IIPP0007 Written submission

Option 3: Based on our discussion of the developments in economics since the classical political economists, which kind of new economic thinking do you think is necessary following events such as the global financial crisis of 2007-8 or the Covid-19 pandemic? Make sure you contrast this new economic thinking with whatever economic elements/theories/concepts you are challenging. If helpful, use real-world examples to substantiate your argument.

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Contents

Introduction

Events in the last few years have rocked UK economic activity. It is impossible to separate the effects of the Covid-19 pandemic ('Covid-19'), Britain's exit from the European Union ('Brexit') and Russia's war in Ukraine ('Russia's War'). Indeed, these effects are overlaid on the fall-out from the 2007-08 financial crash ('2008 Crisis'). Moreover, there are growing warnings of the emergence of new zoonoses (Machalaba *et al.* 2015; Rozenbaum 2020) and worsening climate change (United Nations 2022) meaning that future shocks to social and economic systems are likely over the coming few years.

There have been many changes in economic thinking since the classical period. A range of metrics and heuristics have been advanced to determine when, if and how governments should intervene in economic activity. Various models of the behaviours and motivations of individuals, markets and organisations have been developed. However, this mainstream economic thinking seems unable to find solutions to the ongoing "polycrisis". It is time for new economic thinking.

In this paper, I identify the key features of the current recession in the UK in terms of the experiences of ordinary people and contrast this with the fiscal perspective of the economic situation. I then set out three broad changes in economic thinking for building a more resilient society and economy. These changes are: how we measure our progress; how we invest in the future; and how we think about the motivations of individuals in our society.

A time of polycrisis

Contemporary concerns of many people in the UK are the high cost of living and under-performing public services such as health and social care. These are consequences of the Covid-19 restrictions, changes in immigration and trading rules after Brexit, Russia's War and even the 2008 Crisis[1].

The most recent Bank of England Monetary Policy Report forecasts that inflation will peak at an annual rate of more than 13 per cent and remain above 10 per cent for much of 2023 (Bank of England 2022). The number of people in poverty has been rising for years and is expected to reach 14 million people in 2023-24 (Brewer, Browne, *et al.* 2011; Poinasamy 2013; Corlett and Try 2022). Moreover, many people are living in inefficient homes, they are uncomfortable, unhealthy, expensive to heat and contribute to climate change (Local Government Association 2022).

Whilst UK life expectancy remains above global averages and matches European averages (WorldData.org 2020), reduced spending on health and social care since 2010 has been implicated in increased mortality over the last decade (Watkins *et al.* 2017) and there is a decline in health satisfaction and mental health over the last few years (Office for National Statistics 2022). This reflects data on health service backlogs, which were steadily increasing before the pandemic but have been rising rapidly since 2020 (BMA 2022). For a country near the top of many wealth indicators, these are inglorious trends.

[1] It may also be argued that the 2008 Crisis, Covid-19, Brexit and Russia's War are themselves consequences of specific economic factors such as international trade arrangements and the effects of market liberalisation on different communities.

> *"Humanity will not come to an end of we double debt to GDP ratios, but it could if we fail to combat climate change"*
>
> Allen *et al.* (2019, p119)

Those at the very sharp end of poverty and poor health could be if they are not being concerned about the environmental problems that are intensifying. However, the very severe consequences of the climate and ecological crises are already being experienced, are increasing, and are likely to impact the most vulnerable the hardest.

The UN Intergovernmental Panel on Climate Change have used increasingly unequivocal language to state the imperative to act on climate change (IPCC 2022). Yet, according to the UK's Committee on Climate Change, "tangible progress has not been demonstrated across a host of areas necessary to meet the UK's 2030 [targets] and Sixth Carbon Budget" (Abraham *et al.* 2022). Thus, the "vicious syllogism"[2] of Foster (2015) still holds and "We are in for dangerous, unpredictable and potentially catastrophic climate change".

Climate change is not the UK's sole environmental problem. Biodiversity loss is severe and worsening and threatens our health and food security (House of Commons Environmental Audit Committee 2021) and UK is failing to meet many of the targets of the Convention on Biological Diversity (Defra *et al.* 2021). Further, pollution is implicated in illness and mortality of tens of thousands of people each year with considerable costs to health services (Office for Health Improvement and Disparities 2022).

> *"Economic growth never frees us from the need to grow more"*
>
> Benanav (2020, p93)

The UK is in recession and the Bank of England has warned this is expected to remain the case until 2024 (Bank of England 2022). There is almost universal agreement within mainstream economic and political discourse that growth is essential to counter recession. Over the last century, recessions have been responded to with a range of fiscal tools with the aim of stimulating growth (Table 1). However, early and mid-20th century economists, including Adam Smith, David Ricardo and John Maynard Keynes recognised that there is a limit to the growth of the economy (Raworth 2017, p250-256). The measure used for growth, Gross Domestic Product (GDP), was not designed to measure national welfare (Foreign *et al.* 1934). Worse, there is evidence that the measures used to increase GDP growth worsen inequality (Banerjee and Duflo 2019, p57) and multiple studies find that the objective of raising GDP is incompatible with maintaining a liveable environment (Stiglitz *et al.* 2009; Hickel and Kallis 2020; Haberl *et al.* 2020).

Recessions are problematic to government because they reduce taxation income. This, coupled with increased spending, can increase borrowing from the private sector leading to a fiscal deficit. In the last few years the fiscal deficit has risen to levels not seen since World War II (Harari *et al.* 2021). Over recent years, the response to fiscal deficit that is deemed too large, has been to reduce state spending (see Table 1). This tends to impact

[2] The syllogism is as follows:
1. if we don't keep below 2.0 degrees, we're in for dangerous, unpredictable, potentially catastrophic climate change
2. If we don't limit global emissions to 1,300bn tonnes CO2e, we shall not stay below 2.0 degrees
3. If we haven't already minimally embarked on limiting emissions we will not limit them to 1,300 bn tonnes
4. We have not now even minimally embarked on such a programme
Conclusion: We are in for dangerous, unpredictable and potentially catastrophic climate change

Table 1: *Fiscal responses to recession over the last century have been motivated by the contemporary understanding of dominant economic drivers. This table gives a generalised account of 5 ways of thinking about recession. Examples given are from UK and US.*

Thinking	**Cause**	**Response**	**Example**
Supply is limited	State has borrowed too much from the private sector	Increase taxes	US President Hoover Revenue Act of 1932 (Cooper 2010)
	Investors worried about future tax rise	Reduce state spending	Public spending cuts from 2010, in particular following the "Austerity" budget of 2012 (HM Treasury 2010)
	Private sector has too little to invest	Reduce taxes for investors	US President Reagan's Economic Recovery Tax Act of 1981 (US Congress 1981)
Demand is limited	Consumers have too little to spend	Reduce taxes for consumers	Chancellor Darling Temporary cut in VAT standard rate 2008 (House of Commons Library 2013)
		Increase public spending	US President Roosevelt's New Deals of the 1930s (Snowdon and Vane 2005)

the those already on the lowest incomes in society disproportionately (Browne and Levell 2010) on top of the effects of economic instability (Corlett, Odamtten, *et al.* 2022). Yet, even the accepted tenet that there is a safe limit that public expenditure must not pass (Sutherland *et al.* 2012) is robustly challenged for causing more harm than good (Lerner 1943; Furman and Summers 2019; Kelton 2016). As Kelton (2020) identifies, focusing on budget deficits ignores 7 "deficits that matter" including health care deficit, infrastructure deficit, climate deficit and democracy deficit.

All these crises and more are no doubt contributing to the falling levels of trust in government (Johnston and Uberoi 2022; ONS 2022) which is decreasing public engagement potentially curbs the legitimacy of government to enact the ambitious transformations that are needed (Quilter-Pinner *et al.* 2021).

Traditional economic thinking has tried to explain social and environmental problems as consequences of *market failures*, such as negative externalities and asymmetric information. Neoclassical thinkers have raised the alarm at *government failures* caused when self-interested politicians and bureaucrats, under pressure from interest groups, intervene in markets. Butler (2012) may even have opined that the problem is *democratic failure*. Like "growth" and "deficit", these *failures* are simply labels that detach economic thinking from the reality, which is that we are failing current and future generations, and the natural world, and risking our very survival. The UK now faces "a decade of unprecedented economic change as we adjust to a post-Covid-19 economy, a new economic context outside the European Union (EU), and the decarbonisation of the economy" (Brewer, Handscomb, *et al.* 2022).

A time for more thoughtful economics

Economic thinking has always been in flux but some ideas have proved rather 'sticky' over recent years such as the growth imperative and aversion to fiscal deficits. These metrics no longer reflect society's wellbeing and more meaningful metrics are required. Moreover, fiscal consolidation has reduced investment in public services meaning many societal needs are not being met. New perspectives on investment in infrastructure and innovation are overdue. Finally, poor confidence in future prosperity and low trust in the state calls for a compelling new vision of who we are and where we are going as a society.

Meaningful metrics

The public has very little practical use for GDP (Heydecker *et al.* 2022). It is clear that standard economic metrics are not conveying the impact or complexity of current crises. There has been rising discourse about development trajectories that are not fixated on GDP growth, particularly since the 2008 Crisis (Weiss and Cattaneo 2017). This includes ideas around 'green growth' (OECD 2011), 'degrowth' (Weiss and Cattaneo 2017) and 'post-growth' (Raworth 2017), as well as aiming for sufficiency alongside efficiency (Haberl *et al.* 2020).

If it has a purpose at all, economic thinking must be to benefit society now and in the future. Better metrics would reflect what society values such as Social Progress (Stern *et al.* 2020), Health and Social Problems (Wilkinson and Pickett 2009), Planetary Boundaries (Rockström *et al.* 2009), progress on biological diversity targets (Defra *et al.* 2021) and progress on climate change targets (UNFCC 2022) in a direct challenge to GDP, the Carnegie Trust combines social, economic, environmental and democratic indicators into Gross Domestic Wellbeing (Heydecker *et al.* 2022).

Much like GDP, any single metric can be misunderstood, misused and possibly even dangerous to society and the environment (Moreno *et al.* 2016). UK already publishes a National Wellbeing Dashboard (Office for National Statistics 2022). Similarly, Raworth (2017, p240-242), referencing the city of Oberlin's Environmental Dashboard (Oberlin College 2020) proposes the "Doughnut" as a dashboard that tracks progress on maintaining social foundations and staying within Planetary Boundaries.

Socially-aligned infrastructure and innovation

> *"What matters is not whether the government's budget is in surplus or deficit but whether the government is using its budget to achieve good outcomes for the rest of the economy."*
>
> Kelton (2020, p63)

Since the New Deals of the 1930s, spending on infrastructure and innovation projects have often been employed to reverse the low 'mood' that is a factor in recessions (Dow 2000). Recovery plans that include infrastructure and innovation have been proposed in response to the the 2008 Crisis (e.g. OECD 2010) and Covid-19 (e.g. BEIS 2021). But these proposals miss opportunities to widen the scope of infrastructure and innovation and multi-solve for society and the environment.

Carefully designed infrastructure projects have the potential to improve social and environmental outcomes. The UK has underinvested in infrastructure for decades (Keep 2021). Rather than focussing simply on hard engineering, investment would be better directed to establishing a social care system (De Henau and Himmelweit 2020; Himmelweit 2021), upgrading homes to be healthy and inexpensive to run and to address the inequalities that people of different abilities and long term health conditions face accessing transport and work. Interventions such as these improve people's lives. In so doing, they also support more people to enter the workforce and thus stimulate economic activity where it is currently very constrained - the supply of workers.

Innovation is also a frequently recommended economic stimulant. It is the complement to infrastructure being less reliable but with the potential to produce wholesale transformation. Classical economics seems to think of innovation like a flow from a tap that simply needs to be turned on. Instead, innovation tends to have its own ideas about when and how to emerge. Therefore it is vital to define the broad function of innovation rather than detail its nature (Foray *et al.* 2012). For example, innovation direction-setting may include: putting energy generation in the hands of the consumer; reversing biodiversity loss whilst creating more resilient agriculture; and preventing and treating diseases of poverty and inequality. However, the current models of innovation are unlikely to yield the radical solutions we need because they rely on investment that expects to yield profit. Instead we need innovation that crowds in experts, fully collaborating without the barriers created by competition. The most radical and effective solutions will likely be realised using open source prosumer models[3] that allow individuals and communities to design and refine to suit their individual needs.

The return of society

Infrastructure and innovation will need funding and there is an emergence of scholarship considering alternative financial models that will deliver the transitions necessary (Kedward *et al.* 2022). This includes state spending that is largely agnostic to fiscal deficit (Lerner 1943; Kelton 2016; Kelton 2020) and thinking beyond financing to efficient use of infrastructure already in place, such as housing (Ermgassen *et al.* 2022). Economic thinking is emerging - and returning - that sees the role of the state as a patient investor (Mazzucato 2013), providing direction (Foray *et al.* 2012; Mazzucato 2017; Kattel *et al.* 2018; Mazzucato 2021) and support until innovations are deployed and established (Ergas 1987; Borrás and Edquist 2013).

It is rational that the prospect of future economic shocks is dampening financial investment from self-serving economic actors. Yet, our motivations are not only financial and we are not only self-serving. The evidence is that humanity is naturally cooperative (Anon. 2018). With the right motivation, people will make investments in time, energy and other personal resources, rather than simply money (Ostrom 1996), and even self-serving actors can be persuaded by the *convenient social virtue* of public spiritedness (Galbraith 1973, p46).

Thus, the new economic thinking demands a model that embraces our cooperative nature and motivations. Whilst the economic outlook may be uncertain, creating a compelling vision for who we are and the direction we wish to take from here could engage investment

[3]Whilst economic thinking has traditionally separated consumers from producers, models of innovation, particularly in software and documentation, are emerging - or perhaps returning - for which those involved both consume and produce the good.

that offers the rewards of a healthy and more resilient society in an ecologically richer world. Much as scholars are developing the thinking about value and the purpose of the state (Galbraith 1973; Jørgensen and Bozeman 2007; Martin 2016; Mazzucato 2017; Kattel *et al.* 2018; Mazzucato and Ryan-Collins 2019), wider public participation is required to identify the values and purpose of society for itself.

Conclusion

Economic thinking for many decades has been founded on models that mask the real experiences of people in society. Politics seems stuck, focussed on GDP and fiscal deficit while social and environmental wellbeing is on the decline. It is no surprise that confidence in politicians - and the future - is also declining. A rising chorus calls for a revision of the metrics by which we evaluate our progress. As with other times of decline, investment in infrastructure and innovation, rather than austerity, will be critical. However, what is needed now is the social infrastructure that facilitates care and community, and it is innovation that supports a just transition. These positive actions are necessary to inspire a national conversation about what we value and who we aspire to become. Its time we shed classical thinking about self-seeking individuals and transitioned to a convivial and participatory society[4].

[4]This phrase is borrowed from Cosme *et al.* (2017) which identifies the 3rd goal of degrowth as "Promote the transition from a materialistic to a convivial and participatory society"

Bibliography

Abraham, Sasha *et al.* (2022). *COP27: Key outcomes and next steps for the UK*. Tech. rep. Committee on Climate Change. URL: https://www.theccc.org.uk/publication/cop27-key-outcomes-and-next-steps-for-the-uk/.

Allen, Paul *et al.* (2019). *Zero Carbon Britain: Rising to the Climate Emergency 2019 updates*.

Anon. (2018). "The cooperative human". In: *Nature Human Behaviour* 2, pp. 427–428. DOI: 10.1038/s41562-018-0389-1. URL: https://www.nature.com/articles/s41562-018-0389-1.

Banerjee, Abhijit V and Esther Duflo (2019). *Good Economics for Hard Times*.

Bank of England (2022). *Monetary Policy Report - November 2022*. Tech. rep. Bank of England. URL: https://www.bankofengland.co.uk/monetary-policy-report/2022/november-2022 (visited on 11/27/2022).

BEIS (2021). *Net Zero Strategy: Build Back Greener*. Tech. rep. Department for Business, Energy & Industrial Strategy. URL: https://www.gov.uk/government/publications/net-zero-strategy.

Benanav, Aaron (2020). *Automation and the Future of Work*.

BMA (2022). *NHS backlog data analysis*. Ed. by British Medical Association. URL: https://www.bma.org.uk/advice-and-support/nhs-delivery-and-workforce/pressures/nhs-backlog-data-analysis (visited on 11/27/2022).

Borrás, Susana and Charles Edquist (2013). "The choice of innovation policy instruments". In: *Technological Forecasting & Social Change*.

Brewer, Mike, James Browne, and Robert Joyce (2011). *Child and Working-Age Poverty from 2010 to 2020*. Tech. rep. Institute for Fiscal Studies. URL: https://ifs.org.uk/publications/child-and-working-age-poverty-2010-2020.

Brewer, Mike, Karl Handscomb, *et al.* (2022). *Social Insecurity: Assessing trends in social security to prepare for the decade of change ahead*. Tech. rep. Resolution Foundation. eprint: https://economy2030.resolutionfoundation.org/wp-content/uploads/2022/01/Social-Insecurity.pdf. URL: https://economy2030.resolutionfoundation.org/reports/social-insecurity/.

Browne, James and Peter Levell (2010). *The distributional effect of tax and benefit reforms to be introduced between June 2010 and April 2014: a revised assessment*. Tech. rep. Institute for Fiscal Studies. URL: https://ifs.org.uk/publications/distributional-effect-tax-and-benefit-reforms-be-introduced-between-june-2010-and.

Butler, Eamonn (2012). *Public Choice – A Primer*. URL: https://iea.org.uk/publications/research/public-choice-a-primer.

Cooper, Jeffrey A. (2010). "Ghosts of 1932: The Lost History of Estate and Gift Taxation". In: *Florida Tax Review*. URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1438181.

Corlett, Adam, Felicia Odamtten, and Lalitha Try (2022). *The Living Standards Audit 2022*. Tech. rep. Resolution Foundation. eprint: https://www.resolutionfoundation.org/app/uploads/2022/07/Living-Standards-Audit-2022.pdf. URL: https://www.resolutionfoundation.org/publications/the-living-standards-audit-2022/.

Corlett, Adam and Lalitha Try (2022). *In at the deep end: The living standards crisis facing the new Prime Minister*. Tech. rep. Resolution Foundation. URL: https://www.resolutionfoundation.org/publications/in-at-the-deep-end/.

Cosme, Inês, Rui Santos, and Daniel W. O'Neill (2017). "Assessing the degrowth discourse: A review and analysis of academicdegrowth policy proposals". In: *Journal of Cleaner Production* 149, pp. 321–334.

De Henau, Jerome and Susan Himmelweit (2020). *A Care-Led Recovery from Coronavirus*. Tech. rep. Women's Budget Group. URL: https://wbg.org.uk/analysis/reports/a-care-led-recovery-from-coronavirus/.

Defra Department for Environment, Food, Rural Affairs, and the Joint Nature Conservation Committee JNCC (2021). "UK Biodiversity Indicators 2021". In: URL: https://jncc.gov.uk/our-work/uk-biodiversity-indicators-2021/.

Dow, Christopher (2000). "Shocks and Responses in Major Fluctuations". In: *Major Recessions: Britain and the World 1920-1995*. Oxford University Press. Chap. 5. ISBN: 9780199241231. DOI: 10.1093/0199241236.003.0005. eprint: https://academic.oup.com/book/0/chapter/297065838/chapter-ag-pdf/44508820/book_34766_section_297065838.ag.pdf. URL: https://doi.org/10.1093/0199241236.003.0005.

Ergas, Henry (1987). "Does Technology Policy Matter?" In: *Technology and Global Industry: Companies and Nations in the World Economy*. Washington, DC: The National Academies Press. Chap. 9, pp. 191–245. DOI: 10.17226/1671. URL: https://nap.nationalacademies.org/read/1671/chapter/9.

Ermgassen, Sophus O.S.E. zu *et al.* (2022). "A home for all within planetary boundaries: Pathways for meeting England's housing needs without transgressing national climate and biodiversity goals". In: *Ecological Economics* 201. DOI: 10.1016/j.ecolecon.2022.107562. URL: https://www.sciencedirect.com/science/article/pii/S0921800922002245.

Foray, D., D.C. Mowery, and R.R. Nelson (2012). "Public R&D and social challenges: What lessons from mission R&D programs?" In: *Research Policy* 41.10. The need for a new generation of policy instruments to respond to the Grand Challenges, pp. 1697–1702. ISSN: 0048-7333. DOI: https://doi.org/10.1016/j.respol.2012.07.011. URL: https://www.sciencedirect.com/science/article/pii/S0048733312002193.

Foreign, United States. Bureau of, Domestic Commerce, and National Bureau of Economic Research (1934). *National Income, 1929-1932: Letter from the Acting Secretary of Commerce Transmitting in Response to Senate Resolution No. 220 (72nd Cong.) a Report on National Income, 1929-32*. Letter from the Acting Secretary of Commerce Transmitting in Response to Senate Resolution No. 220(72d Cong.) a Report on National Income, 1929-32. 73rd Cong., 2d sess. Senate. Doc. 124. U.S. Government Printing Office. URL: https://fraser.stlouisfed.org/files/docs/publications/natincome_1934/19340104_nationalinc.pdf.

Foster, John (2015). *After Sustainability. Denial, Hope, Retrieval*. URL: https://www.routledge.com/After-Sustainability-Denial-Hope-Retrieval/Foster/p/book/9780415706407.

Furman, Jason and Lawrence H. Summers (2019). *Who's Afraid of Budget Deficits? How Washington Should End Its Debt Obsession*. Foreign Affairs. URL: https://www.foreignaffairs.com/united-states/whos-afraid-budget-deficits (visited on 12/03/2022).

Galbraith, John Kenneth (1973). *Economics and the Public Purpose*. 3rd. Pelican.

Haberl, Helmut *et al.* (2020). "A systematic review of the evidence on decoupling of GDP, resource use and GHG emissions, part II: synthesizing the insights". In: *Environmental Research Letters* 15. URL: https://iopscience.iop.org/article/10.1088/1748-9326/ab842a.

Harari, Daniel, Matthew Keep, and Philip Brien (2021). *Coronavirus: Economic impact. Research Briefing*. House of Commons Library, UK Parliament. URL: https://commonslibrary.parliament.uk/research-briefings/cbp-8866/ (visited on 11/27/2022).

Heydecker, Rachel, Hannah Ormston, and Jennifer Wallace (2022). *GDWe: A spotlight on democraticwellbeing*. Tech. rep. Carnegie UK. eprint: https://d1ssu070pg2v9i.cloudfront.net/pex/pex_carnegie2021/2022/01/20123523/GDWe-A-spotlight-on-democratic-wellbeing-FINAL.pdf. URL: https://www.carnegieuktrust.org.uk/publications/gdwe-a-spotlight-on-democratic-wellbeing/.

Hickel, Jason and Giorgos Kallis (2020). "Is Green Growth Possible?" In: *New Political Economy* 25.4, pp. 469–486. DOI: 10.1080/13563467.2019.1598964. eprint: https://doi.org/10.1080/13563467.2019.1598964. URL: https://www.tandfonline.com/doi/full/10.1080/13563467.2019.1598964.

Himmelweit, Susan (2021). "Care As investment In social Infrastructure". In: *The Political Economy of Industrial Strategy in the UK: From Productivity Problems to Development Dilemmas*. Agenda Publishing, pp. 191–202. ISBN: 9781788213394. URL: http://www.jstor.org/stable/j.ctv1mvw8s5.22 (visited on 12/04/2022).

HM Treasury (2010). *Budget June 2010*. Tech. rep. HM Treasury. eprint: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/248096/0061.pdf. URL: https://www.gov.uk/government/publications/budget-june-2010.

House of Commons Environmental Audit Committee (2021). *Biodiversity in the UK:bloom or bust? First Report of Session 2021–22*. Tech. rep. House of Commons Environmental Audit Committee. eprint: https://committees.parliament.uk/publications/6498/documents/70656/default/. URL: https://publications.parliament.uk/pa/cm5802/cmselect/cmenvaud/136/136-report.html.

House of Commons Library (2013). *VAT : the temporary cut in the standard rate*. URL: https://commonslibrary.parliament.uk/research-briefings/sn00701/ (visited on 12/11/2022).

IPCC (2022). *IPCC WGII Sixth Assessment Report. Summary for Policymakers*. Tech. rep. United Nations Intergovernmental Panel on Climate Change. URL: https://report.ipcc.ch/ar6wg2/pdf/IPCC_AR6_WGII_SummaryForPolicymakers.pdf.

Johnston, Neil and Elise Uberoi (2022). *Political disengagement in the UK: who is disengaged? Research Briefing*. Tech. rep. House of Commons Library. URL: https://commonslibrary.parliament.uk/research-briefings/cbp-7501/.

Jørgensen, Torben Beck and Barry Bozeman (2007). "Public Values: An Inventory". In: *Administration & Society* 39.3. URL: http://aas.sagepub.com/cgi/content/abstract/39/3/354.

Kattel, Rainer *et al.* (2018). *The economics of change: Policy and appraisal for missions, market shaping and public purpose*. Tech. rep. Institute for Innovation and Public Purpose. URL: https://www.ucl.ac.uk/bartlett/public-purpose/publications/2018/jul/economics-change-policy-and-appraisal-missions-market-shaping-and-public.

Kedward, Katie, Daniela Gabor, and Josh Ryan-Collins (2022). *Aligning finance with the green transition: From a risk-based to an allocative green credit policy regime*. Tech. rep. UCL Institute for Innovation and Public Purpose. URL: https://www.ucl.ac.uk/bartlett/public-purpose/wp2022-11.

Keep, Matthew (2021). *Infrastructure policies and investment*. URL: https://commonslibrary.parliament.uk/research-briefings/sn06594/.

Kelton, Stephanie (2016). "The Failure of Austerity: Rethinking Fiscal Policy". In.

– (2020). *The Deficit Myth*.

Lerner, Abba P. (1943). "Functional Finance and the Federal Debt". In: *Social Research* 10.1, pp. 38–51.

Local Government Association (2022). *England's leaky homes will cost poorer families £250 extra a year in wasted energy*. URL: https://www.local.gov.uk/about/news/englands-leaky-homes-will-cost-poorer-families-ps250-extra-year-wasted-energy.

Machalaba, Catherine C. *et al.* (2015). "Emerging Diseases from Animals". In: *Nature Public Health Emergency Collection*, pp. 105–116. DOI: 10.5822/978-1-61091-611-0_8. URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7124125/.

Martin, Ben R. (2016). "Twenty challenges for innovation studies". In: *Science and Public Policy* 43.3, pp. 432–450. ISSN: 0302-3427. DOI: 10.1093/scipol/scv077. eprint: https://academic.oup.com/spp/article-pdf/43/3/432/7573255/scv077.pdf. URL: https://doi.org/10.1093/scipol/scv077.
Mazzucato, Mariana (2013). *The Entrepreneurial State. Debunking Public vs Private Sector Myths*. 3rd.
– (2017). *Mission-Oriented Innovation Policy. Challenges andopportunities*. Tech. rep. UCL Institute of Innovation and Public Purpose. URL: https://www.thersa.org/globalassets/pdfs/reports/mission-oriented-policy-innovation-report.pdf.
– (2021). *Mission Economy. A Moonshot Guide to Changing Capitalism*.
Mazzucato, Mariana and Josh Ryan-Collins (2019). *Putting value creation back into 'public value'. From market-fixing to market-shaping*. Tech. rep. UCL Institute forInnovation and-Public Purpose. Chap. Working Paper Series (IIPP WP 2019-05). URL: https://www.ucl.ac.uk/bartlett/public-purpose/wp2019-05.
Moreno, Camila, Daniel Speich Chassé, and Lili Fuhr (2016). *Carbon Metrics – Global abstractions and ecological epistemicide*. Tech. rep. URL: https://www.boell.de/en/2015/11/09/carbon-metrics.
Oberlin College (2020). *Oberlin Environmental Dashboard*. URL: https://environmentaldashboard.org/ (visited on 12/22/2022).
OECD (2010). *United Kingdom: Policies for a Sustainable Recovery*. Tech. rep. Organisation for Economic Cooperation and Development. DOI: 10.1787/9789264201774-en. eprint: https://www.oecd-ilibrary.org/docserver/9789264201774-en.pdf?expires=1671202590&id=id&accname=guest&checksum=C6EB8B5AD77AD51487059D1DF0AF04A8. URL: https://www.oecd-ilibrary.org/economics/united-kingdom-policies-for-a-sustainable-recovery_9789264201774-en.
– (2011). *Towards Green Growth. A Summary for Policy Makers*. Tech. rep. Organization for Economic Co-Operation and Development.
Office for Health Improvement and Disparities (2022). *Air pollution: applying All Our Health*. URL: https://www.gov.uk/government/publications/air-pollution-applying-all-our-health/air-pollution-applying-all-our-health (visited on 12/03/2022).
Office for National Statistics (2022). *Measures of National Well-being Dashboard: Quality of Life in the UK*. URL: https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/measuresofnationalwellbeingdashboardqualityoflifeintheuk/2022-08-12 (visited on 11/27/2022).
ONS (2022). *Trust in government, UK: 2022*. Ed. by Office for National Statistics. URL: https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulletins/trustingovernmentuk/2022 (visited on 12/11/2022).
Ostrom, Elinor (1996). "Crossing the great divide: Coproduction, synergy, and development". In: *World Development* 24.6, pp. 1073–1087. ISSN: 0305-750X. DOI: https://doi.org/10.1016/0305-750X(96)00023-X. URL: https://www.sciencedirect.com/science/article/pii/0305750X9600023X.
Poinasamy, Krisnah (2013). *The True Cost of Austerity and Inequality: UK Case Study*. Oxfam International. URL: https://www-cdn.oxfam.org/s3fs-public/file_attachments/cs-true-cost-austerity-inequality-uk-120913-en_0.pdf (visited on 11/27/2022).
Quilter-Pinner, Harry *et al.* (2021). *Trust issues: Dealing with distrust in politics*. Tech. rep. Institute of Public Policy Research. eprint: https://www.ippr.org/files/2021-12/trust-issues-dec-21.pdf. URL: https://www.ippr.org/research/publications/trust-issues.
Raworth, Kate (2017). *Doughnut Economics. Seven Ways to Think Like a 21st-Century Economist*.

Rockström, Johan *et al.* (2009). "Planetary boundaries:exploring the safe operating space for humanity". In: *Ecology and Society* 14.2, p. 32. URL: http://www.ecologyandsociety.org/vol14/iss2/art32/.

Rozenbaum, Mia (2020). *The increase in zoonotic diseases: the WHO, the why and the when?* Understanding Animal Research. URL: https://www.understandinganimalresearch.org.uk/news/the-increase-in-zoonotic-diseases-the-who-the-why-and-the-when.

Snowdon, Brian and Howard R. Vane (2005). "Keynes v. the 'old' classical model. Its origins, development and current state". In: *Modern macroeconomics*. Ed. by Brian Snowdon and Howard R. Vane. Edward Elgar, pp. 36–90.

Stern, Scott, Petra Krylova, and Jaromir Harmacek (2020). *2020 Social Progress Index: Methodology Summary*. Tech. rep. Social Progress Imperative. eprint: https://www.socialprogress.org/static/1aa2d19690906eb93c6cdb281e5ee68b/2020-social-progress-index-methodology.pdf. URL: https://www.socialprogress.org/.

Stiglitz, Joseph E., Amartya Sen, and Jean-Paul Fitoussi (2009). *Report by the Commission on the Measurement of Economic Performance and Social Progress*. Tech. rep. Commission on the Measurement of Economic Performance and Social Progress. URL: https://ec.europa.eu/eurostat/documents/8131721/8131772/Stiglitz-Sen-Fitoussi-Commission-report.pdf.

Sutherland, Douglas, Peter Hoeller, and Rossana Merola (2012). *Fiscal Consolidation: Part 1.How Much is Needed and How to Reduce Debt to a Prudent Level?* Tech. rep. Organisation for Economic Cooperation and Development. DOI: 10.1787/18151973. eprint: https://www.oecd-ilibrary.org/docserver/5k9h28rhqnxt-en.pdf?expires=1670072593&id=id&accname=guest&checksum=0A5D4F0C8CE077D04845903F7F05B129. URL: https://www.oecd-ilibrary.org/economics/fiscal-consolidation-part-1-how-much-is-needed-and-how-to-reduce-debt-to-a-prudent-level_5k9h28rhqnxt-en.

UNFCC, United Nations Framework Convention on Climate Change (2022). *Nationally Determined Contributions (NDCs)*. URL: https://unfccc.int/ndc-information/nationally-determined-contributions-ndcs.

United Nations (2022). *Climate change: No 'credible pathway' to 1.5C limit, UNEP warns. "Only a root-and-branch transformation of our economies and societies can save us from accelerating climate disaster"*. URL: https://news.un.org/en/story/2022/10/1129912 (visited on 12/04/2022).

US Congress (1981). *H.R.4242 - Economic Recovery Tax Act of 1981*. URL: https://www.congress.gov/bill/97th-congress/house-bill/4242 (visited on 12/11/2022).

Watkins, Johnathan *et al.* (2017). "Effects of health and social care spending constraints on mortality in England: a time trend analysis". In: *BMJ Open* 7.11. ISSN: 2044-6055. DOI: 10.1136/bmjopen-2017-017722. eprint: https://bmjopen.bmj.com/content/7/11/e017722.full.pdf. URL: https://bmjopen.bmj.com/content/7/11/e017722.

Weiss, Martin and Claudio Cattaneo (2017). "Degrowth – Taking Stock and Reviewing an Emerging Academic Paradigm". In: *Ecological Economics* 137, pp. 220–230. URL: https://www.sciencedirect.com/science/article/pii/S0921800916305900.

Wilkinson, Richard and Kate Pickett (2009). *The Spirit Level. Why Equality is Better for Everyone*. Penguin.

WorldData.org (2020). *Life expectancy*. URL: https://www.worlddata.info/life-expectancy.php (visited on 11/27/2022).