advantage

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WHO ARE THE POWER BROKERS IN INDIAN HOUSEHOLDS?

Could weak property rights explain Brazil's deforestation and land conflicts?

Reversal of fortune: new insights about the causes of India's decline and growth over the long run

Speaking to the masses on monetary policy

Measuring the worth of a university degree

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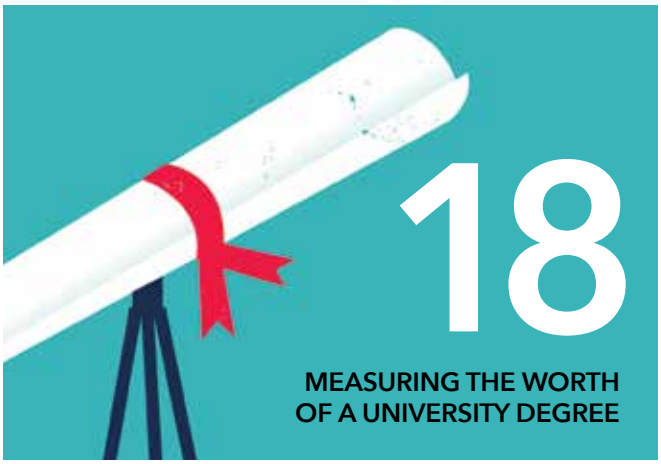

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Welcome to the Spring 2018 issue of *Advantage* ...

... 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.

In this issue, Aditi Dimri looks at the power brokers in Indian Households examining who has the most influence in household decisions and her findings challenge conventional wisdom.

Moving to South America, Thiemo Fetzer shows that insecurity of property rights over land in the Brazilian Amazon is a major driver behind land-related civil conflict and a contributing fact to deforestation.

Bishnupriya Gupta in her article on new insights about the causes of India's decline and growth over the long run finds that an underinvestment in agriculture and a failure to invest in primary school education had far more serious consequences for Economic growth rather than unfair competition from British goods.

Michael McMahon looks at how simplifying communications from central banks to the general public would affect public expectations such that they move more closely into alignment with the Bank's forecasts.

Does it pay to get a degree and does class of degree matter? These issues are considered by Robin Naylor and Jeremy Smith. They find that as the number of workers with degrees has expanded, so has the earnings premium associated with a good degree class.

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Who are the power brokers in Indian households?

By Aditi Dimri

Contrary to the stereotype of the domineering mother-in-law in multi-generational homes, the households' key decision makers are men. The findings suggest that policymakers should re-think health and childcare interventions that exclusively target women.

THE WORLD'S MOST COMMON living arrangement is one in which a married daughter moves to join the family of her husband, who remains with his parents. Some 69 percent of the world's societies follow a form of this "patrilocality." In India, nearly three-quarters (73 percent) of couples live with the husband's family after marriage, a nationally representative survey from 2012 shows.

In trying to understand the dynamics of household decision making, economists have long focused on the bargaining that takes place between the husband and wife. But in developing societies, where patrilocality and extended families are common, senior men and women in the household often have important voices in household decisions.

Understanding how such decisions are made in the presence of multiple adults and multiple generations is important because this kind of knowledge can enhance policy making. For example, which members of the family should policies target to make child health programs more effective?

Most policies target a child's mother. And, the common wisdom that mothers-in-law influence daughters-in-law has led some interventions target the older woman, or both generations of women. However, my recent work in India challenges such targeting by shedding new light on the power hierarchy within households. My recent research suggests that the males in the household hold such decision-making power that they may be the more logical targets of policy outreach.

The household structure that I study, shown in the accompanying figure, consists of the older generation couple, their eldest married son, and his wife. The household may include other siblings and children, but the main decision makers are these four adults. I ask the question: how is power distributed amongst these members in such a household compared to households without the husband's father or mother?

Simply examining the situation in households with different living arrangements does not provide a perfect comparison. For example, comparing households with all four members to those with only three, might raise questions about why families chose one type of living arrangement over another, and if these unknown reasons, rather than the arrangements themselves, might then explain any differences in power.

The ideal experiment would compare households randomly assigned to experience different living arrangements. To get as close as possible to this randomised ideal, I examine the dynamics in the wake of the death of an older member of the household. This leads to a change in the composition of the adults, and thus offers a way to compare power relationships. The analysis compares families that experienced the death of a father or mother over a period from 2005 to 2012 with families that did not experience this dramatic change. ▶

"The household structure that I study, shown in the accompanying figure, (right) consists of the older generation couple, their eldest married son, and his wife."

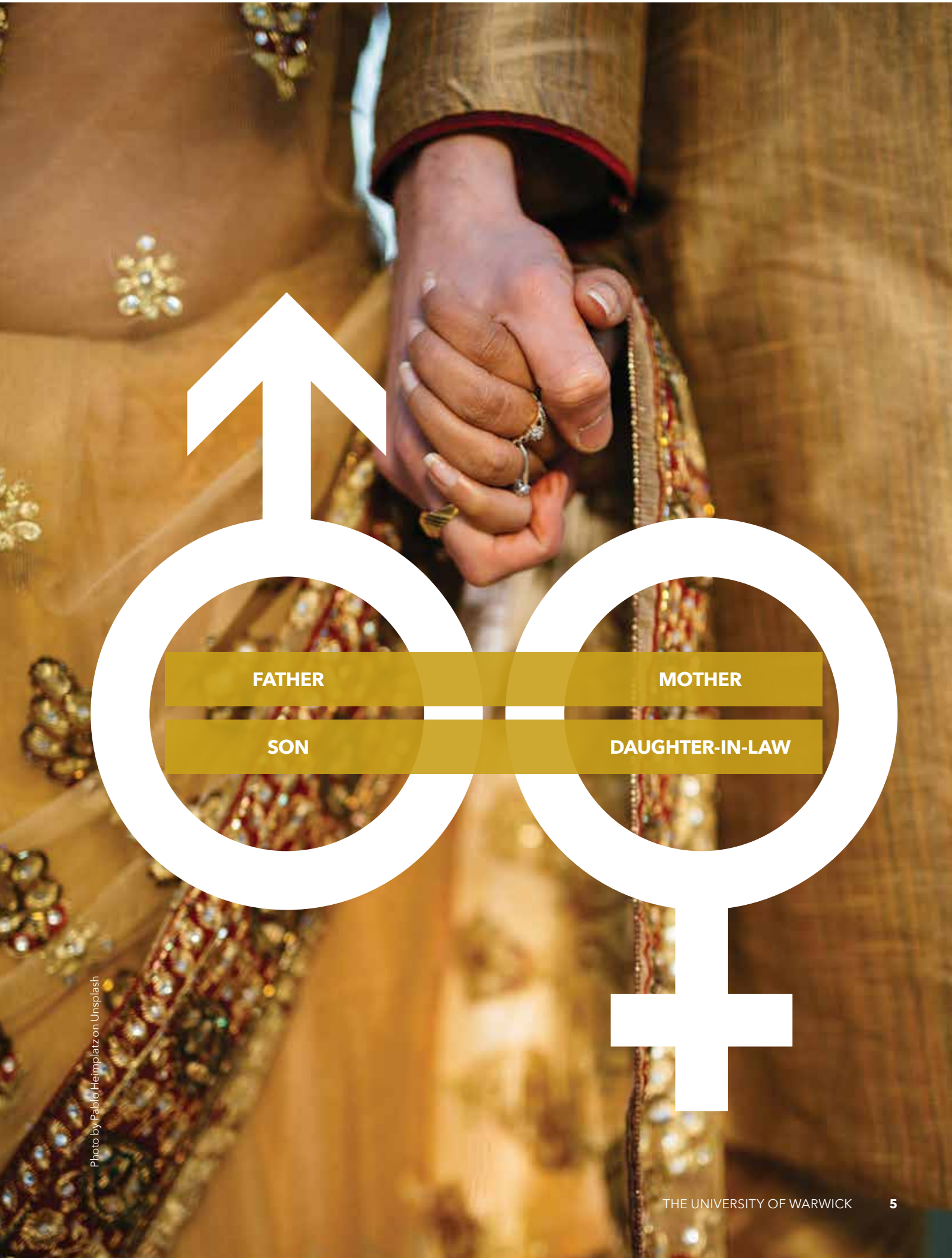


Photo by Pablo Heimplatz on Unsplash

To measure the distribution of power in the household, I rely on the decision-making "say" questions that are widely used in economics surveys. For example, the question, posed to the daughter-in-law in the households studied in my research, asks, "Who has the most say in five decisions of the household?" The response can be one of the four people – her father-in-law, her mother-in-law, her husband, or the daughter-in-law herself. This question has been interpreted to serve as an indicator of which family member has greater authority on household decision making.

I propose a framework of household power that highlights three key dimensions of power distribution: Gender, Generation, and Couple.

Evidence has shown decision-making to be very gender specific, with most economic and community decisions made by men, and household task-related decisions made by women. The accompanying figure illustrates the strong patterns that surface in my research. Among the five decisions, only cooking lies with the women. For the two big family decisions regarding marriage and expenditures, it may come as no surprise that the two men, who are often the primary earners, have the most say. However, child health and fertility are decisions often assumed to be in the domestic sphere, and, hence, one might expect the women to have the most say in making these decisions. Nevertheless, I find a clear dominance of the husband in these decisions.

I also find that the older generation participates in decisions that relate specifically to the younger couple, such as what to do when their child is sick, or what partner will be chosen for the child's eventual marriage. Such a generational division of power is typical in extended households with the power shifting to the younger generation with age. But the death of the mother or father causes a sharp reallocation in who has the most say between the remaining members.

Given the power distribution in 2005, one would expect that after the death of the father the most say would transfer to the son, and after the death of the mother, no significant redistribution would occur. Looking at the index of the five decisions, we find that with the death of the father the son's "most say" increases by around 15 percent This confirms the strong male inter-generational power in this context. However, we find that the mother's "most say" also increases, indicating that the older generation continues to keep power in some households, and in others, the power passes to the son.

Does any redistribution of power take place after the death of the mother? Perhaps surprisingly, I find that in nearly all households, the death of the older woman leads her husband to transfer his say to the son. Hence, on average, the son's "most say" increases by 25 percent.

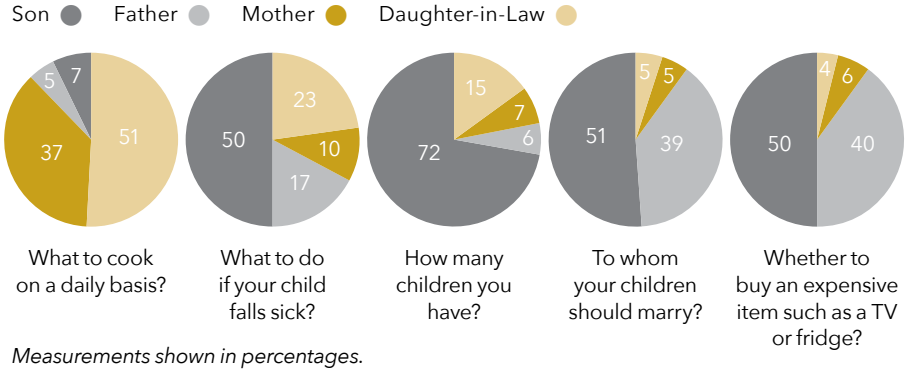
What about the daughter-in-law? As predicted by the gender spheres, she only sees an increase in her say regarding cooking decision after the death of her mother-in-law. I find no effects on her say in her own fertility or in child- outcome decisions.

The findings challenge conventional wisdom that the mother-in-law is the sole and strongest authority over the daughter-in-law. Instead I find that such a household structure places the daughter-in-law at the bottom of the gender, generation hierarchy, and with the mother-in-law in a position subservient to both generations of men.

These findings have implications for policymakers:

- While the results reinforce the fact that the nuclear family bargaining (i.e., dynamics between husbands and wives) is key to household behaviour, the role of the older generation cannot be ignored and could be key for major family decisions such as marriage. Hence, it makes sense to have campaigns at the community level to address issues such as child marriage.
- Policies and programmes should take into account the role of household decision makers. For example, numerous cash and information programs are targeted at the young mother (the daughter-in-law). We find that she is the member with the "least say" in decisions. This means that targeting her may not be as effective as targeting the men who have more say.
- Governments should try to involve men in various health and fertility programs to see whether this leads to better outcomes. Some programmes try to involve mothers-in-law along with their daughters-in-law, yet, while this is commendable, husbands remain households' main decision makers. ◀

Who has the most say in the decision



Measurements shown in percentages.

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Publication Details

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Could weak property rights explain Brazil's deforestation and land conflicts?

By Thiemo Fetzer

Natural resource abundance and weak institutions are believed to breed civil conflict. Weak institutions may also foster the unchecked exploitation and erosion of natural resources.

Insecurity of property rights in the Brazilian Amazon is a major driver behind land-related civil conflict and a contributing factor to deforestation. Creating secure property rights has the potential to dramatically reduce civil conflict, even in the absence of changes in enforcement.

A challenge for policymakers stems from limited understanding of what type of institutional change is required to reduce both civil conflict and unsustainable natural resource exploitation. Our results suggest that secure property rights provide economic benefits and represent an integral function of an effective and peaceful state. ▶

WEAK PROPERTY RIGHTS ARE strongly associated with underdevelopment. The threat of expropriation by government or others leads to inefficiently low investment in productive assets, and inefficiently high investment in guard labour.

In addition, weak property rights may lead to civil conflict. For conflict to be profitable, two conditions must be satisfied. First, there must be something worth taking – the prize must be valuable. Second, it must be possible to take it – the prize must be contestable. For civil conflict, this second condition raises the issue of the state's ability to enforce and protect property rights.

Most conflict research has tended to focus on the value of the prize. As a result – despite a prevailing view that weak institutions and ineffective states set the stage for conflict – we are still only beginning to unpack the roles that specific policies and institutions may play.

In recent research, Samuel Marden and I examine this issue in the context of the Brazilian Amazon, where most of the land does not have well-defined property rights. In fact, the Brazilian constitution encourages contest over land that is not in some form of socially "productive use". This implies that landowners potentially face the threat of land invasions by squatters, who can make the property "productive" by clearing it; they then can appeal to the government for ownership on legal grounds. This potentially sets the stage for conflict, as people vie for the title to a piece of land, and for the deforestation of that land, because clearing land, represents a "productive use".

Brazil is not unique in having constitutional provisions that encourage squatting and contest over property rights. The origins of this lie in the colonial past, which resulted in very unequal distribution of land ownership, which in turn led to the adoption of policies and institutions that favour redistribution and land reform. As such, Brazil is among the many Latin American countries that experiences significant land-related civil conflict. Between 1997 and 2010, for example, there were at least 280 murders, and many more events that involved lower levels of violence (see figure 1).

Our research shows that insecurity of property rights over land in the Brazilian Amazon is a major driver behind land-related civil conflict, and a contributing factor to deforestation.

Our research shows that insecurity of property rights over land in the Brazilian Amazon is a major driver behind land-related civil conflict, and a contributing factor to deforestation. This implies that the assignment of secure property rights can dramatically reduce civil conflict, even in the absence of changes in enforcement. Indeed, at the local level, we cannot rule out that substantively all violent land-related conflict is a consequence of Brazil's failure to securely assign property rights over land.

We arrive at these findings by exploring a natural experiment. Over a 13-year period, the proportion of land in the Brazilian Amazon basin covered by some form of ecological or indigenous protection grew from 16 percent of in 1997 to 44 percent in 2010 (see figure 2). Land with protected status automatically fulfils the constitutional "productive use" requirement simply by virtue of being protected. Thus, squatters have no more incentive to invade land in protected areas because they can no longer appeal to the government for the title for having converted the land to "productive use". Consequently, an increase in the municipal share of land under protection reduces the share of land in that municipality that is contestable.

The causal chain for the argument is simple: if more land is protected in a municipality, less land is available to fight over, which should result in less land-related conflict. We show that this is indeed the case. Our results indicate that weak property rights, and the resulting contestability of land titles, are primary causes of this conflict. We rule out a host of alternative explanations that could generate our results. For example, we find no detectable relationship with non-land related crime (proxied by homicides), economic activity, environmental enforcement or local government expenditure.

Our results also underscore the importance of policies' scope and enforcement.

For example, our findings suggest that local efforts to improve property rights in one area may divert land-related conflict to other municipalities.

Thus, broad national or regional efforts to improve property rights are likely to be more beneficial than piecemeal local reforms.

And, while establishing protected status results in a net gain of forested land remaining, not all types of deforestation are affected equally. "Permanent deforestation" of the type necessary to establish a land title claim decreases substantially, but short-run deforestation of the kind associated with illegal logging and temporary pasture actually increases. We interpret this as evidence as evidence of weak overall enforcement of protection laws. Protection status has reduced deforestation, but would likely have more widespread effects if it were better enforced.

Our paper highlights the importance of establishing secure property rights over land, and, more generally, the importance of the role of law in limiting the set of contestable assets and goods, in preventing civil conflict and discouraging environmental degradation. ◀

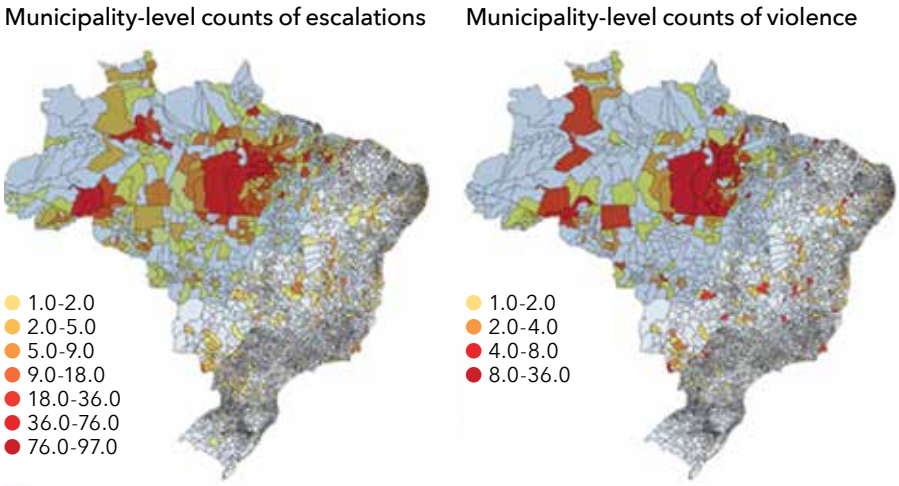

Figure 1: Maps show municipality-level counts of escalations (left) and violence (right) from 1997 to 2010: land-related conflict was concentrated in the Amazon states (shaded).

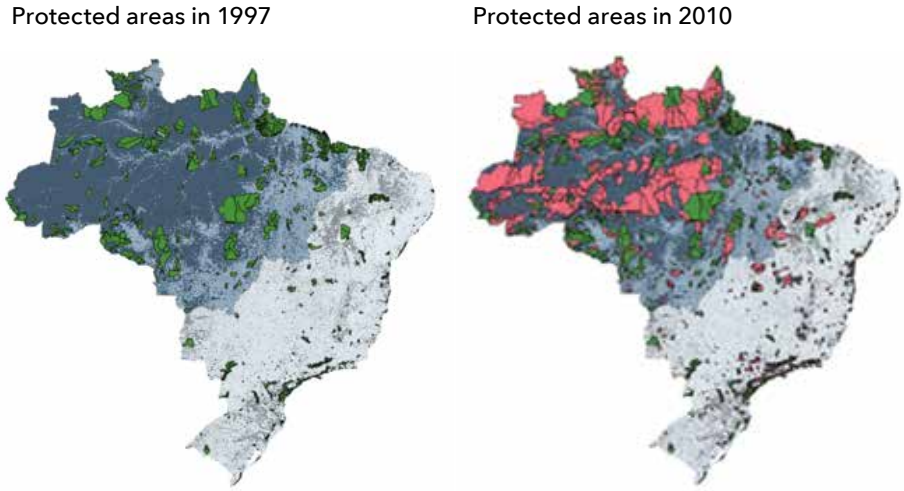

Figure 2: Maps illustrate the expansion of protected areas between 1997 and 2010. The Amazon states are shaded. Forested areas are darkened.

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Publications Details

Take what you can: property rights, contestability and conflict, joint with Samuel Marden, *Economic Journal*, Volume 127, Issue 601, 757–783, May 2017.

Reversal of fortune: new insights about the causes of India's decline and growth over the long run

By Bishnupriya Gupta

The decline of India's traditional textile industry in the face of imports of British goods in the 19th century did not drive economic stagnation, as previously believed. Underinvestment in agriculture and a failure to invest in primary school education had far more serious consequences for economic growth.

IN 1947, WHEN INDIA gained independence following 200 years of colonial rule under the British Empire, the country was one of the world's poorest. India fell behind during colonial rule for reasons that have widely been believed to stem from the decline of traditional textile industries in the face of unfair competition from British goods.

My recent research challenges this view. New quantitative evidence about the indicators of living standards, and analysis of the economy over the long run reveal a different explanation for India's long-run decline and reversal of fortune after independence from British rule. My research shows that the failure to grow was not due to deindustrialisation, as has been argued, but due to a lack of investment in agriculture and in primary school education.

The Indian economy began to decline before colonisation by the East India Company. The high point in Indian GDP per capita was in 1600 during the reign of the Mughal emperor Akbar. GDP then declined from the middle of the 17th century, even as the trade in Indian textiles increased. The decline continued as the East India Company gained territorial control over India from 1757. India stagnated as it became a part of the British Empire. In the post-independence years, technological changes in agriculture and planned industrialisation moved the economy from stagnation to modern economic growth. The slow growth in the post-independence decades is a relative failure in the context of the rapid growth in East Asia, but a reversal in the context of the long-run decline during colonial rule.

Evidence on wages and estimates of per capita GDP from 1600 show that living standards declined absolutely and relatively from the 17th century. In 1600, Indian GDP per capita was 60 percent of British GDP per capita, and well above subsistence levels. India's decline in living standards coincided with increased integration with international markets with the arrival of the European trading companies and the booming textile trade of the 17th and 18th centuries. ▶

In the post-independence years, technological changes in agriculture and planned industrialisation moved the economy from stagnation to modern economic growth.

Growth

Stagnation

Colonisation

Agriculture

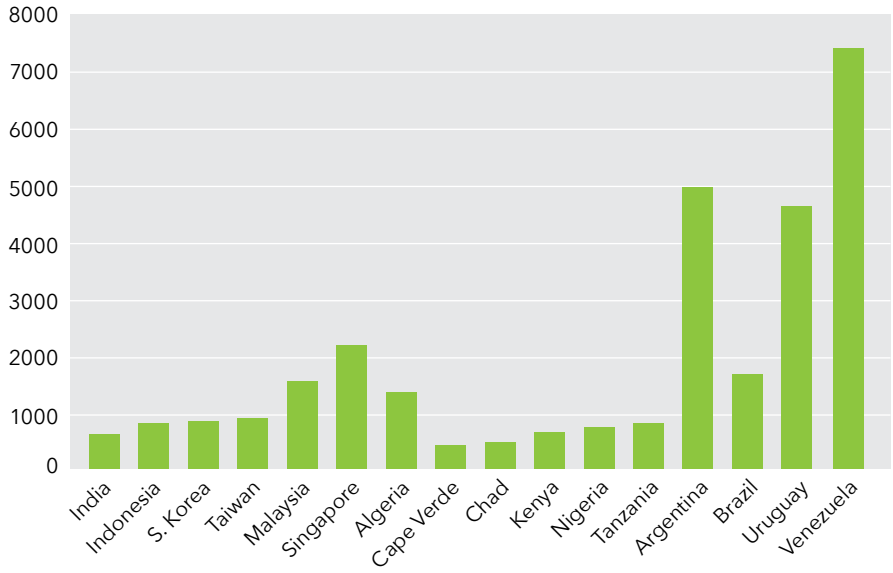
Textiles

Education

Industry

Services

Figure 1: Per Capita GDP in 1990 $ in 1950

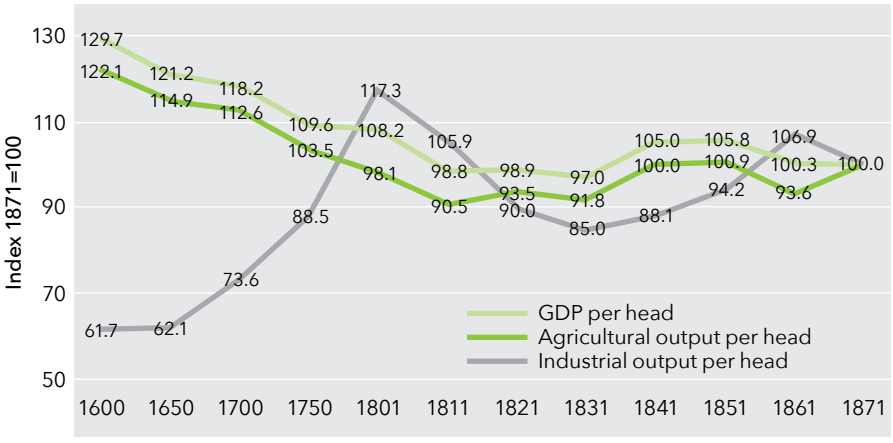


Source: Maddison Project database: https://www.rug.nl/ggdc/historicaldevelopment/maddison/releases/maddison-project-database-2018.

The competitive advantage of Indian textiles lay in the skills of the weavers, the quality of cotton cloth, and the low wages of the textile workers. British wages were five times the Indian wage. The British Industrial Revolution wiped out the wage advantage of the Indian industry. The rising productivity of British workers led to a large decline in price of British goods and to a decline in the share of Indian goods in the world market.

Between 1830 and 1880, the Indian economy deindustrialised. As the political control of India passed from the East India Company to the British Crown in 1858, India integrated into the division of labour of the British Empire as an exporter of agricultural products, such as opium, raw cotton and tea. Specialising in exports of primary products, did not have an adverse effect on Indian GDP per capita, but it did not lead to sustained growth. From 1900, both Indian agriculture and Indian income stagnated.

Figure 2: Trends in GDP per head and per capita agricultural and industrial output from 1600-1871 (1871=100). (The figure shows that agriculture, rather than industry, tracked the movement in GDP per capita).



Source: Calculated from Broadberry et al. (2015).

Agricultural growth was concentrated only on irrigated land, which, in 1935, covered only 20 percent of land under cultivation. Yields stagnated elsewhere, with yield per acre in food grains actually declining. Yet investment in irrigation was relatively small: representing between 3 percent and 5 percent of the budget, compared to the 15 percent to 25 percent spent on the railways from 1895 to 1935.

Following the decline of old industries new industries emerged. Tea and jute industries in eastern India were set up with British capital. Indian trading groups that had been involved in opium and cotton trade, moved into the cotton textile industry from the 1860s. Despite the absence of protective tariffs, the industry began to gain domestic market share from British imports. Industry in colonial India was the fastest-growing sector. Productivity, too, rose faster in industry than in other sectors. Despite the failure to develop a machinery industry, India did not look that different from a comparable Asian country. About 13 percent of GDP in India and Korea originated in the manufacturing in 1945.

Yet, at the same time, public investment in education was one of the lowest in the world. At the time of independence, only 17 percent of Indian population was literate. India followed a different path in developing human capital from the rest of the world. Rather than expanding primary education, the focus was on secondary and tertiary education. Expenditure on secondary education was disproportionately high, and secondary school enrolment was high relative to the primary school enrolment and comparable to countries in Europe. In the middle of the 19th century universities were set up in the large metropolitan cities: Calcutta, Bombay, Madras and Delhi.

Indian independence led to a major change in the direction of economic policy – from a globalised economy integrated into the British Empire to an economy that retreated

from policies of free trade and capital flows. The newly independent state embraced the idea of development through industrialisation. Five-year plans were adopted to transform a colonial economy into a self-sufficient one. Studies of the Indian economy under planning see India as a failure in comparison to the East Asian successes. The catching up took place slowly, and the growth rate of less than 2 percent per year, between 1950-80, came to be known as the Hindu rate of growth. The economy, overburdened with regulation and efficiencies, slowed productivity growth. To the economic historian, this presents a turning point in falling behind. Gross domestic capital formation rose from 6 percent or 7 percent of GDP before 1940, to 13 percent in 1951, and to 20 percent in the 1970s. The Green Revolution in agriculture and industrial growth pulled the economy out of stagnation. (See tables 1 and 2 for GDP per capita and sectoral growth rates over the long run.)

Table 1: Changes in Annual Growth Rate in per capita GDP (%)

	GDP per capita
1870-1885*	0.5
1885-1900*	0.8
1900-1947	0.1
1950-1980	1.4
1980-1990	3.0
1990-2000	4.1

*Source: * Heston (1982) table 4.5. Sivasubramonian (2000) table 6.11.*

Table 2: Changes in Sectoral Growth (% per year)

	Primary	Secondary	Tertiary
1910-1940	0.0	2.3	2.2
1950-1964	3.0	6.8	3.8
1965-1985	2.5	4.3	4.4
1986-2007	3.4	6.8	7.1

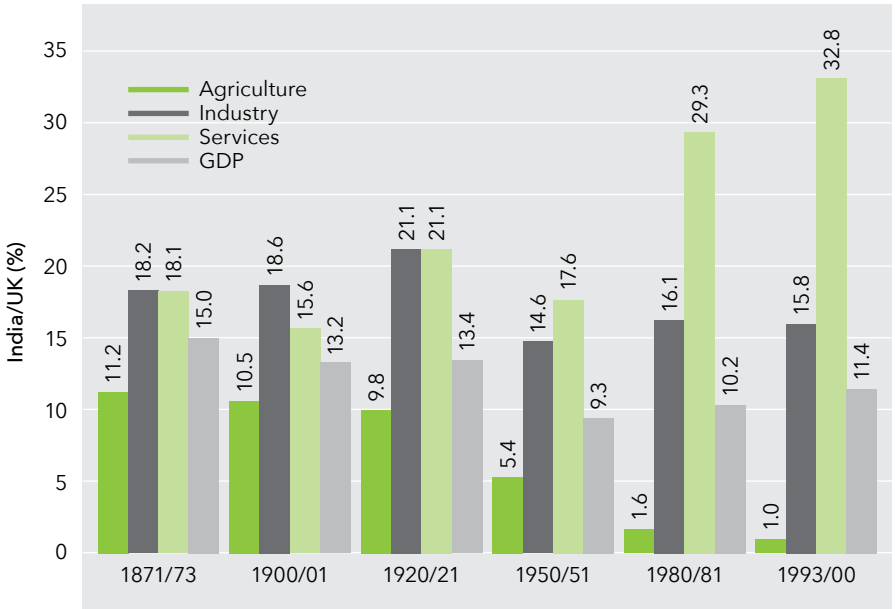
Source: Roy 2012, table 12.1.

From 1950, output per worker in India (in comparison to output per worker in the UK) reversed its decline (Figure 3). Productivity disadvantage in services with respect to the UK also declined over time, while the productivity in industry has varied within a small margin.

The Hindu rate of growth changed in the 1980s, following dismantling of the regulatory system. Per capita GDP growth doubled from 1980, and rose above 4 percent per year after 1990. The path of Indian economic growth has not followed the standard pattern of structural change. Unlike in industrialised countries, industry in India did not emerge as the largest sector at any time either in terms of output or employment. More importantly, India's growth since 1980 has been led by services. This sector has the largest share of workers with secondary and tertiary education, and it has a high total-factory productivity growth. Colonial emphasis on secondary education may have had long-term consequences for services. On the other hand, the effect of the low rate of primary school enrolment has persistent adverse effects on human capital in agriculture and industry. ◀

Rather than expanding primary education, the focus was on secondary and tertiary education.

Figure 3: Sectoral Productivity Differences with UK (% India/UK)



Source: Broadberry and Gupta (2010).

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Speaking to the masses on monetary policy

By Michael McMahon

To be convincing and credible, communications by policymakers need to be simple, relevant and story based. Typical communications from central banks tend to fail on all three fronts.

Simplified communication from central banks could address twin deficits: the deficit of public understanding and the deficit of public trust.

CONTROL OF INFLATION depends on control of inflation expectations, according to most modern views. The idea is that if workers and firms believe that inflation will be 2 percent, then firms will be wary of pricing themselves out of the market, and will set prices accordingly, and workers will not seek wage increases too high above what they believe everyone will seek.

The committees in central banks that set the policy interest rate (to which most other interest rates are related) increasingly use communication to help manage inflation expectations. In the last quarter of a century, a revolution in central bank communication has taken place. Central banks went from operating in an opaque environment to operating in an increasingly transparent one.

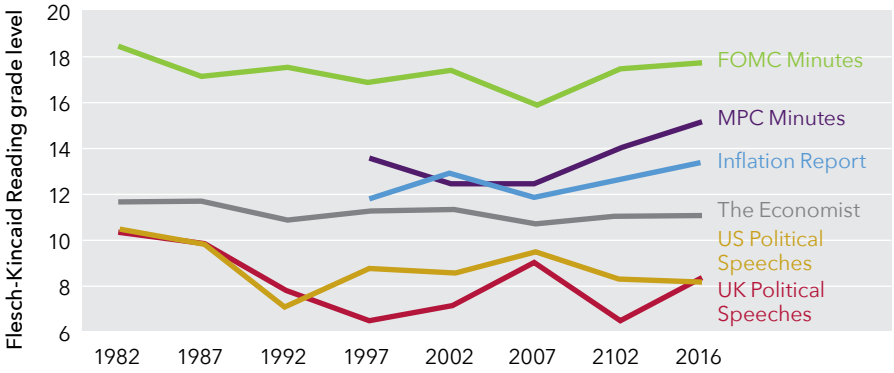
A selective revolution

The members of the Monetary Policy Committee (MPC) at the Bank of England, the UK's central bank, are no exception. They are trying to ensure that people expect them to achieve their objective – that is, to keep consumer price inflation close to its 2 percent target. The committee's efforts involve a huge number of regular speeches and other publications, such as reports and minutes of meetings. But how many people listen to speeches? How many people, every quarter, tune in to get the main messages of the Bank's Inflation Report? The answer is not many.

In fact, while a great deal of evidence shows that communication seems to move financial market expectations of future interest rates, little suggests that the enhanced communications of the last few years have had any impact on expectations or behaviour of the general public.

Nearly a decade ago, Alan Blinder, a Princeton-based economist and former Federal Reserve Governor and member of the Federal Open Market Committee (FOMC, the US equivalent of the MPC) identified that both academic and policy economists may need to "pay more attention to communication with a very different audience: the general public". Despite his call, the communications revolution has been selective. ▶

Figure 1: Readability of various media



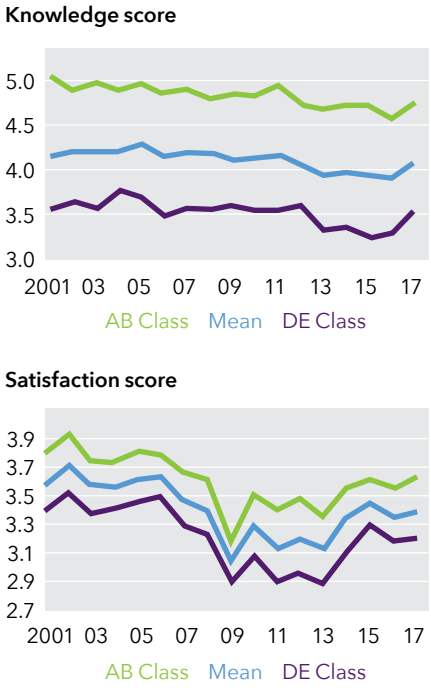
Source: Nexis, Project Gutenberg, Bank of England calculations; see Haldane (2017) and Haldane and McMahon (2018). Note: Newspaper articles match a search for 'monetary policy'..

In fact, the selective nature of the revolution has many roots. One is that most of the material that the central bank publishes is beyond the reading comprehension of the vast majority of the general public. To illustrate this, Figure 1 shows the reading level for various publications and speeches. The main Bank of England publications is 14-18 years of schooling (roughly equivalent to university-level), whereas political speeches are around grade-eight level (secondary school).

The communications deficit involves more than a lack of understanding, however. Andy Haldane, the Bank of England's Chief Economist, identified what he called the twin deficits problem: a deficit of public understanding and a deficit of public trust. Such deficits can even be measured. In recent work, he and I use the Bank of England's Inflation Attitudes Survey of UK households to analyse this issue. We show that since 2001:

- The public's understanding of monetary policy structures appears to have been largely immune to central banks' communication revolution; the average knowledge score has been flat or has actually fallen slightly.
- Satisfaction with central banks' actions declined during and following the financial crisis, and has yet to fully recover.
- While the pattern found for satisfaction in central banks' actions has been broadly based across demographic groups, there is significant stratification in knowledge scores by age, education and social class (as well as by income). The young, less educated and poor are less knowledgeable; this suggests that the revolution has bypassed large cohorts of society.

Figure 2: Public knowledge of and satisfaction with monetary policy



Source: Bank of England's Inflation Attitudes Survey

Desirability of speaking to the general public

If they are going to undertake the task, policymakers must believe that addressing the public is desirable. Here I suggest four reasons why the mission of trying to broaden the audience for the key messages in the Inflation Report has merit:

First, households account for the largest expenditure component of GDP, so influencing their expectations should be particularly important. Moreover, there is growing evidence that their expectations are shaped by a wide range of factors, and certainly not just asset prices. Robert Shiller, the Nobel Laureate, has recently emphasised a key role for 'popular narratives' in determining behaviour in the macroeconomy. To become convincing and credible, communications by policymakers need to be simple, relevant and story based. Typical communications from central banks tend to fail on all three fronts.

Second, building public understanding through more-targeted communication may help to establish trust in central banks and credibility about their policies. This is an important mission for reasons of political accountability. Senior central-bank policymakers usually have independent control of an important policy instrument but are not typically directly elected. As such, central banks must ensure they meet the terms of their social contract with wider society.

These first two reasons reinforce on another; it may be possible to address the twin deficits together through better communication. Using the Bank of England's Inflation Attitudes Survey and controlling for demographic factors, we show that households reporting greater knowledge and greater satisfaction with monetary policy are more likely to have inflation expectations that are closer to the inflation target. Moreover, satisfaction in central banks' actions is positively correlated with institutional understanding.

Households account for the largest expenditure component of GDP; thus, influencing their expectations should be particularly important.

A common driving relationship exists between these concepts; it may be that you cannot build one without the other.

Third, even the traditional audiences for central bank communication, the mainstream media and financial markets, likely benefit from simpler communication. Because these are the main intermediaries of information to the general public, it is of paramount importance that they reflect the messages accurately.

Finally, simplified communications may open a dialogue that can facilitate the flow of information from the general public to the central bank. This can help the central bank to make better decisions.

Feasibility of speaking to the general public

As important, for central banks to invest effort and resources into addressing a wider selection of society, the central bank must be convinced that their efforts won't be wasted. Feasibility is key if they are going to undertake the task.

Addressing feasibility is difficult. Our work uses a novel public survey, and a recently adopted communication initiative by the Bank of England to study the issue. The communication innovation was the November 2017 launch of a new, broader-interest version of its quarterly Inflation Report (IR). This communication had the same economic content as the report itself, but was aimed explicitly at speaking to a less-specialist audience. Importantly, this new content was provided alongside the established (more technical) IR and Monetary Policy Summary. The new content was written for an eighth-grade reading level which compares with the Monetary Policy Summary, written at a 13th-grade reading level.

In our surveys of both the general public and more technically trained, graduate students of economics, we randomised the content which the participants read and explored the effects of reading the new content as opposed to the technical content.

We found that:

- The new layered content is easier to read and understand, even for technically advanced MPhil students.
- Those that read the new layered content tended to develop an improved perception of the institution (important in this era of widespread scepticism of public institutions).
- More straightforward communication boosts the chances that the reader's beliefs, especially those of the general public, move more closely into alignment with the Bank's forecasts.

The message from this preliminary work is that if communication is suitably simplified, there is scope to affect public expectations.

Looking forward

There is still a long way to go in order to address the twin deficits problem, and to improve the public's engagement with central bank communication. The Bank of England's first steps to target communication at the general public seem to hold potential, but more needs to be done. The call to arms from Alan Blinder remains as relevant, if not more so, today. Researchers must further evaluate the benefits and feasibility of broader communication. Central banks will need to continue to innovate by using different media to engage the general public.

Nonetheless, success must be measured, not by the ability to reach everyone, but rather by the ability to extend influence beyond the small minority of technical specialists and information intermediaries who currently form the core of central banks' audience. ◀

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Measuring the worth of a university degree

By Robin Naylor and Jeremy Smith

Has the dramatic rise in the number of students attending university led to a fall in the graduate earnings premium?

DOES IT PAY to get a degree? The short answer, based on evidence for the UK, is: "Yes." The raw median earnings differential between graduates and non-graduates who left school with GCSEs or A-levels is about 35 percent. Estimates of the average graduate earnings premium are in the range of 15 percent to 20 percent, after the inclusion of controls for factors such as university course and institution and limiting the comparison to a more similar peer group, those with at least two or more A-levels.

A more informative answer is: "It depends." The graduate earnings premium varies widely depending on the subject studied, the higher education institution attended, family background, gender, prior qualifications and degree class awarded. For some, a degree brings huge returns. For others, returns are likely to be very low or, potentially, even negative.

Directly or indirectly, individual decisions about whether to invest in a university education will be informed by perceptions of likely returns. It is therefore important that evidence-based information is available to young people and their families. Detailed information on the distribution of the earnings premium for a university education is important for making decisions on university finance, evaluating funding arrangements, and understanding the nature of the impact of higher education on dimensions of inter-generational socio-economic mobility. This is particularly true at a time when a greater number of young people than ever before are pursuing a university education, and, as a result, the relevance of evidence on outcomes of graduates from previous cohorts is fading. For these reasons, the questions surrounding the "worth" of a university degree continue to be the subject of analysis, and key researchers in this field are issuing a cri de cœur for relevant UK agencies to allow more forensic use of, and linkages among, key data sources that are crucial to understanding the earnings premia associated with a university degree, and with certain degree classes.

Variations in the graduate earnings premium

To set the scene, let's first consider variations for earlier cohorts. Blundell et al. (2000) provide estimates for the cohort born in 1958, when roughly 14 percent attended university. Relying on UK National Child Development Study data, which are rich in information on cognitive and other ability measures, they estimate that by age 33, the earnings premium for a degree is 17 percent for men and 37 percent for women.

Does earning a "first" or a "second" make a difference to graduate earnings?

But by the late 1980s, things changed. The number of students expanded dramatically, with university participation more than doubling to over 30 percent by the mid-1990s, and with women more likely than men to pursue a university education. Meanwhile, political leaders increasingly began to urge greater participation in higher education. For example, within one week of becoming Prime Minister in 2007, Gordon Brown announced a target of 50 percent of young people pursuing higher education by 2010.

Our recent research with Shqiponja Telhaj examines the question of the earnings premium associated with a university degree for a generation of young people born in the 1970s and who came of age just as student numbers were beginning to take off. We find that the graduate earnings premium for men in this cohort remained broadly unchanged at roughly 17 percent. Meanwhile, the premium for women fell to be essentially the same as that for men. This is perhaps not surprising; the participation rate for men had not changed substantially, while female participation had been rising substantially relative to the 1958 birth cohort.

Did dramatic increases in student numbers affect the graduate pay premium?

An obvious question is whether the dramatic expansion of student numbers through the early 1990s led this earnings premium to fall. Walker and Zhu (2008) investigate this using UK Labour Force Survey data with which they construct birth cohorts and examine whether estimates of the graduate earnings premium change over cohorts immediately before and straight after expansion. Perhaps surprisingly, they find that, at least for men, the premium continued to be broadly constant across these cohorts on average, though with a rise in the premium for the top quartile of male graduates. They explain the constancy as resulting from an approximate balance between the forces of increased relative graduate supply and skill-biased technical change that increased relative demand. Consistent with this interpretation, Blundell et al. (2016) report that increases in university attendance have not been associated with substantial decline in graduates' wages relative to those of school leavers with at least GCSEs but without degrees. This also holds true through the post-2007 period of recession. Their explanation for the long-term constancy observed to date is similar to that of Walker and Zhu, but focuses on how firms have responded to a rising supply of graduates by adopting more decentralised organisational structures which tend to favour more highly skilled workers. ▶

Variations by subject studied, institution, gender and family background

Britton et al. (2016) turn to other factors that might affect the graduate earnings premium for the group of students entering university from the late 1990s, the period after the most dramatic expansion. They examine gender, family background, the higher education institution attended, and the subject studied. The great innovation of this paper is the use of high-quality earnings data from Her Majesty's Revenue and Customs (HMRC) matched to student record data from the Higher Education Statistics Agency (HESA). They find huge variations in graduate earnings, even between graduates attending the same institution and registered for the same degree subject, though much of the variation can be attributed to differences in student characteristics. Economics and Medicine emerge as high-earning outliers relative to all other subjects. Graduates' family backgrounds also have a large influence on outcomes beyond graduation, with those from higher-income backgrounds receiving on average 10 percent higher earnings than those from lower-income backgrounds, after taking account of observed student characteristics, subject studied, and the institution attended.

For graduates from similar cohorts, our work in 2002 had similarly found earnings to be greater for those from higher social-class backgrounds, based on full-population student records data containing very precise information on prior qualifications and other personal, university, course and school characteristics, though with more limited data on earnings. We also found that, on average, graduates who had attended independent schools prior to university received earnings significantly greater than their peers from local education authority schools, other things equal. Intriguingly, we found that the estimated independent school earnings premium among graduates increases with school fees but has no association with measures of school-level academic performance.

Does degree class matter for graduate pay?

Estimates of returns to education tend to measure education either by years of schooling or by the highest level of qualification attained (for example, GCSE, A-level, bachelor's degree, etc). There is surprisingly little analysis of how returns vary by the level of academic performance (for example, GCSE or A-level grades or the graduate's grade point average). Yet students in the UK commonly perceive that post-university career prospects depend on the class of degree they achieve. In our recent research, we investigate the extent to which graduate returns vary by degree class, and how this variation has evolved over time as higher education has expanded. We find that prior to expansion, there was no substantial additional premium for those graduates who had achieved a first or an upper-second class honours degree relative to those awarded lower classes. However, as the number of workers with degrees has expanded, so has the earnings premium associated with a good degree class.

Better understanding of what determines the relative value of a university degree could lead to lead to insights about the impact of higher education on inter-generational socio-economic mobility.

The Figure shows how graduate earnings became increasingly sensitive to the class of degree awarded over time as university attendance rates increased. Relative to the default case of an upper-second, the premium for a first-class degree was less than 1 percent for 1985 graduates, but rose to 4 percent for the 1993 cohort. Perhaps more strikingly, the span in earnings between graduates with a first and those with a third-class degree widened from 4 percent to 12 percent over these graduate cohorts. This phenomenon surfaced even though the proportion of good degrees awarded was also increasing. It can be viewed as consistent with a job market in which, intuitively, the value of a good degree increases as a higher proportion of the cohort obtains a degree. For those graduating after the take-off in university attendance, we estimate that the overall graduate earnings premium of about 15 percent (relative to non-graduates with at least two A-levels) represents an average of an estimated premium of a little less than 20 percent associated with a good degree, and of a little over 10 percent for a lower degree class. That is, as a ballpark figure, a good degree can almost double your graduate premium. Of course, this is very unlikely to be a causal effect – although it's worth noting that the estimates come from birth cohort data rich in ability and background characteristics. Feng and Graetz (2017) attempt to identify the causal impact of degree class on earnings by comparing earnings of those who fall either side of a degree class boundary. They find that degree classes affect wages, earnings, and the likelihood that graduates work in a high-wage industry.

In current work with Gianna Boero, we are adopting a similar approach to examine how degree classes enter into the picture for a full population of students from a particular UK university. The key issue concerns whether the achievement of a first-class degree, say, conveys a signal of ability to employers, thereby yielding an earnings premium relative to

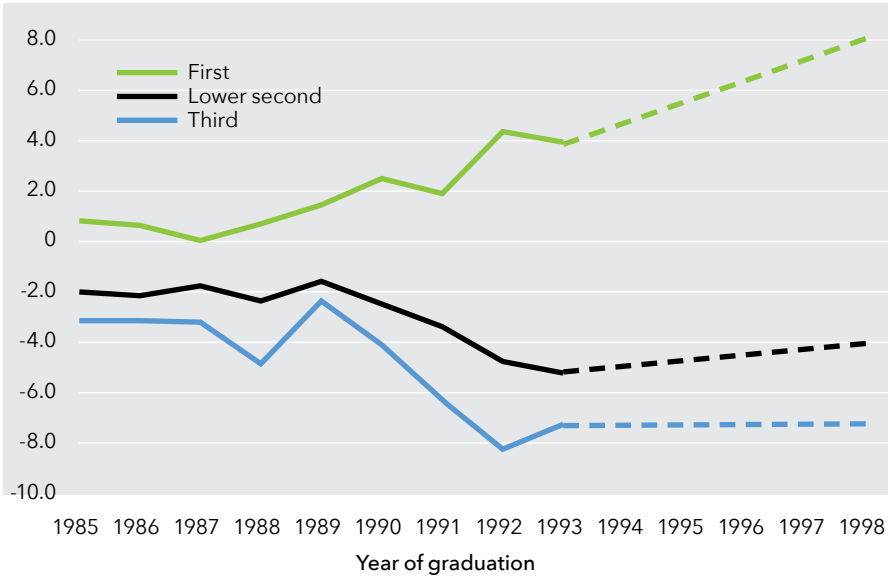
Better access to and linkages among key UK and university data sources would allow researchers to conduct more rigorous analysis.

an upper-second. A causal effect can be established only if the data include information on the graduates' underlying marks, enabling us both to control for any effects of marks on earnings and to identify students close to degree-class boundaries. Our preliminary results suggest that only for science students is there evidence that class of degree itself has an impact on subsequent earnings over and above the effects of students' underlying marks.

Future research

Better understanding of the forces that affect the earnings premium associated with a university degree would enhance public policy. We echo the appeal of Britton et al. (2016) in their call for permissions to be granted to link data available data from various key sources (the Higher Education Statistics Agency, the National Pupil Database, and Her Majesty's Revenue and Customs). This would enable much more rigorous analysis of variations around the average earnings premium associated with a university degree, and would equip researchers with better measures of prior qualifications and background characteristics. In addition, HMRC data could be linked to detailed student record data (such as students' examination marks), which are held at the individual institution, but are not part of the centralised records. This would enhance current research on the causal impact of factors such as degree class awarded on graduate earnings). ◀

Figure 1: The figure shows trends over graduate cohorts in the earnings premia for different classes of degree, relative to the default case of an upper second, based on estimates reported in Naylor, Smith and Telhaj (2016).



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Naylor R., Smith J. & Telhaj S.(2016) Graduate returns, degree class premia and higher education expansion in the UK. *Oxford Economic Papers*, 68(2): 525-545. Available at: http://dx.doi.org/10.1093/oep/gpv070

Parting shot

"CAGE tries very hard not only to produce top-quality research output but also to disseminate it to the policy-making community."

I AM A FULLY-paid-up grumpy old man. There is much to dislike or fear that I couldn't imagine would be a problem when I was young – for example, airport security, climate change, HS2, ISIS, and political correctness. On the other hand, some things never change and one of those is the regrettably low standard of public debate on economic issues.

This is really disappointing because the quality of economics research has improved greatly and the stock of useful knowledge has grown out of all recognition during my academic lifetime. This has resulted amongst other things from advances in econometric technique, much expanded availability of data and phenomenal increases in computing power.

As Joel Mokyr said recently, "Scientists can now find the tiniest needles in data haystacks as large as Montana in a fraction of a second". Moreover, academic economists in the UK are clearly making considerably greater efforts to ensure that their findings accessible partly driven by the requirements for 'impact' imposed by the ESRC and the REF. CAGE tries very hard not only to produce top-quality research output but also to disseminate it to the policy-making community. Yet our main political parties appear to be dominated by ideologues who much prefer policy-based evidence to evidence-based policy. Not 'what works?' but 'what confirms my prejudices?'

Can anything be done to improve matters? It seems doubtful in a world dominated by Facebook, Twitter and tabloid newspapers. The BBC has a role to play but dismally failed the big challenge of Brexit. The *Financial Times* stands more or less alone in the British press in maintaining a high standard of economics reporting and comment and what appears in its pages carries relatively little weight with politicians or voters. Ignorance is not bliss in the making of economic policy as we are about to find out. I don't expect to stop being grumpy any time soon. ◀

Nicholas Crafts
Director of CAGE

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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.

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

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- 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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