The Post Pandemic New Normal: The likely Socio-Economic Implications and Policy Choices facing Scotland and the UK

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1. Introduction

In this essay we consider what the world could look like in the aftermath of the coronavirus (COVID-19) pandemic, with a particular emphasis on the UK and Scottish economies, and what action policymakers could take to address the aftermath of the pandemic. Along the way we also explain some of the implications of important financial and economic repercussions that the pandemic has created. Of course, the huge uncertainties that currently exist with respect to the virus – whether a vaccine will actually be discovered, whether the virus will mutate and create the need for a range of vaccines and so on – make such an endeavour a considerable challenge although there are already features of the pandemic, and particularly the reaction of governments across the world to the pandemic, that allow some informed projections of what the world might look like post pandemic.

We now know, for example, that in the UK "We are likely to face a severe recession, the likes of which we haven't seen, and, of course that will have an impact on employment."(Rishi Sunak, UK Chancellor of the Exchequer 19 May 2020) and this is already having dramatic implications for public debt, monetary policy and unemployment and we consider the implications of these here. The choices that have been made during the pandemic, and those that were not made prior to the pandemic, give some pointers to what in our view the socio-economic landscape will and should look like on the other side of the pandemic. The pandemic will also create important opportunities for policymakers and we consider some of these in this essay. In the first part of the essay we sketch the macroeconomic implications of the pandemic in terms of the level of debt and the fiscal deficit, the sustainability of debt and deficits, the implications of quantitative easing for inflation and unemployment. In the second part we consider opportunities that will arise from the pandemic and the policy implications of these policies. These opportunities relate to and include a rebuilding of social capital, the prioritising of societal wellbeing measures, public good aspect pandemics, the resilience of the public and private sectors, technological changes, inequalities and stakeholder capitalism, tax reform opportunities and climate and environmental changes

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Although we have faced significant shocks to the world economy before, such as the oil crisis of 1973 and the financial crisis of 2007-2008, the current dire straits engulfing the whole global community is unique in the sense that all governments are facing a stark trade-off between the health and wellbeing of their populations and maintaining the economic efficiency of their economies. Initially, nearly all countries have focussed on the health and wellbeing side of the trade-off although as the crisis has developed there is a clear shift, at varying rates, towards planning for economic recovery. As a result, the current shock to the world economy, and its consequences for the price of oil, financial asset prices and the wider economy, has been created by governments. President Macron summarised the initial reaction to the crisis well: “We have stopped half the planet to save lives, there are no precedents for that in our history.” (Financial Times, April 16, 2020).

In thinking through the implications of the crisis, and what the post pandemic world might look like, it is interesting to further quote from President Macron’s Financial Times interview on the pandemic: “I think it’s a profound anthropological shock……it will change the nature of globalisation, with which we have lived for the past 40 years . . . We had the impression there were no more borders. It was all about faster and faster circulation and accumulation,” and “with ups and downs it [globalisation] brought hundreds of millions of people out of poverty. But particularly in recent years it increased inequalities in developed countries. And it was clear that this kind of globalisation was reaching the end of its cycle, it was undermining democracy.”

This quote is helpful since it highlights the role of humankind’s dominant influence on climate and the environment and consequently the pandemic itself. The quote also highlights the implications of the pandemic for a central component of the current world order, namely globalisation, a component which was undoubtedly on the wane prior to the pandemic but the pandemic has clearly exacerbated this decline and what will the implications of this be for the post-COVID landscape.

In its editorial, 3 April 2020, The Financial Times claims that COVID-19 “lays bare the frailty of the social contract” and argue for…“Radical reforms - reversing the prevailing policy directions of the last four decades - will need to be put on the table. Government will have to accept a more active role in the economy. They must see public services as investments rather than liabilities, and look for ways to make labour markets less insecure. Redistribution will be again on the agenda: the privileges of the elderly and the wealthy in question. Policies until recently considered eccentric, such as basic income and wealth taxes, will have to be in the mix.”

These quotes set the scene for the kind of opportunities, radical reforms and potential policy actions and directions that governments can take post-pandemic and we consider these in some detail in part 3. As the FT quote suggests our conclusion stemming from our overview of these issues is that a new form of social contract will be needed as we move out of the pandemic and we essentially flesh out what that social contract might look like. Before turning to these issues, we consider some of the immediate policy actions of the pandemic and their consequences going forward.

2. The post-pandemic economic landscape

In thinking about the macroeconomics of the post pandemic landscape, and particularly the fiscal and monetary policy reactions, it is worth briefly discussing the concept of secular stagnation which Larry Summers argued pre-pandemic might be the 'defining issue of our age'. At the heart of the secular stagnation hypothesis is that the equilibrium real rate of interest in the global economy has been significantly negative (-2 to -3 per cent) since at least the mid 2000's, while the actual real rate (on government bonds) has been consistently much higher than this, despite the massive quantitative easing programme that occurred in many countries after the financial crisis. This has led to a prolonged period of under-investment in developed economies, resulting in GDP falling further behind its underlying long run trend and extensive research has been undertaken in organisations such as the IMF on how to address the issue. In a recent contribution, Summers has argued that the dramatic COVID-19 shock will trigger a permanent increase in risk aversion by the private sector and this will lead to increased precautionary savings by households and less investment by businesses. This in turn will mean the private sector will want to hold greater financial reserves which will have deflationary implication which could be severe. Whether in fact this is the outcome of the pandemic crisis the underlying secular stagnation referred to here will in itself have important consequences for the operation of fiscal and monetary policy in the post pandemic period and any extra COVID-driven risk aversion will clearly exacerbate that.[2] Given the secular stagnation backdrop the task of monetary and fiscal policy moving forward has to be to pull up the equilibrium interest rate towards the actual rate.

2.1 The fiscal response to the pandemic: debt and deficits

The fiscal response to the pandemic has been swift and decisive in most countries, including the UK, with debt and deficits rising at dramatic rates. Although there has been a synchronised cross-country response to the crisis the response has in contrast to the financial crisis been uncoordinated and indeed the total fiscal response from the G20 is so far less than last time around. In the UK, the funding consequences of the COVID-19 response are considerable with the current projections for the UK's 2020 fiscal deficit are anything between £337m and £500m (up to 15% of GDP) with debt to GDP ratios starting at 98% and potentially rising steeply beyond that depending on the length of the current recession.

Although many see the fiscal reaction as a return to Keynesian economics, the latter was originally scripted for a world of deficient demand which is clearly not the source of the

[2] Early evidence in the UK suggests there is a dramatic rise in precautionary saving, and corresponding fall in demand, by households but that this is unevenly distributed across income groups. For example, a study by the New Policy Institute (https://www.npi.org.uk/blog/economic-policy/excess-saving-lockdown-big-new-economic-challenge/) indicates that households in the top fifth of the income distribution (that is, 5.5m households) will have reduced their spending during the lockdown by around £25bn and those in the second highest part will have reduced their spending by £14bn. Across all income groups the figure is £57bn.

current recession. Rather, the dramatic increase in expenditure on this occasion has, rightly, been for two key reasons. First, to fight the infection, in terms of testing, procuring equipment, building new emergency hospitals and sourcing PPE. The second main component of the current increased spend is in the form of what is effectively disaster relief as evidenced by the hugely expensive furlough scheme, grants and loans to businesses. At this stage in the recession there does not appear to be a role for a conventional stimulus to aggregate demand since with the lockdown and confinement in place potential output will have fallen perhaps be around one third and any further stimulus is likely through say tax cuts will in all probability produce inflation or rationing.

However, as we move out of this induced recession there will be a strong case for a conventional boost to aggregate demand given the severity of the induced recession and given the huge uncertainty over how other components of aggregate demand will respond. For example, in terms of consumption spending there is a possibility there will be considerable pent-up demand for certain goods and services post-pandemic but the more likely scenario, as Larry Summers has suggested, is that the huge uncertainty surrounding the pandemic will lead to a reduced appetite for risk by the private sector and an increased risk aversion with increased precautionary savings on the part of consumers and low investment by business as the consequence. As a result, Paul Krugman has argued, in the context of the US, that it should permanently increase public investment and the budget deficit by 2% of GDP with the debt ratio rising to 200% of GDP. This policy would pull up the equilibrium interest rate and produce a more normal upward sloping yield curve thereby giving policymakers some headroom in future recessions.

But should we not be worried about the eyewatering debt and deficit numbers that are already taking place and have been suggested as a semi-permanent solution to the crisis? The UK government certainly was in the post-financial crisis when it engaged in a long period of austerity designed to reduce both the deficit and the outstanding stock of debt. On this occasion, however, this would clearly be a disastrous policy to adopt, certainly for the short to medium term. Although there is often a fixation with debt to GDP ratios that come close to 100%, indeed ratios above 60% are often regarded as imprudent, there are clear precedents for this particularly in wartime situations to which the pandemic has been compared (in the UK for example the debt to GDP ratio during World War Two of 250%). Furthermore, even outwith wartime situations, countries with a safe profile to debt markets are able to sustain equivalent deficits. For example, Japan's debt to GDP ratio is 240% of GDP with little nervousness on the part of financial markets. Crucially, the importance of debt to GDP ratio as an indicator of a country's overall financial health is questionable given that it is the ratio of a stock (the stock of debt) to a flow (GDP); without information on the outstanding interest on the debt the ratio has in fact no real significance. Secular point here

Given the precipitous fall in aggregate demand and output in the initial stages of the lockdown, and with interest rates in the UK at historically low levels, financing the deficit should not be an issue for the foreseeable future especially if the government can lock into long term interest rates, which are at historically low levels, perhaps by issuing irredeemable bonds which have been used in war time (so called consuls) or indeed experiment with GDP linked bonds where the rate of return is dependent on the state of the economy – if the economy is growing relatively rapidly more of the debt is paid off than in the converse situation. But will such levels of deficits and debt be sustainable as we move away from the initial lockdown phase?

As Olivier Blanchard has pointed out the critical relationship when it comes to public debt is that between the rate of interest on the debt and the nominal growth rate. If the former is less than the latter then it is possible for government to simply roll over its debt by issuing new debt to pay for the interest thereby increasing debt at the rate of interest. If output growth exceeds the interest rate the debt to GDP ratio will fall without the need to ever raise taxes. However, the fly in the ointment of this argument is that if investors and rating agencies are concerned about the riskiness of large outstanding debt levels and the spread they need to hold the debt pushes up interest rate payments so that debt becomes risky and the concerns of investors become self-fulfilling leading to a sovereign debt crisis. Such an outcome is likely to be a real issue in emerging markets but much less of an issue in advanced developed countries such as the UK and US where the history of default is unprecedented.

However, such sentiment could nonetheless occur in the UK, particularly if debt levels rose to unprecedented heights. This is where the importance of quantitative easing, discussed in some detail in the next section, comes in with central banks having the means to prevent such self-fulfilling behaviour by committing to buying whatever amount of bonds are required to maintain the low interest rate. This is effectively the policy that the European Central Bank (ECB) and Fed are committed to in the Eurozone and the US, and in a modified form in the UK. The Bank of Japan has formalised such a procedure referred to as 'yield curve control' whereby the Bank maintains an interest rate close to zero on long term government bonds.

Nonetheless, although in principle it is possible for a government to roll over its debt, as described above, it is unlikely to be possible to do this indefinitely and this is especially so given the extra fiscal boost that will be required to create the extra resilience needed in the health sector and in rebuilding in other areas of the economy. In the post-war period it was growth in nominal GDP that eventually lowered the debt to GDP ratio and fiscal deficit and that would be the best way for the pandemic induced debt and deficit to be addressed. However, this is unlikely to be enough in the current environment (that we describe in this essay) and it is likely that there will be a need to raise taxes or cut spending. Given the austerity imposed after the financial crisis is one of the contributing factors to the lack of resilience in the health service and other public services during the pandemic we rule this out as an option. Which leaves taxes as the main vehicle to deliver rectitude in debt and the deficit. Indeed, a recent leaked Treasury document suggests that such rises are being actively considered by the UK government and these include increases in income tax and ending the pension triple lock. However, it is crucial that any tax changes that are introduced should not impede the recovery and there seems to be a growing consensus amongst economists that any such changes should be focussed on wealthy individuals rather than increasing business taxes. The post-COVID landscape would therefore seem to be an ideal opportunity to consider tax reform and we consider this in section 3.7 below.

2.2 Monetary policy and the pandemic: quantitative easing and potential inflationary pressures.

As a result of the pandemic, the Bank of England has cut the bank rate from 0.75% to 0.2% to 0.1 in March, the lowest rate ever. This has been supported by an extra £200bn of Quantitative Easing (QE), and an extra £100bn is expected in June which would take the Bank of England's holdings of government debt to £745bn. The original rationale for QE was after the financial crisis in 2009, when interest rates were thought to have gone as low as they could go and they could go no lower, and the Bank engaged in QE to increase liquidity in the economy. However, on this occasion the extra QE is linked directly to funding the government's fiscal deficit estimated by the Office of Budget Responsibility (OBR) to be £300b. In this regard, the Debt Management office of the Bank of England has targeted £225bn of gilt sales over April to July, mopping up most of the extra issuance from the markets. Furthermore, the QE has been supplemented during the crisis by access to a 'ways and means' borrowing facility at the Bank which effectively is the governments overdraft facility at the Bank and is the closest to printing money. In the context of concerns about the inflationary implications of QE (see below) it is important to note that QE is reversible so the money artificially created can be withdrawn from the economy by the Bank selling the bonds and the current low interest rate can also be reversed.

But will, as some commentators have argued, the current loose monetary policy stance have inflationary repercussions when we come out of lockdown as it has done when wars have ended in the past? The first point to note here is that the conventional inflation targeting is based on a basket of consumer prices that reflect consumer consumption patterns. But in the recent crisis there have been dramatic changes in consumption patterns and these render the standard inflation indices unreliable as indicators of inflation and it seems more likely that the excess liquidity will show up, at least initially, in stock market rallies and the UK's external position in terms of its balance of payments and exchange rate. Changed consumption patterns aside, the immediate impact of the pandemic is highly deflationary with a sharp fall in aggregate demand, dramatic rises in unemployment, a rise in precautionary saving and a collapse in commodity prices.

Blanchard has cautioned that the scenario as we move out of the lockdown is likely to be similar to that of today with structurally weak demand, low inflation and very low interest rates but there are a number of reasons why we could get an unexpected rise in inflation post lockdown. The first is that, in contrast to the QE that took place in response to the financial crisis where the monetary injections stayed largely within the banking system in the form of reserves, the current policy actions are feeding through to the broader measures of money which are the key determinant of inflation. Second, if the public deficits in the UK and elsewhere rise significantly above the levels that are currently being forecast these could lead to further dramatic monetary financing. This clearly cannot be ruled out and in the UK's case will very much depend on how much extra support is to be given as unemployment levels start to move into the red zone and whether the country as a whole or in large part has to go into lockdown again. Furthermore, since the emergence of China as a global trading superpower it has had a deflationary effect on the world economy but, as pointed out elsewhere in this essay, the fracturing of globalisation means that its role is more likely to be inflationary than deflationary going forward.

If inflation does start to take off then given the Bank of England's mandate to design monetary policy to maintain long term price and financial stability there may at some point be a need to raise nominal interest rates sharply, especially if inflation induced changes in the real interest rate do not slow the growth of nominal income. If interest rates were to rise above the growth of nominal income, as we noted in section 2.2, this would mean that the government would be unable to roll over debt repayments. The focus would then need to switch to what public spending would need to be cut or what taxes to raise. Given that there seems to be no appetite for spending-induced austerity now, it would seem, and as we noted in the last section, that the time to start planning for eventual tax changes is now, and specifically in terms of reforming the tax system. Additionally, letting inflation rise, through the growth of nominal income, will have unintended consequences with those in employment probably being protected from its effects and the losers being savers, pension funds and those whose main financial assets are in the form of cash.

The background of secular stagnation, referred to above, and the impact that the current crisis could have on that, make the inflationary scenario seem unlikely. Indeed, at a regular auction of government bonds in May 2020, financial markets signalled to government that they expected negative interest rates going forward which does not suggest financial markets are expecting future inflation. As a result, the Bank of England has now indicated that it may consider negative interest rates as part of its armoury, a policy that will be deeply unpopular in the commercial banking sector since it would slash earnings and limit banks' abilities to absorb large scale coronavirus-related loan losses. However, if negative interest rates are to be used in the UK as a policy instrument, as they have in Japan and the eurozone to a limited extent, Kenneth Rogoff has pointed out that such a policy can only succeed if it is pursued far more aggressively than has so far been attempted, with interest rates needing to move to minus three per cent or lower in recessionary periods. This approach would, as all attempts to push interest rates to the lower bound have had in the past, produce high returns in bonds and equities, which can create further distortions in the economy.

2.3 Unemployment, recovery and retraining

Unemployment has risen sharply in most countries since the implementation of the various lockdowns. For example, in the United States, unemployment has risen to 15%, an 80-year high, and a rate which is similar to the upswing of unemployment in the Great Depression. The UK has gone from a pre-COVID situation, with unemployment at a record low and employment at a record high, to the largest jump in those claiming unemployment benefits since records began in 1971 post-COVID (in the period March to April 2020), and the number of vacancies having the sharpest fall since 2001, with the majority of the fall being for low paid jobs in sectors affected by social distancing. Furthermore, the post-COVID period to date has seen half a million employees made redundant, hours worked falling by a quarter and current universal credit numbers suggesting that a further one million people have become unemployed.[3] The National Institute of Economic and Social Research (NIESR) predict that unemployment will rise to 10% by the end of 2020, although the current claims for universal credit indicate that the UK may have already hit that figure. This is despite the number of employees in the UK being furloughed – 7.5 million employees and a further 2 million on the self-employed version of furlough. Some commentators have already argued that the overall rate of unemployment for the UK could be at least double that from the aftermath of the financial crisis, coming in at around 16%, comparable to what is currently happening in the US. The National Institute for Economic and Social Research (NIESR) predicts that unemployment will rise to 10% by the end of 2020, although the current claims for Universal Credit indicate that the UK may have already hit that figure. This is despite the number of employees in the UK being furloughed – 7.5 million employees and a further 2 million on the self-employed version of furlough. Some commentators have already argued that the overall rate of unemployment for the UK could be at least double that from the aftermath of the financial crisis, coming in at around 16%, comparable to what is currently happening in the US.

Given the structure of the Scottish economy, the unemployment situation in Scotland is likely to be worse than that in the UK for at least two reasons. The precipitous fall in the price of oil is not good news for Scotland's oil sector which has hardly recovered from the 2015 oil price shock but is still an important part of the Scottish economy, accounting for 10% of GDP and employing 100,000 people. Usually oil price shocks are unrelated to other sectors in the economy, apart perhaps from supply chains, but on this occasion all sectors of the economy are affected and particularly for those where social distancing is difficult or impossible. In this regard, of course, Scotland's hospitality sector is highly significant with around 15,000 diverse dependent businesses and 220,000 employed in the sector, representing 8.6% of total employment, with a further 120,000 jobs indirectly connected. We have already seen key hotel chains and bus operators going bankrupt in this sector and some of the country's leading chefs have predicted a tidal wave of closures in the sector going forward unless urgent action is taken, including extending furlough and further business rates relief going forward.

The other key sector in the Scottish economy is food and drink which employs 115,000 and is the main export driver of the economy, with whisky exports playing a leading role. The agriculture and dairy products component of the food and drink sectors are key to the resilience of Scotland and the rest of the UK. Given domestic demand for foodstuffs has been the most buoyant retail sector during the pandemic it would be predicted that employment in these sectors will be maintained and will indeed be an area that can be expanded as in the 'Pick for Britain' initiative, mopping up some of the unskilled unemployment that will arise in other sectors. This may be especially important going forward given the need to build up resilience in the UK's agriculture sector, as discussed in Section 3.4. However, in sectors that are heavily reliant on export markets – whisky, shellfish and farmed salmon – the picture is less clear cut as we argue in section 3.4 due to the breakdown of globalisation. That said there as some very big corporate players in these

[3] The latest quarterly unemployment rates for the UK and Scotland, respectively, are 3.9% and 4.1% which represent rise of 0.1% and 0.6%,greatly underestimate the true impact of the pandemic on unemployment which will only become clear once we have a full quarters worth of 'pandemic data'.

sectors, such as Diageo and Marine Harvest, with presumably deep pockets and they may be able to cushion the effects on employment in the sector for longer than in other sectors, although this is unclear at the moment.

If social distancing is to be an important part of the new normal going forward this will clearly have important permanent effects on sectors where social distancing is difficult or almost impossible to implement in certain sectors. This could lead to the permanent shutting of some business or the replacement of people with technology-driven alternatives, producing permanent scarring or permanence in the resulting unemployment processes. If so, what will the impact of that be on sectors that can't social distance? Doubtless further increases in unemployment will occur before the end of the furlough and clearly the ending of the furlough scheme in October and its tapering from August when employers' contributions will rise, will create further challenges to the unemployment figures.

How then should policy respond to the blight of unemployment that is the inevitable consequence of the pandemic?

The first response should be the adaption of existing government schemes as lockdown ends to support business both in terms of their retention of workers and also in terms of saving businesses from bankruptcy.

Second, the level of aggregate demand in place when these measures end will also be critical. For example, and as noted above, there is considerable uncertainty over whether people will 'binge spend', to release pent-up demand for goods such as motor vehicles, or will save as a precaution due to the uncertainty in the economy once the lockdown has ended. This uncertainty could also have important implications for investment spending and indeed that is predicted in the latest Bank of England report. The fracturing of globalisation noted in 3.4 could also lead to a sharp fall in demand from abroad. If there is demand deficiency post lockdown this will necessitate government engaging in a traditional Keynesian fiscal expansion by, for example, increasing investment in infrastructure at regional and national levels and rethinking existing spending priorities going forward. Such spending will, of course, have further implications for the fiscal deficit and public debt, as discussed in 2.1, and may also require a fine balancing act with monetary policy given there could be severe scarring on the supply side of the economy (see section 2.2). We will say more about what form this infrastructure could take below.

For demand side reasons the sequencing of the end of lockdown may be important. Since lockdown in so-called upstream sectors, where social distancing is difficult – manufacturing, construction and retail - limits demand in downstream sectors, and for activities possible from home, lockdown should be ended in upstream activities first.

There are a number of further measures that policymakers can take post-lockdown to mitigate the effects of unemployment. First, building and rebuilding peoples' skills, through training and retraining programmes, will be critical to accessing jobs in various sectors of the economy. In practice this could mean, for example, reintroducing the special assistance schemes of the 1980s to assist young people entering the job market. Also, The Future Jobs

Fund, which was used in the financial crisis, could be reintroduced and, given the changes in the way universities are going to teach going forward, in addition to the public support being given to the university sector post-crisis, they could perhaps be directed to have a sharper focus on the wider jobs market than hitherto, especially given people will have to train and retrain a number of times throughout their lives. Building resilience in agriculture, referred to above, could be a critically way of addressing high levels of unskilled unemployment in Scotland at least in the short-term recovery from the pandemic. As we shall see below in Section 3.8 the 'greening' of the Scottish economy could generate many new jobs as a further supplement to the above.

The unemployment that arises from the pandemic will undoubtedly create greater inequalities in society. It is likely to be those with a low skill set and on low income jobs that will be hit hardest and there will undoubtedly be differential effects on different age groups in society. For example, according to the International Labour Organization (ILO) it is young people across the globe who will bear the brunt of the employment hit from the pandemic; 1 in 6 in the 18 to 29 age group who had been working before the pandemic began, said that they had since stopped working, some 200m people. (The Institute for Fiscal Studies (IFS) has made a similar point for new graduates in the UK.) Those who retained employment suffered a sharp fall of 23% in hours worked. The crisis is also disrupting the education and training of young people and places major obstacles for those trying to enter the labour market or move between jobs. The crisis therefore risks creating a 'lockdown generation' with permanent scarring and a targeted response of support for young workers, such as training, apprenticeships and guarantees and the kind of tax incentives considered in section 3.6 on Inequalities.

3. Opportunities and policy responses

3.1 Collective action and the implications for social capital

The collective actions taken at a national level in many countries have also been reinforced at a local level. For example, in the UK, there has been much evidence of local voluntary groups forming to assist the most vulnerable with deliveries of food and other essential supplies, along with support for those with mental health problems. It is estimated that 10 million adults in the UK have volunteered for community activities or organisations for on average three hours per week (which would be equivalent to approximately £400m at the median UK wage). A good example of this is the community response in Skye that has grown out of a co-production model regarding health and social care provision that the local community has been involved in with NHS Highland and other public agencies in the implementation of Sir Lewis Ritchie's report. Given the devastating effect that the COVID-19 virus has had in the care home sector it would be expected that such co-production models would become more important to communities and service providers going forward in getting the balance of health and social care right. (Scottish Co-production Network) Furthermore, the use of new technology such as Zoom in business and for social interaction has also demonstrated the importance of social networks to people, spawning, for example, virtual flash mob videoing and numerous impromptu choirs performing from windows within local communities and online, achieving viral global reach.

The above points are reinforced by the Office for National Statistics' Opinions and Lifestyle Survey conducted during the lockdown (May 21 to 24 May). In that they found that over a half of respondents thought that the UK was very united or somewhat united as a result of the pandemic compared to only 23% who thought the country was united before the pandemic. It is noteworthy that Jared Diamond in his book *Upheaval* cites national unity as a key factor in how a country can address a national crisis and it is interesting to conjecture whether that national unity will persist when the pandemic ends and facilitate addressing the other major national crisis facing all countries today, namely climate change, the pandemic's Anthropocene twin.

If the kind of collective actions that we have seen during the pandemic are continued going forward this could have important implications, in turn, for the building of social capital. Social capital is the networks of relationships, and the supporting civic norms between people who live and work and make societies function effectively. Many commentators (see, for example, Fukuyama (1995)) believe that social capital is at least as important as human and physical capital in driving forward socio-economic progress, both in terms of GDP and of wider measures of prosperity such as wellbeing. However, the move in many western societies to individualism has led to a dramatic breakdown or depreciation of social capital and if the current crisis can begin its restoration, fostered by government policy, this could have dramatic implications for countries where social capital has been depleted in recent times.

At the heart of social capital building and a thriving civil society is the concept of trust. To quote Fukuyama: "Trust is the expectation that arises within a community of regular, honest and cooperative behavior, based on commonly shared norms, on the part of other members of that community. Those norms can be about deep 'value' questions like the nature of God or justice, but they also encompass secular norms like professional standards and codes of behaviour. That is we trust a doctor not to do us deliberate harm because we expect him or her to live by the Hippocratic oath and the standards of the medical profession." and "..a nation's well-being, as well as its ability to compete, is conditioned by a single, pervasive cultural characteristic: the level of trust inherent in that society". In sum, the key point here is that the social capital represented by related networks and understandings engenders trust thereby enabling people to work together in a more cohesive and productive manner and that inevitably has consequences for productivity and growth and the wider wellbeing of society.

One of the best-known examples of successful networks in the business community is the unique *keiretsu* or business network in Japan whose working depends on the pervasive ability to enter high-trust relationships. Although unique, *keiretsu*-like business groups exist in many other cultures, such as the important family-based networks in Taiwan and Hong Kong and small companies in central Italy that are united in complex webs of interdependence. Perhaps the business of most interest, in terms of its potential importance for the UK and Scottish economies, is the German bank-centred industrial groups that resemble the Japanese network organisations in various ways. As Fukuyama (1995) notes, Germany's industrial growth in the post WW2 period has been financed primarily by banks, rather than through equity finance as in the UK and US. The commercial banks in Germany grew to a large scale in close relationship with particular industries they knew intimately and to which they supplied capital and so the Diskontongesellschaft became known as the 'railway bank'. Such banking groups, and their Japanese counterparts, provide a degree of stability in terms of company finance that gives German companies the ability to take a longer-term perspective in their investment compared to equity financed companies in the UK and US. Fukuyama notes class and status barriers in Britain prevented such communal linkages between banks and industry and their banks abandoned long term investment in industry as early as the late nineteenth century.

A further key communitarian economic institution in Germany have been the industrial cartels and trade associations that share research and development (R&D) costs or engage in industry-wide plans for industrial restructuring and agree to share markets; the relatively low R&D spend in the UK and Scotland is often given as a key explanation for their poor productivity performance. The effect of these trusts on the German economy are buttressed by the labour-management relationships that have existed there and were codified in the *Sozialmarktwirtschaft* or social market economy. Taken together these three key communitarian strands of the German economy have allowed the country to build companies of scale that can export successfully in global markets and have the resilience to do so through many crises.

Perhaps then if Scotland, and indeed the rest of the UK, are to gain the export, and associated productivity performance that policymakers desire, and will be critical in rebuilding and diversifying the Scottish economy post-COVID, they should start by looking at the social capital building blocks that underpin such success stories in other countries and how policy can be directed to make the necessary changes to the social capital structure in this country. Imparting, or re-imparting, trust from local communities up to business communities and beyond should be a key strand of economic policy making in the post-pandemic period.

3.2. The Market Society - wellbeing measures vs economic growth

Michael Sanders[4] has argued that western liberal democracies have moved from societies based on the market to a market society, where the market governs our lives, and where a good, asset or service only has value if it is in a market and can be priced in that market. In Sanders view the market society has eroded the underlying norms that are required to build the kind of social capital referred to above with the consequences this has for a society's wellbeing and prosperity. In such a society values such as solidarity, fairness, responsibility and compassion get downplayed and undervalued, if not totally ignored.

However, as we have noted, we have, as societies, collectively prioritised health and wellbeing before economic efficiency during the pandemic. Although the lockdown has been imposed by governments around the world, there has nonetheless been a considerable willingness by people to comply with the restrictions of lockdowns even in countries such as the US where there have been armed demonstrations against the lockdown. This is perhaps particularly impressive in the current climate of mistrust of elected politicians and expert advice and, more widely, the me-too generation that has individualism at its heart. This could lead to a new form of social contract going forward especially given the large economic and social challenges that the virus will inevitably create.

Furthermore, there is now increasing evidence that people going forward would prefer to prioritise health and wellbeing and other societal values over economic growth once the crisis is over. For example, a YouGov poll conducted in the UK during the crisis found that 8 out of 10 people would prefer the government to prioritise health and wellbeing before economic growth during the crisis and 6 in 10 would still want the government to prioritise health and wellbeing over economic growth once the pandemic is over. It is noteworthy that even among professional economists there is also considerable agreement on prioritising health and wellbeing over the economy. For example, in a survey conducted by the Initiative on Global Markets (IGM), a research centre at the University of Chicago, 41 well-respected economists indicated the extent to which they agree or disagree on important public policy issues for the COVID-19 crisis. The results of their deliberations demonstrate 80-100% support for economic contraction while demanding greater support for the healthcare sector.

The foregoing suggests that in going forward the UK and Scottish governments should not make GDP their exclusive target for the nations' overall wellbeing, as it often has been in the past, but also target and publish statistics on health and social care, the environment, and the quality of life (the Scottish Government has already begun emphasis on the importance of wellbeing as a target in Scotland in its National Performance Framework).

[4] Michael Sanders, What Money Can't Buy, Penguin, 2012.

In *Maximising Scotland's Well-Being by Bravely Innovating* Ronald MacDonald and Donald MacRae emphasise wellbeing creation as the ultimate goal of kick-starting productivity and growth, rather than a sole focus on wealth creation. However, they argue for a more holistic measure of wellbeing than the narrower focus that has been used in recent policy debates, specifically incorporating relationships, in the form of social capital, and mental and physical health. This is also the tack now being taken by the Boston Consulting Group (BCG) following its study *Striking a Balance Between Well-Being and Growth* in which they find that "there is no need to choose between well-being and growth." BCG's report reveals "that countries can make the overall welfare of citizens the top priority while promoting sustainable and robust economic growth".

A move from a narrow focus on GDP to a holistic measure of wellbeing could have significant ramifications for the kind of economy society wants to create. Pre-pandemic our economy relied on large scale borrowing by households to sustain consumption, a booming housing market that has dramatically skewed wealth and a booming gig economy providing relatively low paid and insecure jobs. But with a considerable proportion of the population facing the uncertainty of unemployment and with the stress created by issues of resilience in the health and social care system this could lead to a major reprioritisation of our society with the consequences this will have for the sectors that will be hit by such a transition.

3.3 The predictability of the crisis and the public good aspects of the pandemic.

That the current pandemic is essentially an anthropological shock, as noted in the comment by President Macron in the introduction, indicates that the shock, although not the timing, was predictable and therefore the appropriate form of resilience in the public and private sectors could and should have been in place prior to the shock (in 2019 UK Ministers were warned in the National Security Risk Assessment that the UK must have a robust plan to deal with a pandemic virus and its potentially catastrophic social and economic consequences). As in the case of climate change, the current epidemic did not happen by chance but as a result of mankind's rapacious demand for global resources of all kinds and the unsustainable nature of this use (in forests, topsoil and fresh water), the huge global appetite for animal foodstuffs in our global food chains and the real and ever-present danger of a zoonotic crossover which results from all of this. Such a crossover appears to be the cause of the current crisis as it has been in previous epidemics/pandemics, such as swine flu, avian flu, SARS, MERS and HIV/AIDs.

Given it is currently not clear if a vaccine will be developed for the virus, that mutations of the virus will occur and other similar sorts of viruses will occur on the future, it is imperative that at a national level investment needs to take place to build much greater resilience in our health and social care systems (see section 3.4 below) and particularly in public health with better monitoring and research. In this regard and in preparing for future pandemics and reacting to them, it is important to consider the 'public good' nature of public health.

As in a standard public good, this where the benefits or costs of a national action are shared equally by all nations and so there is a classic 'free rider' problem in that if one nation enacts material change on a particular issue other individual countries have an incentive to free ride, or under invest, in that action since the benefits resulting from the initial investment are shared. It is clear that many aspects of tackling health pandemics have a public good nature that provide benefits to all – information collection and sharing, development of vaccines and medicines and setting up early warning systems – that developments in any one country are shared rapidly throughout the international community and there is some evidence of this taking place on a voluntary basis in the current pandemic with the sharing of information on the nature of the virus and the sharing of PPE. However, to avoid the free rider problem it would seem critically important going forward that there is some system of commonly accepted global rules so that a coordinated response to future pandemics is in place to the benefit of all in the global community, perhaps policed by a strengthened, rather than weakened, WHO. [5]

3.4 The pandemic, globalisation and resilience in the public and private sectors

The current crisis perhaps indicates the final nail in the coffin of the current period of globalisation, heralded perhaps by the challenges facing the airline industry and the implications this has for international travel. Much deeper fissures in the structure of globalisation have been growing since the financial crisis in 2008, with the implications this has for trade and investment. The effect on trade and capital movements has been exacerbated by the US-Sino trade wars and the free movement of labour, a cornerstone of a truly global economy, has been stymied by the rising nationalism in many countries and the closing of borders. The pandemic has exacerbated these trends, particularly with the shutting down of global supply chains, and, relatedly, just in time (JIT) delivery methods, that are so central to globalisation (around 80% of goods traded internationally are intermediate, or supply chain, goods).

The UK government, for example found it difficult to obtain Personal Protective Equipment during the crisis due to the interruption of supply chains and this will surely have implications for public procurement going forward - indeed at the time of writing Honeywell in Motherwell has been contracted by the UK government to provide more than 70 million face masks, creating 450 jobs - as governments seek to build resilience in critical products and services that affect national security. In addition to building resilience in health and social care, the pandemic has clearly illustrated the need for resilience in the home agricultural sector, since although food supplies have remained robust in the UK throughout this crisis, future crises could have different effects on overseas food chains and so having the right balance of home supply the food chain will be important in the future. Building resilience in the agricultural sector could have implications for addressing the high levels of unemployment arising from the pandemic referred to above, and creating a better balance in this sector with respect to meat versus vegetable production, with the consequences this will have for the greening of the Scottish and UK economies (see 3.8 below) and the incorporation of new and more productive methods of farming, such as vertical farming.

[5] It is worth emphasising, of course, that pandemics such as COVID-19 have to be eradicated in all countries, including poor, developing countries. In all likelihood these countries will not have the financial clout to eradicate the virus at home and so for a coordinated policy to be successful it will require the coordinating body to be able to facilitate direct pandemic aid to these countries and perhaps address their debt burden.

Supply chain/JIT delivery interruptions also have had devastating implications for private companies that have continued to operate during the pandemic and will have implications for companies as they come back on stream. Diversification of supply chain sources has been proffered as an alternative to creating further home biases in trade and that may indeed be a solution in certain crises, but if, as in the current crisis, the global economy is locked down there may be no other option than to create a resilient supply in the home country. Further cracks in globalisation will also occur due to the current challenges to the existence of the WHO and further moves to greater protectionism. Such moves are likely to be exacerbated by the China-US standoff over the causes of the virus, divisions within Europe and the increasing move to nationalism in many countries.

So the demise of the current globalisation era will lead to more local resilience in both the public and private sectors over global efficiency. This will be needed going forward with the sourcing of key goods likely to have an increased home bias buttressed by different inventory policies for goods sourced overseas. If such home bias becomes the norm in other countries too there will inevitably be a further reduction in world trade and growth with the repercussions and spillovers this will have for UK and Scottish export markets - see NIESR: "Quantifying the global macroeconomic spillovers of illness and lockdown measures".

3.5 Technology, technological changes and their implications for where people work, their leisure and public service provision

There will be technological changes that are likely to be permanent post-COVID. These stem from the widespread and dramatic changes in connectivity that have occurred in the recent past in terms of broadband, 4G and 5G phone networks and the hardware and software that allow huge amounts of data to be processed and transferred digitally at great speed and securely if required. For example, the pandemic has highlighted the advantages and value added of teleworking facilitated by the above-noted developments in communications. It has been demonstrated during the crisis that a whole range of sophisticated activities, including much of the trade on financial markets, can be undertaken from the home office and although this presumably doesn't presage the end of the office it does indicate that we may have a new model for work post pandemic and one that may well have important implications for where people choose to live (workers may be able live long distances away from their 'work base') with consequent implications for the property market, which in turn, and separately, will have knock-on effects for leisure, and the retail and hospitality sectors.[6]

In a Scottish context teleworking could reshape how people live and work in the central belt, and in the other Scottish cities, since many city businesses are office-based, such as the dominant financial sector in Edinburgh. Even if the world were to return to normal quickly, there must be potentially significant wellbeing gains (see section 3.2) for people, efficiency gains for businesses and significant environmental impacts for the wider community. For example, such is the volume of commuting traffic into the city of Edinburgh from all points north of the Forth estuary that it was deemed necessary to build a second Firth of Forth road bridge at a cost between £1.72 billion and £2.34 billion to increase the volume of

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[6] At the time of writing, both Facebook and Twitter have given all of their employees the option of working from home going forward.

traffic into the city of Edinburgh. Of the 100,000 people who daily commute into Edinburgh 75% do so by car and have an average commute time of 66 minutes a day (a number that could significantly increase if social distancing on public transport remains in place for some time). The lockdown may well have given commuters a taste for activities that do not require an urban centre of gravity, but nonetheless improve overall wellbeing, activities such as gardening, talking to family and friends, cooking, socialising and entertaining and exercise. Such activities could well help to perpetuate and extend the social networks, discussed in section 3.1, that are so critical to the formation and protection of social capital.

Even if people do not work from home every day, the businesses they work for would need less office space in Edinburgh and the environmental consequences are also clear with a dramatic fall in car commutes and the consequent reduction in emissions, a reduction in city congestion and the commute times of those who have to commute. As cities have been shown to be one of the hotspots for viruses of this nature we may see a trend away from city living (and perhaps presage the end of the 'world city' model) If a vaccine is not discovered and there are further mutations of this virus then there may be a steady migration from cities to live in other parts of the country making the cities themselves more attractive places to live and affordable. This in turn could have important implications for house prices both in and out of the city and could lead to reduced inequality.

The availability of the above-noted technology has also changed the way people consume goods. For example, shopping online was popular before the pandemic lockdown but with high streets effectively closed during the lockdown there has been a mini revolution in buying nearly everything from groceries to books online, as witnessed by the huge demand for products on Amazon and eBay and the dramatic scaling up of delivery services by the main supermarket chains. If these patterns of consumption prove permanent, or at least in large measure are sustained after the lockdown, they will have important implications for employment in the retail sector, which is likely to be affected even if these changes are not permanent given the effects that the lockdown is likely to have on bankruptcies in the high street retail sector. Social distancing, of course, will have huge implications for the consumption of the services in the hospitality and tourism sectors: see *Coronavirus: Impact on the Hospitality Industry* and *Pandemics, tourism and global change: a rapid assessment of COVID-19*.

E-health and telemedicine has been an important element in patients receiving treatment and diagnosis during the lockdown (the Royal College of GPs highlighted that up to 70 per cent of consultations during the pandemic have been delivered by phone or video call) and given how effective this seems to have been is likely to be broadened going forward creating new value and creating opportunities in the digital health area. There are already exciting developments in the use of 5G, for example, to transmit data from ambulances to the relevant expertise, wherever that may be in the world, to obtain potentially rapid diagnosis and the relevant pathway for a patient to follow. This could lead to a shift in resources towards preventative community-based care which would be important for those in remote communities and those most at risk. TEC - technology enabled care - has been piloted in Scotland prior to the pandemic with NHS Highland's Near Me initiative being a good example of this. With Near Me, patients are able to access an appointment with a consultant remotely from dedicated centres and from their homes thereby saving large amounts of time and expense for a relatively short appointment (for example, from Portree it is a 220 mile round trip to attend an appointment in Raigmore Hospital in Inverness). The success of the pilot studies has led to the project being rolled across Highland and it could be used in other rural areas and perhaps also in cities. Drones have also been trialled by the NHS during the period to deliver essential medical supplies such as PPE to the Isle of Mull and Isle of Wight and these highlight a much more efficient delivery mechanism particularly for remote rural areas although they could clearly have applications in congested urban areas too. The US investment bank Goldman Sachs argues that drones could create a £81bn market if governments allow them to be used more extensively in, for example, surveying infrastructures, such as bridges, and policing.

Similarly, the lockdown, by effectively closing the university sector in the UK, has opened up many new possibilities for distance and blended learning which again could create real value added and new patterns of working from home, both for the providers and students. Indeed, the severity of the current financial shock to the university system may well produce fundamental innovation and a permanent change in the sector by supplying blended training and re-skilling to a workforce that will increasingly need to train and retrain a number of times throughout its lifetime as discussed in section 2.3.

The above changes are likely to create value added and improvements in productivity. Further improvements in the latter are likely to come from increased automation as firms seek to address social distancing in sectors where that is difficult if not impossible.

3.6 Inequalities and stakeholder capitalism

Prior to the pandemic, inequality has been a key topic across the social sciences with Thomas Piketty's book *Capital* and Branko Milanovic's book, *Capitalism Alone* giving evangelistic critiques of income and wealth inequalities both within and across countries. Michael Marmot's book *The Health Gap* and Ron Thompson's *Education, Inequality and Social Class* give similar presentations in terms of inequalities in access to health care and education. However, the inequalities described in these books have been deeply intensified during the pandemic since its impacts are very unequal and determined by social class, race, ethnicity, income, gender, age, education, social conditions and geographic location. Jared Diamond has argued that inequality in the form of the "enormous differences in standard of living between the world's peoples destabilising our globalised existence" is one of the four "existential threats" facing mankind today (the others being nuclear war, climate change and the unsustainable use of essential resources).

The CEO of JP Morgan, Jamie Dimon, has described the epidemic as "a wake up call…for business and government to think, act and invest for the common good". In a debate between Ray Dalio, a hedge fund billionaire, and the leading investor Mark Cuban, Dalio argued that the shareholder focussed version of capitalism is now broken and "….needs to be reformed in a way that works better" and claims that the problem is easy to fix "if companies can be convinced to shift their focus to more than just shareholder returns." "We have 6m employees of public companies that today do not make a living wage. Fifty years ago, 6.5 per cent of corporate revenues went to shareholders. Today that number is

13 per cent" - see *Ray Dalio: Tackle inequality or face a violent revolution* and *The kings of capitalism are finally worried about the growing gap between rich and poor*.

The various policies that have previously been proposed to tackle the many inequalities in our societies today are beyond the purview of this paper (although we do give some examples in 3.7) however the 'collective action' point that we referred to earlier and the underpinning of many business with public funds throughout the crisis would suggest that perhaps the time has now come for the stakeholder model of capitalism to replace the shareholder model; it is this thinking that is behind the comments of Dalio and Cuban. There is already a considerable support for this model among business leaders in the United States and the stakeholder model was the main theme of World Economic Forum's 50th annual meeting in Davos. The stakeholder model also resonates strongly with the rebuilding of social capital in 3.3 and the climate change agenda discussed below.

3.7 Tax reform opportunities

As the economy begins to recover post pandemic, the deep scarring created by the policy reaction to the pandemic, the inequalities noted above, along with the need to address the large outstanding debt stocks referred to above, will at some point require taxes to change and, as we noted in Section 2.2, the post-pandemic period would represent an ideal opportunity to reform the tax system in anticipation. A key element of any overhaul of the tax system in the UK would be the minimising of rent seeking, which was a key element in the financial crisis of 2008, and the maximisation of investment in productive enterprise. Given the large inequalities within the UK today any new system should be progressive and in large measure should avoid income and goods & service taxes.

To this end, a permanent reduction in labour taxes such as national insurance would clearly be an obvious alternative to the salary subsidies that have been given during the lockdown and would help to maintain employment levels as the recovery phase proceeds. Furthermore, such a reduction in the tax wedge would give entrepreneurs the incentive to expand existing business and also invest in sectors that will become more attractive post-pandemic. It would be a mistake to pay for the lower taxes on labour by increasing corporation tax, given that an increased investment spend will be essential to a permanent recovery from the recession.

A wealth tax would be a credible tax on capital and is becoming increasingly popular particularly given the nature of inequalities prevalent in the UK. For example, a recent YouGov Survey found the majority of the UK public supported windfall taxes, with 61% support for a wealth tax for people with assets worth more than £750,000 (excluding pensions and main homes). Further popular support for such taxes could be gained by referring to them as an 'NHS surcharge' given the crucial role the NHS has played during the pandemic. A compelling case for such a tax is made by Saez and Bruckman (2019) in *Progressive Wealth Taxation*.

A Land Value Tax has a strong lineage in the economics literature, with economists from Adam Smith through to Milton Friedman, Paul Krugman and Joseph Stiglitz advocating such taxes. Economists generally favour a land tax since in contrast to other taxes it does not affect economic efficiency and can reduce inequality. A land tax is already in place in over thirty countries and would buttress the introduction of a wealth tax in the UK.

Business rates and the council tax have been perennially unpopular in the UK, and with the suspension of business rates during the lockdown this would seem to be an opportune time to consider reforming both of these taxes. Closing tax loopholes and addressing multinational corporate tax avoidance is also overdue. Other novel taxes are likely to arise as a result of the special measures that have been put in place during the pandemic. For example, Boot et al (2020) in *Corona and Financial Stability 4.0: Implementing a European Pandemic Equity Fund* have argued that the small and medium enterprises (SME) sector should be assisted financially, not by loans, which could prove difficult to pay off during the recovery phase but through grants that are combined with a later profit surtax which would in effect mimic government equity injections, as part of the new social contract. Furthermore, taxation reform that contributes to the aim of sustainably decarbonising societies would be an important new way of raising revenue and help to address the issues of climate change discussed in section 3.8.

3.8 Climate and environmental change

In section 3.3 we noted that the current crisis is in essence an Anthropocene crisis driven by mankind's rapacious demand for global resources of all kinds and the unsustainable nature of this use. Climatic change is another crisis of the Anthropocene era that has been around for some time and the global lockdown of economic activity has had significant effects on carbon emissions in cities and in the air. It will be interesting to see going forward if the collective prioritising of health and wellbeing during the pandemic will be focused on the climate change agenda. Most commentators now argue that it should (see, for example, Jared Diamond's point in section above). We argue in this section that there will be a clear opportunity to pursue such climate-friendly policies, or green policies, in the aftermath of the pandemic since they could have large net gains for countries that suffer significant permanent scarring from the crisis.

Climate change and the environment is another classic example of the global public good issue that we discussed in section 3.3. For example, if one country, or group of countries, impose carbon taxes on other countries that do not impose such taxes the latter countries still benefit from the reduction in greenhouse gases and can simply free ride on the investment elsewhere. It is doubtful that a shared understanding of the public good nature of climate change will come about voluntarily although the sharing of information on COVID-19 in the current pandemic may signal a glimmer of hope in the right direction. More likely, though, some rules-based system of coordination, as in the case of the public health control of pandemics, will be required to address this in order to avoid the free rider problem.

Repairing the economic damage caused by the pandemic by a rapid return to business as usual could be environmentally harmful, as was the case after the 2007–08 financial crisis since, by 2010 emissions had reached a record high, due in part because governments implemented measures to stimulate economies with limited regard for the environmental consequences. If the same happens this time there will be little if any hope of meeting the emissions goals of the 2015 Paris Agreement, which were set to limit global warming to 1.5°C to 2°C.

However, a recent paper from the Oxford Smith School of Enterprise and the Environment with co-authors including Joseph Stiglitz and Nicholas Stern (May 2020), (*Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change?)* stresses that an important lesson from the global financial crisis is that green stimulus policies often have advantages over traditional fiscal stimulus. The findings of the report stem from a survey of 231 finance ministry officials, central bankers, and other economists, representing 53 countries. The advantages they cite of green stimulus policies over traditional fiscal stimulus are the following. Construction jobs for renewable energy installation or retrofitting buildings cannot be offshored. They are also labour intensive – for every $1 million spent, 7.49 full-time renewable energy jobs are created but only 2.65 jobs in fossil fuels. And, of course, the long-term effects of cleaner air and lower emissions offer additional benefits. An important lesson from this is that if the construction industry in the UK is to take a hit from the lockdown and faces layoffs and lack of work it may be an ideal time to use such spare capacity to kick start the green revolution in terms of making existing houses much more energy efficient.

The report identifies "five policies with high potential on both economic multiplier and climate impact metrics: clean physical infrastructure, building efficiency retrofits, investment in education and training, natural capital investment, and clean R&D. These recommendations are contextualised through analysis of the short-run impacts of COVID-19 on greenhouse gas curtailment and plausible medium-run shifts in the habits and behaviours of humans and institutions." And the authors note that current crisis has "demonstrated that governments can intervene decisively once the scale of an emergency is clear and public support is present."

A recent study by McKinsey demonstrates that low-carbon recovery could not only initiate the significant emissions reductions needed to halt climate change but also create more jobs and economic growth than a high-carbon recovery would. Their striking analysis of stimulus options for a European country suggests that mobilizing €75 billion to €150 billion of capital could yield €180 billion to €350 billion of gross value added, generating up to three million new jobs, and enable a carbon-emissions reduction of 15 to 30 percent by 2030. Such a package need not involve economic compromises. They argue their analysis "…highlights the chance for policy makers to assemble a package that quickly creates jobs and economic demand, produces steady growth, and accelerates the uptake of zero-carbon technologies."

In a more academic vein, Ronald MacDonald and Donald Macrae, in the reports *Maximising Scotland's Well-Being by Bravely Innovating* and *Hydrogen Scotland: A Route to Export Powerhouse*, outline in some detail a potential route map for the implementation of the hydrogen economy in Scotland that could dramatically improve productivity, wellbeing and economic growth and produce a fully employed economy. In their Wellbeing Report MacDonald and MacRae envisage the creation of considerable benchmarkable gains in both productivity and economic growth by: (a) accelerating Scotland's impressive decarbonisation of its economy; (b) decarbonising to maximise economic, social and environmental gains from decentralisation; (c) being at the forefront of information technology of digitalisation to decarbonise to decentralise. MacDonald and MacRae's Hydrogen Scotland report is a primer for a proposed hydrogen technology road map for

Scotland akin to similar investigations already undertaken by Australian and Norwegian Governments, both of which explicate enormous economic potential while simultaneously decarbonising their economies.

MacDonald and MacRae's reports suggest a number of initiatives that could be got off the ground very quickly to boost economic growth, wellbeing and reduce unemployment in Scotland. As Scotland is already leading in the installation of floating windfarms, a strong case can be made to manufacture a great deal more of the required wind tower assemblies in Scotland, alongside the considerable quantities of Ultra High Direct Current cables that are needed for grid-based transmission of electricity. The steam reforming technology to produce hydrogen and many other products from fossil fuels is well established. There are no barriers to using renewable energy for this purpose. Establishing the feasibility of using offshore generated renewable energy to replicate this offshore from currently disused oil and gas drilling platforms operating alongside operating platforms would be major step forward in greening fossil fuel production. Initially this would involve a great deal of engineering design work onshore followed by extensive proof of concept engineering offshore.

A further core initiative that could get off the ground now is the manufacture of electrolysers for the renewable energy-based production of hydrogen as a store of energy. This hydrogen could also be used to produce ammonia now for export either as a fertiliser or as a store of hydrogen given a recent breakthrough to markedly reduce the cost of extracting hydrogen from ammonia. The addition of "captured" CO_2 to ammonia to produce urea for a high-quality odourless fertiliser for export could also be done now.

Large scale manufacture of electrolysers could proceed now for the renewable production of hydrogen for fuel-cell based transportation by: (a) buses right now with prospects for rapid growth; (b) trucks rapidly emerging as hydrogen can be distributed via the oil industry's present infrastructure of fuel stations; and (c) quieter trains sooner than later to deliver an increasingly significant contribution to the electrification of UK and global rail systems, particularly services to regional and remote communities.

4. Concluding bullet point summary

In this paper we argue that the COVID-19 pandemic is an anthropological shock and as such was predictable. This has important implications for policy in the future, in terms of rebuilding resilience in the public and private sectors. The prioritising of society's wellbeing over economic growth and efficiency during the current crisis suggests that society may now be ready to deal with the other major crisis of the Anthropocene, namely climate change. Although addressing climate change will need a coordinated global response, one of the main themes of this paper is that there will be considerable advantages to the UK and Scotland, particularly in terms of addressing the large scale unemployment that will be the inevitable result of the pandemic, to instigate a wellbeing fiscal stimulus, and one that has a major focus on greening the economy, rather than a traditional fiscal stimulus.

Section 2. Macroeconomic implications of the pandemic

- There is likely to be significant long term scarring in terms of both unemployment and output due to the lockdown period, the changes in aggregate demand post lockdown and the implications of social distancing.
- Post-pandemic unemployment could be as high as 16% and is likely to be especially high in Scotland given the structure of the Scottish economy. A wide policy toolkit will be needed to address this unemployment, ranging from tax incentives, demand management policies, skills and training programmes and a focussed spend on the green economy.
- The stance of fiscal policy should remain substantially expansionary as we move out of the lockdown period due to the need to tackle the alarming rate of unemployment, the potential increased risk aversion from the private sector and the consequent fall in private sector and export demand. There should be no return to austerity policies.
- Monetary policy of low interest rates and significant quantitative easing should continue but this in and of itself will not be sufficient without vigorously pursued fiscal policies.
- Debt and deficit levels should not be a concern for the foreseeable future, even if they approach World War Two levels, and these deficits should be funded with long term maturity debt, preferably consuls.
- Since the backdrop to the pandemic is one of secular stagnation, deflationary pressures are more likely going forward than an uptick in inflation although there are inflation risks.
- The fiscal stimulus package should: prioritise public expenditure on greening the economy; building resilience in health and social care and in the agriculture sector; public spending on infrastructure projects; increased tax incentives to work; and spending on a range of training and skills programmes.

Section 3 Opportunities post-pandemic and building a new social contract

- 3.1 Collective actions at a national level and also at a local level have been very significant and important during the lockdown. The building of these social networks could signal the rebuilding of social capital in Scotland and the UK and there is a significant opportunity for policymakers to help to build such networks at an industrial and sectoral level since they are key to the prosperity of other developed countries.

- 3.2 The prioritising of health and wellbeing during the pandemic indicates that there should not be an exclusive focus on economic growth but a shift to a more holistic wellbeing measure; such a measure should recognise the deficiencies of the pre-pandemic economy in terms of inequalities, a reliance on relatively low paid and insecure jobs and a lack of resilience in health and social care.
- 3.3 Since the current pandemic may be thought of as an anthropological shock it is, in essence, predictable which requires appropriate resilience building in the public sector; the 'public good' nature of public health should be recognised and should lead to commonly accepted global rules to ensure a coordinated response is available In preparing for future pandemics and reacting to them; such rules could be policed by a strengthened, rather than weakened, WHO.
- 3.4 There will increasingly be a home bias in the building of supply chains and the creation of resilience in the public sector including health and social care. The private sector will also want to reconsider its reliance on supply chains and just in time delivery methods.
- 3.5 The pandemic will have a profound effect on the work-leisure balance with teleworking potentially having profound effects on where people work and live and the many ramifications this could have; how people consume goods and services is likely to change and these changing patterns will have important implications for employment; there have been important developments in health and telemedicine during the pandemic and these developments are likely to be continued and reinforced going forward; learning in the university sector will change perhaps permanently with a greater emphasis on distance and blended learning and more focus on training and retraining a workforce that will need reskilling and retraining perhaps a number of times through its lifetime.
- 3.6 The pandemic has underscored and highlighted the many inequalities that exist in the UK and in other developed economies and we have offered various solutions for this in this paper, including reform of the tax system. The main proposal we have under this heading is a move from shareholder to stakeholder capitalism and we believe economic policy should be used to guide that transition.
- 3.7 The pandemic represents an opportune moment for tax reform and we suggest this should comprise a permanent reduction in labour taxes, or the tax wedge; the introduction of a wealth tax for high net worth individuals; a land tax which is one of the most efficient taxes and is equality friendly; reform of business rates and the council tax; innovative taxes such as a profit surtax for SMEs and carbon taxes.
- 3.8 It would be hoped post-pandemic that there would be a greater urgency in addressing the other major anthropological shock, namely climate change; since this is also a global public good we advocate a rules-based system to avoid the classic free rider problem; even if a coordinated response is not possible there is now increasing evidence that a green fiscal stimulus has distinct advantages over traditional fiscal policies to create millions of new jobs and create steady carbon friendly growth. As noted in this paper many of these new jobs could be created relatively quickly with the correct spending focus.