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Will the Knowledge Economy Survive the Pandemic?

COVID-19 has hit the lowest paid hardest, but the pandemic has radically changed white-collar work, too. Sophie E. Hill explores the pandemic's impact on the knowledge economy and asks how innovation will survive in a world of Zoom calls and home working.

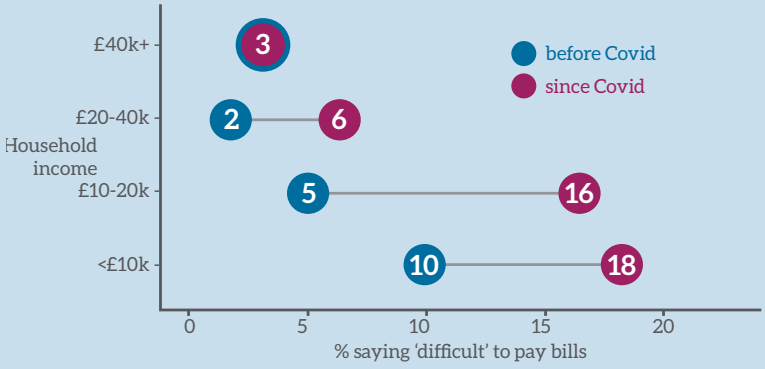
The COVID-19 pandemic has undoubtedly hit the most vulnerable workers hardest. One reason is that low-wage jobs tend to be more difficult to do from home. Some occupations, like carpenters, require access to special tools and equipment. Others, like nurses, require extensive face-to-face interaction.

In Britain, despite a raft of support measures from the government, lower income households were much more likely to report having difficulty paying bills since the pandemic began. Ten per cent of those in households with incomes of under £10,000 and five per cent of those in households with incomes of between £10,000 and £20,000 reported that they had difficulty paying bills before the pandemic. When asked the same question for the period since the pandemic began, those numbers rose to 16 and 18 per cent, respectively. Meanwhile, among households with over £40,000 in income, the proportion reporting difficulty paying bills remained essentially constant at three per cent (see Figure 1).

It's not surprising, then, that both policymakers and the public have focused on the fortunes of the hardest-hit workers during this pandemic. While many highly-skilled white collar workers have been relatively insulated from the economic impact of the pandemic, the sudden transition to remote working has challenged fundamental assumptions about the knowledge economy. Can a geographically dispersed workforce collaborate effectively? How many

Figure 1: Low-income households hardest hit by Covid

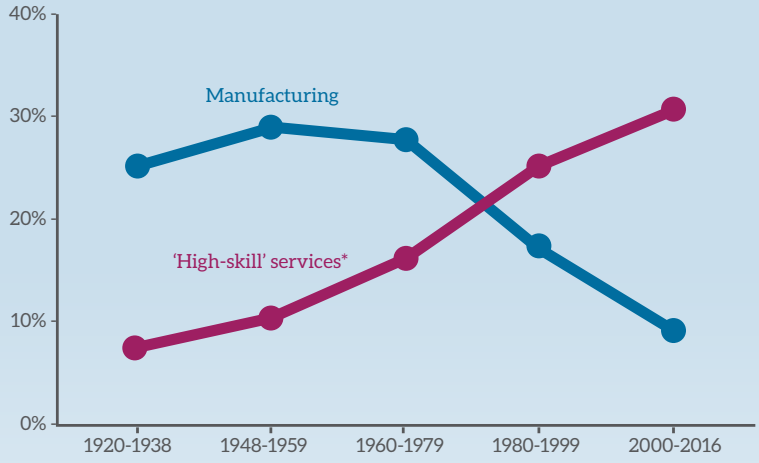
% reporting difficulty paying bills



Source: ONS/OPN (June 2020)

Figure 2: A Tale of Two Sectors

% of employment by sector, 1920-2016

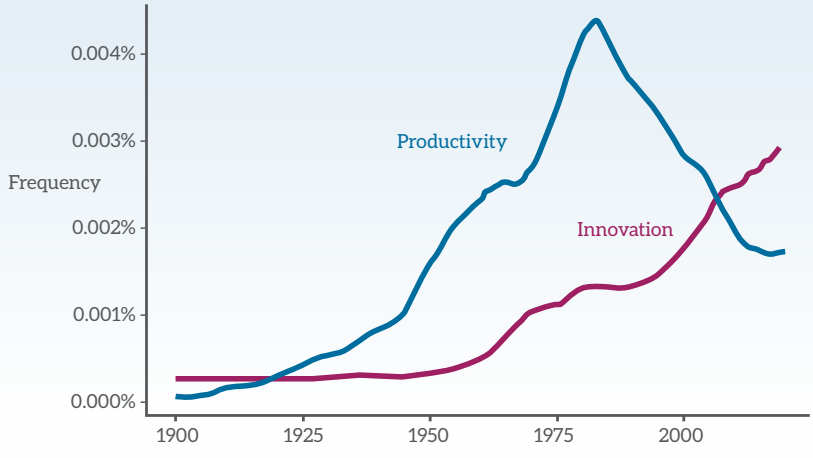


*Professional, technical and scientific services; Education; Health; Finance and insurance

Source: Bank of England

Figure 3: Trends in the Google Books corpus, 1900-2019

Frequency of 'productivity' and 'innovation'



Source: Google Books Ngram Viewer

employees will choose to work from home permanently if their employer allows? Who will be the 'winners' and 'losers' of this new labour market divide?

From Fordism to innovation

To answer these questions, it helps to take a step back and consider how rich economies like the UK have changed since World War Two. Looking at the share of jobs in each sector of the economy over time, we observe a striking pattern: declining employment in the manufacturing sector has been mirrored by the increasing employment in the 'high-skill' services sector (see Figure 2).

This shift in employment represents a fundamental change in the organisation of the economy. The old model – often called the 'Fordist' economy, after the production processes pioneered by the Ford Motor Company – was based around mass production of standardised products. (As Henry Ford famously remarked: customers could buy the Model T car in any colour they wanted, as long as it was black.) Growth was sustained by increasing efficiency on the assembly line and supporting consumption with high wages.

In contrast, in the modern knowledge economy, information is the key commodity. Products are highly differentiated: instead of selling millions of a single car model in a single colour, today's car manufacturers continually create new models, targeting different price ranges, tastes and lifestyles. Production processes are designed to be flexible so that firms can respond quickly to changes in consumer demand. A striking example of this is the 'fast fashion' industry, which takes designs inspired by the runway and brings them to the mass market in a matter of weeks.

In the knowledge economy, growth is sustained through innovation: new products, new methods of production, new marketing, and new organisational forms. Indeed, we can see the shift from Fordism to the knowledge economy reflected in these buzzwords: usage of the word 'productivity' peaked in the 1980s and was overtaken by the word 'innovation' in the early 2000s (see Figure 3).

What exactly is innovation? Typically, innovation is defined as building on

existing knowledge to come up with something new. To understand this process, it helps to distinguish between two types of knowledge. The first type is 'codified knowledge': this refers to knowledge that can be written down in a way that is unambiguous and divorced from its original context. It includes books, scientific articles, training manuals, and even computer code. In a digitally connected world, codified knowledge can be transferred almost costlessly across the world. The second type of knowledge is 'tacit knowledge'. By definition, this is knowledge that is not (yet) written down and codified. This distinction is important because innovation typically arises from the process of combining codified and tacit knowledge.

Unlike codified knowledge, tacit knowledge is difficult to transfer from one person to another. First, the person with the knowledge may not want to share it. After all, tacit knowledge is often left tacit because it is sensitive or prone to misinterpretation. Second, the person with the knowledge may not be able to share it, since by definition tacit knowledge cannot easily be written down. This is why the communication of tacit knowledge often happens through more indirect means, like storytelling, conversation, and demonstration.

Communication

Face-to-face communication is generally assumed to be crucial for transferring tacit knowledge on both fronts. It helps to build trust and expectations of reciprocity, making individuals more willing to share sensitive information. It also provides a much richer channel of communication compared to, say, a phone call or an email. Verbal tone, body language and facial expressions, are often crucial for nudging along the transfer of tacit knowledge.

But have technological advances finally made it possible to communicate tacit knowledge virtually? Video-conferencing is clearly a dramatic improvement over audio calls in terms of visual cues. However, facial expressions are harder to interpret outside of a shared spatial context. (Is your boss frowning because they don't agree with your proposal, or because they are experiencing technical difficulties?) The distinction between eye contact with a speaker – which typically signals approval – and eye contact between listeners – which may signal confusion or even embarrassment – is also lost. The fact that the most popular video-conferencing platform, Zoom, has a feature where participants can display 'reaction emojis', such as a laughing face or clapping hands, perhaps indicates that video-conferencing is not as effective as one might hope in conveying real-time reactions.

When it comes to establishing trust, video-conferencing suffers from an even bigger problem: eye contact. This is a crucial element of face-to-face interactions, but it is almost impossible to replicate via video-conferencing, since one cannot simultaneously look at the screen and into the webcam. But perhaps new technologies will solve this problem? After all, Samsung has filed patents to place to camera underneath a smartphone screen, while Apple and Microsoft have both developed 'attention correction' technology that digitally alters the appearance of someone's eyes to create the illusion of eye contact. Will these technologies make participants feel more connected, or just creeped out?

Even if these barriers can be overcome, there is another important drawback of virtual communications when it comes to innovation: in the digital world, it is difficult to facilitate chance encounters. Whether it's through bumping into an old friend in the street, or networking at after-work drinks in the pub, cities provide ample opportunities for meetings with diverse individuals at a low cost.

A new normal?

So should we expect a return to 'normal' in the post-pandemic world? Probably not. A more likely scenario is that routine or low-stakes meetings will stay in the virtual world, freeing up time to be spent on more complex or high-stakes interactions face-to-face. Consider, as an analogy, the impact of online dating apps. Obviously, conversations on Tinder are not likely to replace in-person dating. Rather, these platforms allow individuals to screen potential partners online at a much lower cost. The result is an expanded pool of potential contacts, with virtual communication complementing rather than replacing in-person interaction.

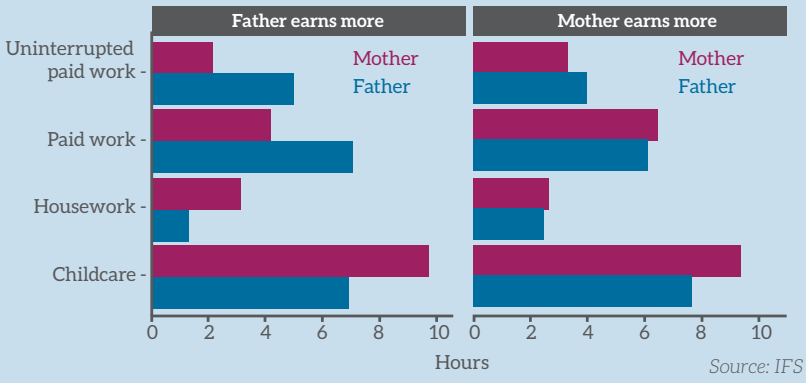
What would this 'hybrid' knowledge economy mean for individual employees? One possibility, which was already emerging before COVID-19 hit, is the creation of a two-tier workforce. Many employees will shift to remote working on a permanent basis, while others will return to the office and engage in both face-to-face and virtual communication. Indeed, many of the world's leading companies appear to have embraced this hybrid model: for example, Mark Zuckerberg recently announced that within a decade up to half of Facebook's employees could be working from home.

Who stands to benefit from this transition? Parents with young children, especially mothers, may welcome increased opportunities for remote work as a way to save on childcare costs while staying in employment. The possibility of remote work might also serve as an escape valve, allowing young professionals to escape the overheated housing markets in large cities and, in turn, boost the economies of smaller towns and cities when they spend their salaries in new locations.

However, it is important to think carefully about the consequences of this kind of labour market stratification. So-called 'flexible' work arrangements can inadvertently reinforce the gendered division of household labour. Data compiled by the Institute for Fiscal Studies shows that during lockdown, mothers were spending more time than fathers on childcare and housework – even in households where the mother earned more than the father (see Figure 4).

These patterns indicate a potential trade-off: remote working may help parents, especially mothers, to stay in employment while raising young children, but with long-term costs to their career progression. Unlike the Fordist economy, which was explicitly predicated on the concept of the male breadwinner household, the knowledge economy has been built around assumptions of gender egalitarianism that often fail to materialise. The prospect of a feminised 'shadow workforce' threatens to undo decades of progress in gender equality.

Figure 4: Time use during lockdown, by pre-crisis earnings



Source: IFS

Figure 5: Inheritance as % of mean lifetime earnings by cohort

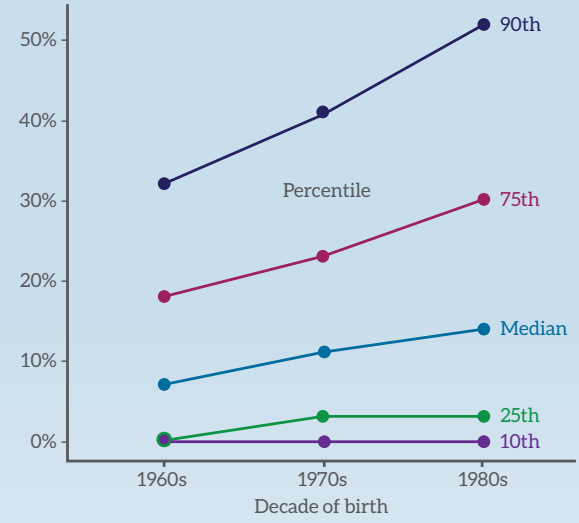
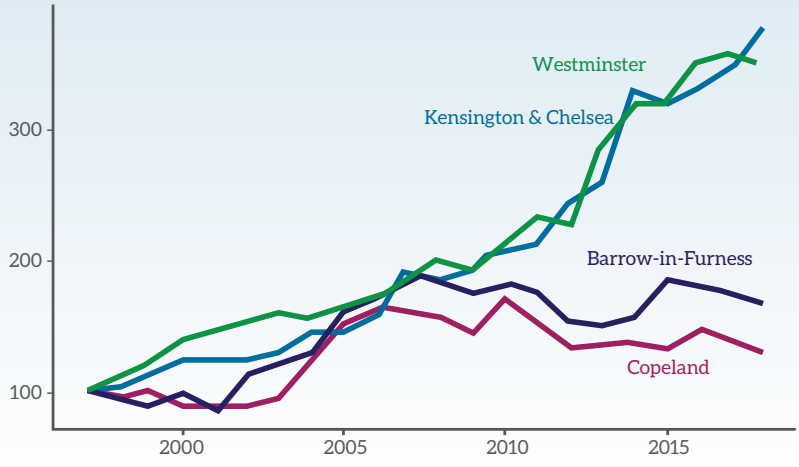


Figure 6: Widening gap between least and most affordable areas

Housing affordability index (1997=100)



Source: ONS

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But gender is not the only division that could be exacerbated in the 'hybrid' knowledge economy. Individuals from more privileged socio-economic backgrounds will be more likely to be able to bear the costs of living in desirable urban locations, taking advantage of better job opportunities as well as highly-valued urban amenities. Intergenerational wealth transfers play a key role in reproducing this type of inequality, especially since inheritance has grown relative to lifetime earnings. For example, the median inheritance for those born in the 1960s was equivalent to eight per cent of mean lifetime earnings in that cohort. For the younger cohort born in the 1980s, median inheritance has risen to 14 per cent of average lifetime earnings. This masks an even more dramatic trend at the top of the distribution: for those born in the 1960s, those at the 90th percentile could expect an inheritance equivalent to one-third of average lifetime earnings. For the cohort born in the 1980s, that figure has risen to one-half of average lifetime earnings (see Figure 5).

The potential exit of many young professionals should, in theory, put downward pressure on housing prices in urban centres. But this may not be enough to undo the dramatic widening in the

'affordability gap' across different areas of the UK. The ratio of the median price paid for residential property to the median gross annual earnings for full-time workers has increased considerably across all areas over the last 20 years. However, this ratio has increased far more in areas that were already unaffordable (see Figure 6).

Importantly, workers who transition into telework after being priced out of expensive areas, can no longer expect the same type of renumeration. For example, Facebook has already implemented a policy of variable pay, in which salary is tied to an employee's residential location. Workers cannot earn Silicon Valley wages while avoiding Silicon Valley housing costs. Instead of being an engine of social mobility, the expansion of tertiary education may end up reproducing class stratification, with less-financially secure workers doing similar jobs for lower pay and in less desirable areas.

Future of the knowledge economy?

In order to counteract these forces and maintain economic opportunity for all, policymakers will need to take bold action. The pandemic has exposed the gap between the assumptions and the reality of the knowledge economy. Expanding access to high-quality childcare will be crucial to ensure that women do not become trapped in 'flexible' work arrangements. Tackling the housing crisis and raising more revenue from Inheritance Tax will be necessary to prevent young people without access to the 'Bank of Mum and Dad' from being shut out of the most productive sectors of the economy.

The stakes are high, in both economic and political terms. The growth model of the knowledge economy rests on innovation, and this cannot be sustained when large swathes of a country's talent is not being effectively harnessed. The political coalition that underpins the knowledge economy also grows weaker, as more and more young people are deprived of a real chance of success. It is by now well-established that individuals with lower formal qualifications are more likely to support populist and anti-establishment parties. But what happens if growing portions of the highly-educated also come to see themselves as part of those 'left behind'?

So, the prognosis? The knowledge economy will survive the pandemic, but it may suffer long-term complications. Policymakers would do well to reflect on the lessons learned from the current crisis and remember that bold action today may prevent even more costly choices tomorrow.

Further reading

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