electorate and the non-anonymous voting process. The 1867-1885 period of electoral reforms saw the birth of political campaigns as we understand them (Kavanagh 1995; Lawrence 2009). With the advent of the secret ballot and the successive extensions of the franchise, candidates

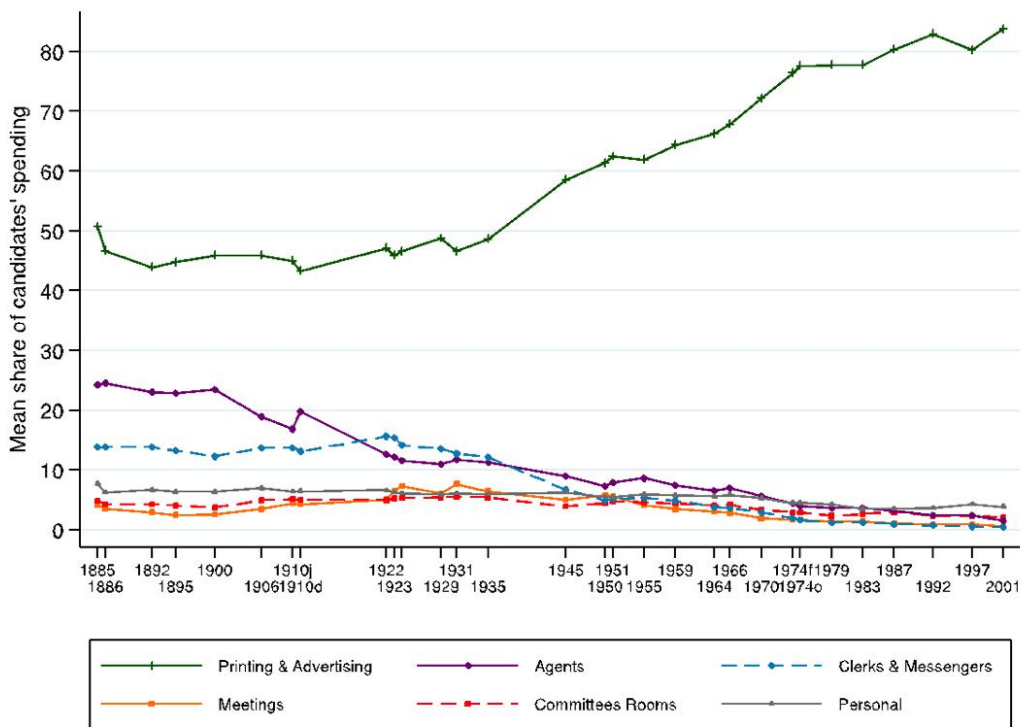
had to find new ways to reach the mass of anonymous electors on whom their fate depended. While open-air election meetings emerged (and started to appear systematically in the expenses data), they always remained relatively inexpensive. On the contrary, technological innovations, first in printing and then in broadcast media, opened a new era of propaganda, making the share of spending devoted to advertising increase constantly over the period, and up until the age of the Internet, when we calculate that candidates devoted on average around 85% of their total expenditures to “advertising” and “unsolicited material” (spending categories changed in 2005).

## 2.2. The growing correlation between spending and votes

On average, across all years, we find that the correlation between a candidate's share of total constituency spending and votes is positive, statistically significant and economically meaningful: in our most conservative specification, a one-percentage-point increase in the spending share of a candidate is associated with a 1.1% increase in her votes-on-abstention. Holding abstention constant, this means that an additional 905 euros in campaign spending corresponds on average to 119 additional votes.

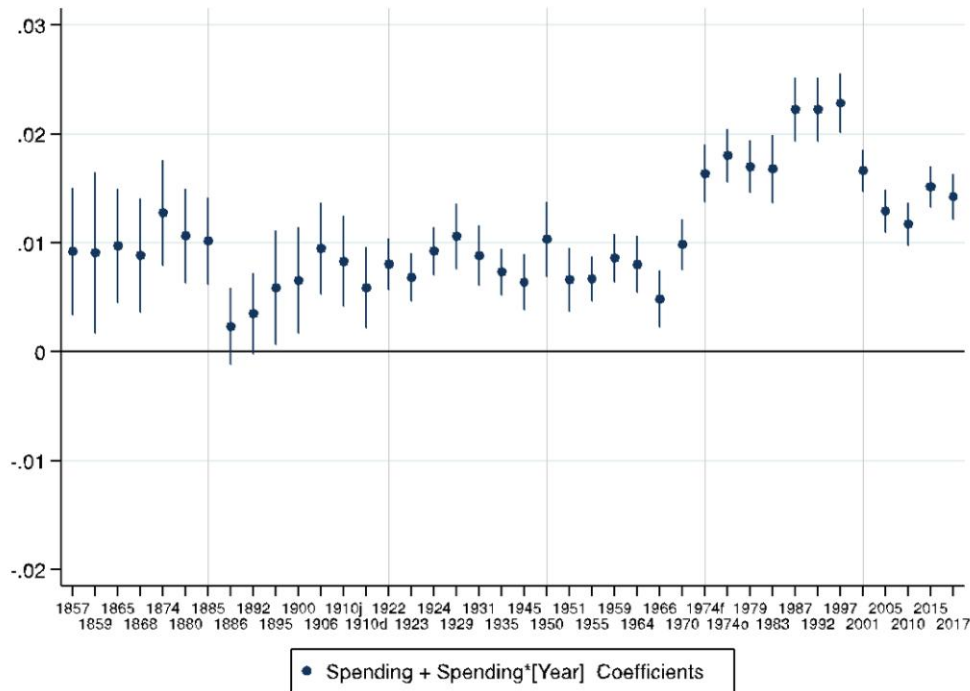
Figure 3 shows that the magnitude of this correlation has consistently increased since the 1880s, despite the passing of stricter campaign

Figure 2. Electoral expenses by category over time



Notes : The figure plots the average share of candidates' total expenses spent on each expenses category at every general election between 1885 and 2001.

Figure 3. 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 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. Vertical lines indicate relatively homogenous (in terms of electoral and mediatic environment) time periods (see Cagé & Dewitte 2022).

finance rules. In particular, it peaked during the last three decades of the 20th century – a result that contrasts with the general consensus in the political science literature on the importance of local campaigning at the time. The correlation then suddenly dropped in the early 2000s but remained at levels close to those of the notably corrupt Victorian-era elections.

How to explain these changing patterns? Using natural experiments, we document that both local radio and broadband Internet increased the sensitivity of votes towards differences in campaign spending. We explain these findings by the amplification potential of these local and decentralized media, which cover and comment on local campaign efforts.

We also relate our temporal trends to the important changes in the electoral environment and the conduct of campaigns described above. We provide evidence that the “professionalization” of local campaigns likely played a significant role in the sudden increased correlation between spending and votes we observe in the 1970s by bringing more sophisticated techniques, especially in marginal constituencies. In the 2000s, however, the limits on national spending and fundraising transparencies imposed by the PPERA 2000, and the economic turmoil of the late 2000s, all helped to shift national parties’ focus away from national campaigns towards local ones. Now interfering extensively in constituencies’ strategies, these nationally led efforts overshadowed candidates’ localized activities,

including their spending. This also had consequences for local campaigns themselves, which would now span longer periods in a more diffuse, less intense fashion.

### 3. Take-aways for policy makers

Our results indicate that while the amounts spent on candidates’ campaigns have decreased dramatically since 1880, the correlation between this spending and the votes candidates received has in fact risen. This means that **measures aimed at reducing the amounts of money spent during elections (such as spending caps) may not necessarily decrease the role it plays in the process.** These measures can nevertheless have different effects, such as changing the pool of potential candidates.

In their appreciation of the efficiency of campaign finance regulations, **policy makers should thus consider:**

- **the role played by media outlets, even those on which candidates are forbidden to advertise** (e.g. television in countries like France and the UK). Media outlets are indeed not solely a support platform for campaign advertising, but also serve as information channels about – and sometimes amplifiers of – any candidate’s public appearances. Hence, all kinds of support platforms can have an impact, in particular those that have a local or decentralized aspect, as most legislative

campaigns do.

- **the potential changes in parties' strategies that their reforms might involve.** Parties are strategic actors whose adaptation to the new regulatory constraints can significantly impact the importance of money in politics – and of who spends it.

If it eventually appears that policy makers have only little influence on the capacity of campaign spending to attract votes, it would make sense to **reflect on who is funding candidates' campaigns**, and, if the capture of elections by private interests is a concern, to consider the introduction public funding, such as reimbursement of campaign costs or subsidies to political parties.

## References

- ANGELUCCI, Charles, Julia CAGE, & Michael SINKINSON, 2020. Media Competition and News Diets. Working Paper 26782, *National Bureau of Economic Research*.
- AVIS, Eric, Claudio FERRAZ, Frederico FINAN, & Carlos VARJAO, 2021. "Money and Politics: The Effects of Campaign Spending Limits on Political Entry and Competition." Forthcoming, *American Economic Journal: Applied Economics*.
- BEKKOUCHE, Yasmine, Julia CAGE, & Edgard DEWITTE, 2022. "The Heterogeneous Price of a Vote: Evidence from Multiparty Systems, 1993-2017." *Journal of Public Economics* 206: 104559.
- BEN-BASSAT, Avi, Momi DAHAN, & Esteban F KLOR, 2015. "Does Campaign Spending Affect Electoral Outcomes?" *Electoral Studies* 40 (1): 102–14.
- CAGE, Julia, & Edgard DEWITTE, 2021. "It Takes Money to Make MPs: New Evidence from 150 Years of British Campaign Spending." *CEPR Discussion Paper* #16586.
- DA SILVEIRA, Bernardo S, and João DE MELLO, 2011. "Campaign Advertising and Election Outcomes: Quasi-Natural Experiment Evidence from Gubernatorial Elections in Brazil." *The Review of Economic Studies* 78 (2): 590–612.
- FISHER, Justin, & David DENVER, 2009. "Evaluating the Electoral Effects of Traditional and Modern Modes of Constituency Campaigning in Britain 1992-2005." *Parliamentary Affairs* 62 (2): 196–210.
- FOURNAIES, Alexander, 2021. "How Do Campaign Spending Limits Affect Elections? Evidence from the United Kingdom 1885–2019." *American Political Science Review* 115 (2): 395–411.
- GAVAZZA, Alessandro, Mattia NARDOTTO, & Tomaso VALLETTI, 2019. Internet and Politics: Evidence from U.K. Local Elections and Local Government Policies. *The Review of Economic Studies*, 86(5):2092–2135.
- GENTZKOW, Matthew, 2006. Television and Voter Turnout. *Quarterly Journal of Economics*, 121(3):931–972.
- HERSH, Eitan D, 2015. Hacking the Electorate: How Campaigns Perceive Voters. *Cambridge University Press*.
- KAVANAGH, Dennis. 1995. Election Campaigning: The New Marketing of Politics. Oxford: *Blackwell*.
- LARCINESE, Valentino, & Luke MINER, 2018. "Was Obama Elected by the Internet? Broadband Diffusion and Voters' Behavior in US Presidential Elections." *CEISifo Working Paper Series* no. 6882
- LAWRENCE, Jon, 2009. Electing Our Masters: The Hustings in British Politics from Hogarth to Blair. *OUP Oxford*.
- RIX, Kathryn, 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.
- SPENKUCH, Jörg L, & David TONIATTI. 2018. "Political Advertising and Election Results." *The Quarterly Journal of Economics* 133 (4): 1981–2036.
- WRING, Dominic, & Stephen WARD. 2010. "The Media and the 2010 Campaign." In *Britain Votes 2010*, 217–32. Oxford: *Oxford University Press*.

## Denières publications LIEPP Policy Brief :

CHAPELLE, Guillaume, Alain TRANNOY, and Etienne WASMER, **L'explosion de la valeur des terrains en France est-elle uniforme ? Une analyse en Ile-de-France**, Sciences Po LIEPP Policy Brief n°57, January 2022.

RAPP, Thomas, Jérôme RONCHETTI, and Jonathan SICSIC, **Les métiers du grand-âge, métiers à risque ?**, Sciences Po LIEPP Policy Brief n°56, November 2021.

KLÖCK, Carola, Paula CASTRO, and Florian WEILER, **Coalitions in the Climate Change Negotiations**, Sciences Po LIEPP Policy Brief n°55, October 2021.

GIVORD, Pauline, **Qu'est-ce qu'un bon lycée ? Questions de mesure**, Sciences Po LIEPP Policy Brief n°54, October 2021.

## Denières publications LIEPP Working Paper :

REVILLARD, Anne, Yasmine TUFFY, **Gender quotas: an interdisciplinary scoping review**, Sciences Po LIEPP Working Paper n°131, February 2022.

NIKOLOPOULOU, Iris, **A socioeconomic evaluation of austerity and labour market reforms in Greece after the 2008 crisis**, Sciences Po LIEPP Working Paper n°130, February 2022.

BERGEAUD, Antonin, Jean-Benoît EYMEOD, Thomas GARCIA, Dorian HENRICOT. **Working from Home and Corporate Real Estate**, Sciences Po LIEPP Working Paper n°129, January 2022.

ANGELUCCI, Charles, Andrea PRAT. **Is Journalistic Truth Dead? Measuring How Informed Voters Are about Political News**, Sciences Po LIEPP Working Paper n°128, January 2022.

DAVID, Quentin. **Gratuité des transports en commun et congestion routière : revue de la littérature et implications pour Paris**, Sciences Po LIEPP Working Paper n°127, October 2021.

XIE, Yu, Hao DONG, Xiang ZHOU and Xi SONG. **Trends in Social Mobility in Post-Revolution China**, Sciences Po LIEPP Working Paper n°126, October 2021.

TRICAUD, Clémence, **Better Alone? Evidence on the Costs of Intermunicipal Cooperation**, Sciences Po LIEPP Working Paper n°125, October 2021.

DE SOUSA, José, and Guillaume HOLLARD. **From Micro to Macro Gender Differences: Evidence from Field Tournaments**, Sciences Po LIEPP Working Paper n°124, September 2021.



***Le LIEPP (Laboratoire interdisciplinaire d'évaluation des politiques publiques) est un laboratoire d'excellence (Labex). Ce projet est distingué par le jury scientifique international désigné par l'Agence nationale de la recherche (ANR).***

***Il est financé dans le cadre des investissements d'avenir (ANR-11-LABX-0091, ANR-11-IDEX-0005-02) et de l'IdEx Université de Paris (ANR-18-IDEX-0001)***

***[www.sciencespo.fr/liepp](http://www.sciencespo.fr/liepp)***

***[@LIEPP\\_ScPo](https://twitter.com/LIEPP_ScPo)***

Si vous voulez recevoir les derniers échos du LIEPP et rester informés de nos activités, merci d'envoyer un courriel à : [liepp@sciencespo.fr](mailto:liepp@sciencespo.fr)

**Directrice de publication :**  
Anne Revillard

**Edition et maquette :**  
Andreana Khristova  
Sofia Cerda Aparicio

Sciences Po - LIEPP  
27 rue Saint Guillaume  
75007 Paris - France  
+33(0)1.45.49.83.61