

# advantage

The Magazine of the Centre for Competitive Advantage in the Global Economy

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Economic voters and partisan consumers

Mobilisation, terror and rearmament

The vanishing bus rider

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# Welcome to the spring 2019 issue of *Advantage* ...

## ... the magazine of the Centre for Competitive Advantage in the Global Economy (CAGE).

Established in January 2010 and funded by the Economic and Social Research Council (ESRC), our 10 year programme of innovative research addressees issues relating to improving living standards, raising productivity, maintaining international competitiveness and facilitating economic wellbeing. The wide range of articles in this issue reflect the range and depth of the work that we undertake.

In this issue, Chris Anderson looks at the diverging opinions of Leavers and Remainers about our economy and compares this state of affairs with the US after Trump's election. He explores the ideas of whether this really makes a difference? Do voters change their economic behaviour after a vote? And is their economic behaviour politically motivated?

Conversely, Mark Harrison looks at another superpower, the former Soviet Union, on the eve of the Second World War, and talks about his latest publication: *The Industrialisation of Soviet Russia Volume 7: The Soviet Economy and the Approach of War, 1937-1939* (co-written by R. W. Davies, Mark Harrison, Oleg Khlevniuk, and S. G. Wheatcroft). In it, he shows how official statistics exaggerated the growth of the economy and the population, and concealed how low productivity and living standards persisted.

Back in the UK, in his article on bus travel, Michael Waterson tells us how the increased cost in bus fares is leading to fewer people using these crucial public services. These declining numbers and deteriorating local government subsidies is leading to passengers increasingly having to shoulder the operating costs.

From here, we move to the online world. Specifically social media such as Facebook and Twitter, and politicians' have used it to micro-target voters. Looking mainly at the US, Michela Redoano shows how Facebook ads have been successfully used in elections to inform and ultimately persuade voters.

So, can we trust governments? Specifically can we trust them to spend revenues they receive in ways that improve the welfare of their citizens? And do they spend tax revenues and non-tax revenues in different ways? Lucie Gadenne answers these questions and more in her article starting on page 19.

Lastly, we also publish an article by Ashok Manandhar, who was the winner of our 2019 essay writing competition. His article, a summary of Morgan Kelly and Cormac Ó Gráda's working paper, shows how, using a variety of novel data sources, the authors piece together a picture of working class migration to Paris, and the changes wrought by the expansion of the railways.

We hope you find this issue enjoyable and informative!



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# Economic voters and partisan consumers: Assessing how political views affect economic decisions

By Chris Anderson

Soon after the Brexit referendum in 2016, the economic opinions of Leavers and Remainers began to diverge, with Remainers becoming more pessimistic about the state of the UK economy, and those supporting Brexit reporting a much rosier outlook. A similar phenomenon emerged in the United States following the election of US President Donald Trump that same year; Republicans expressed much more positive assessments of the current and future economy than Democrats did.

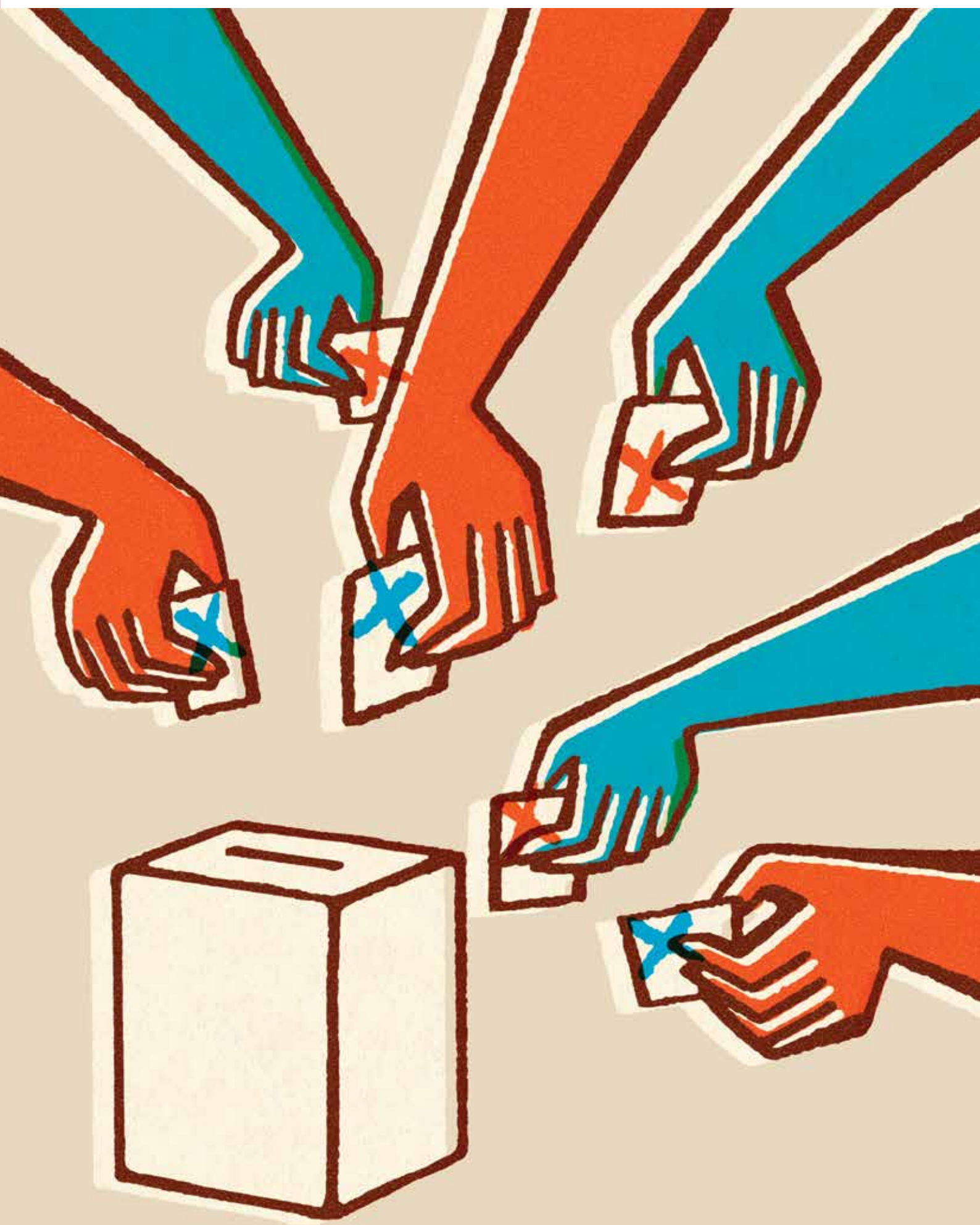
*The spending impact emerged only among voters, suggesting that the act of voting, rather than partisanship drove the effects.*

A NUMBER OF STUDIES have documented the fact that voters see the economy differently in the aftermath of an election. The reasons behind this shift are not well understood, though researchers suspect that it has two potential causes: changes in income expectations by partisans of different stripes, depending on whether their party or candidate won; and/or people's desire to maintain consistency in their political behaviour and cognitions. Regardless, the more important question may be: does it really matter if partisans' views of the economy depend on who won the most recent election?

Until recently, political economists have not asked this question. Researchers have long been interested in whether and how the economy moves people's political choices and, therefore, elections, but they have paid less attention to the reverse relationship: how do elections and the political choices voters make affect their subsequent economic decisions?

Work I conducted with Peter Enns of Cornell University investigates this question by examining the extent to which the choices people make at the ballot box influence their subsequent consumption choices. Essentially, we investigate whether voters are, in fact, political consumers. ►





To see if economic activity in the aftermath of an election is politically motivated, and to develop a more precise understanding of whether voters react to election outcomes by changing their economic behaviour, we analysed individual-level data of consumer spending collected in the United States in 2000. To pinpoint the effect of elections, we were able to utilise a unique set of consumer surveys of household and individual expenditures conducted before and after the 2000 US. presidential election between Republican George W. Bush and Democrat Al Gore. These surveys of a representative sample of over 36,000 respondents provided detailed reports of their economic activities, and allowed us to identify individual consumers' partisan affiliations and voting behaviour. We analysed surveys that corresponded to periods when partisan control of the White House changed, and, thus, when Democrats and Republicans diverged in their economic opinions. As a result, we were able to evaluate whether voters' consumption patterns corresponded with their economic evaluations, as well as whether consumption patterns of Democratic and Republican voters differed systematically before and after the election.

Our work was motivated by two ideas. On one hand, a "future income" hypothesis would suggest that elections rearrange who has the power to implement economic policy; this, in turn, would affect people's expectations of future income and, as a consequence, their economic behaviour. Put simply, supporters of the winning candidate will expect higher benefits during the president's

term in office. As a consequence, differential (post-election) opinions and economic behaviour by partisans reflect differences in people's calculations of differential future income streams.

While this hypothesis is intuitive and elegant, an alternative story is equally if not more plausible. Instead of revealing calculations of future income streams, post-election changes in partisans' economic decisions may simply reflect voters' desire for consistency during times when politics (via elections) is

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### *Is economic activity in the aftermath of an election politically motivated?*

particularly prominent and, thus, is highly salient. This hypothesis, too, expects backers of the winning candidate to express more positive attitudes about the economy, and to consume more after the election as a result. However, any partisan differences in actual consumption resulting from the election should be observed primarily among voters, and these differences should be short lived.

Our analyses of spending on discretionary goods and services show that the election of the Republican candidate, George W. Bush, as President of the United States in 2000 indeed induced partisan differences in individual purchasing patterns. We found that Democratic voters reduced

their spending on groceries, going to the movies, and eating at restaurants. Republicans, in contrast, ate out more than before the election and did not change the frequency of trips to the cinema. However, these effects were modest – the election did not lead to large shifts in spending – and they were temporary, with consumption reverting to pre-election patterns within a year's time. Thus, the election temporarily aligned economic opinions and behaviours for winners and losers, but the two diverged again with the passage of time. Critically, the spending impact emerged only among voters, demonstrating that the act of voting, rather than partisanship per se, drove these effects.

Our results suggest that elections play a role in shaping voters' economic decisions, and that a more multi-faceted assessment of the links among the economy, elections, and voter behaviour at different points of the electoral cycle is warranted. If elections can trigger changes in voters' consumption patterns, common assumptions about economic and political behaviour may require modification. Thus, partisans of different stripes do not just see the political world differently – they also come to hold different views about the health of the economy, and, for at least a period of time, they act on these differing views. Thus, especially in the aftermath of elections, politics and economics become tightly interwoven in citizens' minds to such an extent that political considerations can tinge economic activity. At the same time, this state of affairs does not last, and the economy becomes delinked from electoral politics over time as the election trigger recedes in voters' memory, and people go back to their regular lives and routine decisions. ◀

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*After US voters elected the Republican nominee, George W. Bush, as president in 2000, Democratic voters reduced spending, but Republicans began going to restaurants more frequently.*

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A stylized illustration featuring a formation of five orange Soviet bombers flying diagonally across a red and orange gradient sky. Below the sky, the silhouettes of anti-aircraft guns are visible against a lighter orange horizon. The overall aesthetic is graphic and evocative of mid-20th-century propaganda art.

# **Mobilisation, terror and rearmament: The Soviet economy on the eve of World War II**

By Mark Harrison

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Watching the defeat of Germany on the Eastern Front in World War II, Edward Hallett Carr concluded that the Soviet Union's industrialisation was the most important event of the twentieth century.

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FORMERLY A DIPLOMAT, then a scholar of international relations, Carr set about writing *A History of Soviet Russia*. Eventually he published 14 volumes (Carr 1950-1969), covering the years from the Bolshevik Revolution of 1917 to the adoption of the first Five Year Plan in 1929.

By the end, Carr had acquired a collaborator, Robert William Davies, a specialist in Soviet economics. Where Carr left off, Davies continued work on his own *Industrialisation of Soviet Russia*. He recruited his own collaborators: Stephen Wheatcroft, Oleg Khlevniuk, and eventually me. The first six volumes covered the years 1929 to 1936 (Davies 1980-2014). That period included the collectivisation of Soviet agriculture, the first five-year plan, the economic crisis and catastrophic famine of the early 1930s, and the subsequent economic recovery.

The seventh volume of this grand project has just been published as *The Soviet economy and the approach of war, 1937-1939* (Davies et al. 2018). In the last years of the 1930s, as the threat of war increased, the Soviet leaders pursued rearmament with growing determination. Mass arrests and killings took place. The economy ceased to expand. Living standards fell. Forced labour and the regimentation of regular work increased.

As before the Revolution, ordinary people went to school and to work, married, made babies (but at a lower rate than Stalin expected), adjusted to heartbreak and separation, grew old and died (but on average they lived no longer than in the nineteenth century). Nonetheless, they carried on in a new setting, that of a society at war with the world and within itself.

What was it all about? Volume 7 concludes with a summary chapter that reflects on Soviet interwar economic development from the

perspective of the its endpoint on the eve of World War II. These are the main themes that we consider:

#### **Forced industrialisation.**

Compared to Western Europe, Russia was poor and agrarian. The Bolsheviks saw industrial power as the foundation of the modern state, and pursued it at all costs. Their policies made a clear difference: in a few years, the country became much more industrialised. But the outcome still fell short. For Russia, although no longer agrarian, remained relatively poor.

**Exaggerated measures of progress.** Official statistics reflected systematic biases. They exaggerated the growth of the economy and

illustrates this aspect of economic development in that radical structural change took place. Economic development can also mean the widening of human agency (Sen 1999; see also Schumpeter 1934, who attributed economic development to the agency of entrepreneurs). From that perspective, the Bolsheviks took agency out of private hands and gave it to government officials and party activists; the most important social choices were made by a handful of top leaders.

Soviet industrialisation created winners and losers. Among the winners were millions of young women who were freed from drudgery by

education and training, which allowed them to escape from menial or servile positions, to enter factory and office work, and to pursue careers. The losers were the millions whose loved ones or lives were taken from them by famine or repression –

including many young women.

What purpose lay behind the creation of winners and losers? It is easy to suppose that some design lay behind it – that Stalin's ultimate goal was to raise some groups and cast others down. Our story shows that this was not the case. The promotion of some and the repression of others were usually improvised while the Politburo chased after another, greater goal. The greater goal was to build the military and industrial capacities of the Soviet state, securing it against enemies at home and abroad, and making it powerful in the world. Everything else followed.

The greater goal was pursued at all costs and with many miscalculations. We document the mistakes, and we show that they led to further losses, which were then redistributed across society. The losses were often magnified because, when they became apparent, Stalin refused to acknowledge them or adapt his policies to them.

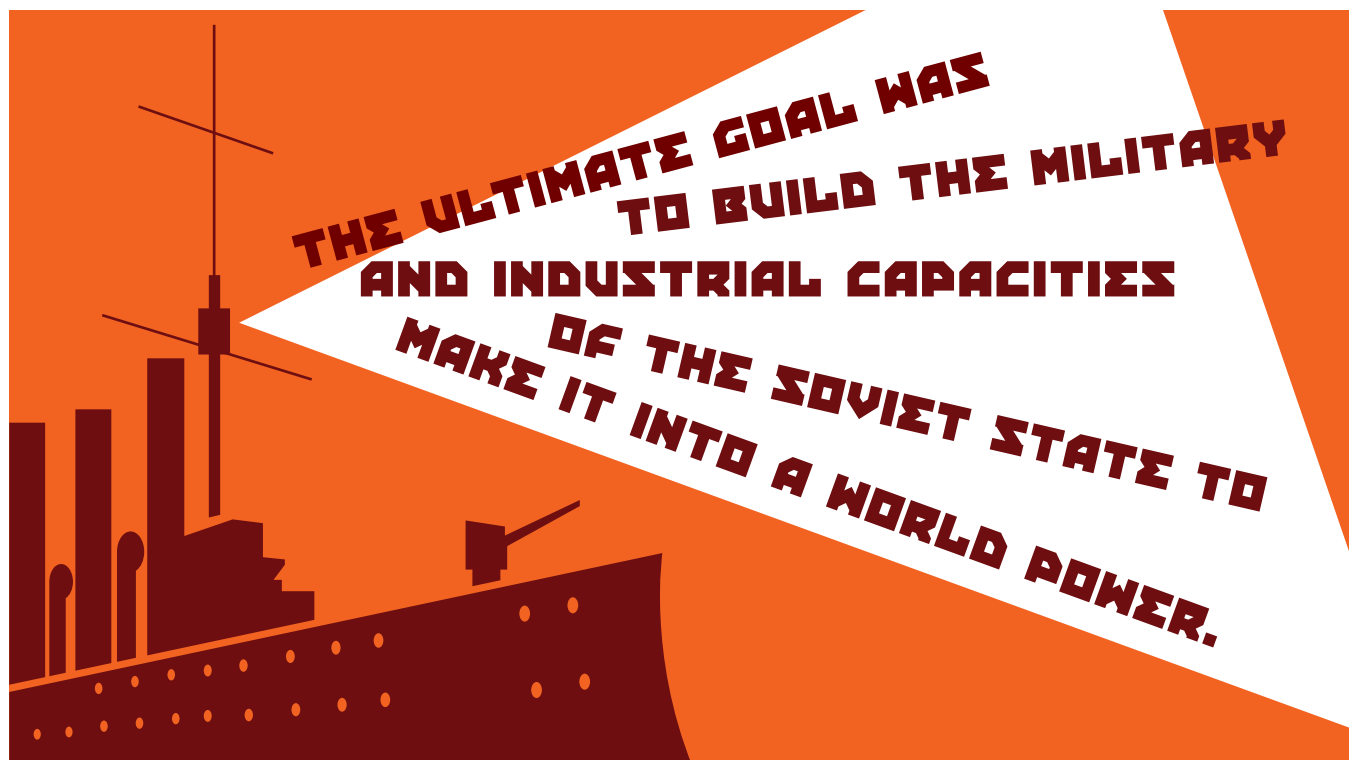
## *New research on the Soviet economy in the prelude to World War II reveals a society at war with the world and within itself.*

the population, and concealed the persistence of low productivity and living standards. The biases were well understood, but measures to correct them they were often blocked by party leaders who preferred numbers that boosted their achievements.

**Militarisation.** In the late 1930s war was in prospect but had not yet broken out. Although there was still peace, Soviet economic institutions were already exceptionally centralised and regimented. The command economy was militarised in substance as well as in form. In 1939, as Hitler launched the first phase of a war for world domination, the Soviet economy had already equalled Germany in nearly all branches of war production, producing nearly a quarter of the world's combat aircraft.

**The nature of economic development.** What makes economic development more than just economic growth? One answer is structural change (Gerschenkron 1962; Kuznets 1971). The Soviet economy clearly





Despite this, Stalin's policies up to 1939 were broadly successful, when measured against the criterion of the greater goal that he pursued. His policies provided the means of national power on a scale sufficient to secure his regime at home; to survive and win the coming war with Germany abroad; and, beyond that, to go on to compete for global influence in the Cold War that would follow victory. Thus, the Soviet Union's industrialisation continues to deserve scholarly attention. ◀

*Official statistics exaggerated the growth of the economy and the population, and concealed the persistence of low productivity and living standards.*

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#### Publication Details

A preprint of the "The Soviet economy: the late 1930s in historical perspective," the concluding summary chapter of *The Soviet economy and the approach of war*, is freely available at [warwick.ac.uk/cage/manage/publications/363-2018\\_harrison.pdf](http://warwick.ac.uk/cage/manage/publications/363-2018_harrison.pdf).

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# The vanishing bus rider: What are the reasons for the great decline in bus ridership in the UK?

By Michael Waterson



Margaret Thatcher is famously alleged to have said “A man who, beyond the age of 26, finds himself on a bus can count himself as a failure.” Though the provenance of this remark remains in question, one thing is clear: each year there are fewer such “failing men” – and women, for that matter. (I even find myself one of these failures!) Bus travel per head is declining throughout Great Britain, even though, overall, people are travelling more. What are the reasons and what, if anything, should be done about it?

TO AN ECONOMIST, one obvious question relates to prices. The price of travelling by bus has risen relative to consumer prices generally. Whilst the consumer price index (CPI) has risen 22 percent since the start of 2009, bus fares have risen on average by 39 percent. By contrast, the costs of operating a motor vehicle have risen roughly in line with inflation over the same period. So, bus fares have risen above the prime alternative. All things equal, this will lead to a drop in patronage.

Outside London, bus services are a mixture of commercial and supported services. The latter are services that local transport authorities view as socially necessary, but not commercially viable. Local authorities, looking for ways to make savings, have cut back on subsidies to such services, since their obligations are vague. Local authority-supported services outside London have halved in vehicle mileage since 2009, whereas commercial services have remained roughly unchanged. (These statistics, however, conceal a fall in commercial mileage in metropolitan areas and a rise outside.)

### *Bus fares are rising far more sharply than the cost of driving.*

Commercial services do receive some government money, mainly in the form of Bus Service Operating Grant, a declining rebate on fuel duty year on year, and payments for free concessionary travel, in lieu of payments that would be made by concession holders (allowing for the fact that not as many of these people would travel if they had to pay the fare). However, for the most part their income comes from fares. As their costs rise, fares will go up.

Herein lies the problem. Bus use is declining, so bus operating costs, which are largely independent of how many passengers they carry, fall ever more heavily on those who do use them. Buses tend to be used more intensely by people who do not

have alternatives, and those who are on relatively low incomes, so there is a clear distributional issue. Rural services are differentially affected by cuts to subsidies, whilst urban and metropolitan services are affected more by declining patronage on commercial routes, as operators cut back in response.

Clearly, this is a vicious circle. To put it in context, Britain is unusual in the way bus services are supplied, at least within urban areas. The common European model is for the local authority to organise tenders for the supply of a given level of service and dictate (normally subsidised) fares. This system works well in countries such as Sweden and Germany. This approach is taken only in London within Britain, and the London system of tenders route by route has been admired in other countries. Indeed, London was, until recently, a shining example of growth amidst a sea of decline in patronage. Bus use, save for the last couple of years, has been increasing inside London and, in terms of journeys per person, London is a complete outlier still with over 250 per year. ►



It supplies over half of all bus journeys taken in England. Since 2017, six metropolitan areas outside London have been able to develop a similar system. Although none has yet taken this step, they may run into difficulties since the traditions are so different.

Here, interdependency over time is an issue with two facets. First, once services have been in the private sector, does a local transport authority have the right to remove commercial routes from operators and to put these routes out to tender? Second, even when significant competition emerges in the first round, companies that have secured a contract may believe that they will be best-placed to retain that contract in subsequent contests, potentially reducing competition down the line.

In London, by luck or good judgement, the market was initially separated among 13 different companies, each of which had a number of bus garages. Following some consolidation, seven major firms, plus some smaller companies, now operate there. Proximity between route and garage is a major factor influencing which firm operates which route, but there is continuing competition for the route-by-route tenders, since typically three or more firms' garages are sufficiently close to the route to provide the service at reasonable cost. This suggests lessons for those metropolitan areas willing to consider introducing tendering.

At the same time, the picture beyond London is not one of complete gloom. Areas with relatively high patronage outside London are, in order: Brighton and Hove, Nottingham

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*Declining ridership  
and declining  
local government  
subsidies mean  
that the dwindling  
number of  
passengers  
shoulder the bus  
operating costs.*

and Reading, contrasting locations but all outside the major metropolitan areas. Notably, both Nottingham and Reading are amongst the small set of locations where the local authority provides most of the bus services within town, a model that was common prior to bus deregulation. Indeed, Reading is one of the few areas experiencing growth in patronage per head. Alongside Brighton, other major growth areas include Bath and Bristol. It seems that growing average affluence is not necessarily a barrier to growth in bus patronage. Brighton provides an interesting example, with commercial operators competing with one another, a situation that is relatively unusual, since commonly, a single firm dominates. At the same time, Brighton has a good system that enables people to make use of different operators' buses using the same payment card – a feature that is not often used in other "competitive"

areas. Thus, Brighton passengers realise the benefits of such market competition that dissipate due to the lack of network interoperability elsewhere. In London, of course, interoperability is provided by Transport for London, the organiser of competition for the market, so the rider need have no knowledge of which operator actually runs a particular route.<sup>1</sup>

It might be said that discussion of buses, and the general picture of decline, is beside the point. With the growth of Uber and its rivals, people (at least, city travellers) can travel swiftly from where they are to where they want to go, at a price. However, there is a significant caveat, in the form of an unpriced externality. Uber, in setting the fare, takes into account that there may be congestion, but not the congestion that increased use of Uber actually creates. Even four cars, taking a total of eight passengers, will create more congestion than the bus which can take all eight. Thus, to some extent their growth exacerbates rather than negates the problem of what to do about buses, by slowing bus services as well as reducing patronage. Perhaps it is also time for some bold experiments, like that in Dunkirk, which has reduced bus fares to zero! ◀

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<sup>1</sup> Note that most rail competition also takes the form of competition for the market, not in the market.

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*Britain uses an unusual funding model. By contrast, European cities with successful bus services and growing ridership use different funding mechanisms that are worth emulating.*

# Politics in the Facebook era: Examining the effects of voter 'micro-targeting' in the 2016 US presidential election

By Michela Redoano



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The ways we access news and, with it, the nature of political communication have radically changed since the advent of social media. Predictive analytics provide social media platforms, such as Facebook and Twitter, with new tools for targeting voters at extremely granular levels.

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TARGETING ON INTERNET platforms is potentially much more precise than on traditional media outlets thanks to technologies such as behavioural micro-targeting (i.e. the tracing of dynamic behavioural patterns, interests and networks) exploiting extensive quantities of user-generated data. For example, to facilitate the identification of different audiences, in 2016 Facebook began classifying its US users in terms of political orientation (conservative, liberal and moderate) and interests (on specific candidates, issues, or initiatives). As a result, political campaigns are increasingly relying on social media, while comparatively reducing their focus on traditional media outlets. Such political micro-targeting of voters with exquisitely tailored messages allows political campaigns to operate at relatively low cost, and with little or no regulatory constraints. A study conducted by Facebook itself indicates that micro-targeting is an effective way to reach voters. Bond et al. (2012) estimate that about 340,000 extra people turned out to vote in the 2010 US congressional elections because of a single Facebook political mobilisation message.

Parallel to this, more and more voters are relying on social media to learn about politics. During the 2012 US Presidential campaign an estimated 12 percent of Americans regularly received their campaign news from Facebook, but by 2016, these figures had grown substantially to over 60 percent, and Facebook was ranked as the third-most-cited "main source" of information for the 2016 US presidential election (Pew

Research Center, 2012, 2014, 2016, 2018). Figures are somewhat similar for European countries, with a 2016 Eurobarometer survey reporting that 40 percent of Europeans use social media daily, and that about 16 percent of Europeans indicate social media as the major source of "most of their news on national political matters".

The Trump campaign's primary communication channels consisted of social media, particularly Facebook and Twitter. The campaign reportedly spent \$44 million on Facebook, running 175,000 variations of political adverts. By contrast, Hillary Clinton's campaign spent an estimated \$28 million on social media, and it relied more heavily on traditional media outreach. Many political campaigners, scholars and journalists think that Facebook and Twitter may have significantly contributed to Donald Trump's election as the 45th president of the United States.

Many fear that this new way of campaigning may have large, and possibly unwanted, consequences on election results and on the functioning of democratic institutions – particularly given the recent scandals of Cambridge Analytica, related to the direct unauthorised access into peoples' accounts, and of the "Russian fake news", related to the spread of false political information. But Trump's victory is not the only event under scrutiny. According to a report<sup>1</sup> published in October by Parliament's Digital, Culture, Media and Sport Select Committee investigating the manipulation of social media in elections, an unknown organisation has spent in 2018 more than £250,000 on Facebook ads, reaching over 10 million Brits and pushing for a far

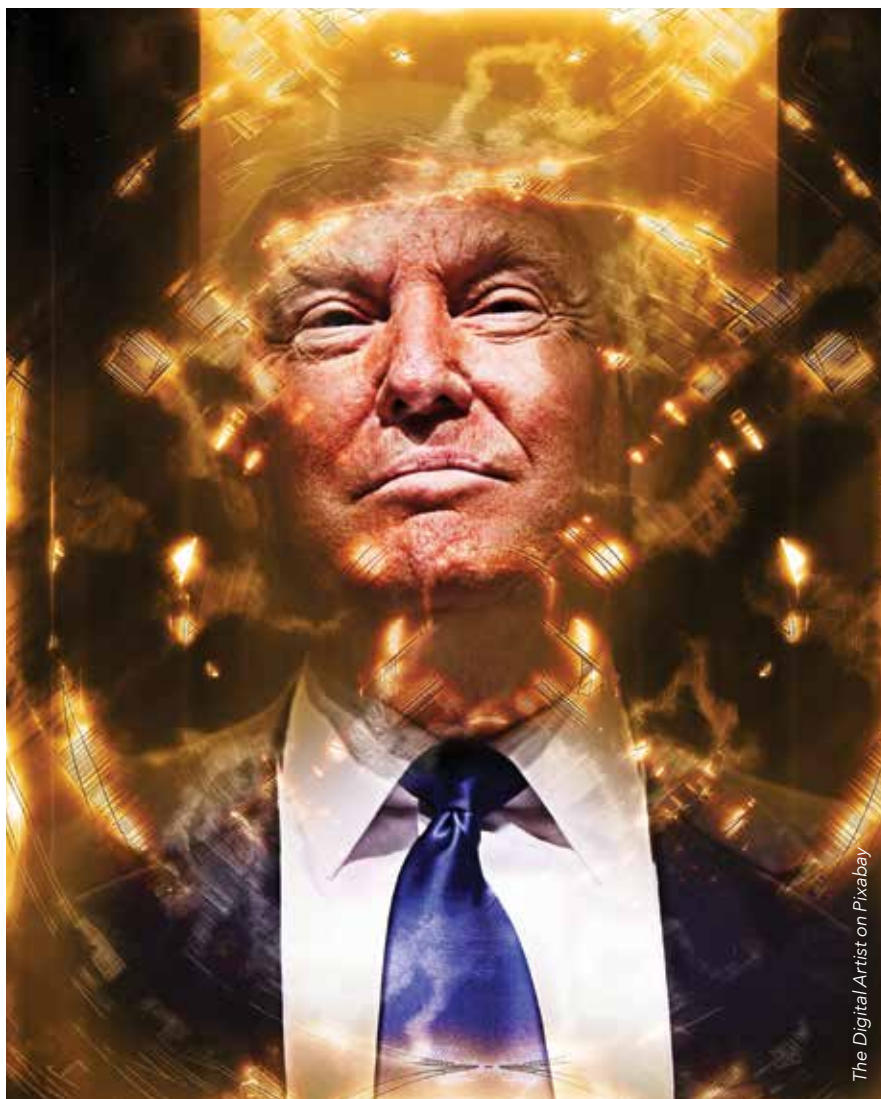
harder Brexit than Prime Minister Theresa May had originally aimed for.

My recent research with an interdisciplinary team – Federica Liberini and Antonio Russo, economists from ETH Zurich; and Angel Cuevas and Ruben Cuevas, computer scientists from Carlos III University of Madrid – assesses the effects and power of political micro-targeting on social media. Our study, which brings into use a new and unique dataset that allows us to examine the issue by using advertising prices as a window onto the issue, has generated interest beyond the academic circles. For example, Jess Garland, director of policy and research at the UK's Electoral Reform Society, has widely cited our research to call for stricter regulations for online adverts to include "imprints" stating their origin and funder.<sup>2</sup> Ofcom, the UK's communications regulator, has invited us present and discuss our findings. Our work has appeared in articles in the national and international press, such as the *El Pais*, and the *Wall Street Journal*.<sup>3</sup>

Despite recent changes, social media are still relative closed platforms. They do not disclose most information, making the task of identifying the effects of political campaign conducted on their networks extremely challenging. At the time of the 2016 US elections, Facebook did not share information regarding the volume or content of political ads, or the identity of the campaigners who paid for these ads. To circumvent these problems, we use daily Facebook advertising prices, collected during the 2016 election campaign, to exploit the variation across political ideologies, and to propose a measure for the intensity of online political campaigns. Our proxy for political campaign intensity is based on variations in Facebook advertising prices charged for different audiences, defined by locations, political ideology and demographics, as observed during the critical campaign months leading up to the 2016 November elections.

*Political micro-targeting via Facebook was particularly effective when based on ideology, gender and educational level, but much less so when based on race or age.*





*The findings show that Facebook ads persuaded undecided voters to support Donald Trump, and persuaded Republican supporters to turn out on election day. By contrast, ads to support Hillary Clinton had no effect.*

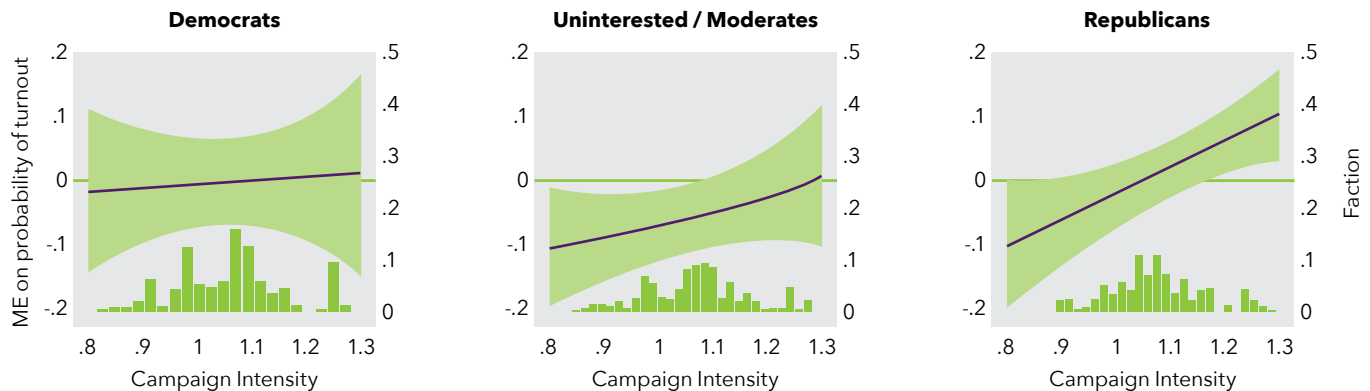
Facebook Marketing API, an ethical and completely privacy-preserving technology, provides novel and highly valuable data in this pursuit; the computer science literature has used this technology to address important socio-economic problems, such as the gender divide worldwide.

We employ this measure to investigate: (i) how intensely the presidential campaigns micro-targeted politically relevant audiences on Facebook, and (ii) what effect, if any, such campaigns had on voters who relied on social media for their political news. The Facebook

price data measure the intensity of political campaigns at the audience level. To complete the analysis and to estimate the effect of such campaigns on individual voting outcomes, we exploit the American National Election Survey database (ANES 2017) to derive measures of exposure to Facebook *political campaigns* based on respondents' Facebook habits. We then match each respondent to Facebook audiences based on demographic, political and location details, and we compute a personalised measure of *treatment* to political campaign on Facebook.

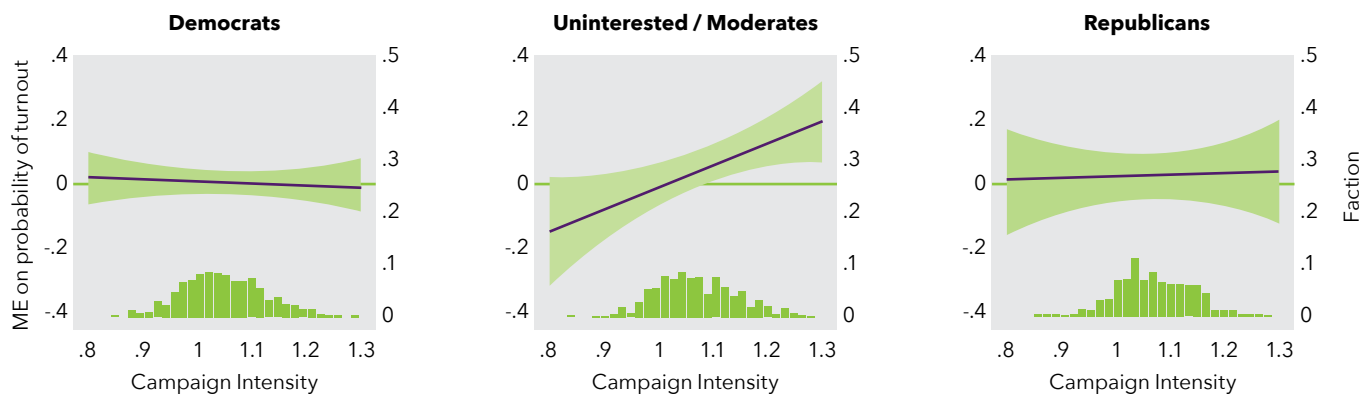
Overall, reading political news on Facebook affects our voting choices. Our study indicates that advertising on Facebook is an effective way to persuade and mobilise voters, but this effect only surfaced in the direction favouring Mr Trump. In the context of the 2016 US presidential elections, we find that political micro-targeting was particularly effective when based on ideology, gender and educational level, but much less so when based on race or age.

More specifically, targeted Facebook campaigning increased turnout among core Republican voters, but not among Democrats or independent voters. Figure 1 plots the differential marginal effect of campaign exposure on voter turnout between regular Facebook users and non-users as a function of campaign intensity for three groups of potential voters: Democrats, Republicans and swing voters (i.e., the moderate, undecided or uninterested voters). The results show a clear positive effect of the Facebook campaign on turnout among Republican supporters, but not on the other two groups (Democrats and swing voters). Our estimates indicate that exposure to political ads on Facebook increases the likelihood of voting by between 5 percent and 10 percent. Note that this difference vanishes as the campaign became less intense. This suggests that Trump (or someone on his side) was effective in mobilising his core supporters to turn out. ►

**Figure 1: Differential marginal effects (ME) of campaign exposure on voter turnout**

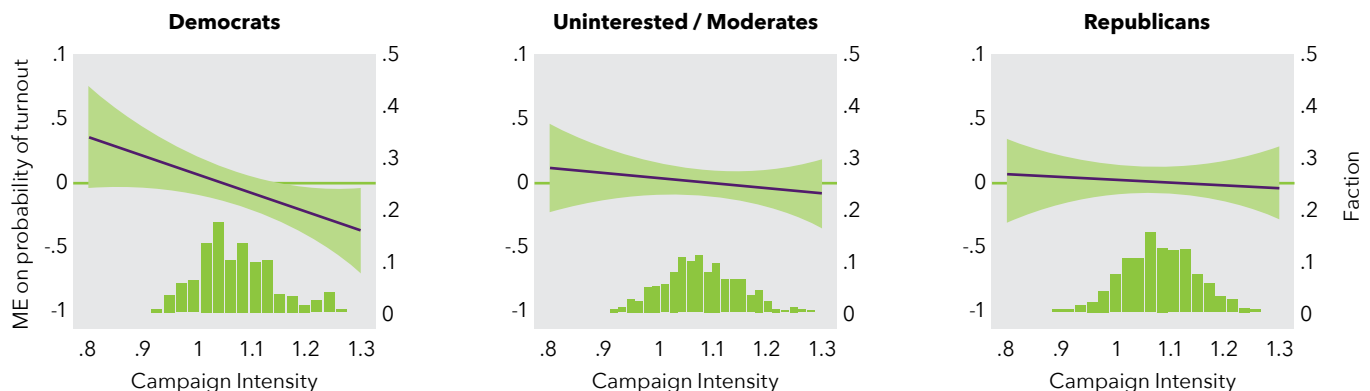
Notes. The solid line represents the differential marginal effect of campaign exposure on voter turnout between “regular” Facebook users and non-users by level of campaign intensity; the grey-shaded area shows the 95 percent confidence interval. The bar-histogram below each line represents the distribution of campaign intensity across each group of respondents. Audiences are jointly defined by ideology, state of residence and gender.

A second finding indicates that targeted Facebook campaigning increased the probability that a previously non-aligned voter would vote for Trump; as shown in Figure 2, if the voter used Facebook regularly, this probability increased by at least 5 percent. Similar effects emerged among those who do not have a university or college degree.

**Figure 2: Differential marginal effects (ME) of campaign exposure on Trump vote**

Notes. The solid line represents the differential marginal effect of campaign exposure on Trump vote between “regular” Facebook users and non-users by level of campaign intensity; the grey-shaded area shows the 95 percent confidence interval. The bar-histogram below each line represents the distribution of campaign intensity across each group of respondents. Audiences are jointly defined by ideology, state of residence, and gender.

A third result shows that this micro-targeting was ineffective for Clinton, failing to boost turnout or to sway voters in her favour, (Figure 3).

**Figure 3: Differential marginal effects (ME) of campaign exposure on Clinton vote**

Notes. The solid line represents the differential marginal effect of campaign exposure on Clinton vote between “regular” Facebook users and non-users by level of campaign intensity; the grey-shaded area shows the 95 percent confidence interval. The bar-histogram below each line represents the distribution of campaign intensity across each group of respondents. Audiences are jointly defined by ideology, state of residence, and gender.

Further results show that targeted Facebook campaigning appears to have reduced the probability of a voter changing his mind about which candidate to support. This was true among males, those without a college education, and those who initially declared themselves to be aligned with the Republican party. These findings provide support for the hypothesis that exposure to social media strengthens polarisation. Our analysis also suggests that reading political ads on Facebook does not make individuals more politically informed, but accessing news on newspapers and surfing the Internet does – as evidenced by a simple test we employed to measure respondents' improvement in political knowledge during the US presidential campaign.

Overall, our results show that social media effectively empowered politicians to influence key groups of voters in electoral races. These findings provide further evidence that recent political outcomes, such as Brexit and the election of President Trump, might be largely due to the effective use of data analytics. ◀

### Footnotes

- <sup>1</sup> [publications.parliament.uk/pa/cm201719/cmselect/cmcmums/1630/163002.htm](https://publications.parliament.uk/pa/cm201719/cmselect/cmcmums/1630/163002.htm).
- <sup>2</sup> [www.electoral-reform.org.uk/latest-news-and-research/media-centre/press-releases/current-election-campaign-rules-are-a-cheaters-charter-say-campaigners-in-fresh-demand-for-transparency/](http://www.electoral-reform.org.uk/latest-news-and-research/media-centre/press-releases/current-election-campaign-rules-are-a-cheaters-charter-say-campaigners-in-fresh-demand-for-transparency/)
- <sup>3</sup> For a list see [sites.google.com/site/michelaredoano/media](https://sites.google.com/site/michelaredoano/media).

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*Though Facebook CEO Mark Zuckerberg has said it is "crazy" to think that Facebook ads swayed the vote, new research shows that the social platform had a significant effect on the 2016 US presidential election.*





*The results suggest that building the capacity  
of developing countries to collect taxes may be an effective  
way to lead to spending  
on investments that benefit citizens*



# Taxing and spending: Examining the relationship between the sources of public finance and the effects on public accountability

By Lucie Gadenne

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Can we trust governments to spend revenues they receive in ways that improve the welfare of their citizens? The vast body of evidence on the topic from developing countries is disappointing. Typically, when government revenues rise, public health, education and social infrastructure seldom benefit, research shows. Money is often wasted or diverted (e.g. Reinikka and Svensson 2005, Olken 2007).

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**M**OST OF THESE studies focus on increases in non-tax revenues, such as grants from higher levels of government, royalties from the exploitation of natural resources, and official development aid. This is likely because of the difficulty in finding variations in tax revenues that are unrelated to other determinants of public spending. Governments might, however, spend tax revenues and non-tax revenues in different ways. Given the growing focus on revenue mobilisation in development, understanding whether an increase in a government's capacity to tax leads

to better public expenditure outcomes is important. Better understanding of this issue can help determine whether, and when, it is worth putting more effort into investing in tax capacity.

In recent research, I focus on local governments (municipalities) in Brazil to consider whether governments spend tax revenues better than non-tax revenues (Gadenne 2017). Municipalities in Brazil control one fifth of public revenues. Their main expenditure is education, an area in which Brazil's performance is disappointing compared to countries at similar levels of development (Ferraz et al. 2012). Municipalities are

in charge of primary education, and so shoulder much of the blame for poor educational outcomes. There is also substantial evidence that municipalities do not use increases in their *non-tax revenues* to improve local outcomes (Caselli and Michaels 2013, Ferraz and Monteiro 2010, Brollo et al. 2013). In this context, it is worth asking whether *tax revenues* would also be wasted or diverted.

I study a programme that helps municipalities increase their tax collection. Local governments are in charge of collecting and setting the rates of two main taxes: a service tax, and an urban property tax. ►

Most local administrations, however, have little capacity to enforce tax payments. Municipal staff often rely on outdated tax registers, and have little institutional memory. Tax liability assessments can depend on the whim of the assessor. The high costs of understanding and paying taxes, and the low penalties for tax dodgers, mean that many citizens simply do not comply with the tax system. To improve this situation, the Brazilian Development Bank (BNDES) launched the *Programa de Modernização da Administração Tributária* (PMAT), which in 1998 began providing local governments with subsidised loans to invest in modernising their tax administration.

A potential concern is that the municipalities joining the programme may also be the ones that already raise more taxes and spend their revenues better. However, the timing of municipalities' uptake of the programme allows me to distinguish the causal effect of the programme on tax revenues. My results indicate that an investment of one Brazilian real in tax capacity led to an annual increase in tax revenues of roughly one real per year after five years. The extra revenue was invested in local public infrastructure: using data on all municipal schools in Brazil, I find that the increase in tax revenues generated by PMAT led to an increase of 5 percent to 6 percent in the quantity

*A programme that increased the tax-collecting capacity of local governments in Brazil led to increases in the quality and quantity of local education infrastructure.*

*Local governments tend to spend tax revenue increases in more beneficial ways than non-tax revenues, such as cash grants.*

of municipal education infrastructure, and a significant improvement in an index of the quality of the infrastructure. I find similar results for local health infrastructure.

How does this compare to the impact of increases in non-tax revenues? I examine variations in non-tax revenues from a rule that determines the size of a federal transfer to municipalities. Using this, I can estimate the effect of an increase in transfers of roughly the same amount as the increase in taxes generated by PMAT. I find that higher transfer revenues have no impact on local education or health infrastructure investments.

The PMAT programme was voluntary, and only 300 local governments – those motivated enough to apply for it – took up the offer. So, from this evidence alone, we cannot conclude that tax and non-tax revenues would always be spent differently by all types of local government. Nevertheless, my results show that PMAT has increased the tax-collecting capacity of local governments that volunteered, and that this, in turn, has increased both the quantity and quality of local education infrastructure. Meanwhile, increases in federal grants to the average government have had no effect.

Overall, the evidence also indicates that revenue mobilisation at the local government level can work in Brazil: this programme, in place for nearly 20 years, has provided long-term sources of funding for local governments, and has led to more spending on education infrastructure. These results have implications that extend beyond Brazil. They suggest that development assistance to build tax capacity would create more public investment than grants or cash transfers. ◀

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### Publication Details

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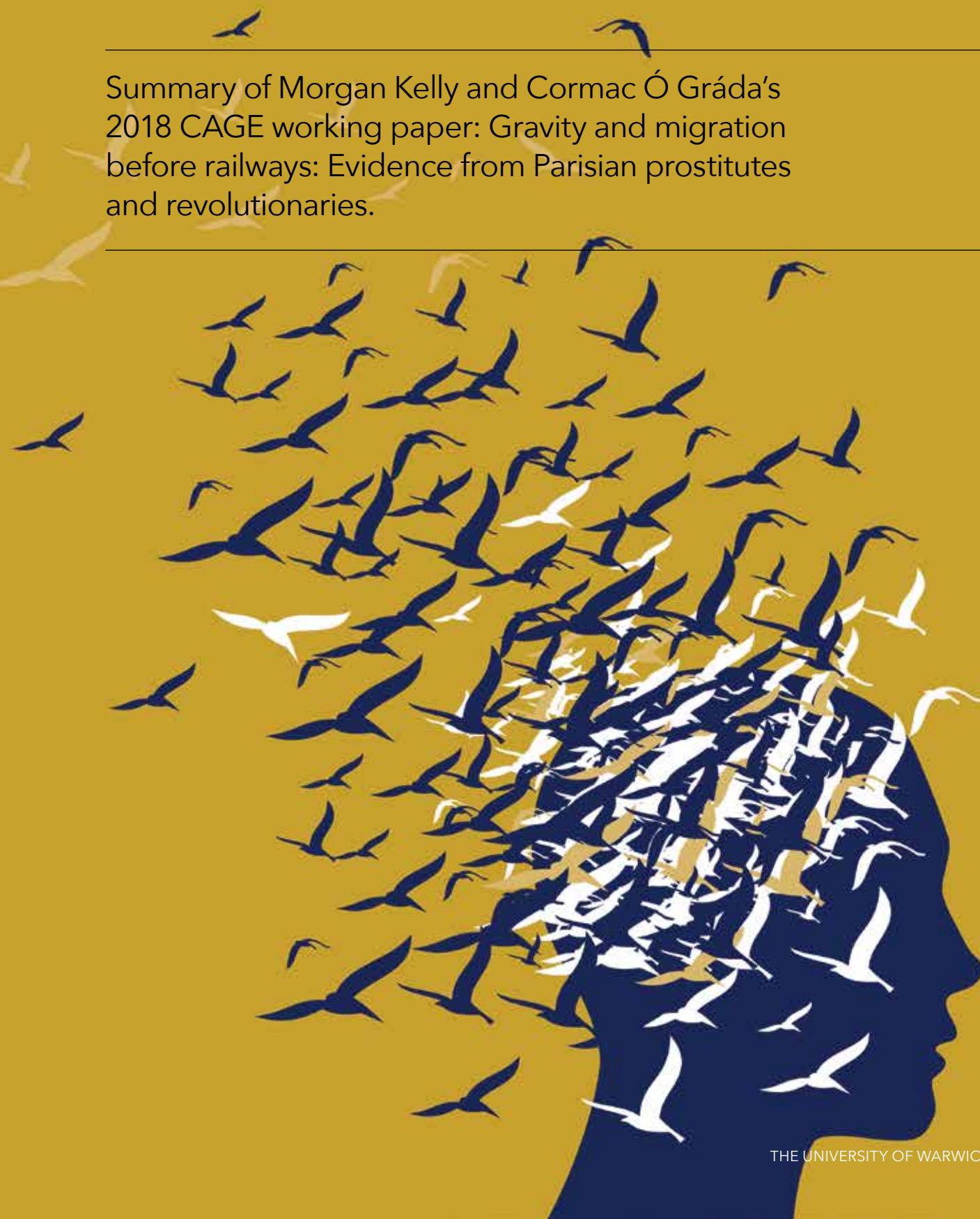


# Essay competition winner: Ashok Manandhar

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Summary of Morgan Kelly and Cormac Ó Gráda's  
2018 CAGE working paper: Gravity and migration  
before railways: Evidence from Parisian prostitutes  
and revolutionaries.

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URBAN CENTRES OFFER opportunities for work, social advancement, and higher living standards for both the most ambitious and the neediest. This force of attraction was pivotal for the development of Paris between the sixteenth and nineteenth centuries, given that the death rate in France's capital and most populous city exceeded the birth rate. Instead, it was mainly internal rural-urban migration that drove population growth and urbanisation during this period, meaning by the 1790s as low as 30 percent of Parisians were native-born.

However, precious little is known about the dynamics of this internal migration in the era before mass transit, partly due to a lack of reliable censuses. What is clear is that these patterns differed for men and women, with Paris housing twice as many bachelors as unmarried women in 1851. The introduction of the railways made moving to the French capital, or any other urban centre, much easier and transformed this picture.

To shine a light on the railways' impact on migration, Kelly and Ó Gráda analyse the influence of both distance and living standards in working-class female and male migration to Paris before, during and after the rollout of the railways. Drawing on a variety of novel data sources, they employ a simple "gravity model", and find that levels of migration were strongly determined by both distance and living standards. For both men and women, those coming from areas with higher living standards were more likely to make the move. However, the arrival of the railways led to a larger increase in the mobility of women than men, although this is unsurprising since distance

was less of an impediment for men to begin with.

The authors take advantage of two quirks of history to provide data on the composition of the Parisian population. The first stemmed from the move towards regulation and documentation of prostitution in the mid-eighteenth century. Later, in 1836 Alexandre Parent-Duchâtelet published *De la Prostitution dans la Ville de Paris* which systematically collated data on Parisian prostitutes for 1834, with a revision in 1857 containing new data for 1854. These prostitutes had to register with the

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*The introduction of the railways made moving to Paris, or any other urban centre, much easier and was pivotal to the development of the French capital.*

police and undergo health checks, but also give personal information including where they came from. Nearly all were young working-class women aged between 16-25 and were typically illiterate.

A large worry is that this subsection is not representative of the overall female population. However, by comparing the origins of the prostitutes to the birth places of women buried in Paris in 1833 – most of whom would have arrived around 1800 – the authors found them

to match considerably. This is then supplemented by a separate source providing information on prostitutes arrested in the 1760s, giving data on female migrants to Paris at three points in time.

The second major source involves the identity cards that men were required to carry during the Revolutionary period. In late 1872 all men in Paris had to register for a *carte de civisme* detailing, among other things, their place of birth and date of arrival in Paris. Records from three of the most working-class, radicalised neighbourhoods and a 10 percent sample from the rest of the city are taken, and similarly checked against the birthplaces of men buried in 1833 to ensure that the sample is representative. An important aside is that these documents were issued before "The Terror", making their contents more reliable since accurately recording personal details was not, by that stage, dangerous. This information was also supplemented by data of immigrants who were recruited into Napoleon's armies between 1802 and 1814.

Over this period, transport speeds rose quickly, with travel times halving between 1765 and 1780. The first railways began to radiate from the capital during the 1840s, with the network growing from 3,500 km to 8,700 km in length in the 1850s, and by 1871, 17,400 km of track had been laid. However, since better roads, and later rail tracks, followed older routes, the relative journey times from elsewhere in France to Paris stayed roughly constant. Therefore, the authors can use the number of days travel to Paris in 1790 as their measure of distance for each cohort and still be able to compare results across time periods.

Since France is split into administrative regions called *départements*, each individual, be they prostitute or *carte de civisme* holder, is grouped with others from their region of origin. It is these *départements* that are the unit of analysis, with their number expanding from 79 to

84 over the period in question. The number of migrants per million from each region is then modelled using a gravity equation which scales living standards in the sending region by its population, and then divides this by the distance between it and Paris. As such, we would expect the amount of migration to be positively related to living standards in the sending region, since adequate finances are needed to make the journey, and negatively related to distance, since it makes the journey more costly.

Unfortunately, while the measure of living standards are typically based on average wages, this data is not available before 1840. Instead, the authors utilise the literacy rates of army conscripts from each *département* as a proxy for its affluence – however this is not a perfect substitute. For men, a further control had to be included for two regions which had a long history of sending temporary workers to Paris which persisted into this period meaning their levels of migration were disproportionally high.

Nevertheless, across the board women were less mobile than men, with a 1 percent increase in distance reducing the number of female migrants per million by between

*Using a variety of novel data sources the authors piece together a picture of working-class migration to Paris, and the changes wrought to this pattern by the expansion of the railways.*

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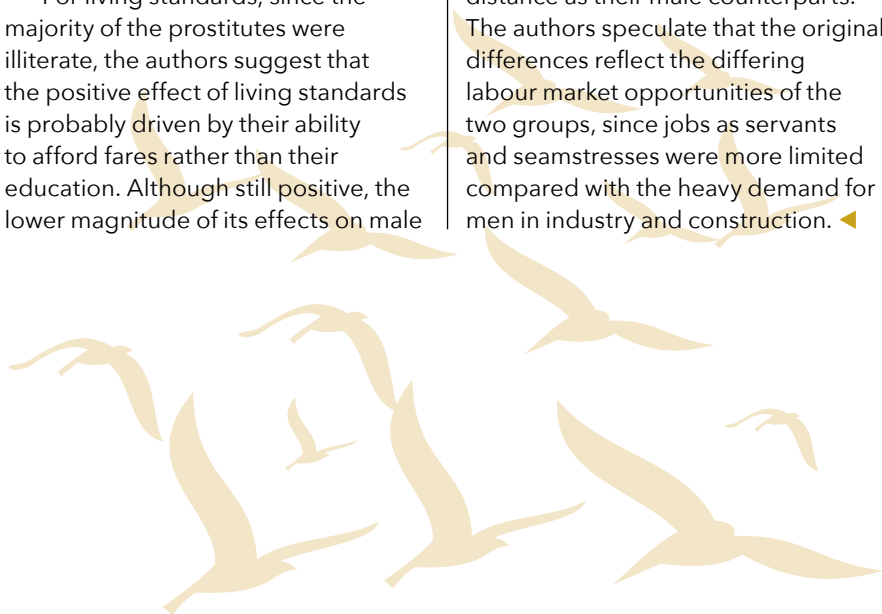
2.4 percent to 3 percent before the railways, whereas for men this was only between a 1.25 percent to 1.75 percent reduction. By the 1850s as more track was laid, this fell to around 2 percent for women, and by the 1891 census, it had fallen further to around 1.25 percent for all Parisians (both men and women) which is on a par with modern Europe. Although data on Parisian prostitutes does not extend this far, the authors switch to analysing prostitutes in Marseille in 1882 and find that the impediment of distance for them is only slightly higher than that for the general population of Marseille, according to the 1891 census. This finding is itself supported by other evidence from the origins of brides and grooms in the city: As travel became easier, a larger share of brides came from outside the city, eventually roughly matching the share of non-native grooms.

For living standards, since the majority of the prostitutes were illiterate, the authors suggest that the positive effect of living standards is probably driven by their ability to afford fares rather than their education. Although still positive, the lower magnitude of its effects on male

migration indicates that the cost of migration was less of an impediment for men.

Since the groups are broadly similar, the authors then pool them together allowing them to increase the precision of their analysis. This further underlines how the impediment of distance fell for prostitutes between 1834 and 1854 and reiterates the relatively constant impact of living standards for male migration over this time.

Having neatly drawn from a number of data sources, the authors piece together a picture of working-class male and female migration to Paris, and the changes wrought to this pattern by the expansion of the railways. The results indicate that women were notably less mobile than men at the start of the 1800s, but nearer the end of the century, they were about as negatively impacted by distance as their male counterparts. The authors speculate that the original differences reflect the differing labour market opportunities of the two groups, since jobs as servants and seamstresses were more limited compared with the heavy demand for men in industry and construction. ◀



# Parting shot

A WELL-FUNCTIONING BUREAUCRACY, free of corruption, and with dedicated civil servants, is a blessing for any country. The UK can call itself lucky to have such well-trained civil servants. In fact, members of the UK's Government Economic Service (GES) have been trained at Warwick and other top Economics departments across the UK. In my encounters with members of the GES, I have always been impressed with their training, and with their dedication to do the best for their country.

The Brexit Referendum has brought up deep divisions in UK society. As detailed CAGE research on the voting pattern has shown, exposure to the EU in terms of immigration and trade provides relatively little explanatory power for the referendum vote. Instead, fundamental characteristics of the voting population were key drivers of the Vote Leave share, in particular their education profiles, their historical dependence on manufacturing employment as well as low income and high unemployment. In short, deep economic factors played a more important role than issues that are directly linked to European issues.

Does Brexit help to address those economic issues? As Nick Crafts, the CAGE Director, likes to say: "There is not a single question to which Brexit is the answer."

How does that relate to our civil service? The answer is bandwidth. Even the best civil servants can only deal with a limited number of issues at the same time. Right now, Brexit preparations take up an amazing part of the bandwidth of the UK's civil service. I was not able to stop my wife from stocking up on food supplies ("think about the kids"), in case the



*"The UK can consider itself lucky to have such well trained civil servants."*

UK really ends up without a deal. Buying huge numbers of extra boxes of durable foods like pasta is only jamming space in our house in the short run, but we can eat them later in the year, so not much is lost. However, the government's no-deal Brexit preparations are taking up billions of taxpayers money and so much bandwidth that normal government business makes less progress than would be necessary to heal the divisions that led to the Brexit vote in the first place.

It would be naïve to think that the UK can return to business as usual any time soon. No deal might lead to chaos, an extension to article 50 might lead to further agony over which way to go. Even the best-case scenario of an orderly exit on 29 March 2019 is just one step on a long journey in which the UK continues its soul-searching. In the meantime, many brilliant civil servants serve as firemen instead of leading on ways to make the UK a beacon of efficiency in solving societal issues.

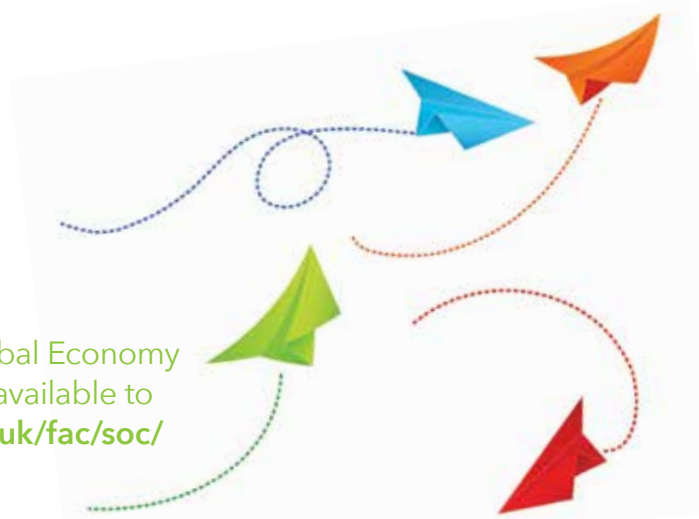
But maybe there is a silver lining: might dedicated civil servants, paired with research expertise (remember all those experts that no one needs) helping to understand the Brexit result, pave a way forward?

**Sascha Becker**  
deputy director, CAGE

# CAGE publications

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The Centre for Competitive Advantage in the Global Economy produces a wide range of publications which are available to download from the Centre's website: [warwick.ac.uk/fac/soc/economics/research/centres/cage/publications](http://warwick.ac.uk/fac/soc/economics/research/centres/cage/publications)



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Established in January 2010, the Centre for Competitive Advantage in the Global Economy (CAGE) is a research centre in the Department of Economics at the University of Warwick.

Funded by the Economic and Social Research Council (ESRC), CAGE is carrying out a 10 year programme of innovative research.

Research at CAGE examines how and why different countries achieve economic success. CAGE defines success in terms of personal well-being as well as productivity and competitiveness. We consider the reasons for economic outcomes in developed economies like the UK and also in the emerging economies of Africa and Asia. We aim to develop a better understanding of how to promote institutions and policies which are conducive to successful economic performance and we endeavour to draw lessons for policymakers from economic history as well as the contemporary world.

CAGE research uses economic analysis to address real-world policy issues. Our economic analysis considers the experience of countries at many different stages of economic development; it draws on insights from many disciplines, especially history, as well as economic theory. CAGE's research is organised under four themes:

*Research at CAGE examines how and why different countries achieve economic success.*



- What explains comparative long-run growth performance?
- How do culture and institutions help to explain development and divergence in a globalising world?
- How do we improve the measurement of well-being and what are the implications for policy?
- What are the implications of globalisation and global crises for policymaking and for economic and political outcomes in western democracies? ◀



## Advantage Spring 2019

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