

CentrePiece

The Magazine of The Centre for Economic Performance

Volume 26 Issue 2 Summer 2021

GROWTH, EQUALITY AND SUSTAINABILITY

House prices
Working mums
Ethnic minorities

Climate emergency
Wellbeing at work
Greek islands



CentrePiece



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Editorial

Growth, equality and sustainability headline this *CentrePiece* magazine – broad challenges on which the Centre for Economic Performance (CEP) has been working for three decades. A key part of that research involves digging down into details of the economy like what determines prices and pay packets – and one such study landed in my inbox recently.

Amid fears that foreign travel will remain tricky over the coming months, the email header ‘All you want is Greek islands’ naturally grabbed my attention. While regular contributor Christos Genakos was not offering a villa vacation, his analysis of lessons from the 33 smallest islands in Greece was clearly a good candidate for our summer issue. Addressing a fundamental question in economics – the extent to which firms pass on unexpected extra costs to consumers – he and Mario Pagliero use the number of petrol stations that an island can sustain as a measure of retail

price competition, and then calculate its effects on ‘pass-through’ of higher excise duties to drivers. Their findings are on page 10.

Alongside holidays, house prices are a perennial topic of UK conversation. Here, CEP experts on the housing market explore the impact of the pandemic. Like many, their initial expectation was that office closures and increased home-working would lead to falling prices in central areas and a shift in demand away from packed cities towards suburban areas. Certainly, there is greater demand now for bigger homes and gardens beyond the Green Belt. But with housing supply limited by strict planning regulations and the market propped up by a stamp duty waiver and the furlough scheme, it's prices of detached houses close to central London that have risen most.

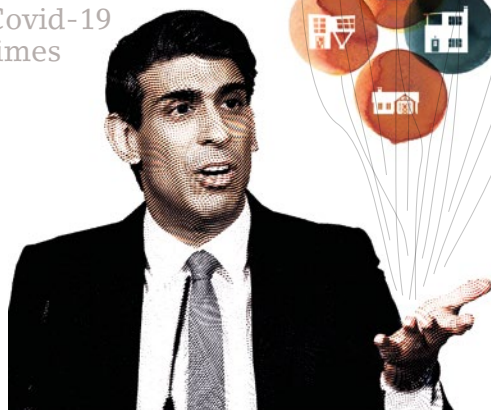
Elsewhere, we have several pieces on workplace inequalities. One shows that claims in the Sewell Report about the

labour market experiences of UK ethnic minorities are misguided: there has been little change in ethnic disparities in pay and employment over the past 25 years. Another adds evidence that women and members of ethnic minority groups tend to have worse non-monetary rewards from their jobs on top of lower earnings. And a third brings news from Spain, where there are notable gender gaps in labour market outcomes, especially for people with children.

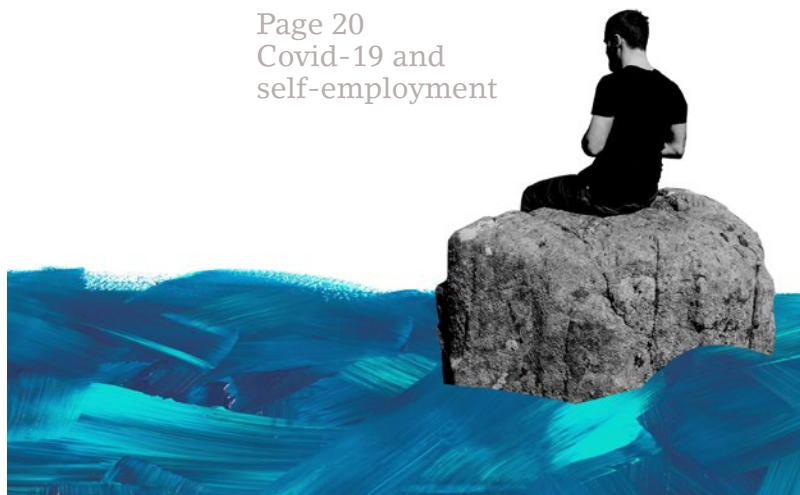
Finally, back to our cover story, former CEP director John Van Reenen summarises his anniversary lecture, the second in our series marking 30 years since the Centre began. Focusing on productivity, he explains how technological innovation and better management can bring about growth that is compatible with both equity and sustainability.

Romesh Vaitilingam, Editor
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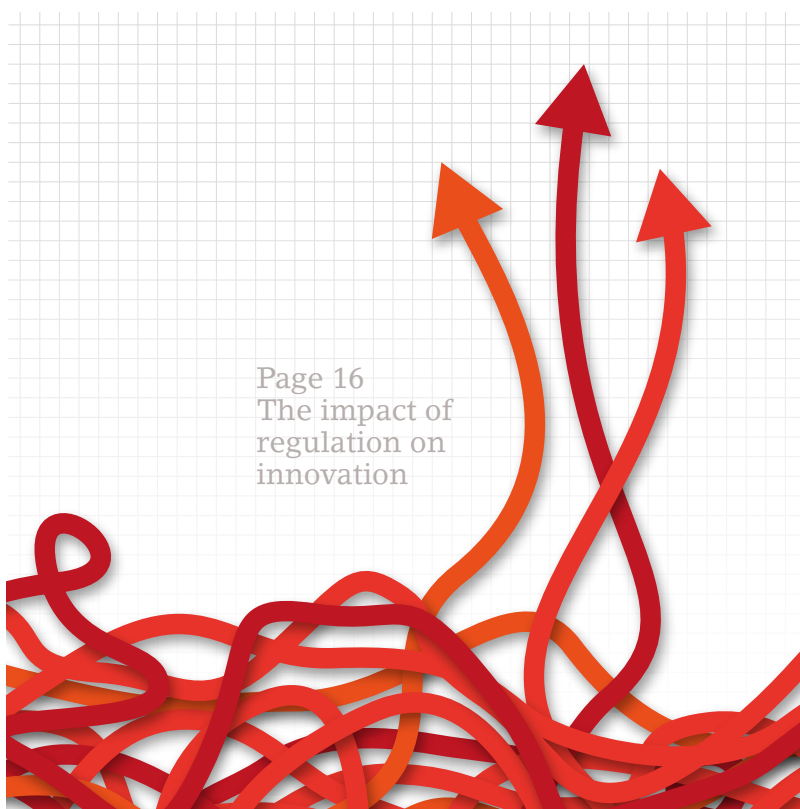
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innovation



Contrary to the impression given by the Sewell Report, there has been little change in disparities in pay, employment and unemployment among different ethnic groups in the UK over the past 25 years. Indeed, as analysis of Labour Force Survey data by **Alan Manning** and **Rebecca Rose** shows, for black, Pakistani and Bangladeshi men and women, pay gaps with white men and women have widened.



Ethnic minorities and the UK labour market

Part of the report of the Commission on Race and Ethnic Disparities – known as the Sewell Report – is about how ethnic minorities fare in the UK labour market compared to white people and how disparities in pay, employment and unemployment have changed over time.

The report gives the impression that disparities are falling over time. For example, on page 110, it refers to an ‘overall convergence story on employment and pay’, but does not present all the available evidence to justify that conclusion. In what follows, we fill in some of the gaps and provide some context using estimates from the Labour Force Survey (LFS).

What has happened to pay differentials by ethnicity?

The Sewell Report contains some information on current pay differentials by ethnicity that comes from an Office for National Statistics (ONS) publication, but not on how these differentials have changed over time. Yet these trends are crucial if we are to evaluate a claim that the labour market is now a more hospitable place for ethnic minorities. The report presents some data on unadjusted (or raw) pay differentials and also after adjusting for a set of characteristics that are important in determining pay.

Adjustment is critical for having a meaningful comparison. For example, ethnic minorities are more likely to live in London (where wages are higher) than the white population. The unadjusted pay differential looks smaller than it really is if one does not take this into account.

While some adjustment is necessary, there is less agreement about what to control for. To give an example, if occupation is controlled for, one is estimating pay differentials within occupations. But an important part of the pay penalty may be over-representation in low-paying jobs, which controlling for occupation would miss.

A complete analysis would look at different sets of control variables since seeing how pay differentials vary with the variables used provides important clues about the sources of those pay differentials. We do not do that here.

We control for personal characteristics – age, gender, qualifications, region, marital status, dependent children – but not job characteristics. This will provide estimates of pay differentials within education groups when access to education may also be important. But that is something that happens outside the labour market and we are interested in how the labour market rewards qualifications.

We restrict our sample to those born in

Men and women
in all ethnic
minority groups
have higher
unemployment
rates than white
men and women

the UK and consider the period from 1995 to 2019 inclusive. The ethnicity question in the LFS has changed over time, becoming more detailed. But to look at long-term trends, we need to reduce to a set of definitions that have been used throughout the period: these are white, black, Indian, Pakistani, Bangladeshi and Chinese. Some of these groups are themselves very heterogeneous, but the available data do not allow us to dig deeper.

Figures 1 and 2 show how the differentials in hourly pay between ethnic minorities and whites have evolved over time. To make any trend clearer, we report nine-year rolling samples so, for example,

Figure 1:

Pay gaps for women by ethnic group

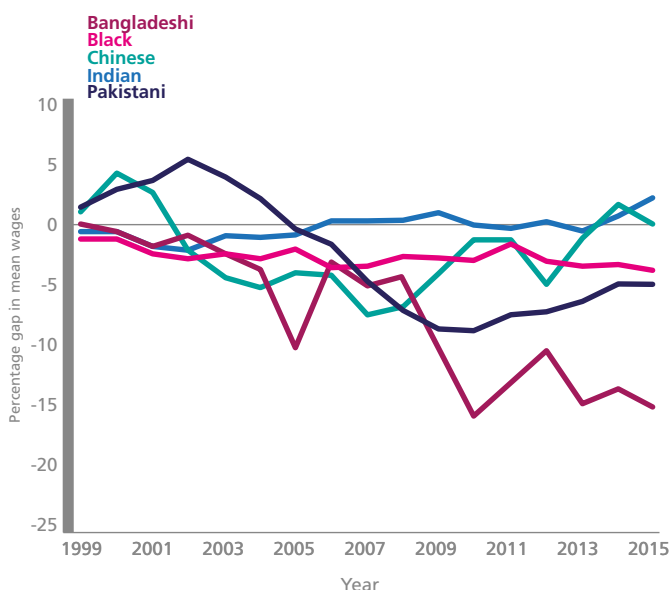


Figure 2:

Pay gaps for men by ethnic group

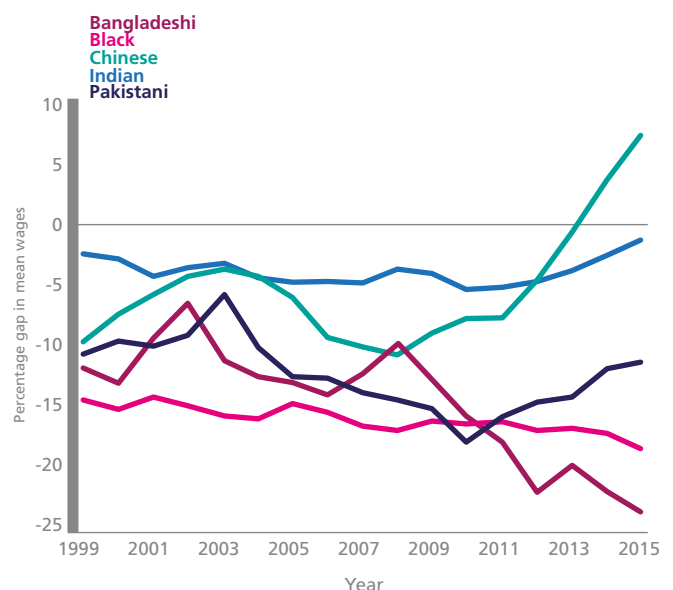


Figure 3:
Employment rates for women by ethnic group

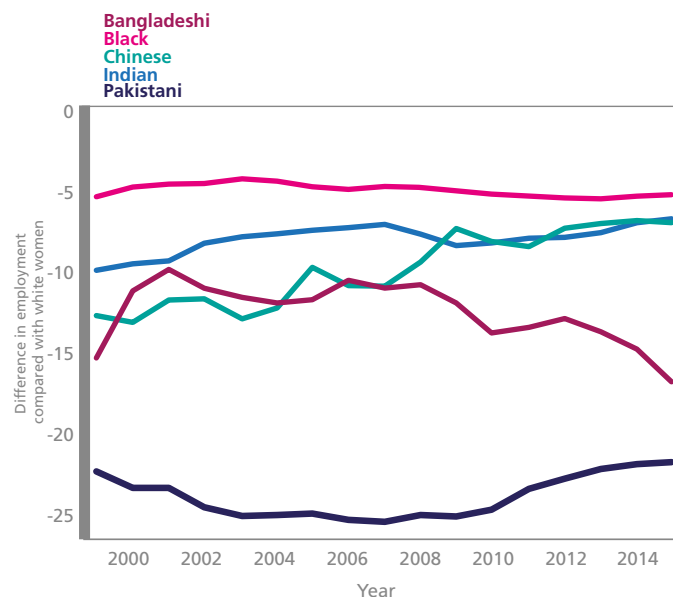
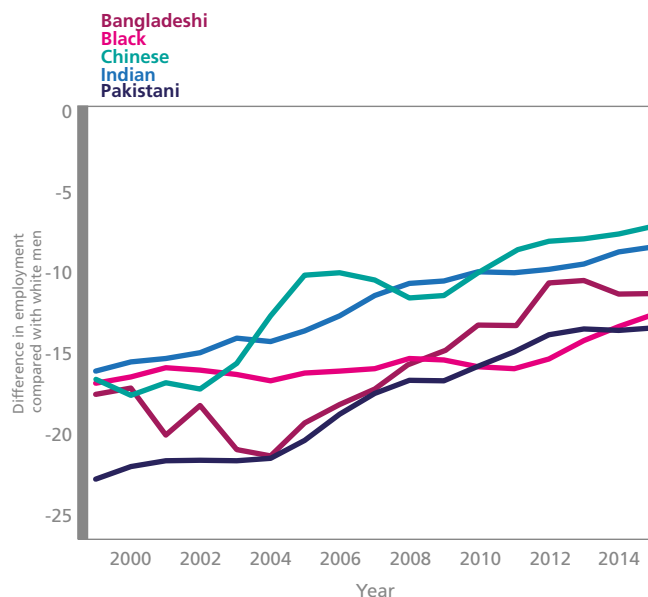


Figure 4:
Employment rates for men by ethnic group



the year labelled 2015 is for the years from 2011 to 2019 inclusive. We do separate analyses for women (reported in Figure 1) and men (reported in Figure 2).

Chinese and Indian women have similar levels of pay to white women but always have done for the past 25 years. Their situation has not improved. Black, Pakistani and Bangladeshi women have lower pay and for all three groups, the pay gap is bigger now than 25 years ago though only slightly so for black women. For Bangladeshi women, the pay penalty has increased a lot. There are many possible reasons for this; one should not jump to conclusions about the causes.

Figure 2 shows that the pay gaps between ethnic minority and white men are generally larger than for women – very dramatically so in the case of black men. For Chinese men, the pay differential has reduced so that they now earn more than white men even after adjusting for characteristics. But the other groups earn less and the pay differentials have widened.

It is clear there is no evidence for pay gaps being smaller for ethnic minorities now than they were 25 years ago, contrary to the impression given by the Sewell Report.

What has happened to rates of employment and unemployment?

The Sewell Report presents estimates of employment and unemployment rates over time but does not adjust these for characteristics as is done for the pay differentials. But it is important to look at employment rates adjusted for characteristics just as for pay.

Figure 3 does this for the differential in employment rates for women. These employment rate differentials are all negative, indicating lower employment rates for ethnic minority women, with the gap being lowest for black women and highest for Pakistani women. For the Chinese and, less so, for Indians and Bangladeshis, the differentials are falling but remain large. There is little sign of improvement for black and Pakistani women over the 25-year period.

Figure 4 shows the differential in employment rates for men. Again these differentials are all negative, but the ethnic employment penalty has been declining



over time for all groups. Some of those who are not in paid work do not want employment – they are what are known as the ‘inactive’. They may not be as much of a concern as those who want work but do not have it – the unemployed.

Figure 5 shows the unemployment rate differentials between ethnic minority and white women. These are all positive, indicating that all groups have higher unemployment rates than white women. Only for Indians has the gap clearly been declining over the past 25 years.

Figure 6 does the same for men. Again, these are all positive, indicating higher unemployment rates for ethnic minorities compared with whites. Only for Pakistanis is there a clear decline in the unemployment penalty over the last 25 years.

What are the causes of labour market differentials?

Although there is clear evidence of ethnic penalties reducing for some minority groups in some labour market outcomes over the past 25 years, the over-riding impression is of stasis. Analyses like those done here can only describe the differences in outcomes: they do not tell

us about the causes. They should be the starting point for a more thorough analysis not the endpoint. The differentials can have many different causes but we do have good evidence that discrimination is part of the story.

The Sewell Report describes the results of the field experiments of job applications that control the content of the CV and show convincingly that having a name that suggests being from an ethnic minority lowers the probability of receiving a call-back. This is obviously unacceptable and the report does say these studies provide conclusive evidence of bias in hiring and that this needs to be investigated further.

Rather oddly, the report then goes on to say that ‘these experiments cannot be relied upon to provide clarity on the extent that it happens in every day life’ when they definitely can because of the nature of the design of the experiment.

It is clear that more work is needed to understand the causes of ethnic minority penalties in the labour market and what can be done about them. A good place to start would be the scandal that your name influences your chances of getting a job interview (and probably of getting a job).

Alan Manning is professor of economics at LSE and co-director of CEP’s community wellbeing programme. **Rebecca Rose** is a doctoral student at LSE.

The original version of this article was published on the Economics Observatory in April 2021 (<https://www.economicsobservatory.com/ethnic-minorities-and-the-uk-labour-market-are-things-getting-better>).

More work is needed to understand the causes of ethnic minority penalties in the labour market and what can be done about them

Figure 5:
Unemployment rates for women
by ethnic group

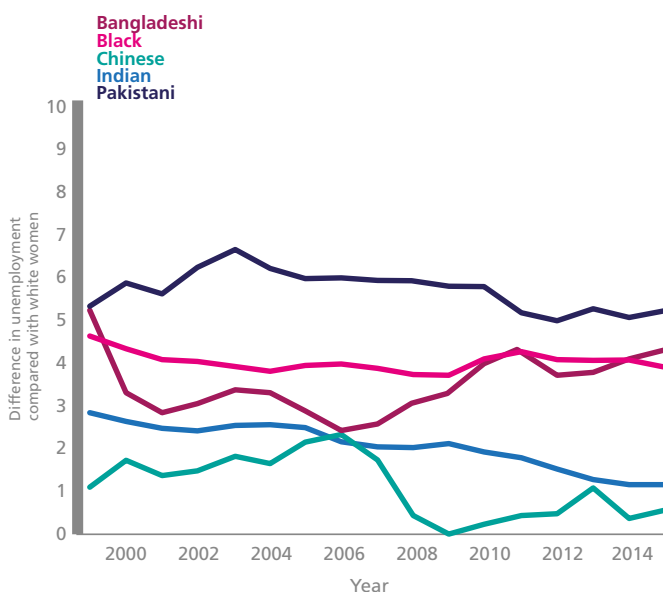
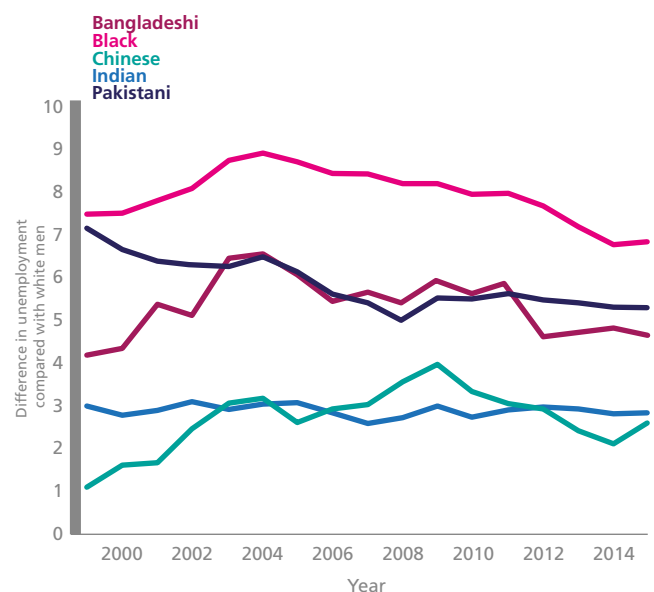


Figure 6:
Unemployment rates for men
by ethnic group



In the second anniversary lecture marking 30 years since CEP began, former director **John Van Reenen** focused on productivity, an issue that has been at the heart of the Centre's work for three decades. He sets out how technological innovation and better management can bring about growth that is both inclusive and compatible with efforts to address the world's climate emergency.

Going for growth that's sustainable and equitable



Covid-19 has revealed serious weaknesses in our politics and economy. As the UK emerges from the pandemic, we face a growth challenge of unprecedented scale. Whatever policy framework we adopt should unashamedly promote sustainable and equitable growth. To do that, we need new and better technologies and management practices.

The UK has been particularly hard hit by the pandemic, in terms of both deaths and the impact on the economy. Annual GDP fell by almost 10% in 2020, the greatest fall since records began. This makes us one of the worst hit countries in the OECD.

Growth is not simply getting bigger. Increasing GDP by having a bigger population, or increasing working hours, is not obviously a desirable thing. What we need is productivity growth. Productivity measures how much more output can be generated per input, for example, GDP per hour worked.

History shows us that wage growth follows productivity growth over the long run. More productivity is like growing the economic pie: it gives us choices to spend more on public services, environmental

protection, redistribution or private goods.

Productivity has been the number one UK economic problem since the global financial crisis of 2007-09. Productivity fell, recovered a bit and has since almost flatlined. There is now a 30% productivity gap between where we would have expected to be on pre-crisis trends and where we are today (see Figure 1).

Real wage growth for the mean and median worker has mirrored the stagnation of productivity. Pay stagnation is a key cause of the populist anger that helped usher in Brexit in the UK and Donald Trump in the United States. You cannot blame people for becoming discontented when they feel they are doing no better than their parents.

The UK's productivity problem will not be fixed by a single silver bullet – but we can see some causes. Since 1981, the UK's investment in research and development (R&D) relative to GDP has been lower than its peers. The country's exposure to the global financial crisis played a role, as well as big cuts in infrastructure and the rapid move to austerity after the 2010 general election. Brexit has been (and will be) another factor holding back prosperity.

The case for growth

There are five main objections to the case for growth – and all of them can be rebutted.

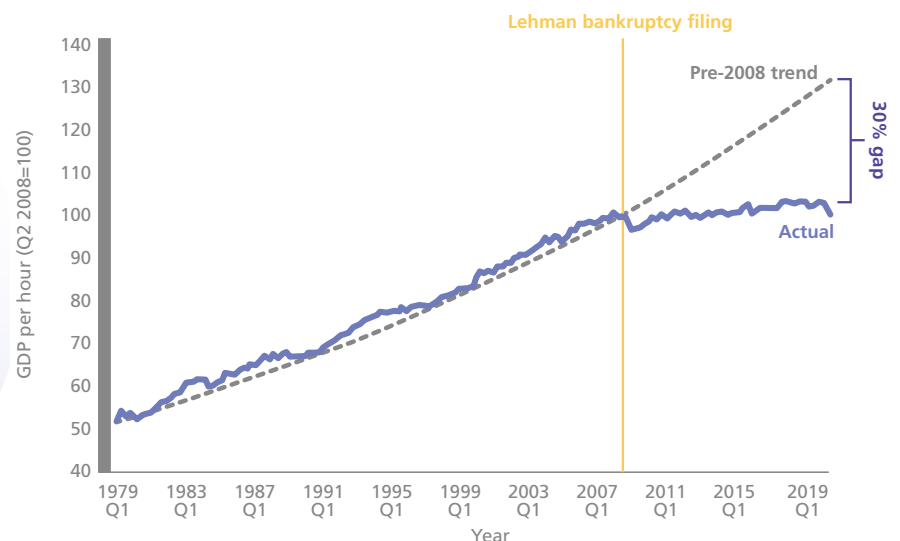
'Capitalists get all the benefit of growth, not workers'

Productivity growth typically goes hand in hand with faster wage growth – and that has indeed held true in the UK (see Figure 2). Unlike in the United States, the share of the economic pie that workers receive has more or less stayed the same for many decades. There is certainly a problem of inequality, which started rising in the early 1980s, but this is inequality between workers rather than between labour and capital.

To make the biggest gains in productivity, you need to make radical changes in the way you work

Figure 1:

UK labour productivity (GDP per hour worked) 1979-2020: the disaster since the 2007-09 global financial crisis



Notes: Whole economy GDP per hour, seasonally adjusted. *ONS Statistical Bulletin*, labour productivity Q2 2020, release 4/11/2020 (Q2 2008=100). Predicted value after Q2 2008 is the dashed line assuming a historical average growth rate of 2.2%.

'Faster growth means more inequality'

The increase in inequality in many countries has not been accompanied by faster growth. In addition, it is easier to redistribute when the economic pie is growing faster.

'Growth is bad for the environment'

We need to adopt more appropriate measures of growth to incorporate the depletion of natural resources (as suggested in Dasgupta, 2021). But tackling climate change requires green innovation – and the political will to do it weakens when times are bad.

'Growth doesn't make us any happier'

It's hard to measure happiness, although we've got better at it, and should take non-material dimensions of wellbeing seriously. But there is plenty of evidence that money makes things easier – as my Aunt Lorraine says, 'although money doesn't buy you happiness, it often makes your misery a lot easier to bear'. People living in poverty tend not to be happier than the better-off.

'There's nothing we can do to improve the growth rate'

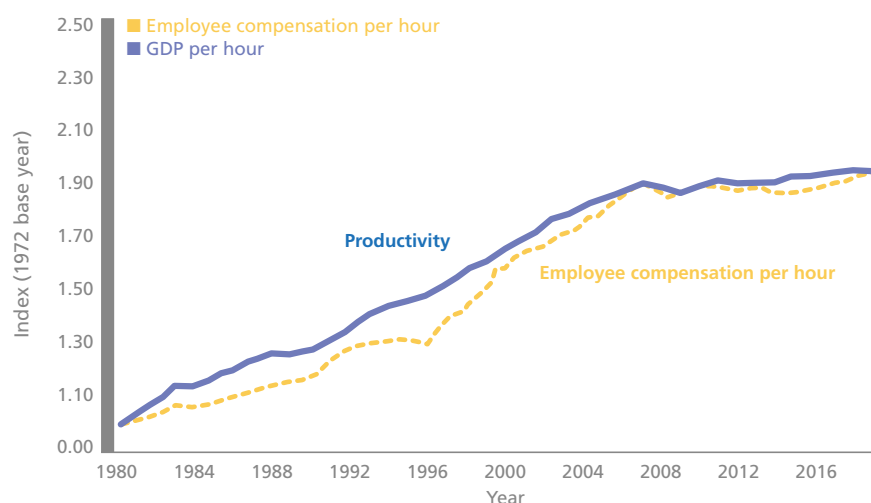
Pessimism about growth has become the 'new normal' in media discourse. But there is also a growing recognition that institutions and policies can actually change the speed of growth. My colleague Philippe Aghion has been a pioneer of this 'modern growth theory', which rejects the view in traditional 'neoclassical' economics that all we can do is adapt to fluctuations in growth rather than seeking to speed it up.

The UK experienced more than a century of relative decline until the late 1970s. Between 1870 and 1970, the country went from being a quarter richer than America to two-fifths poorer. Victorian Britain was 40% richer than France and Germany, but 11-16% poorer than our European neighbours by the end of the 1970s.

Over the next three decades leading up to the global financial crisis, a minor miracle occurred and we reversed that decline. The gap was eliminated with Europe and reduced by a quarter with the United States (see Figure 3).

This change was no accident. Policies introduced in that period played a role. There was a suite of pro-competition policies (such as membership of the European Union, openness to foreign

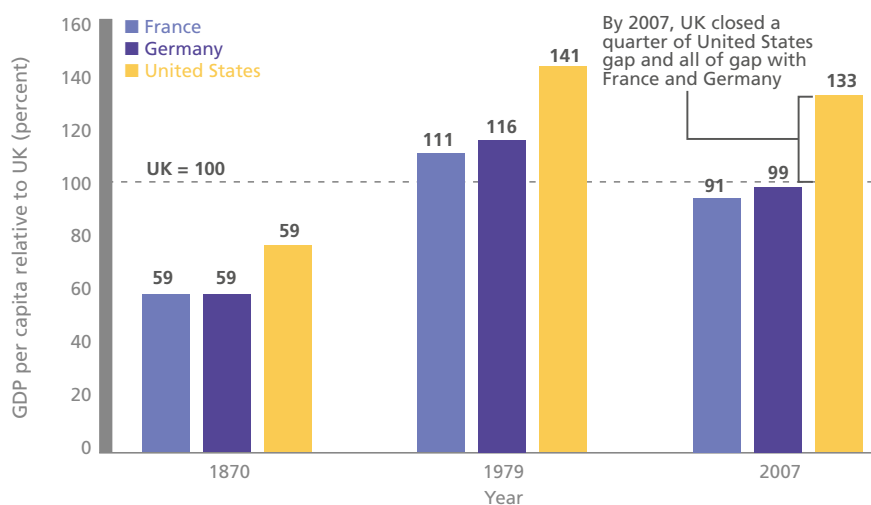
Figure 2:
UK workers' average compensation tracks UK labour productivity



Source: Office for National Statistics (2021): both series based at 1 in 1980, both compensation and productivity approximately doubled over the four decades.

The idea that economic growth is incompatible with tackling the climate emergency is wrong

Figure 3:
After a century of relative decline, the UK closed the GDP per capita gap in the three decades leading up to the global financial crisis



Source: Crafts (2010). Analysis based on data sourced from Angus Maddison historical database and West Germany in 2007 calculated from Statistical Bundesamt Deutschland 2010.

investment, tougher anti-monopoly laws and reduced government subsidies for 'lame duck' industries), more flexible labour markets, the expansion of universities and more autonomous regulation (such as Bank of England independence).

The story of growth is not simply the accumulation of human and physical capital. It is fundamentally a story of technical change. Only a fifth of the growth of output per hour since the Second World War is due to labour and capital – 80% is because of better technology and management practices.

Although technical change is obvious and everywhere, management is often overlooked. Innovations such as Frederick Taylor's scientific management, Fordist mass production, Alfred Sloan's M-form firm, Deming's quality movement and the Toyota lean manufacturing system were all transformative.

To make the biggest gains in productivity, you need to make radical changes in the way you work. For example, the invention of the light bulb took decades to feed through to productivity because of the need to move to a factory-based system. Even today, firms can spend vast amounts on software, robots and artificial intelligence but, without good management, it can have little effect on the bottom line.

There are two sources of growth: innovation (such as the invention of the wheel) and diffusion (when more people use it). Innovation is harder and, to a certain extent, less developed countries can rely on diffusion. But catching up gets progressively harder as countries become richer because there is much less headroom to grow by adapting the technologies of others when you are near the frontier.

Poor management accounts for just under half of the UK's productivity gap with the United States – and it improves when innovative firms displace incumbent firms, the phenomenon known as 'creative destruction'. I have been working on improving measurements of management for some time as part of the World Management Survey.

A growth plan

A growth plan has short- and long-run aspects that have to be joined up. A fundamental principle is that we should base innovation and the other portfolio of policies on what works, using evidence-based policy. Here is an example of how to

do this in the context of innovation policies.

In the short run, we should avoid another premature move to austerity, which would prolong depressed demand. We should take advantage of the environment of low interest rates to continue borrowing and rebuilding. We need to strike a balance between job protection and reallocation, which will mean providing incentives to move jobs between firms, and supporting start-ups, not just incumbent firms.

Many of the Chancellor's support packages are due to expire in the coming months, and to avoid an even more serious recession, we need to smooth that cliff-edge, and be honest about the fact that not all the government's loans are going to be paid back. Some serious debt restructuring will be needed, such as swapping debt-for-equity and write-offs.

In the long run, we need new institutions to mitigate what I call 'policy attention deficit disorder' – a tendency to think short-term that has limited long-run investment, such as the creation of a national infrastructure bank. Competition policy is due for an overhaul. Too much of it is backward-looking: a merger that looks harmless today may turn out to be harmful later, such as Facebook's purchase of WhatsApp.

In the long run, we should reverse Brexit, but in the short run, we should rejoin the European single market and develop a Norway-style relationship with the EU. As the Mirrlees Review (2011) suggested, we should be taxing 'bads' like carbon emissions and relatively immobile factors like land.

Building flexible markets is another priority. CEP has proposed a 'human capital credit' that would fund people to gain intermediate skills (Costa et al, 2018).

A final thought: growth policies must think not just about stimulating the demand side for innovation through taxes and direct subsidies. We must increase the quantity and quality of the supply of the inventors and entrepreneurs of the future.

For example, kids born to the richest 1% of parents are ten times more likely to grow up to be inventors than those born to the bottom 50%. My work shows that the vast majority of this relationship is not due to the lack of talent of poorer kids, but rather to the barriers they face. Policies that give children from disadvantaged groups better opportunities are not just good for equity – they will also be vital to long-run growth.

John Van Reenen is the Ronald Coase Chair in Economics and School Professor at LSE, a research associate in CEP's growth programme and a former director of CEP. This article is a version of his CEP 30th anniversary lecture, 'Going for Growth'.

Further reading

Rui Costa, Nikhil Datta, Stephen Machin and Sandra McNally (2018) 'Investing in People: The Case for Human Capital Credits', CEP Industrial Strategy Paper No. 1 (<https://cep.lse.ac.uk/pubs/download/is01.pdf>).

Dasgupta Review (2021) *The Economics of Biodiversity*, HM Treasury (<https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>).

LSE Growth Commission (2017) *UK Growth: A New Chapter* (<https://cep.lse.ac.uk/LSE-Growth-Commission/files/LSEGC-2017-report.pdf>).

Mirrlees Review (2011) *Reforming the Tax System for the 21st Century*, Institute for Fiscal Studies (<https://www.ifs.org.uk/publications/mirrleesreview>).

Policies that give children from disadvantaged groups better opportunities are good for equity and growth

in brief...

Competition and pass-through on the Greek islands

A fundamental issue in economics is how firms deal with unexpected cost increases, perhaps arising from taxes, exchange rate fluctuations or rising input prices: what drives the extent to which they pass the costs through to the prices they charge? To explore the relationship between 'pass-through' and competition within a sector, **Christos Genakos** and **Mario Pagliero** take us to the Greek islands.

In his 1890 volume *Principles of Economics*, Alfred Marshall writes that 'there is scarcely any economic principle which cannot be aptly illustrated by a discussion of the shifting of the effects of some tax "forwards", i.e. towards the ultimate consumer'. Indeed, since then, the study of how firms pass cost shocks through to prices touches almost any field in economics: from taxation in public economics to exchange rates and tariffs in international trade, to input prices and merger analysis in industrial organization, to fiscal and monetary policy transmission in macroeconomics.

But while theoretical analysis shows that competition is a key determinant of pass-through (Weyl and Fabinger, 2013), the empirical evidence on this issue is scant. The main challenge is distinguishing local markets, while accounting for the endogeneity of market structure.

Greek islands are all you want...

Well, what better environment to study this problem than the many small islands for which Greece is known? Our data come from the retail market for petroleum products (gasoline, unleaded gasoline, diesel, heating oil) on the 33 smallest islands in Greece.

Greek islands naturally vary in size and population and clearly define independent markets. Some of these islands are so small that they have just a single petrol station, while others have two, three or more. The naturally occurring variability in island size provides an exogenous source of variability in the level of competition (Figure 1).

Along with this unique setting, we take advantage of significant policy changes. During the country's financial crisis in 2010, the Greek government increased the

excise duty on petroleum products on three occasions. The increments were large and unannounced, and provide us with an ideal exogenous shock for estimating the pass-through to retail prices. For political reasons, heating oil was excluded from the excise hikes, as it was considered a necessity.

Using daily petrol station data, we study how the pass-through of the excise duty tax varied across markets with different numbers of competitors, while using heating oil as a control group. Thus, we can account for unobserved heterogeneity across islands and petrol stations, and control for the daily aggregate price fluctuations of petroleum products using the control group.

Competition gives you speed...

As Figure 2 shows, we find that pass-through increases significantly with the number of competitors, and the relationship between competition and

Pass-through increases significantly with the number of competitors in a market

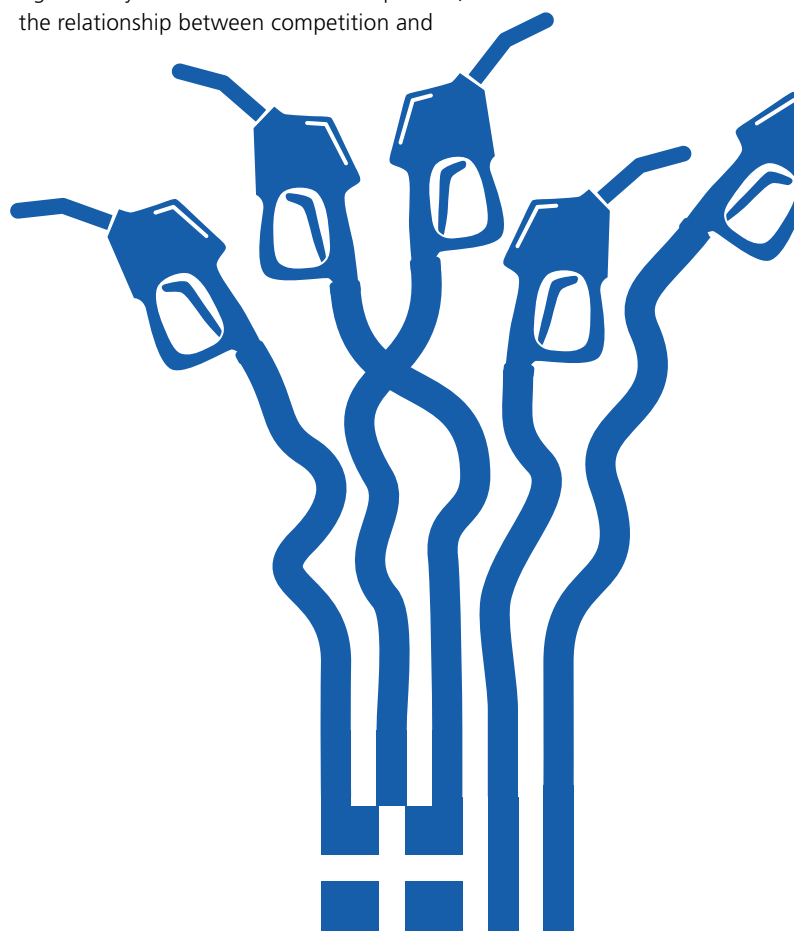
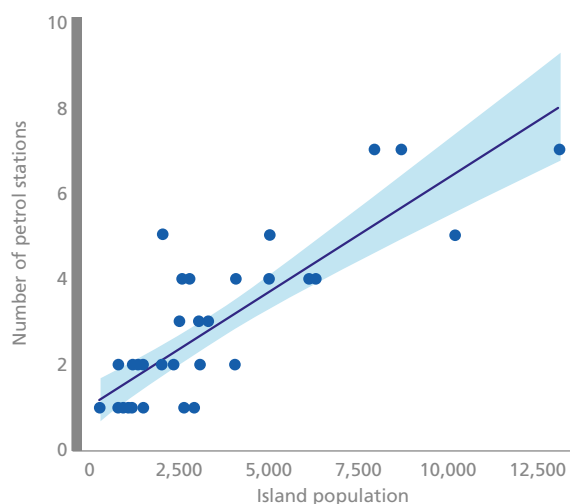


Figure 1:
Competition and market size



Notes: The chart plots the relationship between population in each island and the number of petrol stations.

Source: Authors' calculations based on data from the Greek Ministry of Development and Competitiveness and the Hellenic Statistical Authority.

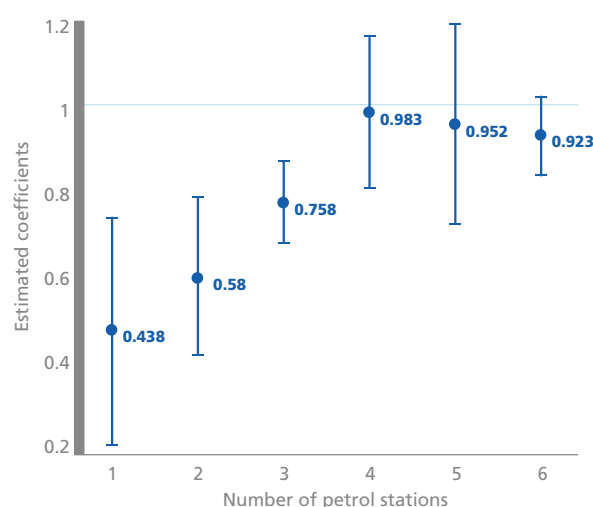
pass-through is nonlinear. On average, the pass-through is 0.43 on monopolistic islands and grows to about 1 on islands with four or more competitors. The quick convergence to a unit pass-through is in line with the results of Bresnahan and Reiss (1991), who show that entry thresholds converge quite quickly; in other words, after three or four firms, an additional entrant does not affect competition much.

Does the speed of adjustment depend on competition? This is an important question, as it relates to understanding how quickly prices adjust to cost shocks in the economy.

We find that price adjustments are larger and occur more quickly in more competitive markets, leading to faster pass-through in more competitive markets. This is consistent with the results of Gopinath and Itskhoki (2010), who find a positive correlation between frequency of price adjustments and magnitude of exchange rate pass-through across sectors.

Greek islands also provide additional insights. When it comes to retail markets, competition authorities throughout the world routinely define markets based on geographical or driving distance between sellers. While realistic, this approach cannot guarantee the absence of substitution effects with firms outside the geographical area being considered. Using small Greek islands as a benchmark, we find that geographical market definitions based on distance across sellers result in overestimation of pass-through in highly concentrated markets.

Figure 2:
Pass-through and competition



Notes: The chart plots the estimated coefficients together with the 95% confidence interval of the semi-parametric relationship between number of competing petrol stations and tax increases pass-through.

Source: Authors' calculations based on data from the Greek Ministry of Development and Competitiveness.

The speed of price adjustment is about 60% higher in more competitive markets

This article summarises 'Competition and Pass-through: Evidence from Isolated Markets' by Christos Genakos and Mario Pagliero, CEP Discussion Paper No. 1638 (<https://cep.lse.ac.uk/pubs/download/dp1638.pdf>) and forthcoming in the *American Economic Journal: Applied Economics*.

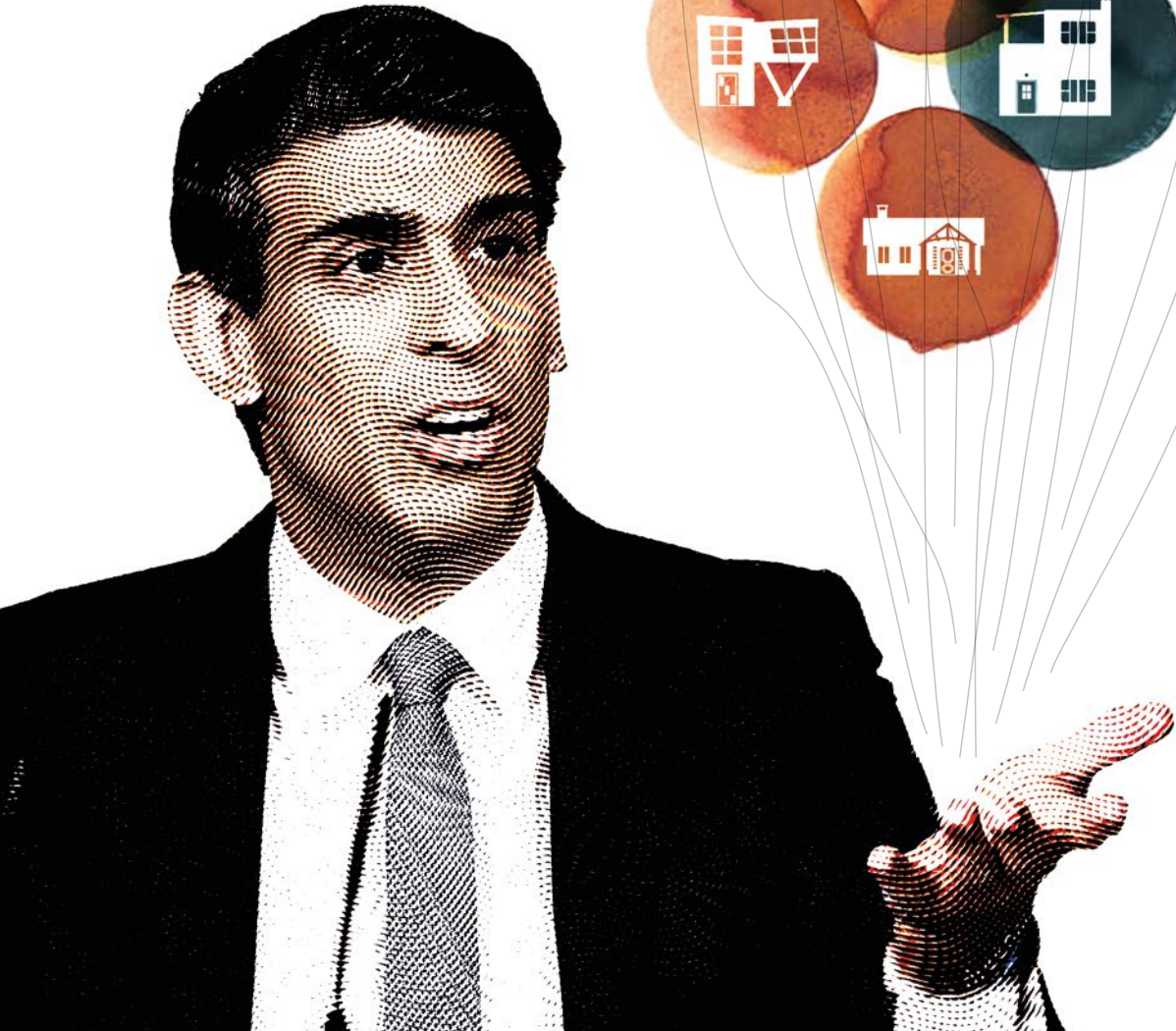
Christos Genakos of the Cambridge Judge Business School is a research associate in CEP's growth programme. **Mario Pagliero** is at the University of Turin and the Collegio Carlo Alberto.

Further reading

Timothy Bresnahan and Peter Reiss (1991) 'Entry and Competition in Concentrated Markets', *Journal of Political Economy* 99(5): 977-1009.

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The pandemic led to increased demand for bigger homes and gardens. With housing supply limited by strict UK planning regulations and the market propped up by a stamp duty waiver and the furlough scheme, prices of detached houses have risen. **Paul Cheshire, Christian Hilber** and **Olivier Schöni** find that they rose most in areas close to the centre of London.

UK house prices in Covid-19 times

The British care deeply about what happens in housing markets. Older house owners care because so much of their personal assets are tied up in housing; the young care because they feel left behind and are increasingly desperate to be able to afford decent homes. So there has been plenty of speculation about the effects the pandemic would have on the housing market – some of which has proved to be wide of the mark.

At the start of the pandemic, we anticipated that office closures and the fear of packed commuting would lead to an increase in the demand for home-working,

with clear implications for space within the home (Cheshire and Hilber, 2020).

Like most, we thought that in the short term, this would lead to falling prices in central areas and a change in demand away from packed cities towards suburban areas – perhaps with an increase in relative demand for very small living spaces in central cities, to support two or three days a week in the office. This implied increasing long distance moves, jumping the Green Belt, and longer, less frequent commutes. It also implied a fall in demand for centrally located, smaller houses compared with larger houses in the outer suburbs.

Although this has become a kind of

conventional wisdom, with headlines describing a ‘race for space’ and rising demand for large country houses, further reflection, and now evidence of what has actually happened in the housing market over the past year, has caused our judgements to evolve.

Partly these changes have been driven by government actions to prop up the housing market, delaying the downward correction in prices, personal incomes and the economy. But this change in emphasis is also partly because in the UK, it is never possible to underestimate the impact of planning policies on house prices.

The most striking result of the onset

of the pandemic was an almost total halt to activity in newly constructed houses: housing completions fell from 46,000 in the second quarter of 2019 to 16,000 in the corresponding quarter of 2020. After a brief but abrupt fall, transaction prices of detached and semi-detached houses quickly recovered after the immediate Covid-19 shock and were above all previous highs by late 2020.

Although prices for the smaller house types did recover somewhat, this was far less pronounced, and prices for flats and maisonettes never got back to their pre-Covid-19 levels at all.

It may be the case that the prices of a few large country houses increased. But the really large price increases in 2020 compared with 2019 were for the few detached houses as close as possible to the centre of London, and not for remote locations. That the increase was confined to detached houses is no surprise, and there were increases for large houses up to 25 miles outside central London. But the fact that the price increases in the later part of 2020 were so large in both absolute and relative terms in central areas is wholly against conventional wisdom.

The ability to translate an increase in preferences into purchases is constrained by incomes. London has an exceptionally unequal income distribution and the evidence is that the pandemic has made the rich (and old) even richer relative to the rest of society. Moreover, the ability to buy the most sought after housing is controlled by people's incomes relative to those of others competing in the market, not by their absolute incomes (Cheshire and Sheppard, 2004).

So a post-pandemic widening of the income distribution gave even more market power to the richest households in London. They seem to have concentrated that power on escaping the effects of the worst impacts of lockdown and the increasing demand for home-working by wanting to buy larger, more central houses.

A larger house in a central location not only allows more space to work at home, but also makes it easier to avoid public transport, to walk or cycle about the city and to the office when that is necessary. It might also reflect a bet on the longer-term bounce-back of cities in general and London in particular. But it is important to note that relative to the total market, the number of detached houses transacted in central areas is small, and they are likely to be bought by the seriously rich.

What we seem to observe in the data is a trend, long predating the pandemic, towards the construction of more detached houses with larger gardens beyond London's Green Belt. This is subject to the caveat that at present we only know about garden sizes and prices in detail for houses inside the Greater London authority.

This trend appears to reflect an increase in preferences for more living space and larger garden sizes. Detached houses are built further and further out, because more central locations are simply no longer affordable. This is a consequence of strong demand in conjunction with a dysfunctional planning system limiting supply (Hilber and Vermeulen, 2016).

Second, the main short-term effect of Covid-19 has been to slow down housing construction, including construction of detached houses. Put differently, housing supply during 2020 was even more inflexible with respect to price than in the normally inflexible state of the UK's housing market. As a consequence, the location and form of houses to accommodate the change in tastes for space simply could not adapt, at least not in the short term.

Covid-19 may have induced stronger preferences for more living space and access to gardens for most people. But the available stock of such houses has roughly remained unchanged in the short term – hence the scarcity-driven increase in their prices.

A post-pandemic widening of the income distribution has given even more market power to the richest households in London



Demand for housing is most importantly determined by incomes. The Chancellor's actions early in the pandemic to support incomes – the furlough scheme, the scheme for the self-employed and support for businesses – effectively supported personal incomes very substantially.

In addition, there were specific measures directed at supporting activity in the housing market and house prices. The Stamp Duty Land Tax holiday scheme, which started in July 2020, was originally due to end on 31 March 2021 but has been extended to 30 June 2021. This was worth up to £15,000 on a £500,000 house, with bigger discounts for more expensive houses up to the ceiling of £500,000.

There were other measures too – aside from the extraordinarily low interest rates – such as potential mortgage payment

holidays for six months to those who had lost income from Covid-19. These measures prevented a downturn in the housing market and added further pressure to the pent-up demand for larger, more expensive houses.

There is now a significant risk of policy trying to prop up house price inflation. These policies are costly to the government and eventually are likely to be reversed. If this coincides with an economic downturn and rising interest rates, there is a significant risk that the policy ends up helping to trigger a disruptively abrupt housing market downturn: a sharp reduction in transactions, an increase in properties' 'time-on-the-market' and eventually a downward adjustment of real prices.

In principle, of course, the British obsession with booming housing markets as a symptom of economic health is absurd. As we have frequently argued, housing is seriously unaffordable in the UK. The problem is the reasons for price reductions and the context. In a context of falling disposable personal incomes, a fall in house prices may not make housing any more affordable.

In the longer term, we expect cities to reassert their pull. They have survived far worse crises than the pandemic – think of the two years 1665 and 1666: first the plague, killing 15-20% of London's population, then the Great Fire destroying most of the city and a good chunk of its suburbs. But London was back and booming within 20 years.

As cities and incomes recover, a rising cost of space looks likely in the long term, especially if the UK planning system is as restrictive as it has been over the past 75 years. Our system of property taxes and local government finance adds to this problem, since it continues to penalise local authorities that permit residential development. Without radical reform, space in housing and gardens – even just houses – will increasingly become the privilege of the rich.

Housing in the UK remains seriously unaffordable

This article summarises 'The Pandemic and the Housing Market: A British Story' by Paul Cheshire, Christian Hilber and Olivier Schöni, CEP Covid-19 Analysis No. 20 (<https://cep.lse.ac.uk/pubs/download/cepcovid-19-020.pdf>).

Paul Cheshire and **Christian Hilber** are both professors of economic geography at LSE.

Olivier Schöni is assistant professor at Laval University, Canada. All are research associates in CEP's urban programme.

Without radical reform, space in houses and gardens will increasingly become the privilege of the rich

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Regulations in France
seem to reduce
innovations by 5%

It is widely feared that private sector innovation is constrained by ‘red tape’. **Philippe Aghion** and colleagues test that view on data from France, where firms of more than 50 employees face far heavier regulatory obligations. The results suggest that regulations do hamper innovation – but the negative effects are only for incremental innovations, not radical innovations.

The impact of regulation on innovation

The media is full of stories of how red tape stifles innovation. But there is not really a coherent economic framework for thinking rigorously about this issue, let alone for quantifying the magnitude of regulatory effects on the aggregate economy.

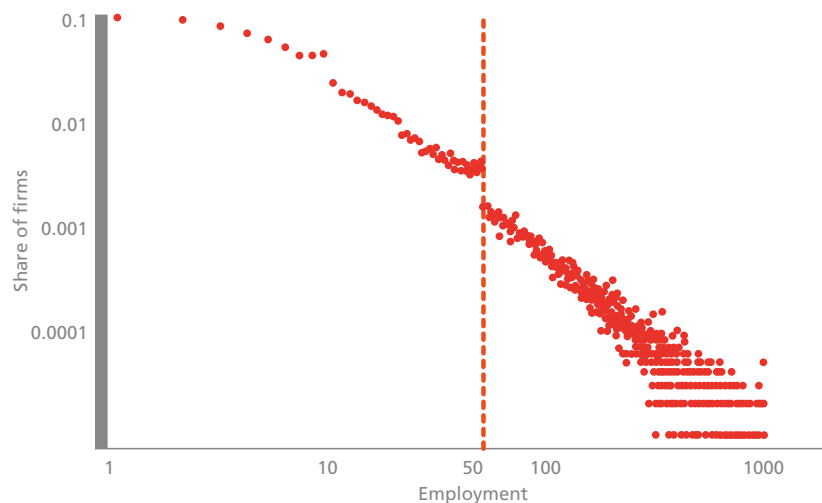
There is suggestive evidence to think that regulations matter. For example, in France before 2018, when a firm reached 50 employees, it faced a tsunami of labour laws including establishing a works council, devoting a minimum fraction of revenue to training, forming a social plan with the labour ministry if it wanted to dismiss workers collectively and instituting a profit-sharing plan with workers. All these may be desirable benefits, but they are also likely to have some costs.

Firm size and innovation

It is well documented that there is an unsurprising bulge in the number of French firms with between 45 and 49 employees that appear reluctant to grow to 50 or beyond (for example, Ceci-Renaud and Chevalier, 2011).

Figure 1 shows the power law that describes the relationship between the size of firms and the number of firms, which is usually linear in the logarithmic scale.

Figure 1:
The French firm size distribution breaks at 50 employees

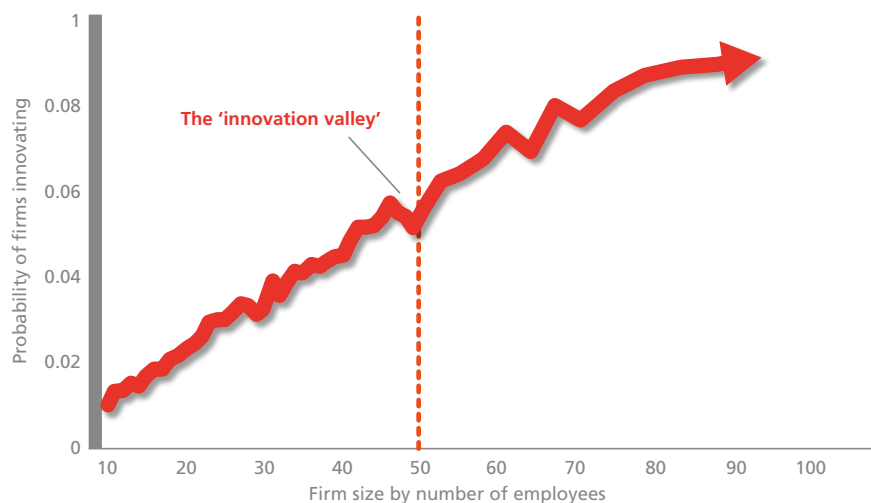


Notes: The share of all firms in the economy by firm size (as measured by number of employees) in 2000. Note that there are also some regulations that kick in when firms reach 10 employees.

Source: FICUS – see Garicano et al (2016) for a discussion on size distribution across different data sources.

Figure 2:

The innovation-firm size relationship has a 'valley' around the regulatory threshold



Notes: An innovative firm is defined as a firm with at least one patent.

Source: Aghion et al (2021) for this and other definitions of innovation.

In France, this firm size power law breaks down precisely around the regulatory threshold with a bulge in the number of firms before 50 employees and a shift down in the line afterwards.

Discouraging productive firms from becoming larger is one 'static' effect of regulation. But a deeper more dynamic problem might be that firms may be reluctant to invest in growth-enhancing innovations when they face these higher regulatory 'taxes'. Furthermore, even larger firms face this tax on growth, causing them potentially to invest less in research and development (R&D).

Figure 2 shows that these innovation effects might be happening in the data. The probability of innovating increases with firm size, but there is an 'innovation valley' just before firms with 50 employees, which is consistent with a discouraging effect. Moreover, the gradient of the innovation-size relationship flattens after 50 employees, also suggesting a regulatory tax.

Dynamics

In a recent study, we analyse this issue using an economic model consisting of firms of variable size and based on Joseph Schumpeter's concept of 'creative destruction' (Aghion et al, 2014).

In our model, firms grow by improving on existing product lines, thereby evicting

the incumbent producers and replacing them on those lines. Hence, firms are in constant danger of being 'creatively destroyed' by a new entrant or an existing rival on any product line they currently control, in which case they shrink by losing the product line.

We then look at the effects of introducing a size-contingent regulation on firms' R&D investments and on the distribution of firm sizes. The model delivers exactly the kind of relationships shown in Figures 1 and 2.

Our model also predicts that firms will respond very differently to changes in demand. Increases in demand – which might come, for example, from an expansion in firms' export markets – will tend to raise R&D investments as firms' rents from innovating increase accordingly. But smaller firms to the left of the regulatory threshold will respond much

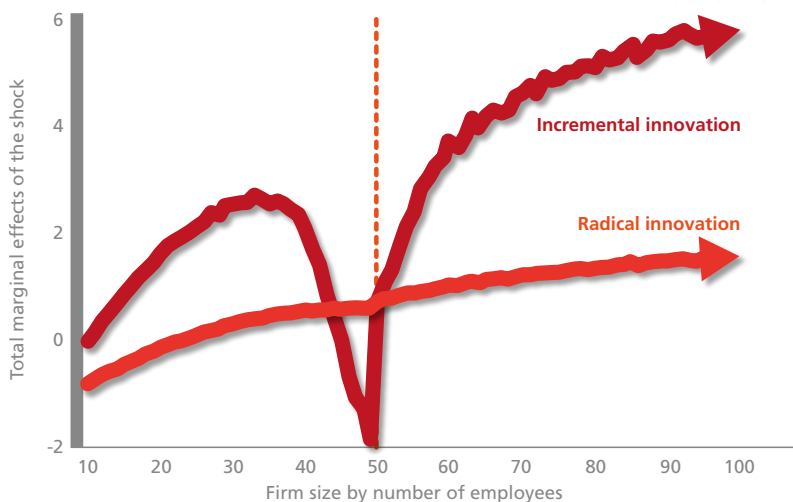
less, as they will gain less from innovation due to the regulation.

This impact will be particularly strong for incremental innovations rather than radical innovations. The intuition is that if a company wants to innovate and pay the regulatory cost of moving beyond the 50 employees threshold, it may as well 'go large'. Moving slightly, say from 49 to 51 employees, is unlikely to make the R&D cost worthwhile.

We find exactly this pattern in the data. Figure 3 shows the impact of a market size shock on the incentive to innovate. For incremental innovation, as measured by low future citations of patents, there is a large discouragement effect near the threshold; for radical, highly cited patents there is no effect. We show that the same is true if we use a measure of novelty of the patent based on a machine-learning algorithm as applied to the text of the patent.

Standard estimates of regulatory costs are likely to be understated when they ignore the impact on innovation

Figure 3:
The impact of a demand shock on innovation as a function of firm size



Notes: These are the estimated marginal effects of a demand shock (as measured by growth in a firm's export market at the HS6 product by country level) on innovation by the size of the firm (as measured by employment). Radical innovations are defined as patents that are in the top decile of future citations in the technology class-year cohort. Incremental innovations are all others (the bottom 90% of the citation distribution).

Source: Aghion et al (2021)

Innovation and growth

Having shown that the qualitative implications of the model hold up, we then quantify the aggregate effect of regulation on innovation. This requires more assumptions, but the framework enables us to quantify the entire impact through the innovation intensity and the firm size distribution.

Compared to an unregulated benchmark, our baseline model estimates that regulations reduce innovation and growth by 5% (for example, from 2% to 1.9% a year) and welfare by about 2%. These numbers need to be added to the standard static misallocation losses on which other work has focused (for example, Garicano et al, 2016).

Policy conclusions

Our analysis should not be taken to mean that regulations are all bad. We have 'priced out' the costs, but there could still be net benefits – for example, if society values job security extremely highly. But our findings do suggest the usual estimates of regulatory costs are understated when we ignore innovation. They also suggest that reforms to current regulations may have greater benefits than previously thought.

This article summarises 'The Impact of Regulation on Innovation' by Philippe Aghion, Antonin Bergeaud and John Van Reenen, CEP Discussion Paper No. 1744 (<https://cep.lse.ac.uk/pubs/download/dp1744.pdf>).

Philippe Aghion is at the Collège de France and LSE. **Antonin Bergeaud** is at the Banque de France. **John Van Reenen** is the Ronald Coase Chair in Economics and School Professor at LSE and a former director of CEP. All are research associates in CEP's growth programme.

Further reading

Philippe Aghion, Ufuk Akcigit and Peter Howitt (2014) 'What Do We Learn from Schumpeterian Growth Theory?', *Handbook of Economic Growth* 2: 515-63.

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in brief...

Covid-19 and self-employment

The pandemic has had particularly damaging economic effects on self-employed people in the UK. CEP has now run three surveys to capture the experience of these workers during the crisis.

Stephen Machin and **Maria Ventura** report on the latest findings, which indicate considerable room for policy improvement.

Before the Covid-19 crisis, one in every seven UK workers was self-employed. The crisis has starkly illustrated the vulnerability of this group as well as the challenges the government faces in insuring them against economic shocks.

We have now run three surveys to capture the experience of these workers throughout the crisis. Here we highlight several key findings from our most recent survey, administered in early February 2021.

Most of the recovery in incomes and hours has been undone in the latest lockdown

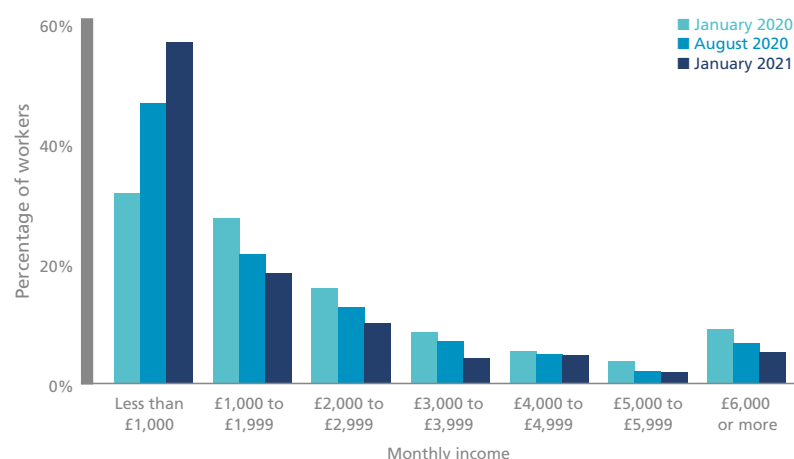
In Figure 1, we show that relative to the summer of 2020, in which some restrictions were eased, incomes have once more dropped precipitously. In January 2021, 57% of surveyed self-employed workers were earning less than £1,000 per month, up from 31% in January 2020 and 46% in August 2020.

The figures for January 2021 are close to those we found in earlier work on the impact of the first lockdown. This analysis excludes the individuals who have already left self-employment as a result of the crisis, so is likely to be an underestimate of the effect of the crisis on those who were self-employed when it first hit.

Incomes matter, but a short-term drop in income does not necessarily correspond to noticeably lower living standards. In the case of the UK's self-employed, our May 2020 analysis showed that relatively early on in the crisis many workers were struggling financially, with 46% of respondents having trouble paying for basic expenses such as rent, mortgage payments or essentials.

In our most recent survey, this had fallen to a third (33%), which, while lower, still ought to cause concern among policy-makers. This improvement in rates of

Figure 1:
Monthly incomes in January 2020, August 2020 and January 2021



Almost two-thirds of surveyed self-employed people report being worse off due to the crisis



financial distress are likely to reflect partially the success of the government's support scheme at keeping some self-employed workers afloat.

The self-employed have poor incentives to self-isolate

An effective recovery from the crisis relies on workers self-isolating when receiving a positive Covid-19 test or when being prompted to by health officials. Incentives should be designed such that it is not unduly costly for workers to do so. While self-employed workers are not able to access statutory sick pay for support when isolating, they may be able to obtain a 'test and trace support payment' of £500 from their local council.

But as highlighted by the Trades Union Congress last February, around 70% of those who apply for this financial support are rejected. Eligibility criteria are strict and designed to identify those on means-tested benefits. For those falling outside these criteria, there exist discretionary payments, but the demand for these severely outstrips supply.

Particularly for self-employed workers, who are likely to have substantial control over whether they work or not, insufficient access to support creates a strong disincentive to self-isolate when required. In our survey, we asked self-employed respondents about Covid-19 testing and self-isolation.

Their responses paint a stark picture. Of the 10% of individuals that declared testing positive at some point during the last year, a quarter report that they did not self-isolate. This is all the more striking when we consider that, if anything, we would expect self-reports to be an underestimate of non-compliance.

Among those who did self-isolate, two in five workers report that their income suffered from doing so. While we did not ask directly about access to the support payment, combined with the evidence described above, this presents compelling evidence that self-isolating represents a real cost to self-employed workers. Unsurprisingly, many workers do not follow the guidance.

Room for improvement in government support

The main channel through which the government has supported self-employed workers during the crisis is the Self-employment Income Support Scheme (SEISS). Up to a threshold, this scheme provides a transfer equalling a large share of past profits to eligible self-employed workers, with no dependence on the amount that self-employed workers have lost as a result of the crisis.

Taking all government support into account, almost two-thirds (62%) of our respondents report being worse off as a result of the crisis. Are there ways that SEISS could be improved to provide better support for affected workers?

While the government's support scheme is generous for those who get it, there are glaring omissions in eligibility

Given the scheme's generosity, we would expect to see high take-up. The most recent government statistics show take-up at 57%, meaning that over a third of eligible workers are yet to access the support.

In our survey, despite SEISS now being in place for the best part of a year and eligibility rules remaining relatively unchanged, we find that almost a third (31%) of respondents are unsure of their eligibility status. One route to increasing uptake could be increasing awareness of eligibility among workers.

From early in the crisis, it has been highlighted that while the SEISS scheme is generous for those who get it, there are glaring omissions in its eligibility. It excludes those who became self-employed since April 2019 (although they are now eligible for the fifth grant in July), as well as those with large profits, those for whom self-employment is not their main source of income, those making losses prior to the pandemic and directors of limited companies.

Among those ineligible for SEISS, we find high rates of financial distress, with 32% of respondents reporting having trouble with basic expenses over the last month. This is significantly higher among the newly self-employed, among whom 58% report struggling with basic expenses.

The Institute for Fiscal Studies has proposed practical solutions for extending support to those with less than half their income from self-employment and for those with large profits. Particularly given the high rates of financial distress that we find in the survey, this support could be further extended to the newly self-employed. This could be based on more recent earnings information (from the 2019/20 tax year), which is now more readily available. This extension is likely to be relatively low-cost, given the small size of this group.

This article summarises 'Covid-19 and the Self-employed – Ten Months into the Crisis' by Jack Blundell, Stephen Machin and Maria Ventura, CEP Covid-19 Analysis No. 19 (<https://cep.lse.ac.uk/pubs/download/cepcovid-19-019.pdf>).

Stephen Machin is director of CEP. **Maria Ventura** is a doctoral student at LSE and a research assistant in CEP's labour markets programme.

Spain has seen a huge influx of women into the workplace in recent decades, but their experiences of work remain very different from those of men. As **Claudia Hupkau** and **Jenifer Ruiz-Valenzuela** explain, there is scope for new family-friendly policies to help to close gender gaps in the labour market and to boost fertility rates.

The motherhood penalty for working women in Spain



Over the past 25 years, Spain has undergone a striking convergence in women and men's participation in the labour market. While in the early 1990s, only 50 women were active in the labour market for every 100 men, this had risen to 88 active women for every 100 active men by 2019. The rapid incorporation of women into the workforce has meant that the participation rate of women in Spain has now overtaken that in the European Union as a whole.

But despite this rapid convergence, women are still behind men in other key job market dimensions. Figure 1 shows that by the end of the 2010s, women are over 27% more likely to be unemployed, 10% more likely to hold temporary (fixed-term)

contracts and over three times more likely to work part-time.

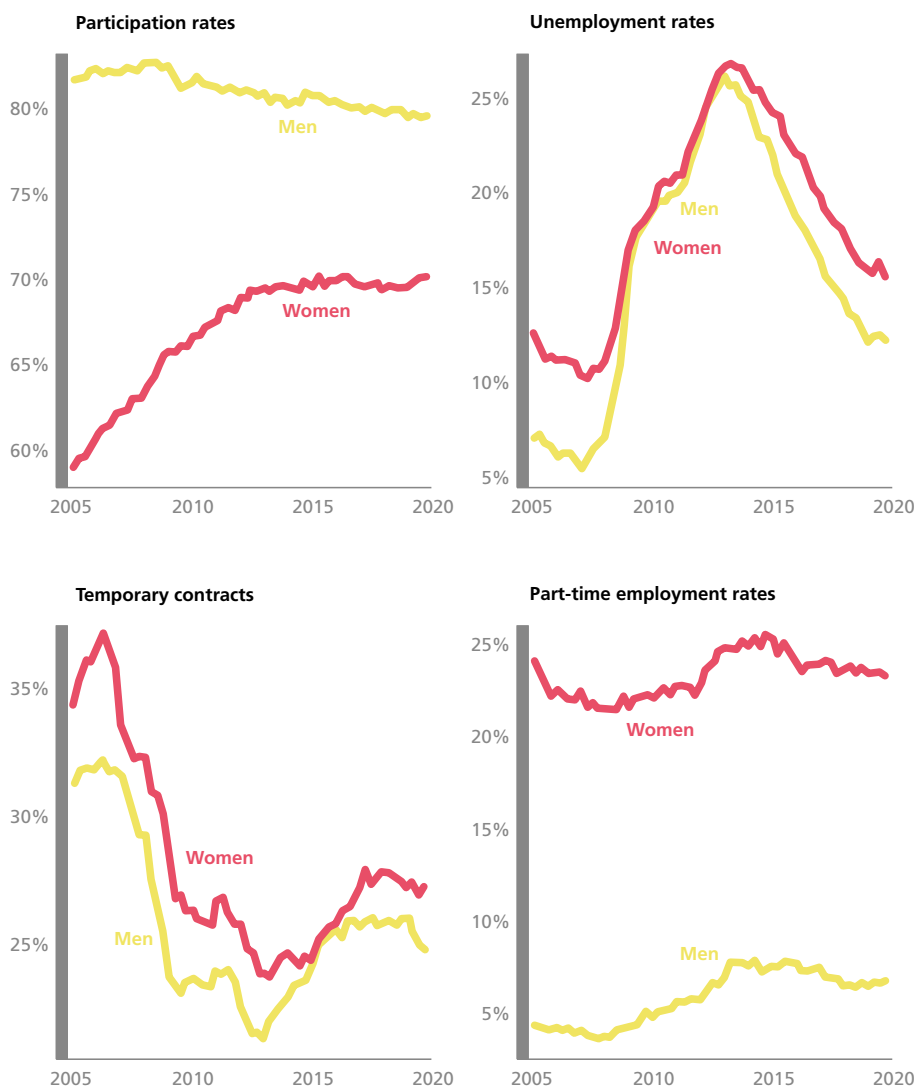
Not only do women fare worse, but the gender gap in these measures has barely improved over the past 15 years. In the aftermath of the Great Recession, which hit jobs dominated by men disproportionately hard (for example, in construction), there were some years in which gender gaps narrowed. But once the economy picked up, the gender gaps in these indicators started rising once more.

The gender gap is also surprisingly stubborn when it comes to the type of jobs that women and men hold. As Figure 2 shows, women in Spain have not increased their presence in top-level occupations, such as managers and directors, since 2011.

At the same time, women continue to dominate employment in what are known as 'elementary occupations', such as cleaners, domestic workers and food preparation workers. This is even though women in Spain have overtaken men in terms of tertiary education: in 2018, 50% of women aged 25-34 held a university degree, compared with 38% of men. Low-skill jobs not only pay worse than higher skilled jobs, but they also tend to offer little career progression and room for growth.

Inequality between men and women is further aggravated among people with children, irrespective of the indicator used. Figure 3 plots the ratio of women to men's rates for different labour market indicators, for people with and without

Figure 1:
Labour market outcomes for men and women in Spain, 2005-19



Notes: Authors' calculations based on the Spanish Labour Force Survey, seasonally adjusted series from Q1/2005 to Q4/2019. Sample of all individuals within the working-age population (16-64 years). Participation rates are computed as the total active population (employed and unemployed) over the total working-age population. Unemployment rates are computed as the total number of unemployed over the total active population. Temporary contracts show the share of individuals with a temporary contract among all those in employment. Part-time employment rates show the share of individuals working part-time among those in employment. All variables are derived using cross-sectional weights.

Gender gaps in Spain's labour market are wider for people with children than among those without children

Figure 2:
Percentage of women and men employed in high-skill and low-skill occupations in Spain, 2011-19

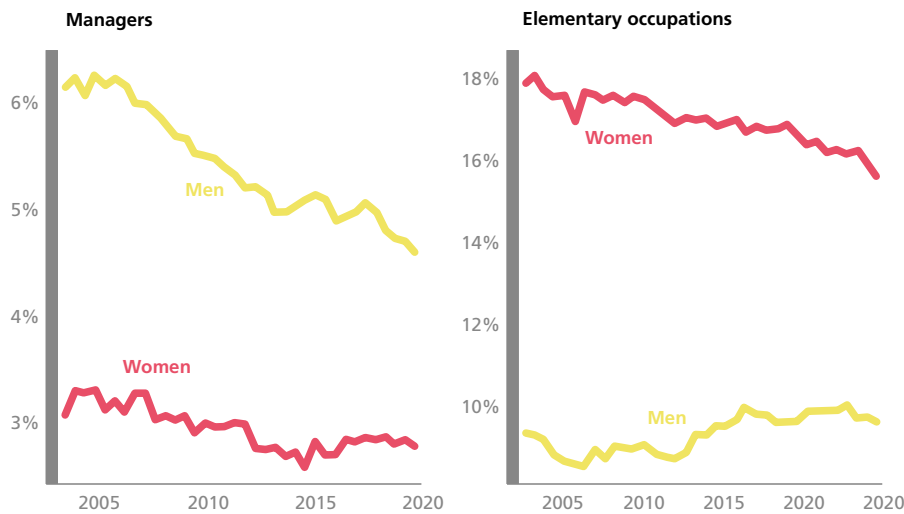
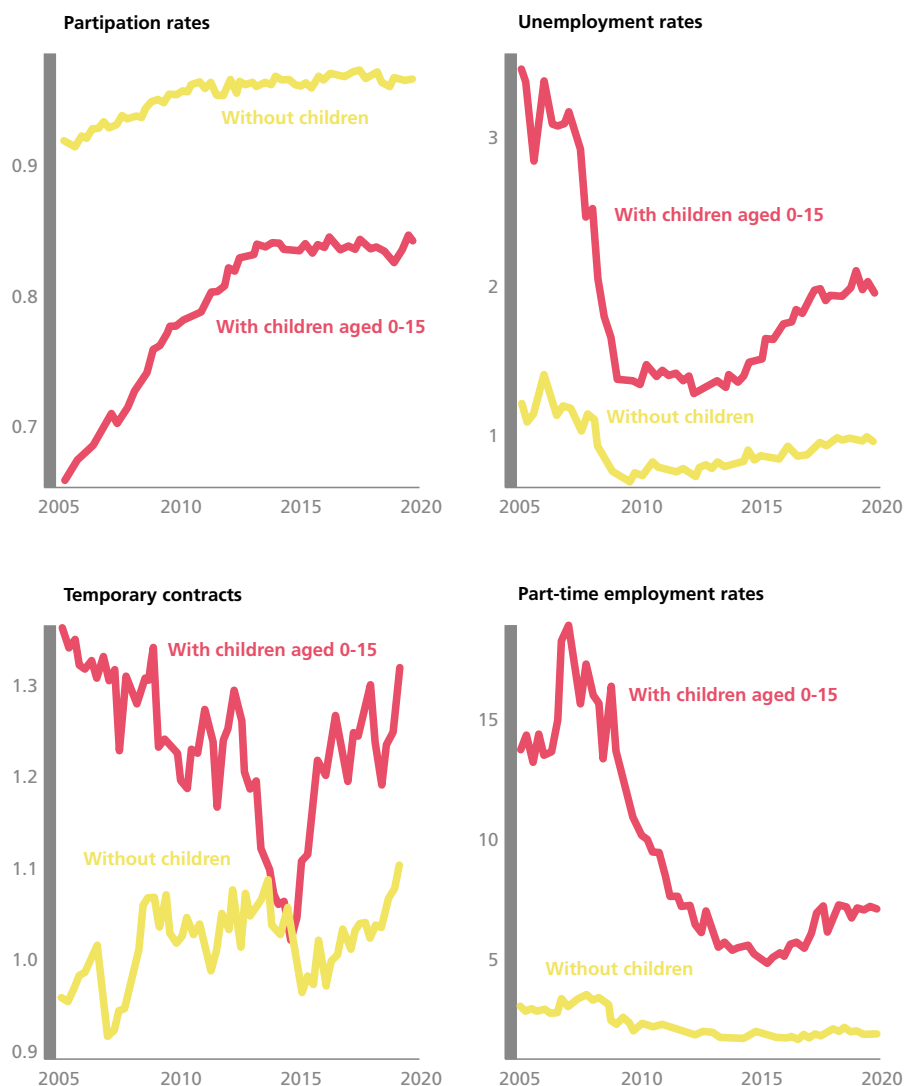


Figure 3:
Women/men ratios of labour market outcomes in Spain by whether they have children, 2005-19



Generous
paternity leave
entitlements can
increase women's
employment,
working hours
and earnings –
as well as men's
involvement in
childcare

children. The vertical scale is informative of how many times more or less likely women are to be in a particular situation than men.

Convergence in labour force participation rates has stagnated for women with children aged 15 and below over the last seven years. By the end of the 2010s, women with children aged 0-15 are about 7.5 times more likely than men with children of the same age to work part-time, twice as likely to be unemployed and about 25% more likely to hold a temporary contract. Overall, all these indicators show larger gender gaps for people with children than among those without children.

Recent evidence shows that the motherhood penalty might be driven by the fact that women choose jobs with family-friendly characteristics after the arrival of children, such as flexible hours (Goldin, 2014), being in the public sector or in lower-level occupations (Kleven et al, 2019). Thus, family-friendly policies, like flexible or shorter hours or long periods of parental leave might reinforce gender inequality if they are only taken up by women, by fomenting employers' beliefs about women's comparative advantage in childcare and reinforcing traditional gender roles (Olivetti and Petrongolo, 2016).

A striking example is the introduction of a law in Spain granting employment protection to workers with young children who had asked for a shorter working week due to family responsibilities. Fernández-Kranz and Rodríguez-Planas (2021) show that employers were less likely to hire women of childbearing age after the law, as well as being less likely to promote them to permanent contracts.

Breaking up traditional gender roles thus seems crucial for enhancing equality in the labour market. Indeed, over a third of women with children under 5, and more than half of women with children aged 5-15 working part-time would like to work more hours, according to the Spanish Labour Force data. One in two women with very young children name childcare responsibilities as the main reason why they do not work more hours.

A review of the research evidence on family policies suggests that there is scope for well-designed measures to help narrow gender inequalities in the labour market. Spain has recently implemented

generous paternity leave entitlements for fathers. These have been shown not only to increase women's employment, working hours and earnings – but also to increase men's involvement in childcare, meaning they have the potential to reduce gender gaps at work and in the home (Patnaik, 2019).

Policies that make it easier to combine family and work, such as financial incentives in the form of tax credits for working mothers and subsidised or free childcare for very young children, have also been shown to have a positive effect on job market outcomes (Olivetti and Petrongolo, 2017). But it is important to keep in mind that family policies alone are unlikely to be sufficient to close the remaining gender gap, especially in contexts where traditional gender roles are very engrained (Kleven et al, 2020).

These policies would also help to tackle a related issue: Spain is among the countries with the lowest fertility rates and the highest age of women at first birth. At the same time, Spain spends only about half of what the average EU country spends on family and child benefits. Increased spending on such policies would thus be likely to reduce the motherhood penalty at the same time as raising fertility.

The overall effect of such policies will depend on whether the gains in terms of tax revenues and economic output from increased women's labour supply outweigh the cost of providing more affordable childcare or in-work benefits. Even if not all the increased expenditure on childcare provision or tax credits is covered by the increases in income, social security and payroll taxes generated from increased maternal employment, this does not necessarily mean that such policies would be inefficient.

Such policies may well bring other benefits, such as increases in fertility and, in the case of provision of free or affordable, high quality childcare, improvements in children's educational outcomes in primary and secondary school (Felfe et al, 2015).

This article summarises 'Work and Children in Spain: Challenges and Opportunities for Equality between Men and Women', published in March 2021 by EsadeEcPol (<https://www.esade.edu/ecpol/en/publications/challenges-opportunities-work-equality/>).

Claudia Hupkau of CUNEF, Madrid, is a research associate in CEP's education and skills programme. **Jenifer Ruiz-Valenzuela** is a research economist in CEP's education and skills programme.

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Discussion of income inequality focuses primarily on wages with limited consideration of the non-monetary rewards to work, not least the satisfaction that employees experience in doing their jobs. **Andrew Clark, Maria Cotofan and Richard Layard** use data on subjective wellbeing to reveal the full extent of UK labour market inequality.

Beyond income inequality: non-monetary rewards to work

Economists have long been concerned with the way in which people are rewarded for their work, and how these rewards are distributed across individuals. A large body of work in economics has focused on how wages are determined, and the inequality that results. But while wages are important, there is abundant evidence that people also care deeply about the non-financial aspects of their work.

According to a recent survey, nine out of ten American professionals were willing to trade part of their lifetime income in return for more meaningful work. The Covid-19 pandemic has further highlighted the importance of these non-monetary benefits – such as, for example, the ability to work remotely. As such, the labour market inequality experienced by workers during the current crisis is not limited to monetary outcomes.

We have discovered that monetary and

non-monetary rewards tend to be positively correlated – on average, those who were paid more also had better non-monetary rewards and those with lower earnings also had worse non-monetary benefits – meaning inequality in working life is greater than income data alone reveal.

During the pandemic, many governments around the world have, to some extent, guaranteed workers' incomes. The furlough scheme in the UK is just one example of such interventions. But non-monetary aspects of work, like the ability to work productively from home, are also likely to have played a major role in workers' wellbeing. Training opportunities, good management relations, a healthy work environment and many other aspects will matter too.

So how can we paint a complete picture of labour market inequality? One point has become increasingly clear: we need to look beyond wages to capture it

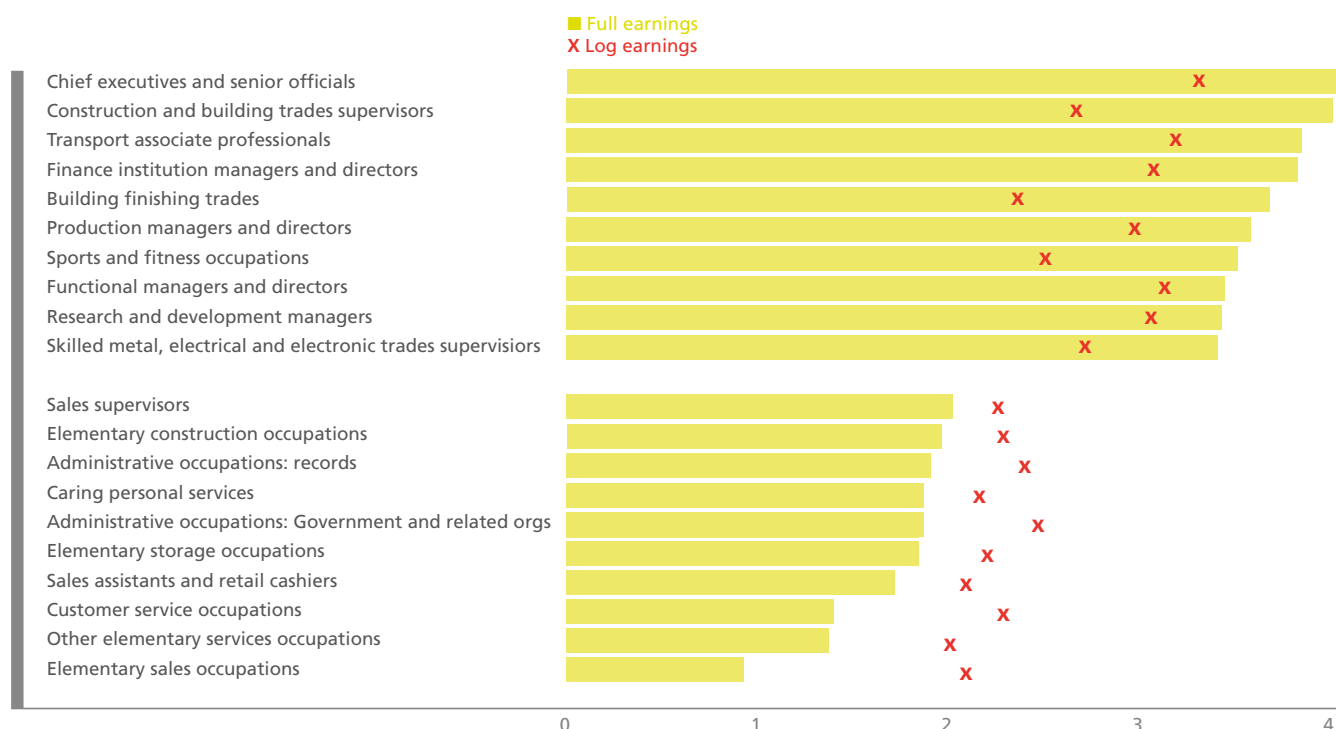
fully. But while wages are comparatively easy to measure, accurately gauging the contribution of non-monetary aspects of a job is far more challenging.

First, many of the non-monetary aspects of jobs that workers find important do not appear in standard data sources. Second, we have no clear way of knowing how important these different non-monetary aspects are to workers.

Our research proposes a solution to these two problems. Using data on the subjective wellbeing of employees in the UK, we directly observe the life satisfaction of individuals in different kinds of jobs. Holding their income constant, the differences in life satisfaction across occupations reveal the value that employees assign to their occupation's various non-monetary characteristics.

Using data on employee wellbeing in this way, we can construct a measure of 'full earnings', which captures both wages

Figure 1:
Earnings and full earnings in different occupations



and the value that each worker puts on the non-monetary rewards in their job. It is this measure of full earnings that we use to quantify labour market inequality in the UK.

We find, perhaps unsurprisingly, that the value of non-monetary rewards differs sharply from one occupation to another. But notably, these non-monetary rewards tend to be higher in better-paid occupations: we calculate that UK labour market inequality in full earnings is one-third higher than the inequality arising from differences in wages alone.

This is a substantial gap that cannot and should not be ignored. These differences in non-monetary benefits across occupations hold even when we compare employees with similar education, and when we calculate them only for individuals who are observed changing from one occupation to another. This shows that the differences across occupations cannot simply be explained by people with certain characteristics sorting into certain jobs.

More worryingly still, the labour market in the UK is even more unequal when we focus on groups with lower average earnings. For example, women and members of ethnic minority groups tend to have worse non-monetary rewards from their jobs on top of lower earnings.

Source: Annual Population Survey.

Notes: Full earnings, which are the sum of hourly earnings and the monetary value of the non-pecuniary amenities in that occupation, are represented by the horizontal bars; hourly earnings are represented by the red crosses. The gap between hourly and full earnings measures the monetary value of amenities in that occupation. A red cross that is to the right of the bar indicates a below average value of amenities in that occupation. For example, the red crosses indicate that, on average, those working in 'Sports and Fitness Occupations' earn about as much as workers in 'Administrative Occupations in Government and Related Organisations'. The bars show that the full earnings of people in the former occupations are higher than the full earnings of people in the latter occupations because they have better amenities.

The correlation between wages and non-monetary job aspects is positive: those in some of the best-paid jobs – such as chief executives, managers and directors – also enjoy some of the best non-monetary rewards (or amenities) at work. On the other hand, those in low-paid occupations – such as customer service or retail cashiers – often have full earnings that are even lower than their wages alone would suggest.

But this correlation is far from perfect: some construction and industry workers have higher full earnings once the value of amenities is considered. Figure 1 illustrates this pattern, from top to bottom, for the ten occupations with the highest and the ten occupations with the lowest full earnings in the UK.

UK labour market inequality is significantly higher than is indicated by wages alone



Not all individuals are equally likely to work in each occupation. Educational attainment plays a large part in determining career trajectories and the jobs in which people end up. Even within the same occupation, the better educated are likely to have different roles and responsibilities, different access to amenities and different earnings.

So how important is a degree and what is its pay-off in terms of work benefits? We know that the better educated earn more on average: our research underlines that they also enjoy better amenities overall.

But even so, it is important to have a good match between education and occupation. Those with university degrees experience the best amenities in managerial and professional occupations, while lower-educated people actually enjoy better amenities than those with degrees in lower-ranked administrative occupations.

As those with degrees also have a broader spectrum of jobs from which to choose, they also experience a much larger dispersion in non-wage benefits. So even though degrees pay-off on average, with higher wages and higher benefits for the higher educated, they are also riskier in this sense.

In other words, as amenities are identified through the life satisfaction of respondents in each job (once income has

been controlled for), young graduates who end up in jobs for which they are over-qualified have worse amenities than if they did not have a degree. This raises important questions about how best to match people to jobs, and who suffers more when this matching is imperfect.

In the context of worries about rising inequalities, our findings paint a stark picture: UK labour market inequality is significantly higher than wages only suggest, and there is no evidence overall that higher wages serve to compensate workers for their poor amenities at work.

Our conclusions are repeated in an analysis of US workers, so that this phenomenon is not UK-specific. Policy-makers who wish to narrow the gaps in labour market outcomes should start looking more closely at the role of non-monetary aspects of work. The difficulties in measuring non-wage benefits across occupations are likely to have hindered progress in the past, but data on subjective wellbeing can serve to evaluate the extent of overall labour market inequality.

This article summarises 'The True Returns to the Choice of Occupation and Education' by Andrew Clark, Maria Cotofan and Richard Layard, CEP Discussion Paper No. 1746 (<https://cep.lse.ac.uk/pubs/download/dp1746.pdf>).

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Women and members of ethnic minority groups tend to have worse non-monetary rewards from their jobs on top of lower earnings

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