Neither Triumph nor Disaster:
United Kingdom Responses to COVID-19 and the Future of National Security

By Nicholas D. Wright

Nations are from time to time subjected to the audit of war: a searching examination that looks beneath the myths, shiny surfaces, and sticking plasters to reveal those areas of society and government that are truly strong, actually weak, or just plain mediocre. What did 1914–1917 or 1941–1945 expose about Russia's *real* strengths and weaknesses? How would the United States *really* stand up to German *Panzer* forces and the Japanese Navy in 1942? Fortunately, no Western nation has been through such an examination since 1945, but the massive social, political, and economic shock of COVID-19 has provided a searching peacetime test. Twenty months since reports of the first deaths circulated in Wuhan, China, we still have not marked the end of COVID-19. But we have learned a lot. Here we ask: what did the United Kingdom's COVID-19 experience reveal; how does that relate to UK national security; and what does this mean for the UK moving forward in a post-COVID global order?

In short, the UK's experience was neither triumph nor disaster. "Lockdowns" that were implemented more slowly than in some other countries and with largely open borders proved to be epidemiological and economic negatives, while the fastest vaccine rollout of any populous country was a positive. The European Union (EU), UK, and United States have ended up with similar numbers of deaths per million—and all did far worse than Asia-Pacific comparators (see figure 1). The time needed for the UK's return to pre-pandemic gross domestic product (GDP) per capita is now thought to be middling among large, advanced European countries—and the bigger story is Europe's weaker economic performance than both the United States and Asia-Pacific (see figure 2). Technologically, the UK was the only Western country outside the United States to invent and develop its own vaccine; it identified the most effective treatment for COVID (dexamethasone); and it dominated global COVID genetics.

A mix of success and failure also describes how the UK's national security thinking and institutions functioned under COVID-19's audit. Correctly, the UK had long prioritized pandemics—including far deadlier ones than COVID-19—among the risks it faced. But it failed to adapt rapidly enough to a coronavirus rather than an influenza pandemic. Moreover, it failed to adapt rapidly enough to the enormous political pressures to follow continental European countries into lockdowns, an option that UK plans had not envisaged.

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Practical lessons can be learned.

COVID-19 has also changed the broader setting within which the UK's national security decision-making operates. COVID-19 increased the pace of key existing trends, such as China's relative economic rise. It also changed the likely path of events, and although identifying changed directions is always analytically tricky as it necessarily involves counterfactuals, to pre-empt later discussion, four interesting changes of direction (not just pace) stand out.

First, UK vaccine rollout success, and earlier struggles obtaining medical supplies, shifted debates toward active management of both supply chains—including domestic capabilities—and technological innovation. The opposition Labour Party touted "Buy British" plans. More important, it is a concrete counterpoint within a ruling Conservative Party long dominated by free market ideas; it chimes with their "levelling up" agenda to aid post-industrial regions; and it chimes with a push toward science, technology, and innovation illustrated by the new "National Technology Adviser" role and March 2021's "Integrated Review" of security policy.[1]

Second, COVID-19 shifted Brexit's domestic UK, and international, politics. It obscured negative Brexit effects on trade. It hogged political oxygen that acrimonious Brexit debates would otherwise almost certainly have consumed. Moreover, under severe political pressure from a slow initial EU vaccine rollout, in January 2021 the EU leadership announced closure of the Northern Ireland–Irish Republic border alongside threats to UK vaccine supplies.[2] Amid outcry across the political spectrum in Northern Ireland, Dublin, and London, they rowed back; but for the first notable time since the UK's 2016 EU referendum, even ardent pro-EU voices in the UK struggled with the EU decision.[3]

Third, the EU took a big step toward integration by issuing large amounts of common debt[4] for the first time—surmounting the hurdle of German domestic politics—which is crucial for the effective functioning of any centralized state, as the first U.S. Treasury Secretary Alexander Hamilton recognized. Germany had resisted common debt during the 2012 Eurozone crisis. German domestic politics had a powerful narrative of prudent northern and profligate southern Europeans, which made it hard to see how to achieve common debt in a future crisis. COVID-19 changed the narrative by causing a serious recession for which profligacy was not to blame and facilitated German Chancellor Angela Merkel's surprise decision to back common debt. EU integration matters for UK security.

Finally, there is a shift in the understanding of how the UK population wants perceived risks to be tackled. The UK's well-established pandemic plans involved neither lockdowns nor travel bans, as they were assumed to be intolerable, yet that is where the UK ended up. What the population is willing to undergo changes the range of options for future responses to national security threats.

This article has three main sections. First, we consider COVID-19's outcomes, focusing on the UK's epidemiological, technological, economic, and political outcomes in turn. Of course, this comes with an important caveat: only twenty months into COVID-19, we cannot be certain of the final story. Second, we examine government responses and other key drivers that help us understand these outcomes. We consider how the UK[5] responded in public health, technology, economics, and politics. The final section looks across these dimensions of the UK response in order to see UK successes and failures in context—and so draw implications for UK national security thinking and practice, and identify potential paths forward for the UK in the post-COVID global order.

COVID-19 Outcomes: Epidemiology, Economics, and Politics

Given the twists and turns over the past twenty

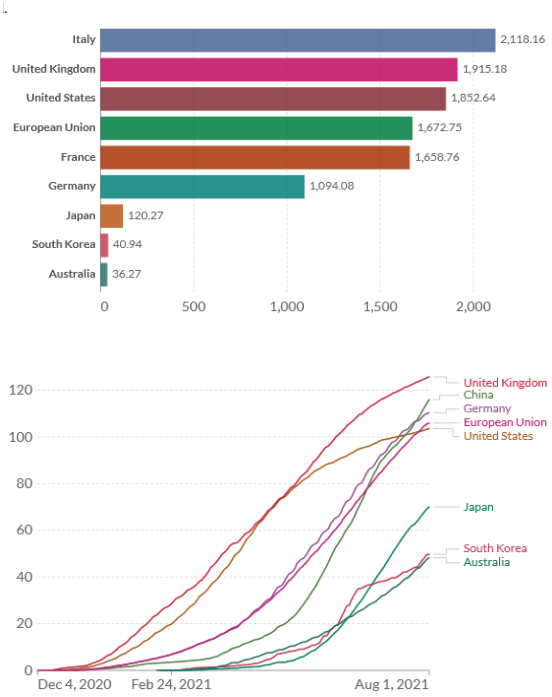
months, it is valuable first to step back and look at the UK's overall outcomes so far in comparison with other large advanced countries. No single lens captures all the outcomes that matter with COVID-19, but we can capture much of what matters by considering epidemiological, technological, economic, and political perspectives.

Epidemiological Outcomes

The UK, EU, and United States have ended up with similar rates of confirmed deaths per million as of August 1, 2021 (see figure 1; similar patterns to those described here are also seen with alternative measures of excess mortality[6]). Most striking is that all three had far worse rates than similarly wealthy Asia-Pacific countries. Within Europe, looking at the six countries with reasonably large populations (more than 20 million) and broadly comparable data (excluding Russia and Ukraine, which leaves Germany, the UK, France, Italy, Spain, and Poland), the UK's rate of confirmed COVID-19 deaths per million was similar to all, with the partial exception of Germany. Germany's rate is also closer to the UK, EU, or United States than it is to South Korea or Australia.

Vaccinations are one important way for societies to achieve protective immunity from disease (the other being previous infections). The UK had the world's fastest vaccine rollout among large countries, closely followed by the United States. Between December 2020 and April 1, 2021, the UK had already protected much of its vulnerable population, having given 53 doses per 100 people compared to 18 per 100 in the EU and 17 per 100 in Germany. By July 2021, the UK, United States, and EU all reached similar levels, with differences determined mostly by vaccine acceptance rates—and the bigger picture is that with the exception of China (whose vaccine efficacy is less well understood), the Asia-Pacific countries now largely lag far behind.

Figure 1. Cumulative confirmed COVID-19 deaths per million people (top panel) and vaccination doses administered per 100 people (bottom panel) through August 1, 2021.



Note that most vaccines require two doses, and given that single-dose vaccines were little used, they do not materially distort this picture. Source: www.ourworldindata.org.

Scientific and Technological Outcomes

Given that COVID-19 is an infectious disease, the life sciences were a crucial area for technical innovation. The UK made three major contributions.

- In vaccines, the UK was the only Western country outside the United States to invent and develop its own vaccine through the nonprofit collaboration of Oxford University's research and the drug company AstraZeneca. Four hundred million doses were administered worldwide by the end of May 2021 alone. An analysis published by the *Financial Times* in August 2021 anticipates around 3 billion doses

will be sold next year, which is equaled only by the Pfizer-BioNtech vaccine and is far more than any other Western vaccine. By July 2021, it comprised some 12.5 million of the doses given in Germany and some 15 to 20 percent of those given in the EU, despite the EU political turn against it (discussed below). The vaccine is also crucial in the developing world: compared to the Pfizer vaccine, it is far cheaper and avoids the serious logistic limitations from Pfizer's cold chain requirements. While the U.S. Johnson and Johnson vaccine similarly avoids those cold chain requirements, unlike the AstraZeneca vaccine, as of early August 2021 none had actually been delivered to the key supplier to developing countries called Covax.[7]

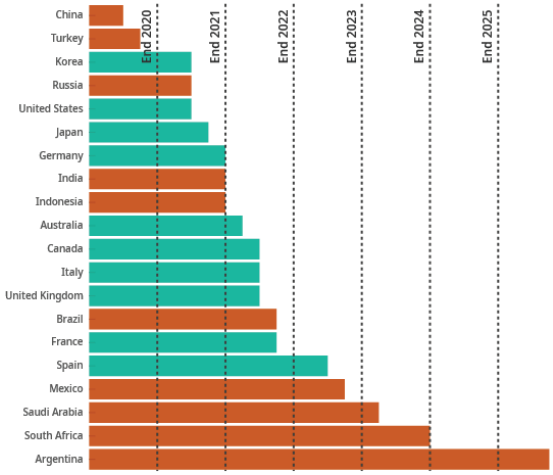
- In treatments, the UK's "Recovery" trials had made crucial advances by June 2020, that included identifying the most significant treatment for COVID-19 so far, the steroid dexamethasone that is both highly effective at reducing death and cheap. Of equal significance, the trials essentially ended debates about many widely touted treatments—most prominently hydroxychloroquine—by showing they were not effective. These well-designed trials proved larger and more effective than U.S., European, or World Health Organization equivalents.[8]
- Identifying genetic variants of COVID-19 that matter epidemiologically is crucial for situational awareness (e.g., the fast-spreading Delta variant) and for anticipated rolling vaccine updates. The UK conducted by far the most extensive analysis of COVID-19 genomes—for example, publishing 44 percent of the global total (190,000 genomes) by January 29, 2021.[9]

Economic Outcomes

All large, advanced economies took a hit from COVID-19, although the extent varied between countries. A May 31, 2021, report by the Organisation for Economic Co-operation and Development (OECD) provides a recent comparison between countries including the UK (see figure 2; similar patterns are seen in the July 2021 International Monetary Fund report).[10] The UK took a larger hit than other G-7 countries in 2020, but the pace of vaccinations facilitated a fast 2021 rebound. Thus, the OECD now anticipates the UK's return to pre-pandemic GDP per capita by around mid-2022, which is a middling performance among large, advanced European countries: slightly slower than Germany, similar to Italy, and a bit faster than France or Spain. Looking at the global context, the United States is thought to have outperformed all large, advanced European countries and will already have recovered to pre-pandemic GDP per capita by mid-2022. The large, advanced Asia-Pacific economies, notably China, have also outperformed the UK and most of Europe.

It is also worth noting that the patterns between countries in epidemiological and economic outcomes are not identical—illustrated most clearly by superior U.S. economic outcomes (figure 2) but not death rates (figure 1).

Figure 2. Economic outcomes for the G-20: how long will it take to recover to pre-pandemic GDP per capita?



Forecasts for advanced economies in green, developing in red. Source: OECD, May 31, 2021, www.oecd.org/economic-outlook/.

Political Outcomes

Despite being something of a political rollercoaster, by July 2021 much about domestic UK politics looked quite similar to the immediate pre-pandemic scene. Politics is more difficult to compare between countries than the areas discussed above, not least as election cycles differ. But we can draw on elections before and after much of COVID-19 in the UK, as well as on comparable opinion polling between countries.

The Conservative Party has led the UK government since the 2010 election. In July 2019, Boris Johnson became leader of the Conservative Party and thus prime minister. The December 2019 general election gave him a large majority (365 out of 650 seats) with the most Conservative seats since Margaret Thatcher's 1987 landslide. In particular, they gained new seats in post-industrial areas previously considered Labour Party strongholds.

The May 6, 2021, local and regional elections across much of the UK provide a good bookend toward the other end of COVID-19, and indeed were the only major electoral test since the 2019 general election. Those elections clearly showed that no major new electoral shift had occurred in the intervening period dominated by COVID-19.[11]

Opinion polls on public perceptions of government handing of the issue of COVID-19 broadly confirm this picture—and also show a remarkably similar beginning and end in Britain, France, and Germany.[12] All three countries began within a few percentage points of 50 percent, and despite different trajectories ended up at very similar places by June/July 2021.

Scotland is an important case and again shows surprisingly little significant change. The Scottish National Party (SNP) currently forms the Scottish government and aims to hold a second referendum on Scottish independence, which will likely require UK government approval. This follows the 2014 referendum that rejected independence by 55 percent to 45 percent. Scottish Parliament elections held on May 6, 2021—held after much of COVID-19 had occurred—showed little change compared to the preceding 2016 elections, returning the SNP as the largest party but with no overall majority.[13] Despite stylistic differences between Scottish First Minister Nicola Sturgeon and the UK prime minister, health outcomes did not markedly differ between Scotland and the rest of the UK. Opinion polls on voting intentions in a potential independence referendum showed close figures before COVID (e.g., December 2019–March 2020) and despite swinging toward independence later in 2020, since April 2021 such polls broadly returned to be close or moderately against independence.

Responses and Other Drivers of Outcomes

This section will consider the drivers of the UK's epidemiological, technological, economic, and political outcomes in turn.

First, however, it is important to note that

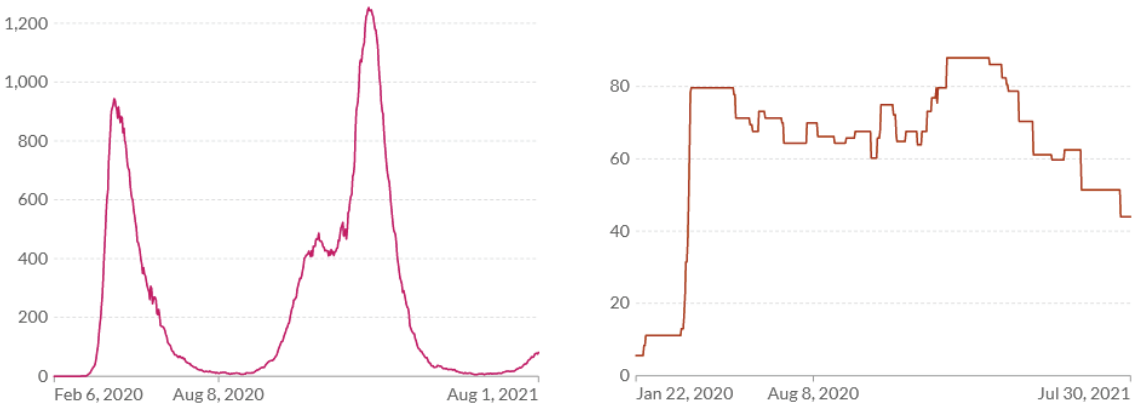
outcomes are only partly driven by decisions taken by governments, such as lockdowns or border closures. Partly, it is features of a country that matter largely regardless of what decisions are made. The UK is, for example, an incredibly interconnected country: according to the International Air Transport Association, more Britons travelled abroad in 2018 than any other nationality, with 126.2 million passengers, followed by 111.5 million from the United States and 97 million from China. In its public health response, Germany's more decentralized systems were lauded as a source of success relative to the more centralized UK; but then the latter's centralization was later lauded as enabling the hugely successful "Recovery" trials of treatments and speeding the vaccine rollout.

Public Health Responses and Other Epidemiological Drivers

The UK had two waves of COVID-19, with the first from March to June 2020 and the second from September 2020 to February 2021 (figure 3, top panel). Lockdowns were imposed during both waves (figure 3, bottom panel). The vaccination campaign began in December 2020 during the second wave. The description of the public health response follows this broad timeline.[14]

Before the pandemic. The UK had well-developed plans for a pandemic, albeit largely for an influenza pandemic. While the 1957–1958 and 1968–1969 influenza pandemics were mostly managed in general practice without much national planning, in 2002 the chief medical officer published

Figure 3. Daily confirmed COVID-19 deaths in the UK (rolling 7-day average; left panel) and stringency of lockdown (right panel)



The Stringency Index (right panel) is compiled by the Oxford Coronavirus Government Response Tracker. It combines nine metrics: school closures, workplace closures, cancellation of public events, restrictions on public gatherings, closures of public transport, stay-at-home requirements, public information campaigns, restrictions on internal movements, and international travel controls. Source: www.ourworldindata.org.

a strategy for combatting infectious diseases. However, the 2003 SARS outbreak did not reach the UK and caused relatively few deaths globally, and the UK's 2008 National Risk Register (a capstone assessment of all security risks to the UK) noted that the risks of a new disease such as SARS causing more than a few hundred deaths were low. The 2009 influenza pandemic caused little damage, which raised some concerns of alarmism over pan-demic risks.

However, it is important to note that in 2017, the UK's National Risk Register placed a pandemic as a top risk and stated that an influenza pandemic could cause 20,000 to 750,000 deaths. Exercises were also held, such as Exercise "Cygnus" in October 2016. By international analysts, the UK was generally held to be pretty well prepared. Against this background, what happened?

Initial response and first wave. COVID-19 surfaced in a Chinese seafood and poultry market in December 2019. On January 23, China announced tough measures to control the virus in Wuhan. On January 30, the World Health Organization (WHO), after downplaying the outbreak's seriousness, finally declared a "Public Health Emergency of International Concern."

The UK Government's Scientific Advisory Group for Emergencies (SAGE) comprises senior scientists, experts, and officials overseen by the government's chief scientific adviser. SAGE met for the first time on January 22 to discuss COVID-19, followed by nine meetings in February and ten in March. In addition, senior government ministers and advisers met to coordinate the national response in a committee known as COBRA (named after the Cabinet Office Briefing Rooms) chaired by the secretary of state for health—and March 2 saw the first meeting chaired by Prime Minister Boris Johnson.

Continental European countries began reporting increased deaths and soon began taking large-scale measures. First hit was Italy, which reported 463 deaths by the week of March 9. On March 8, Italy closed down Lombardy, restrictions covered the entire country the following day, and by March 14, restaurants, cafes, and all nonessential businesses were closed. France had 1,606 cases and 30 deaths by March 10, when they banned mass gatherings, and by March 14, France closed all nonessential businesses.

By March 12, the UK had 590 reported cases and 10 reported deaths. The UK did not initially take large-scale measures such as those in Continental Europe. Partly this was because plans for a pandemic were well-developed and did not include any tough lockdown measures other than consideration of school closures. Also, the UK was following scientific advice from SAGE and advice on border closures from WHO as well. Finally, Prime Minister Johnson's proclivities were also of a less prescriptive bent.

The government radically changed direction over the next two weeks: from March 16 to 23, a series of measures were taken culminating in the announcement that people had to stay at home barring essential reasons (except for exercise once daily). Looking at measures taken in continental Europe, UK public opinion was shifting, and in contrast the UK government articulated no seemingly well-thought-through alternative to such a "lockdown" strategy. Poor communication of UK government thinking also contributed: the mainstream theory of "herd immunity" (which is what one hopes to achieve in many vaccination programs) was discussed in isolation from aspects such as shielding the vulnerable, which wrongly painted the UK strategy as essentially letting the virus rip. Modeling from Imperial College London then suggested that without mitigation, deaths could rise to 500,000, which was made public on March 16. In short, political pressure to follow a lockdown strategy became huge. This first lockdown continued from late March until June, when a phased

reopening of schools began and nonessential shops reopened in England.

In these crucial few weeks, perhaps the key failing of the integrative decisionmaking apparatus at the center of government—including the national security apparatus feeding into COBRA—was the relative lack of pace in generating alternative and well-thought-through strategic options from which the government could choose. Could the UK, for example, have locked down faster or followed a well-implemented "Swedish" strategy that impinged less on personal freedoms? Clearly the lack of prioritization by politicians was partly to blame, as suggested by the prime minister first chairing COBRA on March 2. The problem of "concurrency" also contributed, as the contingency planning challenges from Brexit had consumed so much government energy. In addition, perhaps officials had looked too long at Europe and not sufficiently at the rest of the world—for example, at nations such as Canada that had experience with SARS or Australia and New Zealand in the Asia-Pacific.

Comparing outcomes in the first wave across the six most populous countries in Europe (other than Russia and Ukraine, which present analytic challenges) is also instructive. Epidemiologically, the UK, Italy, and Spain and France all did quite poorly, and certainly far worse than Poland or Germany. Three lessons emerge.

- Poland's remarkable success illustrates the impor-tance of borders. Poland had the lowest death rates in the first wave among populous European countries, half that of Germany and a tenth that of France. This was due to early and strict border closures on March 15, coupled with Poland's relative lack of international connections.
- Germany also had few deaths in the first wave, and in particular a low fatality rate per positive test. This has been attributed to greater levels of testing so that patients were identified earlier in the disease, superior contact tracing conducted by a decentralized system, and a well-funded health service with considerable spare bed capacity.
- A longer UK first lockdown (some 103 days) was needed to bring cases under control than in Italy (70 days) or France (55 days), which contributed to the poor UK economic outcome in the first wave and was likely due in part to the UK's slower initial lockdown allowing widespread seeding across the country.[15] It was not the only factor, with genetic analysis suggesting that COVID-19 was seeded across the country many times from continental Europe.[16] But speed of reaction seemed to matter for lockdowns.

These three lessons—borders, tracking, and initial speed—were not well learned by the UK over the summer respite in July and August. The UK border remained largely open, with holidays to Spain seemingly bringing the virus back again.[17] The UK spent large amounts of money on a "track and trace" system that was highly centralized and outsourced, which later proved to have very minimal effectiveness. Lockdowns were not implemented rapidly when the summer ended and cases surged in the autumn.

Over the summer, the government also left themselves largely constrained to a lockdown strategy. No serious attempts were made to craft either a closed border "Zero COVID" strategy (which might have been impossible anyway in a large and interconnected country such as the UK) or to move to a less behaviorally prescriptive "Swedish" strategy (which may have become politically impossible given the sunk costs of lockdown). If the expensive new "track and trace" system failed, in the short term there was no real plan except another lockdown in the autumn.

Second wave and two more lockdowns. In September 2020, cases began to rise again. A SAGE meeting on September 21 recommended an immediate "circuit breaker' or short lockdown.[18] Instead, a second lockdown was postponed, seemingly because ministers hoped a light touch approach could control the viral spread while preserving jobs and businesses.[19] Eventually, however, the prime minister announced a second lockdown that lasted from November 5 to December 2 in England.

Unfortunately, socializing over Christmas (which had been initially encouraged by the government) coupled with the emergence of a new and 30 to 40 percent more transmissible "Kent" variant of COVID-19 (later renamed the "Alpha" variant) drove cases far higher still. Identifying that the "Alpha" variant accounted for the faster transmission was a remarkable testament to the levels of genetic testing occurring in the UK. On January 6 England entered a third lockdown, from which it emerged gradually from March 2021 onward. All in all, the response was pretty mediocre.

Fortunately lessons had now been learned. The relaxation of rules out of the third lockdown was more cautious. February 15 saw the start of hotel quarantine for travelers arriving in England from 33 countries deemed high risk. However, the real change was the rapid vaccine rollout.

The vaccination campaign. On December 2, 2020, UK regulators became the first globally to approve a COVID-19 vaccine tested in a large clinical trial, the Pfizer-BioNTech vaccine.[20] On December 8, 91-year-old Margaret Keenan became first person in the world to receive a Western-approved COVID-19 vaccine. The Oxford-AstraZeneca vaccine was approved for use in the UK on December 30.

The UK rollout started with the most vulnerable and health care workers and then moved down through risk levels to healthy young people. By mid-March, over 90 percent of those aged 70 and up had received at least one dose. The National Health Service (NHS) handled the logistics well. Moreover, the UK allowed a longer gap between doses than those used in trials, because it helped speed the rollout and also because immunological theory suggested a longer gap might improve response (subsequently shown to be likely correct).

Very low UK rates of vaccine hesitancy helped the rollout. The UK had the lowest rate unwilling to get vaccinated (12 percent) out of 14 countries on May 31, for example, with 29 percent unwilling in France and 28 percent in the United States. As of August 1, 57 percent of the UK population were fully vaccinated, and 69 percent had received at least one dose, equivalent to 73 percent and 88.7 percent of UK adults respectively.

A third wave of cases in July 2021 arose from the more transmissible "Delta" variant identified from India. Crucially, despite case rates almost as high as in January's second wave, the high rate of vaccinations greatly reduced the link between increased cases and hospitalizations or deaths. Indeed, a large population study in late July showed that 90 percent of the adult population now had COVID-19 antibodies.

Scientific and Technological Response

UK successes in the life sciences—in vaccines, treatments, and genetic testing—rested on three sets of factors.

First was having a strong innovative base on which to draw, including both strong academic capabilities (the UK published 18 percent of the top 1 percent most cited life sciences citations in 2014), and industrially with large pharma companies like GlaxoSmithKline and AstraZeneca.

Second, scientists with relevant expertise pivoted quickly to COVID-19 and were rapidly given resources. In early March 2020, for example, Sharon Peacock, professor of public health and microbiology at Cambridge University, emailed

five colleagues saying: "Can you call me, please?"[21] Within weeks she had put together a consortium of the UK's leading genomic researchers. She secured around £32 million in funding to map COVID-19 genomes spread in the UK. The 16 labs in the Cog-UK consortium helped increase the amount of sequencing taking place in the UK from 50,000 genomes a year to over 30,000 a week.

Third was large-scale, coordinated government activity to build industrial capacity and secure supply chains at pace—most clearly demonstrated with vaccines.[22] Before COVID-19 the UK had little onshore vaccine manufacturing. The vaccines task force was established in April 2020 to secure vaccines supplies from a range of manufacturers using different technologies. The UK made deals with eight vaccine groups, four of which accepted funding to develop and manufacture products in the UK. The government helped Oxford University and AstraZeneca, which had no large-scale vaccine manufacturing experience, to set up production partnerships with Oxford BioMedica and Cobra Biologics and with Wockhardt for fill-finish.

In January 2021, it was reported that while the United States, UK, and EU had all ordered or optioned similar numbers of vaccines on a per capita basis, the UK and United States had each spent about seven times more upfront, per capita, on vaccine development, procurement, and production than the EU. Moreover, while the EU was later to embrace the groundbreaking mRNA vaccine technology: the UK and United States had already put in extra orders for the Pfizer jab within weeks of its encouraging early trial results in July.

Economic Response

In common with the United States and other large European countries, 2020 saw one of the worst recessions in UK history. The UK's economic outcomes—middling among large, advanced European economies, worse than the United States or Asia-Pacific—were driven by four interacting sets of factors.

First were the UK economy's existing strengths and weaknesses. For example, no countries outside the United States and China have built huge digital technology companies such as Google, Amazon, Microsoft, Alibaba, or Tencent. COVID-19 drove faster digitization globally, which inevitably advantaged those economies at Europe's expense. Even before COVID-19 struck, for example, by January 2020 the U.S. company Apple had overtaken the market capitalization of the entire Dax index of Germany's thirty leading companies.[23]

Second were the economic effects of COVID-19 itself. Millions of consumers and workers in a country like the UK were either themselves clinically vulnerable to COVID-19 or lived with or cared for the vulnerable, and this situation reduced willingness to go out and engage in economic activities.

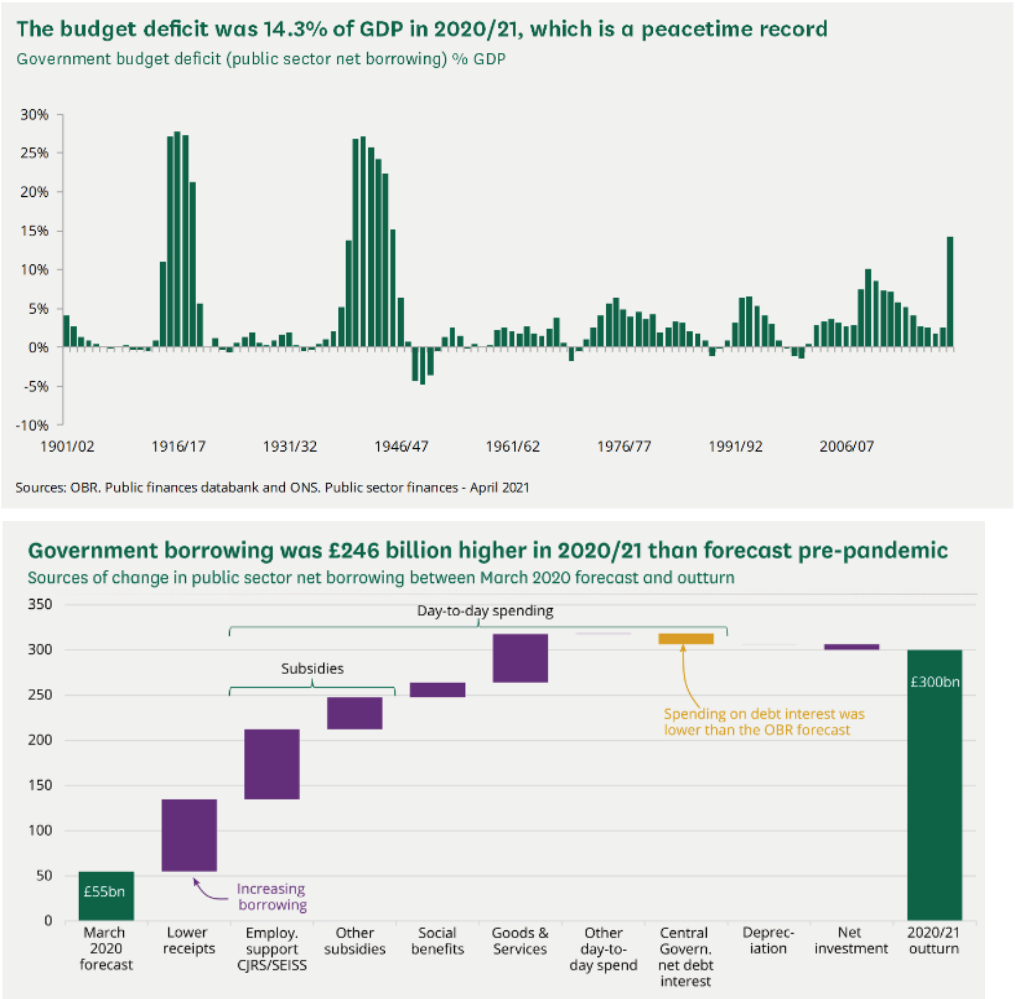
Third were the economic effects of government public health measures taken to reduce COVID-19's epidemiological impacts. Lockdowns were the UK's main public health tool before the vaccinations, and while in force they significantly reduced economic activity. The UK's long lockdown in the first wave contributed to its worse economic outcome than G-7 comparators, which could have been ameliorated either by a more effective (and hence shorter) lockdown or by applying less strict measures than a lockdown (as in Sweden or the United States).[24]

Fourth were economic responses to the effects of both COVID-19 itself and public health measures. In common with most advanced economies, the UK borrowed and spent very large sums to bridge cash flow issues of individuals and firms, in order to mitigate longer-term economic "scarring." COVID-19 support is forecast to cost some £340 billion, with £250 billion in the UK's fiscal year (FY) 2020/21, £90 billion in FY 2021/22, and very little in future years. To compare this spending to other countries,

a recent analysis of stimulus packages announced or implemented through March 10, 2021, showed that the UK's spending of 16.3 percent of GDP was less than the United States (25.4 percent), similar to Australia (16.2 percent) or Japan (15.6 percent), and more than Germany (11 percent), France (7.7 percent), or China (4.7 percent).[25]

The UK government's budget deficit at 14.3 percent of GDP in the 2020/21 financial year was a peacetime record and leaves debt at levels unseen since the early 1960s, when the government was still repaying vast World War II debts. However, this is not a markedly greater impact than the global financial crisis a decade before, and among the G-7, the

Figure 4. Economic Responses



Budget deficit as a percent of GDP (top panel). The bottom panel shows the makeup of government spending on COVID-19. Employment support is the Coronavirus Job Retention Scheme "furlough" that paid up to 80 percent of employees' salaries for 11.5 million jobs overall, and Self-Employed Income Support Scheme is the version for the self-employed that was accessed by 2.7 million users. Source: https://commonslibrary.parliament.uk/research-briefings/cbp-8866/

UK went into COVID-19 with a lower debt-to-GDP ratio than Japan, the United States, Italy, and France.

Political Responses

Political factors played key roles throughout the UK's COVID-19 response, as they did everywhere.

First, the political proclivities of many in government, such as the prime minister and chancellor,[26] as well as the Conservative Party more broadly, tended toward individual liberties and against significant impingements on those liberties such as through lockdowns. As described above, this slowed the moves to lock down in March 2020 in the early stages of the first wave and again in the run-up to the second wave that autumn. The "Eat out to help out" scheme that subsidized restaurant meals in the summer of 2020 as well as the later decisions over mixing that Christmas 2020 almost certainly had negative epidemiological effects, although whether these were outweighed by morale boosting effects is a matter of opinion. In June 2021, 51 backbench Conservative Members of Parliament in the informal "COVID Recovery Group" voted against the government extending lockdown restrictions.

Second, potentially salient political optics shaped policies. An early example was the desire to avoid politically disastrous photographs of lines of ambulances outside overwhelmed hospitals.[27] Indeed, the first lockdown was communicated as required in order to "Save the NHS," even though this had the unintended effect of causing more deaths by sending COVID-19 cases back to residen-tial homes.

Third, comparisons with continental European countries became politically key. In particular, why were they locking down in March 2020 while the UK was not. Inevitably, this also interacted with ongoing public debates over "Brexit."

Fourth, domestic political divisions in the UK from COVID-19 were actually relatively mild compared to other countries. The UK had the second lowest ratings of 16 advanced nations (second only to Sweden) for those thinking their country was more divided than before the pandemic when measured in both summer 2020 and March–May 2021.[28]

Fifth, the Scottish government under the SNP skillfully used the platform available due to the devolved nature of much of the COVID-19 public health response to visually distinguish the Scottish response. In particular, daily briefings by First Minister Nicola Sturgeon increased the sense of a separate Scottish political world. That said, there were only minor substantive differences in response or outcomes, and the UK government's political capital from the vaccine rollout also featured in Scotland.

Sixth, the renewed focus on supply chains and domestic manufacturing is an important political shift, particularly in the Conservative Party that contains a large cohort devoted to free market ideology.

Seventh, the response of EU leaders to the slow vaccine rollout by lashing out at the AstraZeneca vaccine—including French President Emmanuel Macron, leaks from German officials, contradictory rulings by national regulators, and aggressive litigation by the European Commission—was entirely understandable from a purely domestic political perspective, but it played badly in the UK across the political spectrum. This was particularly so when coupled with the EU announcement of closing the Irish border and threats to stop vaccine supplies to the UK. It also has very damaging global public health implications given the vaccine's importance in the developing world. As a recent Chatham House report noted, "The apparent politicization of the issue has contributed to public distrust."[29]

National Security Thinking and Practice: Post-COVID Paths Forward

Looking across the public health, technological, economic, and political dimensions of the UK

response, one can see that no single lens comes close to capturing everything that matters. Looking at UK successes and failures in context, we can next draw implications for UK national security thinking and practice and identify potential paths forward.

Continue the Past Century's Integration of the Instruments of Strategy

The UK had identified a pandemic as a top national security threat, which sat at the top of the National Risk Register, which in turn is at the apex of formal national security planning. That basic analysis was sound. The weaknesses exposed by COVID-19 were more that, particularly in late February and early March 2020, decisionmaking structures did not adapt fast enough to provide strategic options that integrated epidemiological, economic, and political factors.

No system can be omniscient, but for over a century we have seen the gradual pursuit of structures (and informal networks) to facilitate coherent strategy-making between different state agencies.[30] It is useful here to review this development and then suggest possible next steps.

Improvised, extemporaneous security policy coordination endured throughout the 19th century. Following failures in the Boer War, the Committee of Imperial Defence (CID) was formed in 1902 and gained an official supporting secretariat in 1904. The CID acquired supporting sub-organizations such as, in 1936, the Joint Intelligence Committee (JIC). World War I saw the development of today's Cabinet Office in 1916. In World War II, the CID was replaced by a War Cabinet, and in 1964, the three separate services were combined into the Ministry of Defence governed by a Defence Council that survives today. The JIC also survives to this day, although it has evolved from a purely military organization; in 1957, it was moved into the Cabinet Office due to the increasing importance of political intelligence.

From the early 1970s, the so-called COBRA Committee took on an institutionalized crisis management role within the Cabinet Office, with a supporting Civil Contingencies Secretariat. As discussed above, these structures were important with COVID-19.

Reforms in 2010 created a National Security Council (NSC), a Secretariat, and the post of National Security Adviser (NSA) which aimed to improve the quality of strategy and implementation. The vocabulary of "national security" had also evolved over this decade to replace Whitehall's traditional reference to "Defence and Overseas Policy," acknowledging the need to consider defense and security, domestic, and international issues as part of a holistic process.[31] No definitive definition of national security exists even now, although in rather unwieldy terms it has been described in legal proceedings with government bodies, and recent UK think tank reports involving research with UK security communities accord with such integrated views.[32]

The evolution of major post–Cold War strategic reviews (see table 1) further illustrates both the response to key historical events and this general trend aiming toward greater integration.

Post-COVID, the next steps to improve integration will largely surround the unglamorous business of better imple-mentation. The national security machinery (formal processes and informal networks) should have better integrated expert epidemiological advice from SAGE into strategic options that were considered from multiple key perspectives including foreign, domestic, economic, and political ones. All these perspectives should be represented in decisionmak-ing, each asking for the right data to understand and anticipate potential problems and determine how to adapt to them.

No such system can ever be perfect. Moreover, the next big challenge will likely not be a pandemic but will instead relate to other threats such

as radiological or cyber attacks. But the UK did not "think" fast enough during COVID and can implement practical changes to do better next time.

The next subsection looks at further area that should be better integrated into strategy: supply chains for inventing and building key technologies.

Table 1. Post–Cold War Strategic Reviews. Notable updates between these reviews are in grey.

Published	Title	Key Points
1990	"Options for Change"	Post–Cold War major defense cuts.
1998	Strategic Defence Review	Labour Party won 1997 election after some 18 years of Conservative government. Focus on inter-service jointness and "foreign policy–led" defense.
2002/ 2003	"New Chapter" for the Strategic Defence Review	Post-9/11 focus on terrorism and related Afghan operations, etc.
2010	National Security Strategy; Strategic Defence and Security Review	Post-financial crisis cuts. Part of reforms that adopted a National Security Council, National Security Advisor, and quinquennial reviews.
2015	National Security Strategy and Strategic Defence and Security Review	State-on-state conflict considered more possible. Focus on more funding (for example, intelligence, special forces) and integration of influence across instruments of power.
2018	National Security Capability Review	Post-Brexit referendum.
2021	The Integrated Review of Security, Defence, Development, and Foreign Policy; Defence and Security Industrial Strategy; and Defence Command Paper.	Focus on technology (cyber and space) and an "Indo-Pacific tilt" in addition to Euro-Atlantic.

Domestic Robustness through Supply Chains, Innovation, and Managed Openness with Regional and Global Networks

Until recently, a false dichotomy dominated many debates, particularly in the United States but also to some extent in the UK, about the supply chains and technological innovation required for modern societies. One extreme was radical decoupling of supply chains or innovation from countries that may pose security threats, notably China. The other was that essentially nothing can be done, because globalization is like a force of nature or historical imperative. These debates, and policies in countries such as the UK, are now moving to a more balanced approach.

Strategies of "managed openness"[33] build domestic resilience both within sovereign states—such as the UK—and across global networks. Those global networks can be conceptualized as concentric circles, which help balance security and the benefits of interchange. The circles range from long-established networks dealing with the most sensitive matters—such as the "Five Eyes" of the United States, UK, Canada, Australia, and New Zealand—through groupings such as the Indo-Pacific "Quad" (United States, India, Australia, Japan) and the "D-10" (Democratic-10) of the G-7 plus India, Australia, and South Korea, and on to others including managed interchange with China.

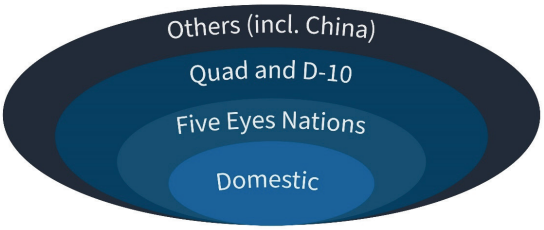
The degree of cooperation depends partly on partners' preferences. An analogy is France's Cold War position: it withdrew from North Atlantic Treaty Organization (NATO) military structures and expelled NATO's headquarters, but it kept some links. In February 2020, the European Commission President, Ursula von der Leyen,[34] described her concept of "tech sovereignty," directed as much at the United States as at China, with the EU contrasted against Silicon Valley and nowhere else. India has long guarded its independence.

The UK's March 2021 "Integrated Review" introduced an "own-collaborate-access" model for sensitive technologies that relate to such ideas. Domestic capabilities are crucial, as illustrated by COVID-19 vaccines, but so too is collaboration.

A tangible example of how such collaboration could have helped the UK and its allies during COVID-19 is illustrated by a Five Eyes Medical Countermeasures Consortium[35] that ran for a number of years before it dissolved after 2015 following funding cuts and personnel changes. It brought together capabilities from across the Five Eyes nations to cover a range of biological threats that even the United States could not cover with such expertise. Generating technical capabilities superior to those possessed by any nation alone, it also held regular meetings. Had the other Five Eyes nations, notably the UK, continued to draw regularly on relevant expertise from Canada (which dealt with a large SARS outbreak), Australia, and New Zealand (which drew strongly on Asia-Pacific experience), this would likely have provided a stronger initial foundation for analysis and policymaking.

However, balancing different networks also raises the issue of how the UK should balance its strategic partnerships in a post-COVID global order.

Figure 5. Managed openness networks that balance security and the benefits of interchange.



Balancing the Regional and Global Legs of UK Strategy

Harold Wilson, UK prime minister in the 1960s and 1970s, once said that "if you can't ride two horses at once, you shouldn't be in the ruddy circus." The historian Paul Kennedy, in *The Rise and Fall of Great Powers*,[36] wrote that for centuries successful British strategy required having both effective "continental" (European) and "maritime" (essentially global) legs—with the maritime and continental legs being complementary rather than antagonistic. I would also add a domestic dimension. Thus, UK strategy must always balance domestic and foreign concerns, and in foreign policy also balance continental European and global concerns. How does this relate to UK strategy in a post–COVID-19 world?

Domestically, the challenge is one of "building back better." This involves improved economic productivity through innovation and adapting to changing political circumstances by ameliorating political fissures such as those from Brexit, social class, or Scottish nationalism. Although beyond the scope of this article, and without wishing to sound glib, Britain has successfully adapted to changing circumstances for around a third of a millennium, which bodes well for the future. Such adaptation requires hard work, to be sure, but COVID-19 has not greatly altered that ability to adapt.

What About the Crucial European leg?

First, we might take a step back. Europe is the second smallest of the world's continents, with a population of around 700 million living between the Urals in the East to countries such as the UK at its West. Russia has the largest population in Europe, with some 110 million living west of the Urals. The most powerful military actor is the United States, not least through leadership of NATO. The EU is the most powerful economic player, with its population of some 446 million being a little under two-thirds that of Europe.

In security terms, the United States is the biggest player in Europe, and because COVID-19 speeded China's relative economic rise, the U.S. refocus toward the Indo-Pacific was hastened. Keeping the United States engaged in European security, most obviously through NATO, will continue to be a key UK goal.

In economic terms, the EU is Europe's most powerful actor, and also a powerful political actor. COVID-19 increased EU integration and so strengthened the EU relative to its member states and compared to the UK. COVID-19 also directly affected EU-UK relations by obscuring Brexit's negative effects on trade, and also via the January–March 2021 EU-UK tensions over vaccines. The EU announcement of closing the Irish border and associated implicit and explicit threats to UK vaccine supplies from EU sites were both rapidly withdrawn but still affected relations. Concerted political attacks on the AstraZeneca vaccine with no scientific merit, notably French President Macron's incorrect statement that the vaccine was "quasi-ineffective in older people" and grossly misleading reports in the German financial newspaper *Handelsblatt* appearing to come from officials, soured relations. The EU's highly politicized legal pursuit of AstraZeneca over production shortfalls may also have been effective domestic EU politics (albeit not ones later upheld in court), as were various rapidly changing national regulatory decisions—but overall were perceived poorly across the political spectrum in the UK, not least because the effect of these various activities tainted the AstraZeneca vaccine's reputation in developing countries that desperately need it. That all said, the net effect of COVID-19 on direct UK-EU relations was probably not to make them much more or less acrimonious than they would otherwise have been.

Crucially, too, as the EU is Europe's largest economic actor, the UK has no choice but to keep working away at building as mutually beneficial a

modus vivendi as possible. This will be tricky, as it requires both sides to change. Domestic political concerns have sadly dominated the face the UK has presented to the EU since the 2016 referendum, and it would certainly be prudent for that now to change over time. Abrasive rhetoric may play well domestically, but it precludes better relations. Sadly too, the EU has difficulties interacting productively with almost every neighboring country: from the recent breakdown in negotiations with Switzerland over trade; Ukraine's distress over the NordStream 2 pipeline; Turkey left hanging in limbo for years over a now highly unlikely EU membership; a lack of clear direction leading to disquiet in the Balkans; and fissures over Russia policy, most obviously between Germany and member states such as Poland or the Baltic Republics. The UK can productively sidestep the EU and interact with individual member states (e.g., the E-3 of the UK, France, and Germany, or working with Sweden in defense), but this will only take it so far, as the European leg of UK strategy now also needs a functioning UK-EU relationship. While it is important not to overplay the problems in the UK-EU relationship, they are real, and both sides need to feel their way forward.

What about the equally crucial global leg? COVID-19 sped up China's relative economic rise, and the UK strategy is adapting to an era of increased China-U.S. competition. COVID-19 also sped digitization globally, which offers new opportunities for global trade—and indeed, UK trade with countries outside Europe has for a little while now outstripped that with Europe. Perhaps most important for the UK is that COVID-19 brought home to many capable but mid-sized countries that they share vulnerabilities to supply chains and innovation—not least Five Eyes nations such as Canada and Australia, as well as UK partners such as Japan. This offers great opportunities for the global leg of a UK strategy of managed openness. However, the UK also has manifest weaknesses, such as an overreliance on financial services and poor productivity growth that must be honestly addressed. Moreover, as Paul Kennedy describes of Britain in other eras, a weak European leg will hamper the global leg in UK strategy; they are complements.

Conclusion

An audit of the UK experience reveals neither triumph nor disaster. The UK must build on areas of success and learn from its failures and mediocrities. COVID-19 has changed the security landscape for the UK, although less than seemed likely a few months into the pandemic before the remarkable success of so many vaccines.

Balance is boring, especially in an age of social media hyperbole. But learning requires a balanced view that credits both successes and failures. Moreover, balance also matters moving forward. COVID-19 highlighted the need for better balancing of different perspectives and expertise in UK government decisionmaking. It is crucial for the UK to balance both domestic and foreign policies and the European and global legs of its national security strategy. As Prime Minister Wilson said, "If you can't ride two horses at once, you shouldn't be in the ruddy circus." PRISM

Notes

[1] Her Majesty's Government, "Global Britain in a Competitive Age: The Integrated Review of Security, Defence, Development and Foreign Policy," March 2021.

[2] George George Parker and Jasmine Cameron-Chileshe, "EU pledges vaccine controls will not hit UK supplies," Financial Times, January 30, 2021, available at <https://www.ft.com/content/93555276-fc30-41cc-8f94-ca968e3622aa>.e <https://www.ft.com/content/93555276-fc30-41cc-8f94-ca968e3622aa>.

[3] Annabelle Dickson, "UK's Remainers Question Love for EU Amid Vaccine Row," *Politico*, March 23, 2021, available at <https://www.politico.eu/article/remainers-brexit-uk-eu-coronavirus-vaccine-row/>.

[4] "Germany Is Doomed to Lead Europe," The Economist, June 25, 2020, available at <https://www.economist.com/europe/2020/06/25/germany-is-doomed-to-lead-europe>; "The EU's Leaders Have Agreed on a €750bn Covid-19 Recovery Package," *The Economist*, July 21, 2020, available at <https://www.economist.com/europe/2020/07/21/the-eus-leaders-have-agreed-on-a-eu750bn-covid-19-recovery-package>.

[5] Differences in public health and some other responses were seen in the devolved nations. However, the substantive differences were relatively limited, and thus for simplicity I primarily refer to the UK.

[6] (1) Excess mortality data compares overall death rates to historical averages, and although it can be calculated in various ways, it describes a similar overall picture to confirmed COVID-19 deaths among advanced economies. Data compiled by the *Financial Times* and last updated on April 23, 2021, shows the UK had 17 percent excess mortality from COVID-19. It shows a similar picture with the United States slightly higher and the populous EU countries Italy, Poland, and Spain slightly higher, with France slightly lower and Germany lowest, although still higher than South Korea. See <https://www.ft.com/content/a2901ce8-5eb7-4633-b89c-cbdf5b386938> figure from July 16, 2021. (2) This cross-country comparison of deaths places UK outcomes in context, although it is not to minimize COVID-19's health problems other than death, such as "long COVID," but that is likely to be similar.

[7] Data on the Oxford-AstraZeneca vaccine in this paragraph derives from: <https://www.npr.org/sections/goatsandsoda/2021/06/01/1002067808/astrozenecas-rocky-rollout-the-woes-of-the-vaccine-of-the-world>; <https://www.statista.com/statistics/1219343/covid19-vaccine-doses-distributed-in-europe-by-manufacturer/>; <https://www.nytimes.com/2021/08/02/world/europe/covax-covid-vaccine-problems-africa.html?referringSource=articleShare>.

[8] Kai Kupferschmidt, "One U.K. Trial Is Transforming COVID-19 Treatment. Why Haven't Others Delivered More Results?" *Science*/AAAS, July 2, 2020, available at <https://www.sciencemag.org/news/2020/07/one-uk-trial-transforming-covid-19-treatment-Joanna Sugden, "How the U.K. Became World Leader in Sequencing the Coronavirus Genome," The Wall Street Journal, January 30, 2021, available at <https://www.wsj.com/articles/how-the-u-k-became-world-leader-in-sequencing-the-coronavirusgenome-11612011601>.equencing-the-coronavirusgenome-11612011601>.

[10] There is perhaps greater uncertainty of the impact of new variants on the economic outlook, e.g., Delta variant; see <https://www.oecd.org/economic-outlook/>; <https://www2.deloitte.com/us/en/insights/economy/emea/a-vew-from-london.html>. See also the International Monetary Fund for a similar picture: <https://www.imf.org/en/Publications/WEO/Issues/2021/07/27/world-economic-outlook-update-july-2021>.

[11] See <https://www.bbc.co.uk/news/uk-politics-56562354>; <https://www.bbc.co.uk/news/uk-politics-56286643>; <https://www.bbc.co.uk/news/topics/c481drqqzv7t/england-local-elections-2021>.

[12] See <https://yougov.co.uk/topics/international/articles-reports/2020/03/17/perception-government-handling-covid-19>.

[13] See <https://www.bbc.co.uk/news/uk-scotland-scotland-politics-57028315>; Henry Mance, "Inside Scotland's Pandemic: Has It Made Independence More Likely?" *Financial Times*, April 22, 2021, available at <https://www.ft.com/content/2b424b56-70e0-42c2-a980-213091ec522f>; Paul Whiteley and Harold Clarke, "How Do the Scots Achieve Independence given the Volatility in Voters' Attitudes?" *British Politics and Policy at LSE* (blog), June 15, 2021, available at <https://blogs.lse.ac.uk/politicsandpolicy/indyref-polls-volatility/>.

[14] For an excellent description of thinking and events before the pandemic and in the first wave on which I draw here, see Lawrence Freedman, "Strategy for a Pandemic: The UK and COVID-19," *Survival* 62, no. 3 (2020), 25–76.

[15] See <https://news.sky.com/story/coronavirus-history-repeating-itself-with-second-lockdown-but-what-will-be-done-with-it-12120327>.

[16] See <https://science.sciencemag.org/content/371/6530/708.full>; <https://www.cogconsortium.uk/cog-uk-preliminary-analysis-reveals-the-frequency-and-source-of-virus-introductions-into-the-uk/>; <https://www.sciencefocus.com/news/coronavirus-entered-the-uk-at-least-1356-times/>.

[17] See <https://www.theguardian.com/world/2020/oct/30/coronavirus-strain-from-spain-accounts-for-most-uk-cases-study>; <https://news.sky.com/story/coronavirus-history-repeating-itself-with-second-lockdown-but-what-will-be-done-with-it-12120327>.

[18] See <https://www.bbc.co.uk/news/uk-54518002>.

[19] See <https://www.theguardian.com/world/2021/apr/27/rishi-sunak-defends-delay-in-england-autumn-lockdown lives and livelihoods>; <https://www.bbc.co.uk/news/uk-54763956>. But minsters had to consider the economic impact as well as the politics. They had hoped their light touch approach might have been enough to control the spread of the virus while preserving jobs and businesses.

[20] Heidi Ledford, David Cyranoski, and Richard Van Noorden, "The UK Has Approved a COVID Vaccine—Here's What Scientists Now Want to Know," *Nature* 588, no. 7837 (December 3, 2020), 205–206, available at <https://doi.org/10.1038/d41586-020-03441-8>; <https://www.nytimes.com/2020/12/02/world/europe/pfizer-coronavirus-vaccine-approved-uk.html>.

[21] Anna Gross, "The Revolution in DIY Testing That Will Outlive the Pandemic," *Financial Times*, June 3, 2021, available at <https://www.ft.com/content/c9565eb8-4250-495c-bce9-93d786e3bb9f>.

[22] Clive Cookson, "How the UK Boosted Its Vaccine Manufacturing Capacity," *Financial Times*, February 10, 2021, available at <https://www.ft.com/content/662ab296-2aef-4179-907c-5dba5c355d86>.

[23] Patrick McGee and Guy Chazan, "The Apple Effect: Germany Fears Being Left behind by Big Tech," *Financial Times*, January 29, 2020, available at <https://www.ft.com/content/6f69433a-40f0-11ea-a047-eae9bd51ceba>.

[24] "How to Assess the Costs and Benefits of Lockdowns," *The Economist*, July 1, 2021, available at <https://www.economist.com/finance-and-economics/2021/07/01/how-to-assess-the-costs-and-benefits-of-lockdowns?frsc=dg%7Ce>.

[25] Atlantic Council, "How Much Money Is the G20 Spending?" March 10, 2021, available at <https://www.atlanticcouncil.org/blogs/econographics/how-much-money-is-the-g20-spending/>.

[26] George Parker, Daniel Thomas, and Jim Pickard, "Sunak at Odds with Johnson over Speed of UK Lockdown Exit," *Financial Times*, May 22, 2020, available at <https://www.ft.com/content/0a4351c4-8d81-4755-8d63-d6bcd790cd49>.

[27] Personal communication from very senior former UK official.

[28] See <https://www.pewresearch.org/global/2021/06/23/people-in-advanced-economies-say-their-society-is-more-divided-than-before-pandemic/>.

[29] See <https://www.bbc.co.uk/news/world-europe-55844268>; <https://www.politico.eu/article/how-astrazeneca-threw-away-its-shot/>; <https://www.chathamhouse.org/2021/07/solidarity-response-covid-19-pandemic>.

[30] For a good discussion on which this section draws, see Catarina P. Thomson and David Blagden, "A Very British National Security State: Formal and Informal Institutions in the Design of UK Security Policy," *The British Journal of Politics and International Relations* 20, no. 3 (August 1, 2018), 573–593, available at <https://doi.org/10.1177/1369148118784722>.

[31] Joe Devanny and Josh Harris, "The National Security Council, National security at the centre of government," Institute for Government, 2014.

[32] As described by the Information Commissioner's Office regarding a definition, "the Information Tribunal for Norman Baker v the Information Commissioner and the Cabinet Office (EA/2006/0045 4 April 2007) provided the following: 'national security' means the security of the United Kingdom and its people; the interests of national security are not limited to actions by an individual which are targeted at the UK, its system of government or its people; the protection of democracy and the legal and constitutional systems of the state are part of national security as well as military defence; action against a foreign state may be capable indirectly of affecting the security of the UK; and reciprocal co-operation between the UK and other states in combating international terrorism is capable of promoting the United Kingdom's national security." In terms of think tanks, a recent report—The National Security Council, National security at the centre of government (Joe Devanny and Josh Harris, 2014)—wrote: "Broadly construed, national security encompasses defence, intelligence, foreign affairs (including trade and development assistance), internal security and civil contingencies." A Demos report ("The case for a national security strategy, Charlie Edwards, 2007) convened a group of UK experts who considered "Security" to be: "The confidence and capacity of the individual, community and state to anticipate and respond effectively to threats or hazards that may endanger their safety." The role of a national security strategy should be: "to integrate preventative and contingency measures in order to anticipate and respond to significant threats or hazards to the nation."

[33] Nicholas D. Wright, Geraint Rees, and James A. Lewis, "Innovation with Allies: Practical Paths Forward," Center for Strategic and International Studies, May 26, 2021, available at <https://www.csis.org/analysis/innovation-allies-practical-paths-forward>.\\ uc0\\u8221{} Center for Strategic and International Studies, May 26, 2021, https://www.csis.org/analysis/innovation-allies-practical-paths-forward.","plainCitation":"Nicholas D. Wright, Geraint Rees, and James A. Lewis, "Innovation with Allies: Practical Paths Forward," Center for Strategic and International Studies, May 26, 2021, https://www.csis.org/analysis/innovation-allies-practical-paths-forward.","noteIndex":33},"citationItems":[{"id":10892,"uris":["http://zotero.org/users/350895/items/79KJJCSG"],"uri":["http://zotero.org/users/350895/items/79KJJCSG"],"itemData":{"id":10892,"type":"post-weblog","abstract":"Cooperation between democratic allies and partners is crucial, and so is the imperative to build science and innovation, but this raises a question: How can democracies practically build science and innovation with allies and partners? China's emergence as a peer-innovator makes this question urgent. This commentary offers practical paths forward for the United States, United Kingdom, Canada, Australia, and New Zealand—the "Five Eyes" nations, not just their intelligence sharing apparatus—in key areas for national security like artificial intelligence (AI

[34] Ursula von der Leyen, "Op-Ed by Commission President von der Leyen," text, European Commission, February 19, 2020, available at <https://ec.europa.eu/commission/presscorner/detail/en/AC_20_260>.

[35] Private communications from Canadian officials who led the project.

[36] Paul Kennedy, *The Rise and Fall of the Great Powers: Economic Change and Military Conflict from 1500–2000* (London: Unwin Hyman, 1988), 126, 152.