# advantage

Does offering more free childcare help parents work more?

Globalisation and economic development: A lesson from history

Building a new industrial strategy ... on shaky foundations?

Who voted for Brexit?

Measuring historical happiness using millions of digitised books

# In this issue ...

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# "Welcome to the Summer issue of *Advantage* ...

... THE MAGAZINE OF THE CENTRE FOR COMPETITIVE ADVANTAGE IN THE GLOBAL ECONOMY.

Our research, which is funded by the Economic and Social Research Council (ESRC), addresses issues related to improving living standards, raising productivity, maintaining global competitiveness and facilitating economic well-being.

This issue features a diversity of themes which reflects the breadth and depth of research undertaken by researchers at CAGE.

Our opening article focuses on government plans to double entitlement to free childcare for parents of 3 and 4 year olds. Claire Crawford's research indicates that this is unlikely to encourage many parents to work more.

Continuing on the theme of government policy Nick Crafts considers the recent government Green Paper 'Building our Industrial Strategy' in the light of historical experience.

As the UK enters Brexit negotiations we examine the vote 'Leave' result of last summer. Research by Sascha O. Becker, Thiemo Fetzer and Dennis Novy featured in the 'Who Voted for Brexit?' piece reveals important, and in some cases, surprising correlations and finds that fundamental, slow-moving factors, such as education, may explain more of the 'Leave' vote.

Meanwhile Luigi Pascali takes us back to the invention and development of the steamship, a watershed event in maritime transport and the major driver of the first wave of trade globalisation. Professor Pascali considers the impact of globalisation on economic development.

Finally researcher Daniel Sgroi talks about the importance of historical data, essential for understanding what drives happiness and how major shocks or government policies affect happiness at the level of the nation-state.

I hope you will find this issue of *Advantage* an interesting and enjoyable read. If you wish to find out more about the centre please take a look at our website."

**Tracy Evans, Editor**
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# Does offering more free childcare help parents work more?

By Claire Crawford

New research suggests the government's plans to double entitlement to free childcare for parents of 3 and 4 year olds in England is unlikely to encourage many parents to work more.

*We hear regularly that childcare in the UK is amongst the most expensive in the world, and the run-up to the general election in 2015 saw politicians falling over themselves to promise to reduce the cost of childcare for parents.*

ONE OF THE FEW things on which politicians from all parties seem to agree is the need to provide parents with more support to help cover childcare costs. We hear regularly that childcare in the UK is amongst the most expensive in the world, and the run-up to the general election in 2015 saw politicians falling over themselves to promise to reduce the cost of childcare for parents.

They seem to be doing this with at least two aims in mind – to make it easier for families to get by (i.e. to reduce their "cost of living"), but also to encourage parents to work more.

Why should offering free or subsidised childcare lead parents to work more? Because it reduces the cost of entering work or increasing the number of hours worked. For example, if a lone parent with a 3 year old has to pay £8 per hour for someone to look after their child while they are at work, for which they earn £10 per hour, then they would only be £2 better off per hour worked than if they had stayed at home with their child instead. If the government

were to offer the same parent 3 hours of free childcare per day, then it would reduce the amount they had to spend on childcare (e.g. from £64 to £40 to cover an 8 hour shift), and hence mean that they would take home more of the money they earned than before (£40 as opposed to just £16). It would, in other words, help "make work pay".

The latest increase in childcare support from the government – due to be rolled out across England in September 2017 – is the offer of more hours of free childcare for 3 and 4 year olds. Children of this age are already offered 15 hours of free care per week during term-time. The government is now planning to extend this to 30 hours per week during term-time for children in families where all parents work. For the lone parent in our example above, this would mean that, during term-time at least, they would only have to pay for 2 additional hours of childcare per day to cover their 8 hour shift, and hence would be able to take home £64 of the £80 they earned each day, as opposed to £40. ▶

On the face of it, therefore, we might expect this policy to increase the number of parents in work and potentially also the number of hours they work. But is this what the evidence suggests is likely to happen? To help answer this question, we can turn to some recent research that I conducted with Sarah Cattan at the Institute for Fiscal Studies and Mike Brewer and Birgitta Rabe at the University of Essex. We looked to see what happened to the labour market outcomes of mothers and fathers when their children started primary school. One can think of this as a moment when entitlement to free childcare increases from 15 hours a week to 30–35 hours a week – a similar increase in the number of hours of free childcare per week as will be available under the new policy.

We found no evidence that the work patterns of mothers with younger children, or those of fathers, were affected by this increase in free childcare. We did find some evidence of an effect for mothers whose youngest child became eligible for free full-time care, but this effect was still relatively small: at the end of the first year of entitlement to free full-time care, mothers whose youngest child was eligible were found to be 5.7 percentage points more likely to be in the labour force and 3.5 percentage points more likely to be in work than mothers whose youngest child was at the end of their first year of part-time entitlement. This is equivalent to around 12,000 more mothers in work each year.

Should we infer from these results that the planned increase in entitlement to free care from 15 to 30 per week will have a similarly small effect on parents' labour supply? There are some reasons to think that the proposed extension may have a somewhat larger impact on parents' working patterns than our research suggests: the intention is to offer more flexibility over when the extra



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hours of childcare can be taken, for example, and the additional hours will only be available to families where all parents in the household work. On the other hand, the 30 hours of free care offered will be less than the time children spend at school, so there are also some reasons why the impact might end up being smaller.

The government expects to spend close to £1 billion extending the number of hours of free childcare available to working parents of 3- and 4-year-olds in England from 15 to 30 a week during term time. Our research suggests this is unlikely to lead to many more mothers – and no more fathers – moving into paid work. Offering free childcare does, of course, save money for parents who already use formal childcare. But it is unlikely to dramatically transform parents' ability to work. ◄

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# Globalisation and economic development: A lesson from history

## By Luigi Pascali

History teaches us that globalisation does not automatically translate into economic development.

HOW DOES GLOBALISATION affect development? This question has a long tradition in economics and has been much debated both in academia and in policy circles. Neoclassical theories tell us that reducing trade barriers across countries should provide net benefits to individual economies by making markets more efficient and stimulating competition. Testing these theories, however, turns out to be difficult: rich countries are generally also those that trade the most, but is it trade that makes them rich, or do they trade more because they are rich to start with? ▶

The ideal way to answer to these questions would be through an experiment, in which we randomly divide all the countries of the world into two groups and then we reduce trade costs for one group, while keeping trade costs constant for the other group. The difference in the observed GDP growth in the following years between the two sets of countries would eventually provide us with an estimate of the impact of trade integration on development.

It turns out that history can provide us with such an experiment! The invention of the steamship in the late 19th century greatly reduced trade costs for some countries but not for others; whether a country was able to reduce its trade costs as a result of this innovation was the result of its geography, rather than economic forces. In a recent paper (Pascali, forthcoming), I use this natural experiment to assess the causal impact of trade on development.

**THE EXPERIMENT**
Before the steamship, sea routes were shaped by winds. As an example, consider Figure 1, which illustrates a series of journeys made by British sailing ships in the 19th century, between England, the Cape of Good Hope and Java, and Figure 2, which depicts the prevailing sea-surface winds in the world. Winds tend to follow a clockwise pattern in the North Atlantic; consequently, sailing ships would sail westward from Western Europe, after traveling south to 30 N latitude and reaching the 'trade winds', thus arriving in the Caribbean, rather than traveling straight to North America. The result is that trade systems historically tended to follow a triangular pattern between Europe, Africa, the West Indies and the United States. Furthermore, because in the South Atlantic winds tend to blow counterclockwise, sailing ships would not sail directly southward to the Cape of Good Hope; rather, they would first sail southwest toward

*The invention and subsequent development of the steamship was a watershed event in maritime transport and was the major driver of the first wave of trade globalisation (1870-1913), an increase in international trade that was unprecedented in human history.*
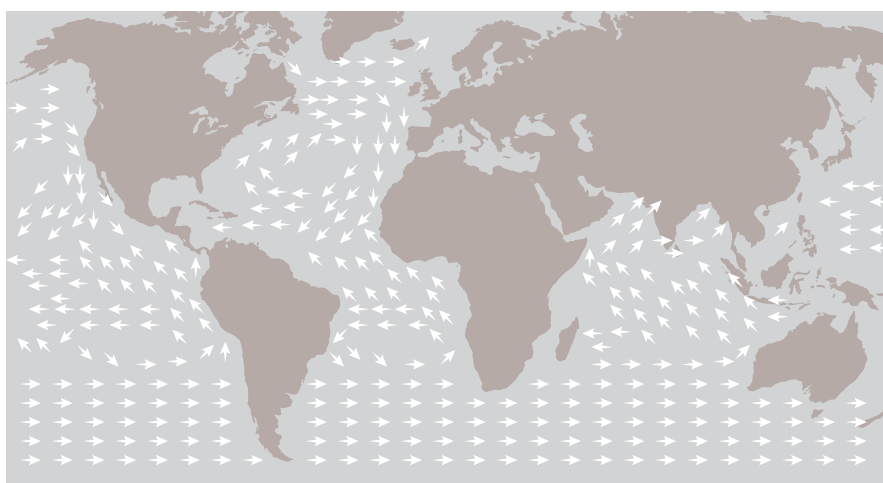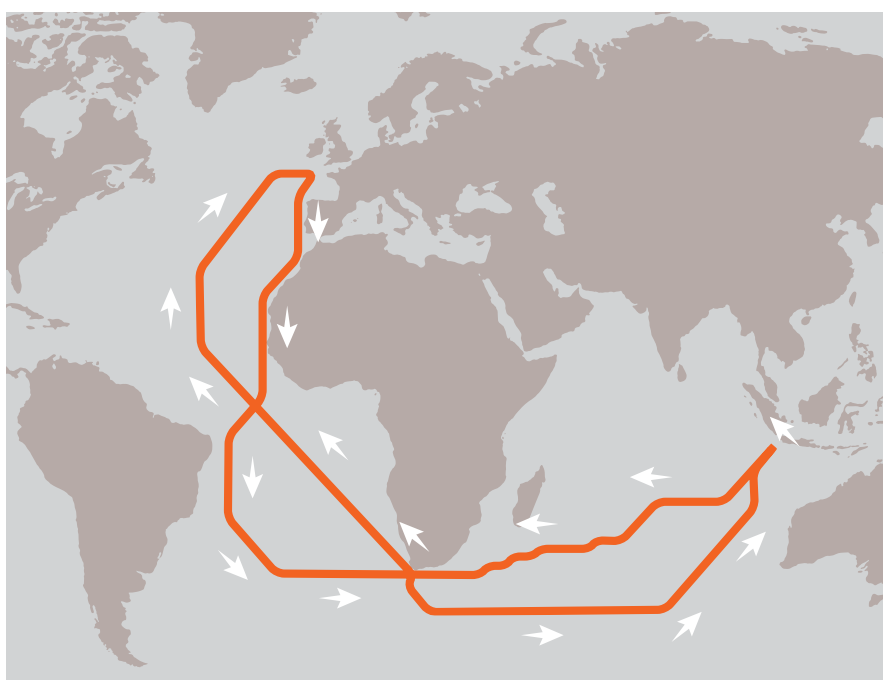




Figure 1. 15 journeys made by British ships between 1800 and 1860
Notes: These journeys were randomly selected from the CLIWOC dataset among all voyages between England and Java comprised in the dataset.

Figure 2. Prevailing winds in May (between 2000 and 2002).

Brazil and then move east to the Cape of Good Hope at 30 S latitude.

The invention and subsequent development of the steamship was a watershed event in maritime transport and was the major driver of the first wave of trade globalisation (1870-1913), an increase in international trade that was unprecedented in human history. For the first time, vessels were not at the mercy of the winds, and trade routes became independent of wind patterns.

The steam engine, however, reduced shipping times in a disproportionate manner across trade routes, depending on the type of winds that vessels used to face throughout their journeys. In some routes, shipping times were cut by more than half, while in others the change was minimal.

These asymmetric changes in shipping times (and related trade costs) across countries are used as a natural experiment, to explore the effect of international trade on economic development.

**FINDINGS**
Exploiting the random variation in trade costs, generated by the transition from sail to steam, I document that the consequences of the first wave of trade globalisation on development were not necessarily positive. On a sample of 36 countries, the average impact, in the short run, was a reduction in per-capita GDP, population density and urbanisation rates.

This average negative impact, however, masks large differences across different groups of countries.

Firstly, the initial wave of trade globalisation turned out to be particularly detrimental in countries that were already less economically developed to start with and it was probably the major reason behind the Great Divergence, the economic divergence observed between the richest countries and the rest of the world, in the second-half of the nineteenth century.

Secondly, trade turned out to be very beneficial for countries that were characterised by strong constraints on executive power, a distinct feature of the institutional environment that has been demonstrated to favour private investment.

Why should we expect institutions to be crucial to benefitting from trade? A common argument is that a country with 'good' institutions will suffer less from the under-investment problem in those industries that intensively rely on relationship-specific assets. In this sense, good institutions are a crucial source of comparative advantage in non-agricultural sectors, in which the hold-up problem is more binding. My results confirm this theoretical prediction: a reduction in trade costs increased the share of exports in non-agricultural products, and the share of the population living in large cities, only in those countries characterised by stronger constraints on the executive power.

**CONCLUSIONS**
How did the rise in international trade affect economic development? I addressed this question using novel trade data and an historical experiment of history. I found that:

1) the adoption of the steamship had a major impact on patterns of international trade worldwide,

2) only a small number of countries, characterised by more inclusive institutions, benefited from trade integration, and

3) globalisation was the major driver of the Great Divergence.

Policymakers who are willing to learn from history are advised to consider that a reduction in trade barriers across countries does not automatically produce (at least in the short-run) large positive effects on economic development and can increase inequality across nations. ◄

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*Exploiting the random variation in trade costs, generated by the transition from sail to steam, I document that the consequences of the first wave of trade globalisation on development were not necessarily positive.*

# Building a new industrial strategy ... on shaky foundations?
By Nicholas Crafts

Following the lead given by the new Prime Minister, the UK government has recently published a Green Paper, *Building our Industrial Strategy.* It is hoped that this will build on UK strengths and extend excellence into the future, close the gap between the UK's most productive companies, industries, places and people and the rest, and make the UK one of the most competitive places in the world to start or grow a business.
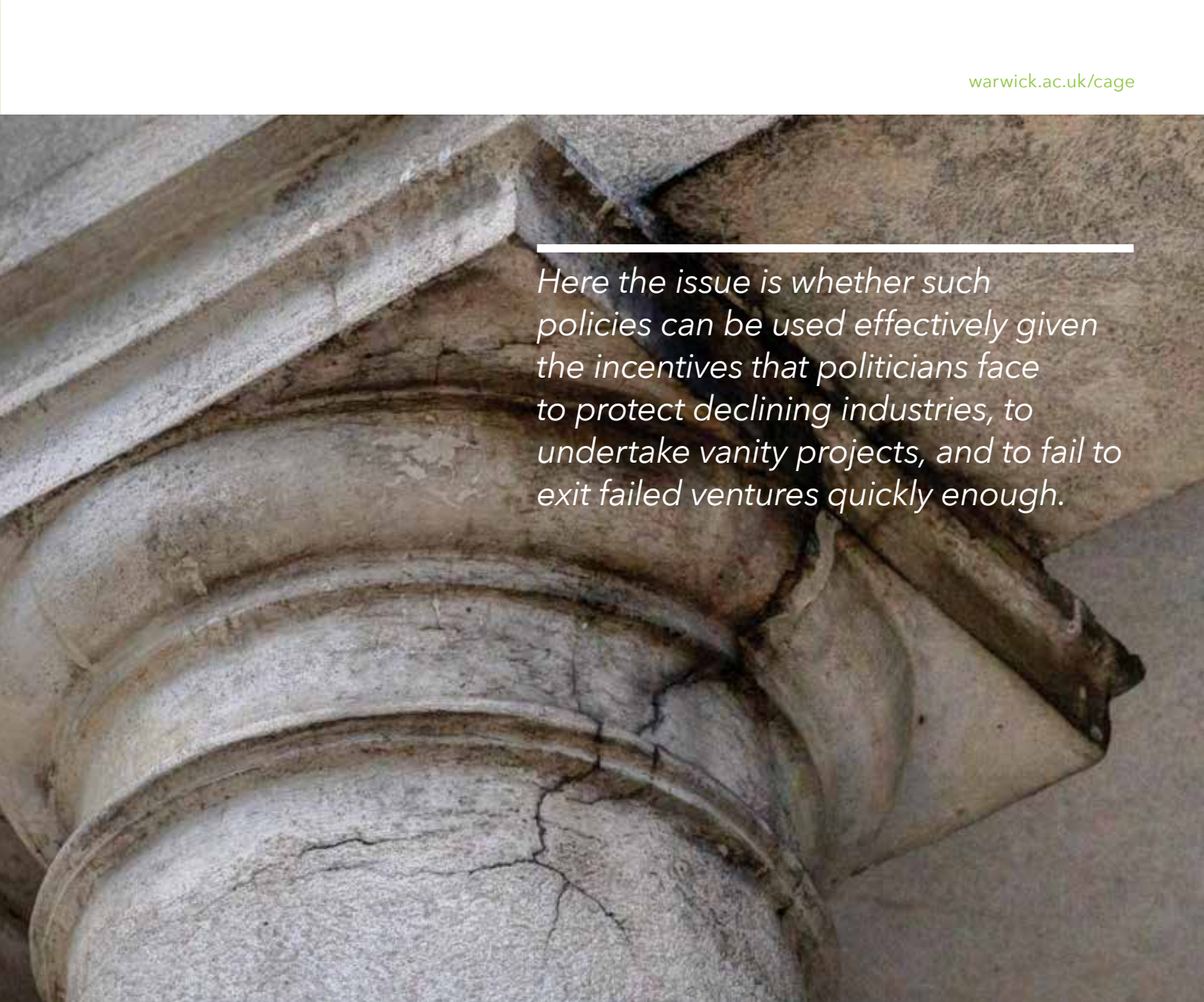
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HESE HAVE, OF COURSE, been policy aspirations in the past but the context has now changed. Three points in particular are worth bearing in mind. First, UK productivity growth has been very disappointing in recent years. Second, an influential interpretation of the Brexit vote is that a key element in its core support came from 'left-behind' voters. Third, Brexit potentially increases the scope for industrial policy free of constraints imposed by EU membership.

The strategy is to be based on ten pillars (see opposite page). Some of these, for example, investing in science research and innovation, developing skills, and upgrading infrastructure address widely-recognised weaknesses in UK supply-side policy. The issue will be about how well the government will deliver rather than the desirability of strengthening policy interventions. Others, notably improving procurement, encouraging trade and inward investment, and cultivating world-leading sectors, seem to embody a return to selective industrial policy (favouring privileged industries and domestic producers) which was last used on a significant scale in the 1970s and has been largely precluded by EU rules on state aid. Here the issue is whether such policies can be used effectively given the incentives that politicians face to protect declining industries, to undertake vanity projects, and to fail to exit failed ventures quickly enough. ▶

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## THE 10 PILLARS

1. INVESTING IN SCIENCE, RESEARCH AND INNOVATION
2. DEVELOPING SKILLS
3. UPGRADING INFRASTRUCTURE
4. SUPPORTING BUSINESSES TO START AND GROW
5. IMPROVING PROCUREMENT
6. ENCOURAGING TRADE AND INWARD INVESTMENT
7. DELIVERING AFFORDABLE ENERGY AND CLEAN GROWTH
8. CULTIVATING WORLD-LEADING SECTORS
9. DRIVING GROWTH ACROSS THE WHOLE COUNTRY
10. CREATING THE RIGHT INSTITUTIONS TO BRING TOGETHER SECTORS AND PLACES

The principal rationale of an industrial strategy might be to improve medium-term productivity performance by addressing market failures. For example, there is a strong reason to intervene to support research and development expenditure where we know that the social returns are much higher than the private returns. An important role for R and D is to facilitate the diffusion of new technologies from abroad as well as to stimulate the domestic invention of new products and processes. Among the important opportunities for the near future, artificial intelligence and robotics stand out. The scope for increasing productivity is substantial but this will entail job losses especially for low-wage/low-education workers. Managing this transition to achieve inclusive growth, which seems to be a strong aspiration of the Prime Minister, without holding back innovation and inhibiting productivity improvement will be a major challenge requiring, in particular, well-designed labour market policies. The Green Paper does not have anything to say about this.

More generally, a key aspect of modernising the UK economy is to strengthen rather than weaken forces of creative destruction – to encourage the entry of the new and the exit of the old – or put another way to promote the shift of productive resources, both capital and labour, to higher productivity uses. The UK is no better than mediocre at this as is shown by the 'allocative efficiency' (AE) scores in the table and this accounts for a large part of the productivity gap with leading economies. The Green Paper does not, however, address this issue and doing so would only exacerbate the woes of many pro-Brexit voters.

A hard Brexit with reliance on WTO rules to govern trading relationships appears to be a quite likely outcome of the UK's negotiations with the EU under Article 50. If so, this will in effect allow much more scope for selective industrial policy and it seems from the Green Paper that this would be welcome to the government. The problem is that this has the potential to increase ministerial discretion to support favoured industries and technologies 'in the public interest', to help the left behind or, more generally, to win votes rather than to pursue economic efficiency. In other policy areas, especially competition policy, we have come to realise that it makes sense to have a rules-based system which precludes such political opportunism. The imperative for government outside the EU is to establish a framework which controls the use of state aid. Unfortunately, on this topic the Green Paper is silent.

Ten pillars to an industrial strategy might seem like a lot. Yet, on closer inspection, the unavoidable conclusion is that there are striking omissions and that many of the biggest challenges are not mentioned. A successful approach would include a strong emphasis on some of the ten pillars, notably the first three, but it would also address employment issues arising from the consequences of technological change, the prevention of the misuse of selective industrial policies, and the facilitation of creative destruction.

No doubt, the Green Paper serves a short-term political purpose but it is not a landmark in economic policymaking. A recent poll of economists found that a large majority thought that it is time for a new industrial strategy but at the same time they doubted that the government could implement one successfully. I share these opinions. ◄

| Allocative Efficiency Scores | | | |
|---|---|---|---|
| | **Manufacturing** | **Services** | **Business Sector** |
| France | 0.461 | 0.161 | 0.296 |
| Germany | 0.443 | 0.399 | 0.460 |
| Greece | -0.056 | -0.235 | -0.240 |
| Italy | 0.141 | -0.190 | -0.039 |
| Spain | 0.465 | -0.052 | 0.117 |
| Sweden | 0.672 | 0.253 | 0.379 |
| UK | 0.300 | 0.065 | 0.156 |
| European Union | 0.272 | 0.036 | 0.140 |
| United States | 0.473 | 0.358 | 0.394 |

*Note: the scores reflect the extent to which labour productivity exceeds that which would result from a random allocation of resources, i.e., for the business sector in the United States this is 39.4 per cent.*

*Source: online appendix to D. Andrews and F. Cingano, "Public Policy and Resource Allocation: Evidence from Firms in OECD Countries", Economic Policy 2014, vol. 78.*

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# Who voted for Brexit?
## By Sascha O. Becker, Thiemo Fetzer, and Dennis Novy

Fundamental, slow-moving factors, such as education, explain more of the 'Leave' vote than short-term factors such as public services that are comparatively easier to influence.

THE UK REFERENDUM on EU membership in June 2016 represented a key moment for European integration, and one that academics and political observers are still seeking to understand and explain. In the days running up to the referendum bookmakers and pollsters had predicted that the 'Remain' side would win, and, afterwards, many observers were left puzzled about just who voted for 'Leave' — and why.

In a new paper, we examine the Brexit referendum vote in great detail, using statistical analysis as a way to highlight which factors proved to be the strongest predictors of the 'Vote Leave' share.

Though our findings establish correlations, not causation, they nonetheless underscore the many complex issues that surfaced in the 'Vote Leave' result. Key issues and findings include:

**EU exposure and immigration**
Surprisingly, and contrary to much of the political debate in the run-up to the election, we find that exposure to the EU in the form of migration, trade and EU transfers to UK regions has relatively little predictive power. All factors relating to EU exposure together explain under 50% of the variation in the Leave vote share — much less than other factors we analysed. We find some evidence that the growth rate of immigrants from the 12 EU accession countries that joined the EU in 2004 and 2007 is linked to the 'Leave' vote share. This stands in contrast to migrant growth from the EU 15 countries or elsewhere in the world. It suggests that migration from predominantly Eastern European countries has had an effect on voters. We cannot identify the precise mechanism — whether the effect on voters is mainly economic through competition in the labour and housing markets, or it is the result of changing social conditions. In a recent research paper, we study the causal impact of migration on the evolution of anti-EU voter preferences, which in turn correlate with support for Leave. We found, consistent with the present paper, a relatively modest but statistically significant association between immigration from Eastern Europe and growing anti-EU sentiment represented by support for UKIP across European Parliament elections between 1999 and 2014. ▶

## Fiscal consolidation

In the wake of the Global Crisis, the UK coalition government brought in wide-ranging austerity measures to reduce government spending and the fiscal deficit. At the level of local authorities, spending per person fell by 23.4% in real terms, on average, from 2009/10 until 2014/15. But the extent of total fiscal cuts varied dramatically across local authorities, ranging from 46.3% to 6.2%. It is important to note though that fiscal cuts were mainly implemented as de-facto proportionate reductions in grants across all local authorities. This setup implies that reliance on central government grants is ultimately a measure of deprivation, with the poorest local authorities being more likely to be hit by the cuts. This makes it impossible to separate the effect of deprivation as such from the fiscal cuts (which hit those areas that were more deprived to begin with) when studying the 'Vote Leave' support, and still very challenging when working with a sample capturing anti-EU sentiment over time across local authorities in the UK. With this caveat on the interpretation in mind, our

## UKIP and Brexit support

Our results indicate that electoral preferences as measured by the 2014 European Parliamentary elections are strongly correlated with the Vote Leave share. In statistical terms, almost 92% of the variation in the support for Leave across local authority areas can be explained by the variation in vote shares for the 2014 European Parliament elections. As Figure 1 shows, the UKIP vote share is particularly important. We find that earlier parliamentary votes, especially the UKIP vote share, are extremely strong predictors of how voters in different local authorities voted in the EU Referendum. Understanding the UKIP vote share therefore seems crucial for understanding the Brexit vote. Only founded in 1991 and taking on its current name in 1993, UKIP is a fairly new contestant on the British political scene. It has traditionally been seen as pushing the single issue of Britain leaving the EU. In the 2014 European Parliament elections it won the largest vote share, beating the Labour Party and the Conservative Party into second and third place.

rise, which has not been accompanied by representation in domestic politics, makes understanding the drivers behind UKIP's ascent in recent years key to understanding the EU Referendum result.

## Socioeconomic characteristics

Figure 2 illustrates the predictive power of different sets of factors in explaining the Referendum result and helps to shed light on the relative importance of different salient 'issues'. For example, we find that demography and education (i.e. the age and qualification profile of the population across voting areas) explain just under 80% of the Leave vote share. The economic structure explains just under 70%. Variables in this group include the employment share of manufacturing, unemployment and wages.

## Context

Our findings are based on analysis of the EU referendum result in England, Wales and Scotland across 380 local authorities and across 107 wards in four English cities. We relate the vote to fundamental socioeconomic features of these areas. Figure 3 plots the Leave vote shares, measured as percentages, across the local authority areas (excluding Northern Ireland and Gibraltar). We stress that our analysis is looking at a rich set of correlations but cannot possibly identify which individual factors caused Brexit. Additional related research (by Becker and Fetzer, referenced below) focuses on immigration from Eastern Europe as one specific factor of interest. Using more elaborate statistical techniques to understand whether migration was a causal factor in explaining UKIP's rise, we find that UKIP gained significant support in areas that received a lot of migrants from Eastern Europe. However, given the complexity of voter behaviour, many more studies will be required to analyse other salient factors in the Brexit result in more detail.

*Using more elaborate statistical techniques to understand whether migration was a causal factor in explaining UKIP's rise, we find that UKIP gained significant support in areas that received a lot of migrants from Eastern Europe.*

results suggest that local authorities experiencing more fiscal cuts were more likely to vote in favour of leaving the EU. Given the nexus between fiscal cuts and local deprivation, we think that this pattern largely reflects pre-existing deprivation.

UKIP therefore has the ability to mobilise a large number of voters. But due to Britain's first-past-the-post voting system UKIP is otherwise hardly represented in national UK politics. UKIP only has one Member of Parliament in the House of Commons and three representatives in the House of Lords. The relevance of UKIP for the referendum result and its dramatic

**Summary**

The findings reveal important, and in some cases, surprising correlations. We find that exposure to the EU in terms of immigration and trade provides relatively little explanatory power for the referendum vote. Instead, we find that 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. ◀

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**Dennis Novy** is an associate professor of economics at the University of Warwick and a research associate at the Centre for Competitive Advantage in the Global Economy.
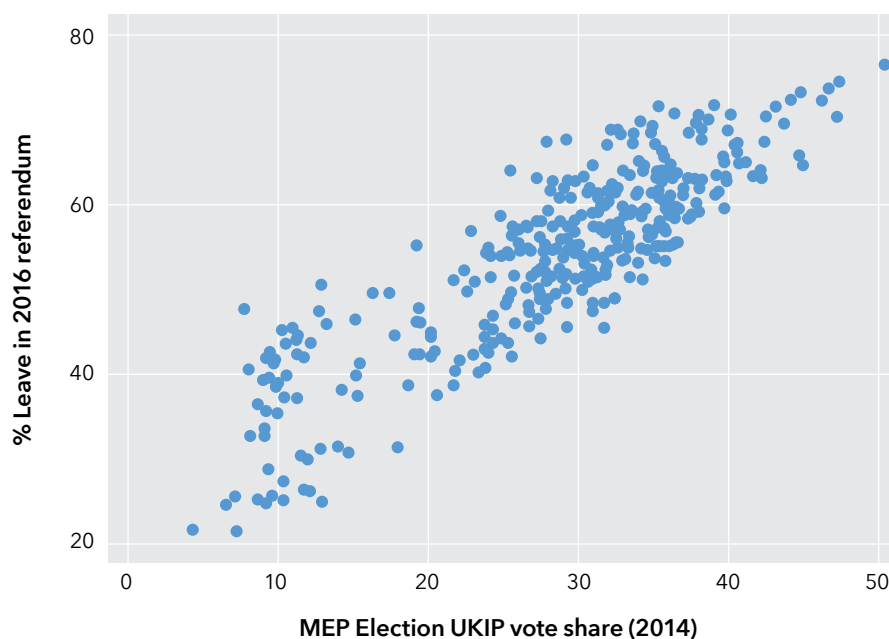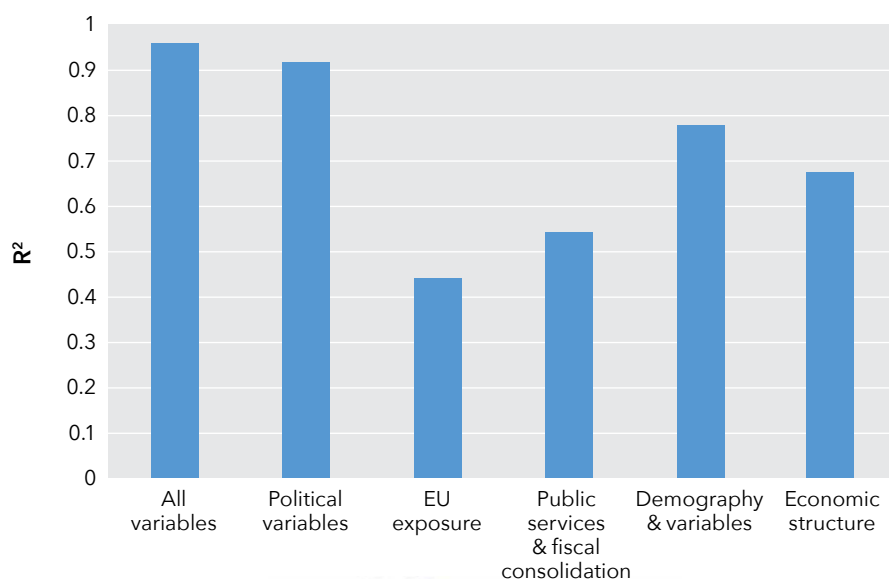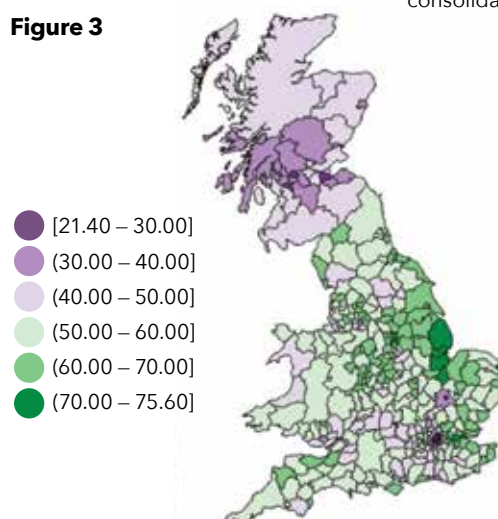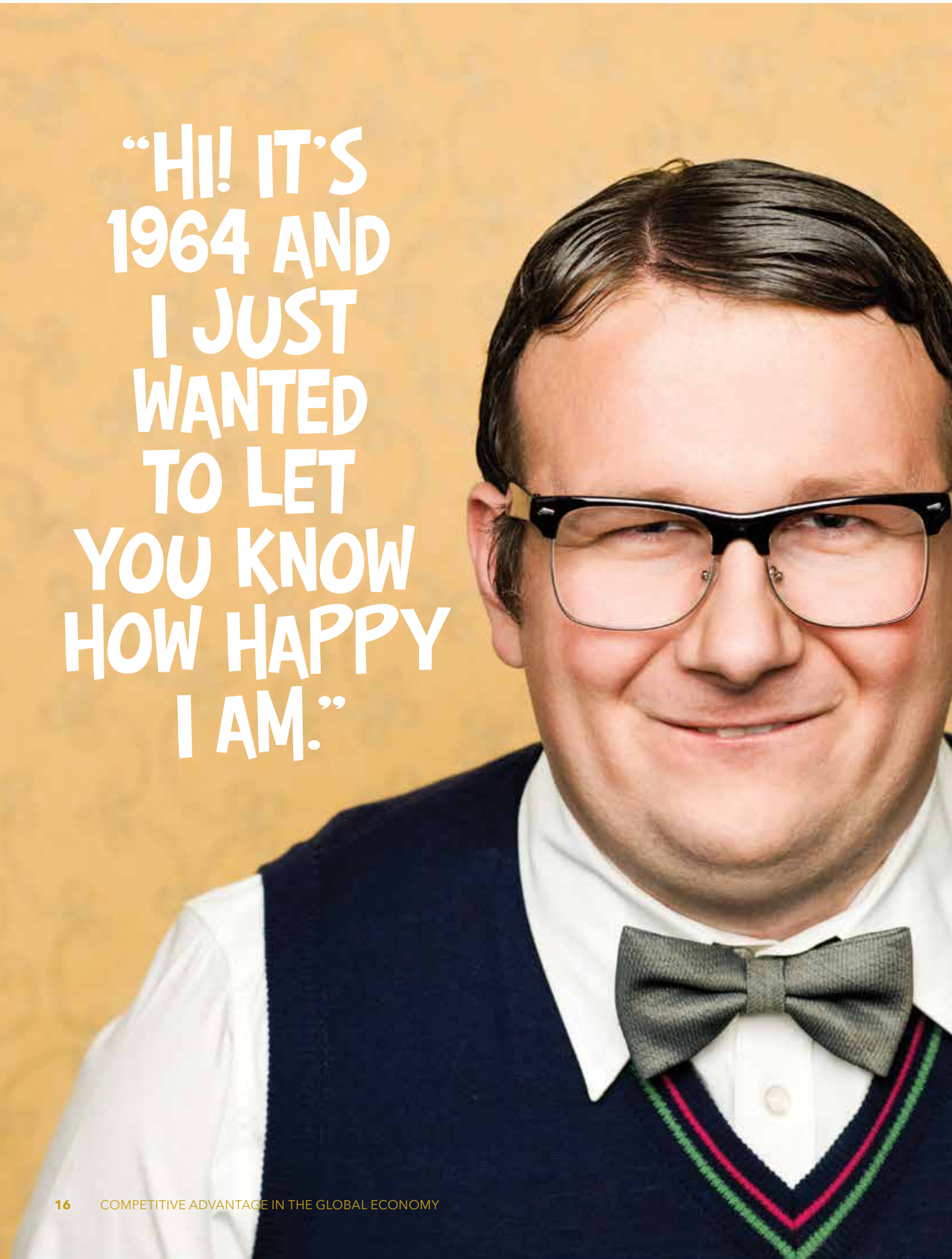
**Figure 1**



**Figure 2**



**Figure 3**

"HI! IT'S 1964 AND I JUST WANTED TO LET YOU KNOW HOW HAPPY I AM."

# Measuring historical happiness using millions of digitised books
## By Daniel Sgroi

New research demonstrates that through careful analysis of the words people were using in the past, applied to new sources of Big Data, we can start to build a long-run measure of subjective wellbeing.

HAPPINESS HAS LONG SINCE moved from being considered a fringe concern for economists to being a major policy objective. 2011 saw the launch of the UN World Happiness Report and the OECD's Better Life Index and at the level of national governments, the UK is leading the way in thinking about how to take national happiness seriously as a policy objective. However, despite the best of intentions national happiness suffers when compared to national income in one major regard: we have very little historical data. Without historical data we will always struggle to understand what truly drives happiness, and how major shocks or government policies

affect happiness at the level of the nation-state. But how can we ever access historical data on happiness? The standard method to measure happiness is to survey opinion: surely surveying opinion from past generations is impossible?

The key insight in our work is that language conveys sentiment, and that the growing availability of digitised text provides unprecedented resources to construct a quantitative history of wellbeing based on historical language use. In particular, the foundation of our work involves combining multiple large corpora of natural language going back two centuries with state-of-the-art methods for deriving public mood (i.e., sentiment) from language. ▶

*Without historical data we will always struggle to understand what truly drives happiness, and how major shocks or government policies affect happiness at the level of the nation-state.*

The recent digitisation of books, newspapers, and other sources of natural language – such as the Google Books Ngram database – represent historically unprecedented amounts of data on what people thought and wrote over the past few centuries. These databases have already proved fruitful in detecting large-scale changes in language, which in turn correlate with social and demographic change.

These data offer the capacity to infer public mood using *sentiment analysis*. Deriving sentiment from large collections of written text represents a growing scientific endeavour. Examples include recovering large-scale opinions about political candidates, predicting stock market trends, understanding diurnal and seasonal mood variation, detecting the social spread of collective emotions, and understanding the impact of events with the potential for large-scale societal impact such as celebrity deaths, earthquakes, and economic bailouts. Applying the same methods to historical text we can begin to produce more quantitative accounts of national happiness.

In the approach we took, sentiment measures were based on valence norms for thousands of words. These already exist in the literature and are collected from a large group of individuals who are asked to rate a list of words on how those words make them feel. In the present case, valence norms based on the Affective Norms for English Words have already been collected for five languages: been collected for six languages: French, Spanish, Italian, German and separately for (British) English and American English.

We applied these norms to the Google Books corpus for each of these languages, allowing us to derive proxies for subjective wellbeing going back to 1776.

An initial comparison with subjective wellbeing collected with survey data is shown in Figure 1. The data reflect the residuals after controlling for country fixed effects and clearly show a strong
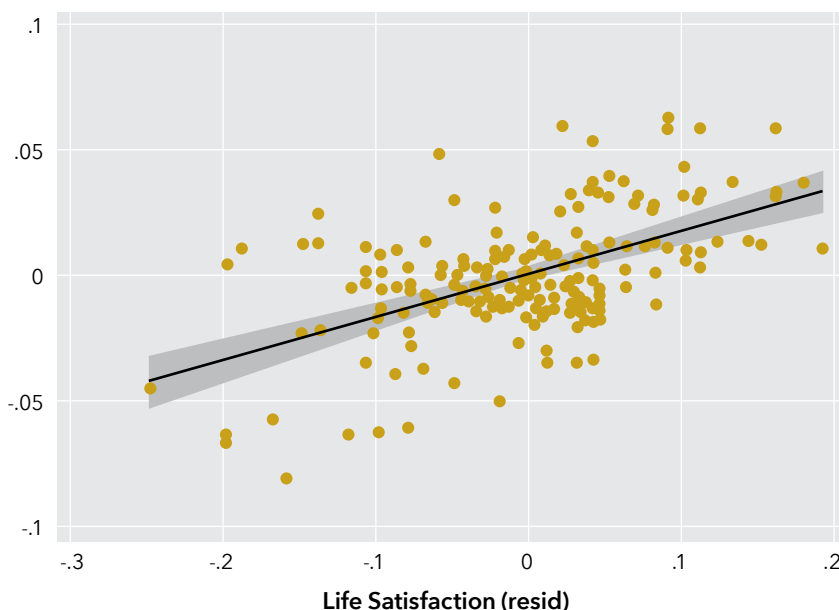


**Figure 1.** Comparison between survey measures of life satisfaction and residuals (after controlling for country fixed effects) for our measure based on sentiment from historic text. The grey area represents the 95% confidence interval.



**Figure 2.** The Average Valences Over the Period 1776-2000 Vertical red lines correspond to 1789, the year of the French Revolution, the Napoleonic Wars (1803-15), the year of the revolutions (1848), World War I (1915-18) and World War II (1939-45).

and significant correlation with our measure based on historic language. This is reinforced in regressions, clearly showing that our measure is very significantly linked to life satisfaction measured from survey data where both are available.

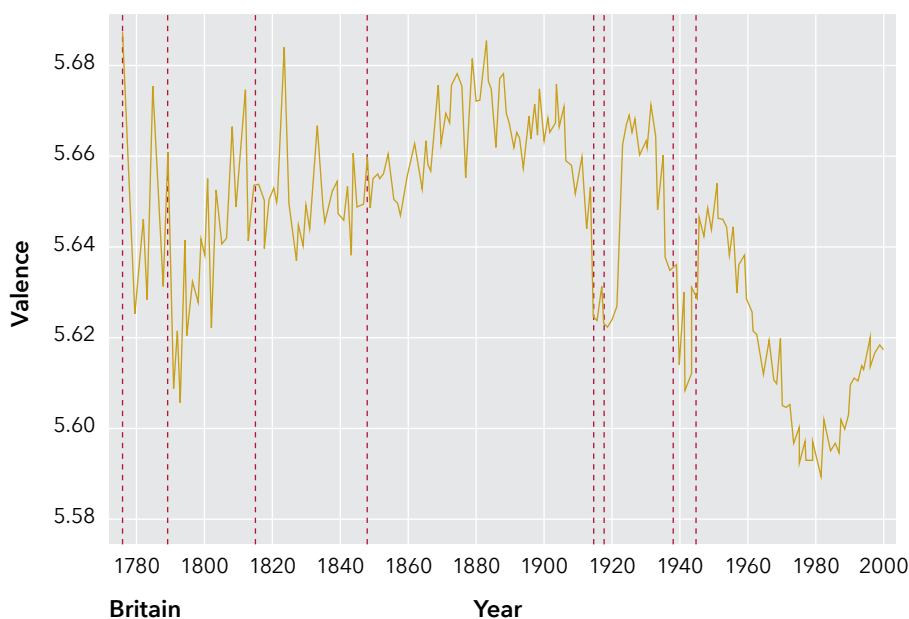Rolling the text-derived measures of subjective wellbeing back to 1776 reveals a quantitative picture of how public sentiment has changed across the six countries. Glancing at Figure 2 we can see the 1920s, the depression era, and World War I and II show clear and distinguishable influences on subjective wellbeing in the UK (and we can see similar patterns across the other countries we have investigated). We can also see the boost to happiness after World War II (a period of high aspirations) and the fall back (perhaps as those aspirations fail to be achieved) to the trough during the 'Winter of Discontent'. While we warn against super long-run comparisons (aspirations have changed so much over the last few centuries) we can see much in our index that makes sense.

**Why is a quantitative history of wellbeing important?**
The fledgling state of wellbeing data has limited our collective ability to understand how wellbeing responds to different historic events. This has in turn limited the use of wellbeing in public policy, health initiatives, and financial decision making. In practice, if subjective wellbeing is to become a key factor in guiding our collective behaviour, then we need accounts of wellbeing on par with those of GDP.

Using wellbeing as a measure to guide behaviour, however, takes more than the desire to simply improve wellbeing. As noted by Daniel Gilbert in *Stumbling on Happiness*, people have problems understanding what is called *affective forecasting* – the ability to understand how one will feel in the future – and with this also comes a limited capacity to understand how prior events and decisions influenced our past happiness. To overcome this, especially at the level of government, we must develop our

*We can also see the boost to happiness after World War II (a period of high aspirations) and the fall back (perhaps as those aspirations fail to be achieved) to the trough during the 'Winter of Discontent'.*



capacity to predict how wellbeing responds to both deliberate and unexpected events. Better predicting economic fortunes was the motivation of the national income accounting following the depression in the 1930s, which later became GDP. Of course, now numerous decisions are based on GDP, despite a near global acceptance that, in the words of John F. Kennedy, "it measures everything in short, except that which makes life worthwhile" (Presidential Library and Museum, n.d.). Thus, like GDP, governments and other agencies recognise the importance of this additional 'emotional accounting' and, by all accounts, they want to understand how better to use it to improve future wellbeing. But to do that, we need historical data. ◄

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# *Parting shot*

Scholars involved in evidence-based policy research are sure to be concerned when "alternative facts" and "fake news" take over the agenda.

BY THAT, I MEAN more than just selection of the facts in a biased way. This is commonplace, and the expert's task has always been to sift the data to correct for such biases. A more difficult problem is how to respond to alternative facts that are fabricated, although outrageously different from the truth, because that's what their authors think *ought* to be true.

Alternative facts of the made-up kind are not new. As the economist Ed Glaeser once wrote, fabricated stories have typically spread through society in conditions of depression or defeat, when there is a popular thirst for explanation. Why has this happened and who is to blame? Foreigners, minority groups, and corporate interests can quickly become the target of "fake news" that points an accusing finger at the "enemies of the people."

Alternative facts can emerge in any society, including liberal democracies. But the most diligent promoters of alternative facts are dictators, who are armed with the power to suppress the truth. Authoritarian rulers do this both to build support, and to expose covert resistance. Communist regimes, for example, required everyone, including experts, to salute fictitious achievements. To show scepticism or just indifference was not an option.

Exactly 80 years ago, in the spring and summer of 1937, Soviet statisticians were being arrested and imprisoned or shot because the facts they produced were in conflict with alternative facts that their rulers had authorised.

At the end of 1926, the Soviet population had been enumerated at 147 million. In the mid-1930s, to demonstrate the happy progress of Soviet society, Stalin announced an alternative fact: the population was growing every year by three million. On that basis, by the beginning of 1937, the population should have gained around 30 million people.

The 1937 census showed only half the expected increase: 15 million were missing. Why? The regime had to choose among explanations. In secret, some experts reported that Stalin's alternative fact was wrong. There were more deaths than Stalin projected, because millions had starved, or were shot or died in prison, or fled the country. There were also fewer births, millions fewer, as a result.

More loyal officials offered another explanation: the census did not confirm Stalin's alternative fact because it was captured by traitors, who aimed to discredit the party. Stalin waited a few weeks, then decided. Those who went with the facts disappeared, along with the census. Those who went with the alternative facts were promoted, and their explanation was released to the public.

This story has two messages. On the side of pessimism, it shows that the logic of alternative facts can be self-sustaining. When experts refute the alternative facts, the believers are likely to blame them as enemies, whose aim is to confuse and undermine society.

I am also an optimist. In the age of social media no information can be suppressed for decades. Yes, tyrants and despots can exploit social media to spread lies and to identify critics. Nonetheless, more scope exists today for truth-tellers in Russia and China, let alone in the West, than there ever was under Stalin or Hitler. ◄

> *... fabricated stories have typically spread through society in conditions of depression or defeat, when there is a popular thirst for explanation.*

**Mark Harrison**
Professor of Economics, University of Warwick

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

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. In the coming years, CAGE's research will be organised under four themes:

- 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? ◄

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