Entrepreneurial egalitarianism:
How inequality and insecurity stifle innovation, and what we can do about it

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Entrepreneurial egalitarianism: How inequality and insecurity stifle innovation, and what we can do about it

Craig Berry* and Nick O'Donovan[Ψ]

Abstract

Despite recent advances in our understanding of how innovation happens – for example, recognising the role of the state in fuelling private sector innovation, and of user demand in enabling the generation and dissemination of innovation – the assumption that inequality somehow enables innovation remains widespread. This paper builds upon empirical evidence that more equal societies tend to be more innovative by exploring how inequality and insecurity can inhibit innovative activity at the individual level, both directly and indirectly, by diminishing the resources and capabilities which enable innovation, and disincentivising risk-taking and entrepreneurialism. The paper also outlines an 'entrepreneurial egalitarianism' policy agenda, exploring how social and economic policies based on egalitarian values can support innovation, focusing in particular on a contributory social security system with income guarantees that supports entrepreneurial risk-taking, an expansive conception of universal basic services, a widening of access to capital, and the potential for institutions such as trade unions to facilitate innovation.

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Introduction

What makes some places and periods of time more innovative than others? With advanced democracies already well into a second decade of post-global financial crisis economic stagnation, the hunt for policy tools that could unlock technological progress, improve productivity, and accelerate growth is more urgent than ever. Innovation has a vital role to play in combating burgeoning geopolitical and ecological threats at the global level, as well as shoring up the legitimacy of democratic institutions domestically. Yet determining how best to incubate innovation is far from easy. The time lags between policy changes and the innovation they are supposed to unlock, as well as between innovation and the realisation of that innovation's full economic benefits, can be highly variable, making it difficult to unpick the effects of any given economic strategy. Furthermore, policies interact with path-dependent processes of technological change, the initiatives of particular individuals and groups, and wider social, economic and political trends in ways that policymakers cannot fully anticipate. Mariana Mazzucato, identifying one of the silences of neoclassical economics, has pointed out:

> *One of the few things that economists agree on is that technological innovation produces long-term economic growth… However, how this occurs is an area of hot debate.*[1]

Similarly, writing in 1998, reflecting on over four decades spent participating in that debate, the economist Zvi Griliches concluded:

> *Knowledge and knowledge generation is indeed the major source of productivity growth in the long run. But our ability to describe and quantify its flows is still quite rudimentary.*[2]

We are hardly any closer to an answer in this regard. This paper, however, sheds light on a dimension of this debate which is often overlooked: the positive contribution that equality can make to innovation. To the extent that inequality figures in the innovation literature at all (that is, as a *driver* of innovation rather than as a possible *outcome* of technological progress[3]), it is generally as an extension of orthodox economic thinking about the trade-offs between equality and efficiency.[4] On this account, redistributive tax and spending policies distort the price mechanism, reducing the incentive to innovate and dulling market signals that channel resources towards promising new technologies. Although many economists would agree that this is a price worth paying, redistribution tends to be treated primarily as a requirement of social justice, rather than as economically beneficial in itself.

This paper challenges the assumptions that underpin this view, highlighting both evidence that greater equality can contribute to higher levels of innovation, as well as theoretical explanations and empirical data explaining *how* equality can contribute to higher levels of innovation. This is not to say that it offers conclusive evidence that greater equality will inevitably accelerate innovation

[1] Mariana Mazzucato, 'Innovation, the State and Patient Capital', in Rethinking capitalism: Economics and policy for sustainable and inclusive growth, Michael Jacobs and Mariana Mazzucato (eds.), John Wiley & Sons, 2016 (98-118): 99.
[2] Zvi Griliches, R&D and productivity: The econometric evidence, University of Chicago Press, 1998: 8.
[3] On inequality as a potential outcome of technological change, see e.g. David H. Autor, Lawrence F. Katz and Melissa S. Kearney, "The polarization of the US labor market", American Economic Review 96.2 (2006): 189-194; Claudia Goldin and Lawrence F. Katz, The race between education and technology, Harvard University Press, 2010.
[4] Arthur M. Okun, Equality and efficiency: The big tradeoff, Brookings Institution Press, 1975.

rates at all times and in all places, or that the innovation that egalitarianism generates is necessarily the kind of innovation we want or need. Nevertheless, after several decades of widening inequality and growing insecurity in advanced democracies have culminated in a sustained period of comparatively slow economic growth, a different approach may well be warranted.

To clarify, this paper is not focused on the *direction* of innovation, which has been the subject of much innovation studies scholarship in recent years. It is more concerned with the *genesis* of innovation. Over the last five decades, inequality has moved from being seen as essential to innovation to a more peripheral position, but the core assumption that *ceteris paribus* the prospect of large rewards spurs greater innovative effort has remained largely unchallenged. Even more sophisticated accounts that recognise the contribution of a more diverse range of motives and actors to the innovation process – as well as a more inclusive definition of innovation – tend not to view greater equality as a prerequisite of innovation (although they might view greater equality as a common good that entrepreneurs in both public and private sectors might collectively pursue).[5]

Our approach also differs from a 'systems' focus on innovation capacities at the level of organisations and societies.[6] Instead, our interest is primarily in the capacity (and motivation) to innovate at the *individual* level – the human roots from which any innovation system or process must emerge. What are the characteristics of societies in which individuals are able and willing to take risks and innovate? What has (in)equality got to do with it? This individual-level approach nevertheless has important implications for public policy and collective institutions. A key aim of this paper is to explore innovation-promoting institutional reforms and new policy directions suggested by this analysis.

The first part of the paper examines the causal role that inequality plays in major theories of innovation, as well as macro-level data that suggests that not only is the connection between inequality and innovation weak, but that more equal societies might be *more* innovative than their less egalitarian counterparts. The second part of the paper attempts to explain why this might be the case. It identifies multiple distinctive channels by which equality contributes to innovation, backed by economic, social and psychological theories as well as by empirical evidence. The final part of the paper then reflects upon what this analysis implies for public policy and public institutions, exploring how to embed 'entrepreneurial egalitarianism' across social and economic policy practice.

[5] Mariana Mazzucato, Mission economy: A moonshot guide to changing capitalism, Penguin, 2021: 168-171.
[6] e.g. Bengt-Åke Lundvall (ed.), National systems of innovation: towards a theory of innovation and interactive learning, Pinter, 1992; Charles Edquist (ed.), Systems of innovation: technologies, institutions, and organizations, Pinter, 1997.

1. Equality and innovation: Conventional wisdom and macro-level evidence

1.1 A brief history of innovation policy and inequality

The market-centred theories of economic growth that came to dominate the economics profession over the course of the 1960s and 1970s (and public policy over the course of the 1980s) portrayed innovation primarily as a response to incentives. On this account, demand for novel products (or for cheaper versions of existing products) is the primary driver of innovation, determining where the innovative efforts of private actors are focused.[7] Innovation is treated as comparable to any other economic activity: individuals and firms will devote time and resources to it if they are incentivised to do so by the prospect of higher pay and profits. Property rights – including intellectual property rights and patent regimes – give would-be innovators confidence that they will enjoy the fruits of their labours.[8]

Such understandings of innovation imply that any attempt to curb inequality through redistribution will blunt productivity growth by dampening market signals and disincentivising innovative effort.[9] Equally, by rolling back programmes designed to equalise conditions (and reducing the taxes needed to fund them) a greater quantity of valuable innovation should result, with 'value' measured by the amount that market actors are willing to pay for innovative products. In effect, a lower rate of entrepreneurial activity and innovation is simply a special case of the general inefficiency that results from government intervention in markets.[10]

Although alternatives to these market-centred accounts of innovation were available throughout the 1970s and 1980s (for example, in the work of evolutionary economists and other scholars in the emerging field of innovation studies), the idea of innovation as market-led chimed with the increasingly dominant neoliberal political agenda.[11] During the 1990s and 2000s, however, innovation discourse among policy elites shifted to place more emphasis on the positive role that proactive government might play in the innovation process.[12] Drawing on 'endogenous' theories of

[7] Zvi Griliches, "Hybrid corn: An exploration in the economics of technological change", Econometrica: Journal of the Econometric Society (1957): 501-522; Jacob Schmookler, Invention and economic growth, Harvard University Press, 1966.
[8] Douglass C. North and Robert Paul Thomas, "An economic theory of the growth of the western world," The Economic History Review 23.1 (1970): 1-17.
[9] Daron Acemoglu, James A. Robinson and Thierry Verdier, "Asymmetric growth and institutions in an interdependent world", Journal of Political Economy 125.5 (2017): 1245-1305.
[10] Criticisms of the 'distortionary' effect of government policy featured heavily in debates surrounding the 1986 Reagan tax reform, with interest groups and policymakers arguing that privileged treatment of heavy industry under the old tax code was preventing the reallocation of resources to the most dynamic, innovative and fast-growing sectors of the economy. See Timur Ergen and Inga Rademacher, "The Silicon Valley imaginary: US corporate tax reform in the 1980s", Socio-Economic Review (published online 14 October 2021).
[11] On alternatives, see e.g. Vernon W. Ruttan, "Induced innovation, evolutionary theory and path dependence: sources of technical change", The Economic Journal, 107.444 (1997): 1520-1529; Benoît Godin, Models of innovation: The history of an idea, MIT Press, 2017.
[12] Peter A.Hall, "The electoral politics of growth regimes", Perspectives on Politics 18.1 (2020): 185-199; Nick O'Donovan, "From knowledge economy to automation anxiety: a growth regime in crisis?", New Political Economy 25.2

growth developed by academic economists over the course of the 1980s and into the early 1990s,[13] politicians and policymakers argued that private market incentives alone failed to reflect all the benefits of innovative activity. Private investments in education and research 'spill over', increasing the level of knowledge and the pace of productivity growth in wider society at the same time as they generate valuable human capital and intellectual property for the individuals and firms involved. Consequently, economic actors confronted by private market incentives alone will tend to underinvest in innovation relative to the socially optimal level of spending, and state intervention can produce a more growth-friendly allocation of resources than market forces alone.

Market outcomes and inequalities were thus displaced from the central position they occupied in earlier orthodox accounts of innovation. According to the 'new economics' of endogenous technological change, state spending on education and research might be redistributive while also accelerating productivity growth. Progressive forms of taxation might not impede overall levels of innovation, assuming the proceeds were invested wisely by governments. Nevertheless, it is important to note that on this account greater equality is only a *by-product* of pro-innovation policy interventions, and even then not a necessary one. Conceivably, regressive taxes might be used to fund unevenly distributed investments in human capital and research while still bolstering the rate of innovation. Indeed, during the 1990s heyday of this approach to innovation, many policy-makers expressed a preference for taxing consumption rather than corporate or personal income because such a tax mix better preserved entrepreneurial incentives.[14]

Moreover, the theories of endogenous technological change that underpinned the 'knowledge-driven growth' agenda at the dawn of the twenty-first century remained close to their roots in neoclassical economics: innovation was still first and foremost conducted by market actors in response to market incentives. 'Third way' politicians such as Bill Clinton and Tony Blair were thus reluctant to dramatically alter the progressivity of their tax systems, arguing that inequality was a necessary by-product of rapid technological change and necessary to that rapid technological change too. The way to redistribute was for the state to invest in the human capital of its poorer citizens, making them more productive and innovative in their current roles (as well as enabling them to apply for better-paid jobs at more technologically advanced firms).[15] Striving for greater equality of outcome was misguided; only equality of opportunity mattered.

The concept of the 'entrepreneurial state' marked a further stage in the marginalisation of inequality in accounts of innovation and innovation policy. While endogenous growth theory primarily implied state support for 'basic' research and education, Mariana Mazzucato's analysis of the 'entrepreneurial state' argued that rapid innovation has historically relied upon an even greater strategic and entrepreneurial contribution from public sector actors. Over and above correcting

(2020): 248-266; Nick O'Donovan, Pursuing the Knowledge Economy: a sympathetic history of high-skill, high-wage hubris, Agenda Publishing, 2022.

[13] Paul M. Romer, "Increasing returns and long-run growth", Journal of Political Economy 94.5 (1986): 1002-1037; Robert E. Lucas, "On the mechanics of economic development", Journal of Monetary Economics 22.1 (1988): 3-42; Gene Grossman and Elhanan Helpman, "Trade, knowledge spillovers, and growth", European Economic Review 35.2-3 (1991): 517-526; Philippe Aghion and Peter Howitt, "A Model of Growth Through Creative Destruction", Econometrica 60.2 (1992): 323-351.

[14] O'Donovan, Pursuing the Knowledge Economy.

[15] ibid.

market failures in the under-supply of education and research, the entrepreneurial state must go further, bearing the risk of developing new capital-intensive technologies that the private sector can then commercialise while simultaneously making markets for new innovations through public sector procurement and regulatory decisions.[16] On this account, the US is not an innovation outlier because it has allowed the invisible hand of market forces the greatest leeway to direct economic activity, but rather because of colossal state spending on new technologies over the latter part of the twentieth century.[17] Whereas most endogenous growth theorists were chary about the state 'picking winners' amongst rival firms and technologies, proponents of the entrepreneurial state point out that states can and do pick winners through both supply-side interventions (such as research funding) and demand-side policies (such as procurement and regulatory approvals). What matters is whether this activity is undertaken strategically and nimbly.

This account implies an even smaller role for market incentives – and market-driven inequality – in the innovation process. The expanded role of the public sector in the innovation process implies putting additional resources at the state's disposal; not only to fund interventions, but to build the capacity of state actors to allocate funding strategically, and to oversee complex long-term investments. This may require higher taxes, which can in turn result in a reduction in inequality. Yet once again, this is not necessarily the case: the resources required for strategic state intervention might be mobilised through borrowing or regressive taxes, and might be distributed regressively too. Moreover, even on this account the private sector still has an important role to play in innovation, implying that the possibility of unequal market rewards continues to motivate innovative activity at the margin.[18]

1.2 Macro-level evidence

The previous section demonstrates that innovation theory has begun to discard the notion that inequality is an essential pre-requisite of innovation – but the relationship between inequality and innovation remains under-theorised. This section considers what the available empirical evidence tells us about that relationship.

Market-centred theories imply that inequality and innovation should be closely correlated, at least in advanced liberal democracies where the political system is not (for the most part) itself a source of unequal patronage and sinecures. Accordingly, so the argument goes, governments that allow their societies to become more unequal through untrammelled market activity, safeguarding property rights and preserving market incentives, should see higher levels of innovation. Theories of endogenous growth and the entrepreneurial state, by contrast, imply that the picture will be

[16] Mariana Mazzucato, The Entrepreneurial State: debunking public vs. private sector myths, Anthem Press, 2013. On innovation agencies in particular, see Rainer Kattel, Wolfgang Drechsler, and Erkki Karo, How to Make an Entrepreneurial State: why innovation needs bureaucracy, Yale University Press, 2022.

[17] Mazzucato, The Entrepreneurial State: e.g. 59-62. See also Fred Bloch, 'Swimming against the current: the rise of a hidden developmental state in the United States', Politics & Society, 36:2 (1998), 169-206; and Robert Reich, 'Why the US needs an industrial policy', Harvard Business Review, January 1982, available at https://hbr.org/1982/01/why-the-us-needs-an-industrial-policy.

[18] That said, scholars of the entrepreneurial state tend to be alert to the possibility that private sector actors are as likely to pursue unproductive rent-seeking as they are genuine innovation in order to secure and enhance profitability. See e.g. Mariana Mazzucato, The value of everything: Making and taking in the global economy, Hachette, 2018.

messier. Greater equality might reflect higher levels of broadly progressive taxation, which then funds various forms of state spending on innovation (including investment in the state's own capacity to support innovation strategically). In these accounts, however, there remains a risk that redistributive tax and spending might blunt incentives for market actors to innovate.

Straightforward comparisons suggest that inequality and innovation are far from natural companions. Figure 1 shows the relationship between inequality and innovation in 35 OECD countries, measuring inequality through the Gini index of household disposable income after taxes and transfers (higher values equate to more unequal societies) and innovation through the Global Innovation Index (higher values equate to more innovative societies).[19] Variation is high and shaped by a number of outliers, and we should be cautious about the reliability of the data sources (especially country-level indexes of innovation, which tend to contain some subjective and contested measures). Nevertheless, the inverse relationship between inequality and innovation is striking, especially given the prevalence of equality-efficiency trade-offs in many of the foundational models and introductory textbooks of the economics profession (and it is of course possible that the unreliability of the data on innovation means the strength of the relationship is actually being *under*estimated).[20] Furthermore, this is consistent with broader macro-level evidence on the relationship between *growth* and equality. For example, a 2015 IMF study suggested that increases in the relative income share of the top 20% of earners tended to reduce the pace of medium-term growth, and a 2016 meta-analysis of empirical work on the inequality-growth literature agreed that the relationship was broadly negative (albeit highly variable and context-specific).[21]

There is also a growing body of evidence querying the impact of market incentives on innovation. As Philippe Aghion has pointed out, at least for democratic countries with comparatively low rates of corruption, higher levels of corporate income tax seem to correlate with higher levels of economic growth.[22] Andrew Berg and his co-authors have found that lower net inequality is correlated with stronger and more durable growth, and that redistribution is generally benign (or at worst, ambivalent) for growth.[23] Michal Brzezinski, in a study that examines data from 34 advanced and emerging economies between 1980 and 2010, found that redistributive tax and spending policies did not negatively impact on rates of innovation as measured by patent metrics.[24] Similarly,

[19] This follows patterns noted by Jonathan Hopkin, Victor Lapuente and Lovisa Moller in earlier data - see "Lower levels of inequality are linked with greater innovation in economies", LSE Politics and Policy, 29 January 2014, available at: https://blogs.lse.ac.uk/europpblog/2014/01/29/lower-levels-of-inequality-are-linked-with-greater-innovation-in-economies/.

[20] e.g. N. Gregory Mankiw & Mark Taylor, Economics, Cengage Learning, 4th edition, 2017: 155-9.

[21] Era Dabla-Norris, Kalpana Kochhar, Nujin Suphaphiphat, Frantisek Ricka and Evridiki Tsounta, Causes and consequences of income inequality: A global perspective, International Monetary Fund, 2015; Pedro Cunha Neves, Óscar Afonso and Sandra Tavares Silva, "A meta-analytic reassessment of the effects of inequality on growth", World Development 78 (2016): 386-400.

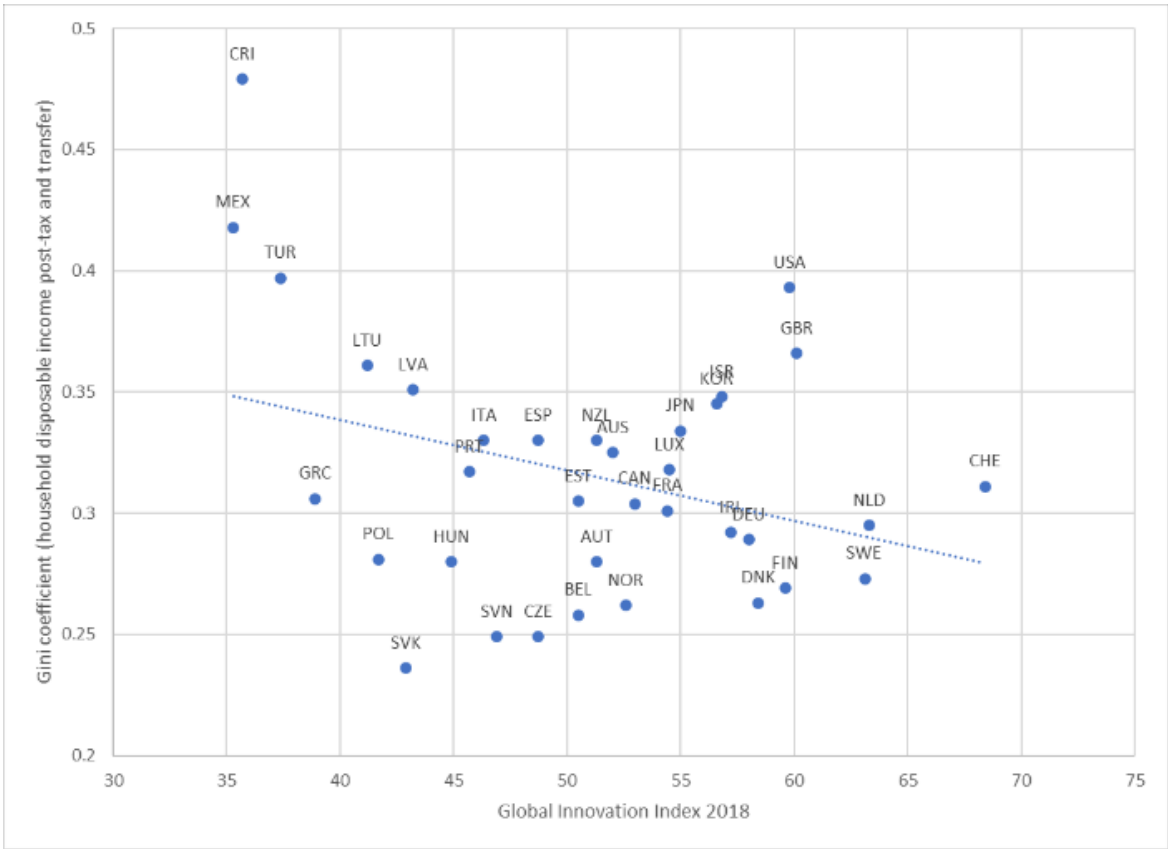
[22] The data is presented in Aghion's 2012 lecture at the Joint Vienna Institute and referenced again in Philippe Aghion, Céline Antonin and Simon Bunel, The Power of Creative Destruction, Harvard University Press, 2021: 101. The point finds further empirical support at the level of individual US states. See Philippe Aghion, Ufuk Akcigit, Julia Cagé and William R. Kerr, "Taxation, corruption, and growth", European Economic Review 86 (2016): 24-51.

[23] Andrew Berg, Jonathan D. Ostry, Charalambos G. Tsangarides and Yorbol Yakhshilikov. "Redistribution, inequality, and growth: new evidence", Journal of Economic Growth 23 (2018): 259-305.

[24] Michal Brzezinski, "Does income redistribution impede innovation?", Research Policy 51.10 (2022): 104603.

David Hope and Julian Limberg's research into major tax cuts for the rich across a range of OECD countries between 1965-2015 found that these policy changes did not have a significant beneficial impact on growth.[25]

Figure 1. The relationship between inequality and innovation among OECD countries[26]



What might account for these findings? As mentioned above, one possibility is that more equal societies are simply by-products of state support for innovation. Assuming tax systems are broadly progressive, then we would expect a country that raises more tax revenue to invest in basic research and education (as under endogenous growth theories) and/or to fund more strategic forms of public sector engagement in the innovation process (as per the entrepreneurial state) to exhibit a higher degree of post-tax equality. Another possibility is that the impact of taxes and transfers on economic efficiency has been over-stated, and that they are more neutral than policy-makers have generally assumed. Certainly, recent reappraisals of international factor mobility in knowledge-intensive industries, coupled with real-world developments in global tax cooperation (such as the OECD's initiative on domestic tax base erosion and profit-shifting), seem to suggest

[25] David Hope and Julian Limberg, "The economic consequences of major tax cuts for the rich", Socio-Economic Review 20.2 (2022): 539-559.

[26] Global Innovation Index data from www.globalinnovationindex.org; Gini coefficient data from stats.oecd.org.

that higher taxes on capital, corporate income and high-skilled labour are less economically harmful than previously supposed.[27]

There is however a further possibility: that equality and redistribution can have a direct and positive effect on rates of innovation. Carlota Perez's scholarship on technological revolutions is highly relevant to this discussion. Perez is a leading evolutionary economist and does not necessarily dispute the Schumpeterian logic that profit-driven entrepreneurship (which might of course generate or reinforce inequality) drives technological breakthroughs. However, as well as recognising the role of the state in directly supporting technology-related entrepreneurship, Perez argues that wider social relations drive both a higher rate of innovative activity, and the dissemination of innovation, through both the creation of demand for innovative products (through welfare provision and job creation) and, to some extent, the role of users in incremental innovation processes. Perez therefore introduces Keynesian (and post-Keynesian) economic theory to Schumpeterian economics, demonstrating that more egalitarian social structures play a crucial role in innovation processes.[28]

This paper takes inspiration from Perez's approach – accordingly we arrive at a similar place in terms of policy recommendations – but it remains the case that individual capacities to participate in innovation processes have been under-explored by scholars within both mainstream and heterodox economics. The next section of this report explores the micro-level economic, social and psychological mechanisms that might lead to higher levels of innovation in more equal societies.

2. How inequality inhibits innovation

From at least the early 1980s onwards, policy elites in advanced democracies have generally held market inequalities to be good for innovation. Admittedly, as we have seen, they have increasingly viewed certain forms of state action that might incidentally reduce inequality as more conducive to innovation than a purely market-based approach. Nevertheless, the stronger claim we explore here, that more equal societies might be more innovative *because* they are more equal, has not figured prominently in policy thinking or indeed innovation studies. But it is far from novel: scholars from a wide range of disciplines – including economics, sociology, psychology, geography, history and political science – have provided theoretical and empirical accounts of diverse channels through

[27] Rasmus Corlin Christensen and Martin Hearson, "The new politics of global tax governance: Taking stock a decade after the financial crisis", Review of International Political Economy 26.5 (2019): 1068-1088; Torben Iversen and David Soskice, Democracy and prosperity: Reinventing capitalism through a turbulent century, Princeton University Press, 2020.

[28] Carlota Perez, Technological Revolutions and Finance Capital: the dynamics of bubbles and golden ages, Edward Elgar, 2003. Perez discusses the implications of her account of innovation for social policy in a recent Harvard Business Review podcast, available at https://hbr.org/podcast/2019/10/bubbles-golden-ages-and-tech-revolutions. See also Johan Schot and W. Edward Steinmuller, 'The frames for innovation policy: R&D, systems of innovation and transformative change', Research Policy, 47:9 (2018), 1554-1567.

which greater equality might facilitate innovation, productivity growth and improved economic performance.[29]

A comprehensive survey of this literature is beyond the scope of this paper. Instead, we aim to highlight several of the main mechanisms through which greater equality can encourage innovation (and through which greater inequality can inhibit innovation), as well as providing examples of studies that support these claims. To reiterate a point made in the introduction, we do not intend to claim that more equality equates to more innovation at all times and in all places; neither do we deny that incentives matter, nor that some egalitarian interventions may have a net negative effect on innovation. The argument is rather that reducing market inequalities can sometimes stimulate innovation, contrary to the conventional wisdom that has dominated economic policy circles in the last forty years. Following several decades in which inequality in advanced democracies has remained high, while productivity growth has stagnated, entrepreneurial egalitarianism is an option well worth exploring.

2.1 Insecurity

Innovation requires both deep learning and creative thinking, and there is mounting evidence that inequality inhibits these mental processes.[30] The most compelling argument in favour of egalitarian entrepreneurialism is therefore that, by subjecting many people to insecure social and economic conditions, inequality stymies the innovation process through its impact on individual capabilities. Perceived threats to security give rise to stress responses that hamper memory formation and problem-solving, and children growing up in poorer households exhibit higher levels of stress hormones than their more economically secure peers.[31] Over and above the well-documented differences in levels of human capital investment between rich and poor households, it thus appears likely that children from more affluent households will on average derive more benefits from whatever education they do receive, because psychological insecurity does not interfere with their ability to learn to the same degree. Moreover, stressful experiences such as family breakdown, mental illness, exposure to drug and alcohol dependence and violent crime all tend to be more

[29] A particularly notable body of work was produced under the auspices of the MacArthur Network on the Effects of Inequality on Economic Performance from 1996-2006. Based out of UC Berkeley, the interdisciplinary network brought together high-profile economists such as Philippe Aghion, Abhijit Banerjee, Samuel Bowles and the young Thomas Piketty, political scientists such as Michael Wallerstein and Elinor Ostrom, as well as the sociologist Erik Olin Wright. Its outputs examined the impacts of inequality in diverse micro- and macro- settings, from agricultural communities in the Global South to high-tech start-ups in advanced democracies. Heather Boushey's 2019 book Unbound offers an excellent overview of more recent scholarship, with a particular focus on the US (Unbound: How inequality constricts our economy and what we can do about it. Harvard University Press, 2019).

[30] Modupe Akinola, Chaitali Kapadia, Jackson G. Lu and Malia F. Mason, "Incorporating physiology into creativity research and practice: The effects of bodily stress responses on creativity in organizations." Academy of Management Perspectives 33.2 (2019): 163-184.

[31] W. Thomas Boyce, Pamela K. Den Besten, Juliet Stamperdahl, Ling Zhan, Yebin Jiang, Nancy E. Adler and John D. Featherstone, "Social inequalities in childhood dental caries: the convergent roles of stress, bacteria and disadvantage" Social science & medicine 71.9 (2010): 1644-1652; Hannah E.Bryson, Fiona Mensah, Sharon Goldfeld and Anna MH Price, "Using hair cortisol to examine the role of stress in children's health inequalities at 3 years", Academic Pediatrics 20.2 (2020): 193-202.

prevalent in unequal countries and communities.[32] On average, children growing up in more equal societies are subject to fewer environmental stresses and should thus be better equipped on average to learn and innovate.

The link between physiological responses to insecurity and creativity is not limited to childhood. Experimental studies suggest that, although a certain degree of stress exposure can stimulate creative thinking, exposure to multiple and/or more extreme forms of stress render individuals less able to engage in creative problem-solving.[33] This implies that the social problems associated with widening economic inequality will inhibit innovative thinking among the working-age population too, thereby slowing the pace of productivity growth at the aggregate level.

This is in part a problem of poverty: 'low-income families may have difficulty dealing with stressors, because they may not have adequate resources to cope with them'.[34] However, it is not *exclusively* a problem of poverty. Greater inequality appears to correlate with larger numbers of stressors within society as a whole.[35] Widening inequality can draw parts of the middle class into an increasingly precarious economic position, exhibiting hallmarks of insecurity such as high indebtedness or inability to meet unexpected additional costs.[36] In addition, in more unequal societies, higher- and middle-income households have further to fall, and thus maintaining or improving their present economic status becomes more urgent, and the threat of losing ground looms larger. Daniel Markovits, a professor at Yale Law School, extensively documents the increase in anxiety experienced by high-achieving US professionals at the top of the income distribution (and their children) in his 2019 book *The Meritocracy Trap*.[37] The penchant for 'prepping' among the global billionaire class might be interpreted as another symptom of high status inequality-anxiety.[38] Moreover, though the threat of becoming poor may motivate people to accumulate wealth, it does not necessarily motivate them to pursue wealth through the development of innovative capabilities. Policy settings that permit larger inequalities of outcome may reinforce tendencies to accumulate wealth through zero-sum rent-seeking rather than genuinely productive innovation.[39]

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[32] Ching-Chi Hsieh and Meredith D. Pugh, "Poverty, income inequality, and violent crime: a meta-analysis of recent aggregate data studies", Criminal Justice Review 18.2 (1993): 182-202; Victor Asal and Mitchell Brown, "A cross-national exploration of the conditions that produce interpersonal violence", Politics & Policy 38.2 (2010): 175-192; John Eckenrode, Elliott G. Smith, Margaret E. McCarthy and Michael Dineen, "Income inequality and child maltreatment in the United States", Pediatrics 133.3 (2014): 454-461; Kate E. Pickett and Richard G. Wilkinson, "Income inequality and health: a causal review", Social Science & Medicine 128 (2015): 316-326.

[33] Kristin Byron, Shalini Khazanchi, and Deborah Nazarian, "The relationship between stressors and creativity: a meta-analysis examining competing theoretical models", Journal of Applied Psychology 95, no. 1 (2010): 201-212.

[34] Craig Gundersen, Brenda J. Lohman, Steven Garasky, Susan Stewart and Joey Eisenmann, "Food security, maternal stressors, and overweight among low-income US children: results from the National Health and Nutrition Examination Survey (1999–2002)", Pediatrics 122.3 (2008): 529-540: 531.

[35] Much of the evidence on this issue is summarised in Kate Pickett and Richard Wilkinson, The Spirit Level: Why equality is better for everyone, Penguin, 2010.

[36] Costanzo Ranci, Jason Beckfield, Laura Bernardi and Andrea Parma, "New measures of economic insecurity reveal its expansion into EU middle classes and welfare states", Social Indicators Research 158.2 (2021): 539-562.

[37] Daniel Markovits, The Meritocracy Trap, Penguin, 2019.

[38] Douglas Rushkoff, Survival of the richest: Escape fantasies of the tech billionaires, WW Norton & Company, 2022.

[39] Thomas Piketty, Emmanuel Saez and Stefanie Stantcheva, "Optimal taxation of top labor incomes: A tale of three elasticities", American Economic Journal: Economic Policy 6.1 (2014): 230-271.

Insecurity in advanced capitalist democracies has been further exacerbated by the loss or weakening of institutions that once ameliorated inequality. Some of these institutions directly reduced market inequalities by redistributing resources to poorer households, whether in the form of cash transfers or access to services such as healthcare, housing and education: the paradigmatic example being the cradle-to-grave post-war welfare state. Others tackled the powerlessness experienced by poorer individuals in unequal societies relative to their more affluent counterparts (such as trade unions that allowed workers to club together to tackle poor working conditions, bad management practices and low pay, or cooperative societies that helped poorer households to negotiate lower prices for everyday essentials in their particular locality).

The decline in the prominence and prevalence of all these institutions forces households to rely increasingly on private wealth accumulation for future security.[40] However, such forms of 'asset-based welfare' are vulnerable to volatility in market conditions to a far greater extent than collectivised and institutionalised forms of provision that enable risk-pooling across a broader range of people and across a broader span of time.[41] Processes of financialisation, marketisation and welfare retrenchment thus exacerbate insecurity directly, as well as doing so indirectly via their tendency to widen inequality. These institutional developments will thus tend to constrain risk-taking, entrepreneurialism and innovation in the wider population – a point we return to in the third section of this paper.

2.2 Loss aversion

The claim that inequality curbs innovation and entrepreneurship is further bolstered by evidence from behavioural economics. The ability of market incentives to deliver innovation-led growth depends on the rationality of economic agents: their ability to assess risks and rewards objectively, and to invest time and resources accordingly. For the most part, however, human decision-making in real life rarely lives up to this requirement. Instead, people weigh gains and losses relative to their current economic situation, attaching greater weight to losses than they do to gains.[42] The phenomenon of 'loss aversion' means that people may be deterred from risky but rewarding courses of action – joining a new start-up, launching their own business, investing in the development of an unproven technology – even when the expected outcome (allowing for the probability of different levels of gain and loss) is positive.

The more unequal the society, the more threadbare the social security net, the more people stand to lose through risk-taking entrepreneurial endeavours. This is particularly true of those towards the top of the income distribution who have the furthest to fall: a group that includes many individuals with highly sought-after advanced skills in fields such as science, technology,

[40] Alan Finlayson, "Financialisation, financial literacy and asset-based welfare", The British Journal of Politics and International Relations 11.3 (2009): 400-421; Johnna Montgomerie and Mirjam Büdenbender, "Round the houses: Homeownership and failures of asset-based welfare in the United Kingdom", New Political Economy 20.3 (2015): 386-405.

[41] See e.g. Craig Berry, Pensions imperilled: the political economy of private pensions provision in the UK, Oxford University Press, 2021.

[42] Amos Tversky and Daniel Kahneman, "Loss aversion in riskless choice: A reference-dependent model", The Quarterly Journal of Economics 106.4 (1991): 1039-1061.

engineering and mathematics, who might otherwise be well-suited to innovation and entrepreneurship in a high-tech economy. As such, inequality inhibits innovation through its impact on the best off, as well as the worst off. Measures that compress the income distribution and insure the risk-taker against a portion of the remaining downside risk – for example, more steeply progressive forms of taxation coupled with more generous forms of redistribution (potentially including a regressive earnings-related component, as in many continental European welfare systems) – could thus incentivise economically productive forms of risk-taking among this group.

2.3 Opportunity hoarding

The growing costs of downward mobility as inequality becomes more extreme do not solely affect individuals' capacity for learning and creativity, as well as their appetite for risk: they can also affect policy preferences and private investment decisions that have wider social ramifications. The expectation of a persistent or widening gap between comparatively well-paid, secure and stimulating jobs and their more precarious counterparts – a gap associated with the 'hollowing out' of middle-paid jobs in advanced democracies over the last forty years[43] – encourages well-resourced parents to invest large sums in the success of their offspring. This 'opportunity hoarding' may entail additional human capital investments (spending on private school fees, private tutors, housing near to high-quality schools, extracurricular activities and so forth), as well as leveraging of social and professional networks to help children to gain work experience in prestigious workplaces.[44]

Superficially, additional private investments in skills might appear attractive, leading to a more educated population than public spending alone could achieve (albeit a more unequal one). However, in addition to these investments, widening inequality might also encourage affluent parents to insure their offspring against downward mobility by opposing redistributive taxation and spending policies that would raise the skill levels of poorer households, or earmarking prestigious work experience placements for the offspring of the privileged few who are able to return the favour. Opportunity hoarding prompted by widening inequality may thus result in a less-educated population overall, narrowing the pool of individuals with the skills and expertise necessary to innovate.

2.4 Access to capital

In market-based accounts of innovation, competitive financial markets are assumed to funnel capital towards any would-be entrepreneurs with commercially viable plans for innovative new goods and services (or innovative ways of creating and delivering existing goods and services at a

[43] Maarten Goos, Alan Manning and Anna Salomons, "Explaining job polarization: Routine-biased technological change and offshoring", American Economic Review 104.8 (2014): 2509-2526; OECD, OECD Employment Outlook 2017, OECD Publishing, 2017: Chapter Three.

[44] Abigail McKnight, Downward Mobility, Opportunity Hoarding and the "Glass Floor", Social Mobility and Child Poverty Commission, 2015; Laura Hamilton, Josipa Roksa & Kelly Nielsen, "Providing a 'leg up': parental involvement and opportunity hoarding in college", Sociology of Education 91.2 (2018), 111–31; Michael Sandel, The Tyranny of Merit, Penguin, 2020; Adrian Wooldridge, The Aristocracy of Talent: How Meritocracy Made the Modern World, Penguin, 2021.

lower cost and/or of a higher quality). Some economists have even argued that access to capital is no longer a major prerequisite of innovation and entrepreneurship: in the excitement surrounding knowledge-intensive industries in the 1990s, many proponents of endogenous technological change suggested that capital was increasingly irrelevant to economic success in the 'weightless world" of the knowledge economy.[45]

Unfortunately, both of these claims are deeply suspect. Knowledge-intensive businesses can be extremely capital intensive: whether because of the high fixed costs of creating innovative new products (running high-tech research facilities, funding large teams of highly-skilled workers, etc.), or because the costs involved in scaling up goods and services to a point where their production is financially viable can be significant (e.g. operating a digital platform for free in the hope of building a sufficiently large user base that can then be monetised through advertising).[46] However, high-tech businesses often struggle to attract conventional finance. Investments in innovation involve a high degree of uncertainty, surrounding both the substantial outcomes of the research activity in question and asymmetries of information between entrepreneur and investor (dramatised by spectacular corporate failures such as Elizabeth Holmes's Theranos).[47] Innovative activity in advanced economies often involves little by way of tangible assets that can be used as collateral against lending, and intangible assets often involve substantial sunk costs and can prove difficult to liquidate in the event that investors decide to withdraw.[48]

As a result, personal wealth (or access to large amounts of private or institutional wealth through trusted social networks) plays an important role in determining who can become an entrepreneur.[49] Where wealth is highly concentrated (both socially and geographically), and where the social networks of wealthy individuals and financial gatekeepers are narrow and inward-looking, innovative and entrepreneurial activity will decrease. Admittedly, innovation might also suffer if personal wealth is so equally dispersed that no-one can access enough capital to engage in innovation, or if access to personal or institutional sources of wealth via social networks is so fragmented that no-one can overcome the trust problems inherent in innovation finance. Nevertheless, the fact that many advanced economies have over the last forty years witnessed an increase in wealth inequality and/or an increase in the polarisation of communities along economic lines (including decreases in social mobility), coupled with declining levels of entrepreneurial start-

[45] See O'Donovan, Pursuing the Knowledge Economy for an extensive collection of examples.
[46] Reid Hoffman & Chris Yeh, Blitzscaling: The lightning-fast path to building massively valuable companies, Currency, 2018.
[47] Dirk Bergemann and Ulrich Hege, "Venture capital financing, moral hazard, and learning", Journal of Banking & Finance 22.6-8 (1998): 703-735; Christian Keuschnigg and Soren Bo Nielsen, "Tax policy, venture capital, and entrepreneurship", Journal of Public Economics 87.1 (2003): 175-203.
[48] Jonathan Haskel and Stian Westlake, Capitalism Without Capital, Princeton University Press, 2018: 158-181.
[49] For examples from the literature on the US, see David S. Evans and Boyan Jovanovic, "An estimated model of entrepreneurial choice under liquidity constraints", Journal of Political Economy 97.4 (1989): 808-827; Camilo Mondragón-Vélez, "The probability of transition to entrepreneurship revisited: wealth, education and age", Annals of Finance 5 (2009): 421-441. For an overview of literature on geographic clustering based around access to venture capital finance in particular, see Patricia H. Thornton, "The sociology of entrepreneurship", Annual Review of Sociology 25.1 (1999): 19-46.

up activity, suggests that developed capitalist democracies may have long since surpassed the optimal level of inequality for innovation.[50]

2.5 Access to demand

Following a generation of economic policy focused on supply-side reforms (improving the supply of innovation and skills through investment in education, or by removing regulatory 'barriers'), the anaemic recovery from the global financial crisis focused political attention on deficiencies in demand: both domestically and from international export markets. It is now widely held that excessively austere fiscal policies in advanced economies stifled growth post-2008, causing long-term damage to their productive capacity.[51] Absent the prospect of robust future demand, innovators and entrepreneurs face diminished incentives to bring new ideas and products to market.

Inequality plays an important role in depressing demand. Poorer households consume proportionately more of their income than richer households. Consequently, a shift in the distribution of national income towards more affluent households (that is, an increase in inequality) implies a reduction in demand, all else being equal.[52] Furthermore, low-income households struggle to diversify their consumption, meaning an increase in inequality decreases the market for new products. Counter-balancing this market size effect is a price effect, whereby increases in the disposable income of affluent households enable innovators to charge higher prices for high-end novelties.[53] Conceivably, a perfectly equal society might be one in which resources are so widely dispersed that no-one can afford new innovations, and recent history is littered with examples where affluent early adopters supported the development of technologies that later became available to mass markets. Nevertheless, empirical evidence suggests that although greater

[50] On declining levels of entrepreneurship, see Chiara Criscuolo, Peter N. Gal and Carlo Menon, "The dynamics of employment growth: New evidence from 18 countries", OECD Science, Technology and Industry Policy Papers 14 (2014). On declining social mobility, see OECD, A Broken Social Elevator? How to Promote Social Mobility, OECD Publishing, 2018.

[51] Lawrence H. Summers, "US economic prospects: Secular stagnation, hysteresis, and the zero lower bound", Business Economics 49.2 (2014): 65-73.

[52] See Michal Kalecki, "Three ways to full employment" in The Economics of Full Employment, Oxford University Institute of Statistics, Blackwell, 1994: 39–58; Marc Lavoie and Engelbert Stockhammer, "Wage-led growth: Concept, theories and policies" in Wage-Led Growth, ed. Marc Lavoie and Engelbert Stockhammer, Palgrave Macmillan, 2013: 13–39. This shift could be driven by changes in the wage:capital share of national income or shifts in the distribution of wages (see Nick O'Donovan, "Demand, dysfunction and distribution: The UK growth model from neoliberalism to the knowledge economy", The British Journal of Politics and International Relations 25.1 (2023): 178-196.

[53] Reto Foellmi and Josef Zweimüller, "Income distribution and demand-induced innovations", The Review of Economic Studies 73.4 (2006): 941-960. Note that Foellmi and Zweimüller conclude that inequality is positive for innovation because the model they present shows price effects outweighing market size effects. The model is however derived entirely from axiomatic assumptions about the behaviour of rational agents rather than empirical data about the real world. Interestingly, in a later paper that does engage with real-world evidence, Zweimüller and his co-authors argue that, although inequality can improve growth in the short-run, the long-run impact of inequality on growth is negative. Daniel Halter, Manuel Oechslin and Josef Zweimüller, "Inequality and growth: the neglected time dimension", Journal of Economic Growth 19 (2014): 81-104.

inequality can allow for more differentiated consumption and greater demand for innovative products, it can also inhibit innovation due to lack of market size.[54]

Furthermore, there is a geographical component to this story. In unequal societies that exhibit geographical clusters of wealth and poverty, would-be entrepreneurs based in economically marginalised communities and regions may struggle to access sufficient demand in their immediate environment to render new enterprises viable. Across diverse advanced economies, differences in demand between regions is a common factor predicting differences in rates of entrepreneurship.[55] Although advances in information and communication technologies make it increasingly easy for entrepreneurs to connect with customers outside their locality, this is not equally true of all industries. Even individuals and firms selling digital services often depend on affluent local markets in their early stages. For example, the personal trainer and social media star Joe Wicks, who grew up in an economically deprived housing estate in outer London, generated income from running fitness bootcamps in affluent nearby suburbs while building his online profile. Similarly, customers wishing to access TheFacebook.com originally required a Harvard email address, and for the first year of its operation, Uber's services were limited to residents of the San Francisco Bay Area (an area characterised by above-average affluence and technological literacy).

2.6 Access to role models and social networks

Just as unequal societies can deny would-be innovators access to the finance they need to succeed and disconnect them from markets where they might sell their products, they can also limit individuals' exposure to potential role models. Academic studies have assembled a wide range of evidence showing the importance of role models to entrepreneurs and innovators.[56] Role models can act as a vital source of information, advice and know-how that are difficult to communicate in formal educational settings run by professional educators; their presence alone can legitimate entrepreneurial aspirations.

Significantly, community-based role models appear to be more important than more remote figures (for example, iconic individuals in the national or international media), suggesting that widening inequalities that isolate existing entrepreneurs from a broad cross-section of wider society are particularly problematic from the perspective of future entrepreneurship.[57] As communities become more stratified along lines of income and wealth – as has tended to be the case in many advanced

[54] Hyejin Jung, Inseok Seo and Kyujin Jung, "Mediating role of entrepreneurship in explaining the association between income inequality and regional economic performance", Economic Development Quarterly 32.2 (2018): 135-145.
[55] Paul Reynolds, David J. Storey and Paul Westhead, "Cross-national comparisons of the variation in new firm formation rates", Regional Studies 28.4 (1994): 443-456; Andrew G. Ross, John Adams and Kenny Crossan, "Entrepreneurship and the spatial context: A panel data study into regional determinants of small growing firms in Scotland", Local Economy 30.6 (2015): 672-688.
[56] Hans K. Hvide and Paul Oyer "Dinner table human capital and entrepreneurship", National Bureau of Economic Research Working Paper Series, No. w24198 (2018); Arezou Abbasianchavari and Alexandra Moritz, "The impact of role models on entrepreneurial intentions and behavior: a review of the literature", Management Review Quarterly 71 (2021): 1-40.
[57] Niels Bosma, Jolanda Hessels, Veronique Schutjens, Mirjam Van Praag and Ingrid Verheul, "Entrepreneurship and role models", Journal of Economic Psychology 33.2 (2012): 410-424; Andersson, Martin, and Johan P. Larsson, "Local entrepreneurship clusters in cities", Journal of Economic Geography 16.1 (2016): 39-66.

democracies over recent decades[58] – social networks become increasingly segregated, with access to the means of entrepreneurial aspiration (not just start-up finance and robust demand, but also social networks and role models) increasingly denied to many would-be innovators.[59] Even if governments invest in the human capital of their citizens, as accounts of endogenous growth imply they should, innovative activity may still stall if this is accompanied by growing inequalities of outcome that fragment the social and geographical context in which innovative activity is forged.

2.7 Trust

Across developed countries, more equal societies tend to have higher levels of trust.[60] Economic inequality is a form of social division: as societies become more unequal, different parts of the income distribution lead increasingly different lives, creating sharper delineations between in-groups and out-groups. Although causality also runs in the other direction – more trusting societies might be more willing to support equality-promoting redistributive policies – efforts to distinguish these impacts using instrumental variables suggest that inequality does indeed have a corrosive impact on trust.[61]

Many scholars have highlighted the important contribution that trust makes to the innovation process.[62] Trust is in part a product of laws and institutions: for instance, legally enforceable contracts and property rights. However, over-reliance on these mechanisms can result in social resources being expended on convoluted zero-sum disputes over how output is distributed rather than efforts to increase output.[63] Over-prescriptive intellectual property rights also limit the degree to which others benefit from knowledge created by a particular individual or firm, which is key to rapid productivity growth in technologically advanced economies.[64] The issue of intellectual property-hoarding is becoming increasingly problematic in certain high-tech sectors.[65]

In knowledge-intensive industries, where new insights and inventions are produced collaboratively by large teams, potentially also drawing on expertise across a number of different organisations and exploiting synergies between a range of different innovations, it can be difficult to attribute ownership and reward value creation fairly. Trust is necessary within firms and across wider society

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[58] See e.g. Lisa Adkins, Melinda Cooper and Martijn Konings, "Class in the 21st century: Asset inflation and the new logic of inequality", Environment and planning A: economy and space 53.3 (2021): 548-572; Rory Coulter, "Local house prices, parental background and young adults' homeownership in England and Wales", Urban Studies 54.14 (2017): 3360-3379.

[59] Antoni Calvo-Armengol & Matthew Jackson, "The effects of social networks on employment and inequality", American Economic Review 94.3 (2004): 426–54; Matthew Jackson, Brian Rogers & Yves Zenou, "The economic consequences of social-network structure", Journal of Economic Literature 55.1 (2017): 49–95.

[60] Pickett and Wilkinson, The Spirit Level: 52-3.

[61] Guglielmo Barone and Sauro Mocetti, "Inequality and trust: new evidence from panel data", Economic Inquiry 54.2 (2016): 794-809.

[62] Chris Clegg, Kerrie Unsworth, Olga Epitropaki and Giselle Parker, "Implicating trust in the innovation process", Journal of Occupational and Organizational Psychology 75.4 (2002): 409-422; Ken Dovey, "The role of trust in innovation", The Learning Organization, 16.4 (2009), 311-325.

[63] James Bessen and Michael J. Meurer, Patent Failure, Princeton University Press, 2009; James Bessen and Michael J. Meurer, "The direct costs from NPE disputes", Cornell Law Review 99, 387-424; Michele Boldrin and David K. Levine, "The case against patents", Journal of Economic Perspectives 27.1 (2013): 3-22.

[64] Paul M. Romer, "Increasing returns and long-run growth", Journal of Political Economy, 94.5 (1986): 1002-1037.

[65] Cecilia Rikap, Capitalism, power and innovation: Intellectual monopoly capitalism uncovered, Routledge, 2021.

in order to reassure contributors to the innovation process that they will be rewarded or at the very least recognised for their work.[66] Of course, many innovative firms go to great lengths to reinforce feelings of equality and trust among their own employees (open-plan offices, access to communal leisure facilities, etc.). Leaders of innovative firms might also seek to circumvent mistrust in wider society by bringing more and more third-party expertise in-house, a strategy clearly evident in the recruitment and acquisition policies of the sprawling platform companies that dominate the tech world.[67] Nevertheless, it remains an open question whether competition between tech giants that attempt to cultivate trust internally can substitute for the aggregate-level productivity benefits of a more open innovation culture characterised by lower levels of market concentration and higher levels of social trust, underwritten by greater equality.[68]

Even at the level of individual firms, contemporary capitalism may be operating in ways that corrode trust. William Lazonick's account of 'the innovative enterprise' identifies 'organisational integration' as central to innovation processes: all workers are supported and incentivised to participate in collective learning processes which enable firms to remain innovative over the long term. Executives understand the co-operative nature of innovation, and workers trust they will be rewarded for their contributions.[69] Excessive emphasis on 'shareholder value' can however undermine this intra-firm trust. A recent report by the think-tank CommonWealth argues that the UK is a corporate governance outlier in this regard, with the prioritisation of shareholders coming at the expense of 'increasing investment and real wages, and limit[ing] the ability of ordinary people to shape – and improve – the strategic direction of their firm'.[70]

3. Embedding entrepreneurial egalitarianism

One of the key themes of this paper has been the role that economic security plays in enabling people to innovate. We have also emphasised the importance of wider access to resources (broadly conceived) that enable people to innovate, including mitigating the geographical concentration of these resources. This analysis indicates that egalitarianism – the view that rights and opportunities should be more equally distributed across society – could therefore underpin a greater spread of innovative capacities at the individual level.

[66] Haskel and Westlake, Capitalism without Capital: 156.
[67] José Van Dijck, Thomas Poell and Martijn De Waal, The Platform Society: Public values in a connective world, Oxford University Press, 2018.
[68] Not least because these platform firms might act in ways to stifle investment in and diffusion of innovative technologies across the economy as a whole - see e.g. Herman Mark Schwartz, "Wealth and secular stagnation: The role of industrial organization and intellectual property rights", RSF: The Russell Sage Foundation Journal of the Social Sciences 2.6 (2016): 226-249; Herman Mark Schwartz, "Global secular stagnation and the rise of intellectual property monopoly", Review of International Political Economy 29.5 (2022), 1448-1476.
[69] William Lazonick, 'Innovative enterprise and the theory of the firm', in Rethinking capitalism: Economics and policy for sustainable and inclusive growth, Michael Jacobs and Mariana Mazzucato (eds.), John Wiley & Sons, 2016.
[70] Mathew Lawrence and Khem Rogaly, Stagnant and Unequal: how the UK is an outlier in corporate governance and why that matters, CommonWealth, 2023, available at: https://www.common-wealth.co.uk/publications/stagnant-and-unequal-how-the-uk-is-an-outlier-in-corporate-governance-and-why-that-matters?s=03.

It is nevertheless important to emphasise that the evidence we have explored does not require equality *per se* (pursuing absolute equality, even in a narrow economic sense, may well be rather meaningless).[71] Though we highlight evidence that more equal societies tend to be more innovative, 'more equal' is not necessarily synonymous with 'equal' (far from it, in most cases). The mechanisms we have identified do not specify what an 'optimal' distribution of resources for innovation would look like. Nevertheless, it is clear that, in order to create conditions in which more people are able to innovate, further redistribution of resources from the richest to the rest (and some curtailment of the economic freedoms of the former) will be necessary. Security, trust and aspiration cannot be conjured from nowhere.[72]

This section will explore the policy implications of our analysis. It looks first at issues around social security, taxation and public services. In general, it makes the case for a progressive approach to the welfare state in order to support innovation, albeit with suggestions of how to align specific practices with our understanding of how equality enables innovation. It then broadens its focus to consider how to increase the availability and effectiveness of capital for investment in innovation, and concludes by examining the wider social and geographical context in which innovation occurs (or not).

3.1 Social security and redistribution

The welfare state is perhaps the most obvious example of a set of egalitarian institutions and practices, which nevertheless does not produce, or even seek to produce, the equalisation of resources or opportunities for all. Of course, in recent years, many public policies related to welfare provision in countries like the UK would rightly be considered *anti*-egalitarian, insofar as they deliberately place upon benefit recipients a compulsion to work which does not apply across society more generally, or knowingly introduce new services and entitlements which produce less equitable outcomes for poorer recipients.

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[71] On this latter point, see e.g. Amartya Sen, "Equality of What?" in Tanner Lectures on Human Values vol.1, Cambridge University Press, 1980; Gerald A. Cohen, "Equality of What? On welfare, goods and capabilities", Recherches Économiques de Louvain/Louvain Economic Review 56.3-4 (1990), 357-382.

[72] It is worth reflecting in this regard on the challenge of modern monetary theory (MMT) to more orthodox economic thought, and indeed to the Keynesian perspective which underpins much centre-left economic policy thinking. MMT proponents would of course object to the implication that spending on social priorities necessitates higher taxes, since the state can create the money required for such purposes. Nevertheless, most MMT proponents would agree that taxation is justifiable – indeed imperative – in order to manage the macroeconomy (primarily offsetting the inflationary effects of money creation), with left-wing MMT proponents further arguing that progressive taxation is also justifiable on ethical grounds to support greater equality (see e.g. Andrew Baker and Richard Murphy, "Modern monetary theory and the changing role of tax in society", Social Policy and Society 19.3 (2020): 454-469). The distinction between MMT and Keynesianism in this regard has been rather over-stated. Part of the intent of the current paper is to show that progressive taxation has economic benefits, irrespective of the technical debate over whether it is required to finance social spending. Of course, MMT's main concern is borrowing, rather than taxation, insofar as it argues that governments do not need to borrow in their own currency in order to fund expenditure. Keynesian arguments in favour of borrowing are increasingly being challenged, however, by post-Keynesian scholars who recognise the role that assets based on public debt play in financialisation. Again, irrespective of the monetary debate, our analysis supports a view that taxation, rather than borrowing, should be the most important source of revenue for the state, given the role it can play in supporting innovation, productivity and growth. The state may add directly to the volume of money but our concern is whether it is economically useful to do so, ahead of taxation – it is arguably more important to consider more strongly regulating how the private sector creates money, especially in terms of financing innovation.

However, such policies should be considered examples of welfare *retrenchment*. The principles which underpin the *expansion* and *maintenance* of welfare states can be considered broadly (if not exclusively) egalitarian in nature. This paper is not the place to discuss the merits, or otherwise, of redistribution in general. Crucially, however, as discussed in the first section, many of the societies in which equality is associated with innovation also tend to have relatively 'generous' welfare states and redistributive social security systems financed by progressive taxation.

If our goal is to embed entrepreneurial egalitarianism, how much of the load can we expect the social security system to carry? Clearly, if we are correct that (a) innovation is not inspired exclusively by financial incentives, but rather enabled by a complex set of conditions, and (b) higher levels of inequality can impede innovation, then we should not be squeamish about redistribution. Targeting tax to reduce inequality and using the social security system to build capabilities as well as to relieve poverty are not straightforward tasks. But this does not mean we should not be guided by such an agenda. As we argue above, inequality may actually impede the already affluent from innovation, because they have further to fall if risks do not pay off. Progressive taxation is an antidote to this. Notably, however, the ability of tax systems to reduce inequality has declined over the last fifty years.[73] During this period, reductions in top marginal income tax rates have combined with a proliferation of rules that treat certain kinds of wealth accumulation preferentially for tax purposes – for example, lower rates of tax on capital gains, corporate income, returns on savings/investments or intergenerational bequests. Addressing these deficiencies in tax progressivity may help to reduce inequality and boost innovation.

Redistributive social security is a broad category, generally encompassing a spectrum from means-tested benefits targeted on the poorest to universal benefits available to all. We have reservations about the ideal-types at each end of the spectrum. Systems based on means-testing (which the UK has moved rapidly towards since the 1980s) tend to achieve neither adequacy nor wider acceptability. Benefits tend to be set at very low levels to avoid 'disincentivising' work (and complex arrangements which govern the interaction of income from benefits and employment tend to lead to low take-up and misadministration, further undermining adequacy). The low financial value and complex conditionality of some countries' social security payments limits their ability to provide individuals with a meaningful 'safety net' (particularly for those with income levels and consumption patterns substantially higher than the state-subsidised minimum). At the same time, targeting tends to feed perceptions of 'the undeserving poor' which undermine the political consensus necessary to sustain welfare provision over the long-term, further reducing the ability of such policies to offer individuals contemplating risky career moves and/or entrepreneurial decisions much by way of reassurance.

The idea of a 'universal basic income' (UBI) lies at the opposite end of the social security spectrum. Many have argued UBI can help to bolster political support for the welfare state, insofar as all citizens would benefit, irrespective of their economic circumstances.[74] On the other hand, it seems

[73] Emmanuel Saez & Gabriel Zucman, "The rise of income and wealth inequality in America: Evidence from distributional macroeconomic accounts", Journal of Economic Perspectives, 34.4 (2020): 3-26; David Hope & Julian Limberg, "The knowledge economy and taxes on the rich", Journal of European Public Policy, 29.5 (2022), 728-747.
[74] Andrew Gamble, Can the Welfare State Survive, Wiley, 2016.

likely that any move towards UBI would be opposed by some voters, in fear that it would *create*, rather than simply *reward*, a class of undeserving (not quite) poor by softening the compulsion to work.

This paper is obviously not the place to rehearse all the arguments for and against UBI. From the perspective of innovation, it is clear that UBI provides a platform of financial security which would enable more people to innovate. Perhaps more pertinently, UBI mitigates the atrophy of innovation capabilities that might occur at times of upheaval, whether for individuals, particular firms or industries, or the economy more generally. UBI would allow some individuals to choose jobs which better allow them to utilise their skills, as well as help to support them to develop new skills.

However, if this is (part of) the rationale for UBI, there may be more suitable policy options (some which have the benefit of mitigating political resistance). The notion of a minimum income guarantee (MIG) can achieve some of the same ends, insofar as it would be available to people without an income (or sufficient income) from employment or self-employment, but building upon existing social security infrastructure.[75] The MIG could be made available to people when taking opportunities to retrain, or starting a business or social enterprise – essentially providing financial security to enable risk-taking, not simply insuring people against a lack or loss of income. (As discussed below, the case for UBI-style benefits would be strengthened by the development of novel mechanisms for financing and administering benefits.)

The drift of UK social security towards means-testing did not just displace elements of universalism but also a range of contributory benefits, which traditionally tend to characterise welfare provision in continental European countries such as 'corporatist' Germany. In a contributory system, social security ultimately treats people unequally, because benefit payments are higher for people who have made higher contributions to the system through taxation. Of course, this does not necessarily mean it treats people *unfairly* (determining the equity of contributory benefits is not our concern here), nor is it necessarily regressive (after accounting for the higher tax contributions of higher earners eligible for higher benefits). From the perspective of supporting innovation, however, it makes sense for social security to be paid with regard to previous earnings: potential innovators may not *feel* secure with the prospect of relying on a UBI or MIG when they take financial risks, if they are accustomed to or reliant upon a higher level of income.

Furthermore, a contributory system can offer flexibility in terms of what counts as a 'contribution' – an approach welfare policy might take to people who cannot work due to caring responsibilities, for example. It should be possible for innovation to be rewarded through benefit entitlements even if it does not immediately generate earnings for the innovator.

3.2 The public services platform

Even if the social security system could be engineered to provide greater financial security for would-be innovators, social security alone is unlikely to be sufficient to provide the bedrock of

[75] Alfie Stirling and Sarah Arnold, A Minimum Income Guarantee for the UK, New Economics Foundation, 2020, available at: https://neweconomics.org/uploads/files/MIG-new.pdf.

insurance that supports individuals to develop innovative capacities. There are, most obviously, essential goods that individuals struggle to organise effectively via market mechanisms, such as health and education (both of which involve significant asymmetries between buyers and sellers, as well as spillovers for wider society), which must be seen as integral to a welfare state which helps to ensure that people can innovate and take risks without fear for their livelihoods and the wellbeing of their families. Entrepreneurial egalitarianism would favour an expansive view of public services in this regard, making the case for a greater range of caring activities to be brought firmly into the public sector, funded by general taxation, and for education systems to provide lifelong learning opportunities to enable retraining and support entrepreneurship. Employment rights and regulations that secure scope for learning and leisure outside the rigours of the working day might also form part of this platform. A greater role for the public sector in housing provision would arguably also be justifiable on these terms – we discuss housing further below.

The increasingly popular concept of 'universal basic services' (UBS) – often contrasted with UBI – is, on the one hand, a call for all people and places to benefit from a higher standard and wider range of public services.[76] Paradoxically, but correctly, UBS advocates often recommend greater local control of public services delivery, insofar as local governments are better placed to ensure that national standards are being met in their areas. On the other hand, UBS encompasses a wider range of services (which might be provided publicly or privately – the key is citizens' entitlement to these services). For example, UBS could encompass access to legal services (building upon legal aid), on the basis that the cost of legal advice is undermining the universal applicability of equal access to the legal system. After all, the prohibitive cost of enforcing one's rights as a consumer, employee and/or citizen can be a major source of insecurity in unequal societies such as the UK.

UBS also encompasses public goods such as transport networks and high-speed internet access, and as such overlaps with 'the other UBI', that is, universal basic infrastructure. In this sense, UBS has an explicit economic purpose, in that it envisages all people and places being provided with the physical, digital and social infrastructures required to become more productive and prosperous. We believe that UBS could explicitly encompass also a set of 'innovation services', widening access to the means of entrepreneurial aspiration, ranging from advice and networking opportunities to various forms of infrastructural support and access to finance. This approach could be established at the local level, where authorities often have the closest relationships with innovation practitioners, and are directly engaged in challenges around bringing innovative products to market. It might also extend to addressing issues around unequal internet access, especially for children, and ensuring all have access to guidance on safe and effective use of digital technologies.

We should also consider issues around data management and ownership in any universal basic infrastructure framework. The collection and analysis of data is of course at the heart of the business model of the most ostensibly innovative firms and industries, who often rely upon

[76] Jonathan Portes, Howard Reed and Andrew Percy, Social Prosperity for the Future: a proposal for universal basic services, UCL Institute for Global Prosperity, available at: https://www.ucl.ac.uk/bartlett/igp/publications/2022/feb/social-prosperity-future-proposal-universal-basic-services-2017; see also Anna Coote and Andrew Percy, The Case for Universal Basic Services, Polity, 2020.

synergies between large datasets to create innovative new products and to improve their existing services. However, market concentration sometimes allows firms to use data to secure economic rents, inhibiting genuine innovation (and simultaneously exacerbating inequality via rent-enabled rewards for executives and shareholders).[77] There is a strong case therefore for collective models of data ownership, allowing data to become a shared innovation resource.[78]

3.3 Democratising capital

The prospect of a universal basic services and/or universal basic infrastructure agenda encompassing access to finance draws attention to the more general issue of how innovation is financed. The evidence, presented above, is clear that seedcorn funding remains essential to innovation, and that access to such funding by conventional means is far from equal due to a range of formal and informal barriers.

The UK government has in recent years sought to use public finance to support the growth of innovative start-ups and SMEs through institutions such as the British Business Bank (BBB), a function greatly expanded during the COVID-19 pandemic.[79] BBB generally supports business growth which is already close to realisation (and indeed does not necessarily prioritise innovation, but often rather profitability, in its decision-making), and therefore privileges individuals and companies that already have access to the wider array of resources and opportunities that support innovation.

There is a strong case, however, for public finance playing a larger upstream role, allowing a broader range of people to access seedcorn funding of various types, and recognising the potential societal benefits – over and above the prospect of firm-level financial returns – of supporting innovation. A transformative agenda for access to finance could perhaps reimagine such mechanisms as an entitlement available to all citizens, albeit with conditions on how finance is used, as well as enhanced mechanisms for the public sector to benefit from financial returns and new technologies generated by the investments it makes. The importance of private banks financing innovation should also be recognised within financial regulation; this is an agenda UK policy-makers have consistently neglected, even when government became a major shareholder in several private financial institutions after the 2008 financial crisis.

None of this is to suggest that larger-scale public investment in innovation – whether in conventional R&D processes, or in building the public sector's own capacity for innovation – is not necessary. But there is also a role for democratising public investment mechanisms, to both showcase and institutionalise the positive relationship between innovation and egalitarianism, for

[77] Nick O'Donovan, "Personal Data and Collective Value: Data-Driven Personalisation as Network Effect", in Data-Driven Personalisation in Markets, Politics and Law, ed. Uta Kohl and Jacob Eisler, Cambridge University Press, 2021: 74-91
[78] Stuart Mills, "Who owns the future? Data trusts, data commons, and the future of data ownership", SSRN working paper (2019), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3437936; Rosie Collington, "Disrupting the welfare state? Digitalisation and the retrenchment of public sector capacity", New Political Economy 27.2 (2022): 312-328.
[79] Craig Berry, Daniel Bailey, David Beel and Nick O'Donovan, "Building back before: fiscal and monetary support for the economy in Britain amid the COVID-19 crisis", Cambridge Journal of Regions, Economy and Society 16.1 (2023): 49-64.

instance through the introduction of citizens' wealth funds.[80] They could be financed by various public and private sources, including taxation, and could play a role in providing small grants for innovation, and even for the introduction of a minimum income-style benefit for individuals working in particular areas. They could also have a role at the macro level in establishing and helping to finance industrial strategies.

Even without the direct input of citizens into investment decisions, allowing local government greater control over public investment in innovation can serve the cause of democratising capital, insofar as the local level allows for more meaningful engagement between policy-makers and the public around operational decisions. A mandate to, for instance, diversify the base of entrepreneurs could be built into future devolution deals.

3.4 Mobilising pension funds

The prospect of reorienting pension fund investment in order to support long-term economic growth has been highlighted by various UK policy-makers in recent years.[81] While ostensibly correct that private pension funds' investment profile could be aligned with the kind of 'patient' and riskier investment that tend to have the greatest innovation or productivity outcomes, this agenda tends to overlook three key constraints.

First, the legal (and arguably moral) imperative to prioritise – essentially to the exclusion of all else – the financial interests of members of the pension scheme limits the potential for these funds to play a broader social role. There is scope for fund trustees, for instance, to interpret members' interests relatively broadly, but nevertheless regulation has in recent decades strongly reinforced the need to make investment decisions based solely on protecting these interests. As such, pension funds, whether as investors in a 'public good' of disseminating opportunities to innovate or merely as investors in innovation in a more conventional sense, are never going to provide the same flexibility as a citizens' wealth fund, which can be established with an alternative mandate.

Second, the focus of attention for pension funds as patient investors has invariably been upon collectivist 'defined benefit' schemes, where outcomes for members are determined *in advance of* their capital being pooled for investment. The fact that employers guarantee these outcomes allows for a higher risk appetite and for a focus on long-term returns, which might be conducive to supporting innovation. This model, however, has all but disappeared from the UK private sector. In the individualised 'defined contribution' schemes which now dominate, due in large part to their role

[80] Carys Roberts and Mathew Lawrence, Our Common Wealth: A Citizens' Wealth Fund for the UK, IPPR, 2018, available at: https://www.ippr.org/research/publications/our-common-wealth; Mariana Mazzucato, Laurie Macfarlane, Olga Mikheeva and Ryan Bellinson, A Mission-Oriented Community Wealth Fund for Camden: governing finance with public purpose, UCL Institute for Public Policy, 2022, available at https://www.ucl.ac.uk/bartlett/public-purpose/sites/bartlett_public_purpose/files/iipp_camden_report_digital_singlepage.pdf. Camden's locally constituted wealth fund is worth noting in this regard: the fund seeks to democratise access to capital, build novel forms of business support suitable for low-income communities, and build connections with philanthropic investment in social action which can help create a network and pipeline of early stage businesses.

[81] A prospect raised again recently by a joint report by Tony Blair and William Hague (with Jeegar Kakkad, Benedict Macon-Cooney, Jess Northend, James Phillips, Nitarshan Rajkumar, Luke Stanley and Tom Westgarth), A New National Purpose: Innovation Can Power the Future of Britain, Tony Blair Institute for Global Change, 2023.

in the 'automatic enrolment' of most private sector workers into pensions saving, members' outcomes are tied to the value of their pension 'pot' at the point of retirement, as determined by investment returns. This breeds fragmentation and conservatism in investment strategies. Moreover, the fact that most private sector defined benefit schemes are now closed to new members or accruals means that even defined benefit funds are increasingly conservative, since they cannot rely on cash contributions from working-age members to offset losses from riskier investments.[82]

Third, both defined benefit and defined contribution schemes are now highly dependent on a small number of asset managers to operationalise their investment strategies. This has led to greater uniformity in strategies and a focus on scalable investment products such as index-tracking funds.

That said, given the vast size of pension funds – with assets across funded defined benefit and defined contribution schemes valued at around 124% of the UK's annual GDP – even a small shift in investment strategies could have a significant impact on innovation finance. Furthermore, despite the necessary focus on members' interests, as a form of welfare provision – heavily subsidised by the state in the form of pensions tax relief – it would be justifiable to expect pension funds to embody egalitarian values. While benefit design is largely a matter for industrial relations, egalitarianism could be pursued via investment strategies – and widening opportunities for innovation would represent the ideal objective for combining member and societal interests.

There would be four main options for reform. First, rather than prescriptive investment regulation, policy-makers could make the receipt of tax relief conditional upon the adoption of a particular investment profile. Second, scheme members (and their trade union representatives) could be given a stronger role in investment decisions – although this does not itself guarantee a more pro-innovation view of investment priorities. Members could also be given the option to redirect some of their contribution to alternative investment vehicles: putting some of their retirement at risk but continuing to benefit from pensions tax relief.

Third, to combat their inherent conservatism in investment allocations, defined contribution schemes could be provided by the public sector (as the Turner Commission which led to automatic enrolment originally envisaged). It could be that members' savings are directly invested *via* the state, or that schemes are run on a notional basis, with contributions hypothecated by the state for certain forms of patient finance. Fourth, we could reintroduce an additional state pension – to either replace or supplement private provision – albeit with benefits receiving less protection than the main state pension (they could for instance be linked to aggregate economic performance). As with a notional defined contribution scheme, contributions could be hypothecated for investment in innovation.

There is another set of policy options related to pensions provision which could also be pursued. In 2014, the coalition government in the UK introduced controversial reforms to allow for early access to pensions saving in defined contribution provision. Given the issues around access to finance discussed above, as well as the opportunity costs for higher earners foregoing lucrative careers to engage in risky entrepreneurial activities, we could reorient this system to focus on

[82] Berry, Pensions Imperilled.

enabling individuals to invest in, for instance, retraining or starting a business at earlier stages in the lifecycle. They would of course risk making a loss, and partially undermining their retirement security. However, the state could support these initiatives through co-financing – effectively an additional benefit which would increase incentives to save for a pension in the first place.

It is possible that early access could apply to the state pension as well as private pensions. We could enhance options for deferring receipt of the state pension, if later retirements result from career changes associated with engaging in innovation (for example, joining a start-up or retraining in STEM subjects).

3.5 The wider social fabric

Several of the mechanisms by which inequality constrains innovation involve the social and geographical fragmentation arising from economic inequalities. Such conditions would be mitigated by the alleviation of inequality through some of the redistributive tax, welfare and public services measures discussed above. Nevertheless, we should also consider how wider social policy changes could combat fragmentation in a way that supports innovation.

Most obviously, it is important that we cultivate more diverse lived environments, so that people from different backgrounds are better able to form social networks which may support innovation. This has implications above all for housing and urban planning regimes; it is important to recognise that, in many UK cities, residents are becoming more stratified by class and ethnicity.[83] We believe this may be a larger part of the UK's productivity problem than has yet been acknowledged.

An entrepreneurial egalitarian approach would, as a minimum, require us to rethink the volume, range and location of social housing (and other forms of affordable housing), and the type and location of new developments for more affluent households too. It would extend also to ensuring that transport networks are accessible and affordable for all – within and between urban areas – to minimise barriers to taking up suitable work and training opportunities, and to ensure entrepreneurs can access potential intermediary and end users. At the macro level, the groups who tend to create demand for innovation – through the financial resources at their disposal – need to be more spatially dispersed than they are at present in order to widen the social supply of enterprise and innovation.

The evidence presented in this paper also has implications for education. There is of course a solid, principled case for addressing class- and ethnicity-based fragmentation within education systems. But there is also a strong economic case insofar as the absence of social mixing may be impeding the development of innovation capacities and opportunities. Clearly, the segregated nature of private and/or selective schooling is the main example of this problem, but it speaks also to the inequalities in quality and resources present within public education (exacerbated in the UK by the establishment of academies and free schools).[84]

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[83] Rowland Atkinson, 'Padding the bunker: strategies of middle-class disaffiliation and colonisation in the City', Urban Studies 43:4 (2006), 819-832.

[84] On free schools, see Bobbie Mills, Emily Hunt and Jon Andrews, Free Schools in England: 2019 Report, Education Policy Institute, available at https://epi.org.uk/wp-content/uploads/2019/10/Free-schools-in-England-2019_EPI.pdf.

A focus on social networks and relationships extends beyond education. In *Radical Help*, Hilary Cottam outlines an approach to welfare (including skills development and support to find work) based on community organising, where relationships with fellow citizens allow individuals to nurture their productive capabilities.[85] Cottam's approach to welfare is strongly aligned with a wider entrepreneurial egalitarianism agenda: it is important to ensuring that welfare institutions nurture the relationships that can build individual capacities. Kayley Hignell makes the case persuasively for a greater role for occupational therapy – beyond the confines of the NHS – to support people to find sustainable and rewarding careers.[86]

In the case of innovation, we can perhaps think of employers or workplaces playing the role of developing individual capabilities – but this might also be a role for trade unions. Clearly, workers' associations can play a role in securing higher labour incomes and greater job security, fulfilling a redistributive function that complements and enhances the role played by the welfare state under entrepreneurial egalitarianism. Might organisations such as trade unions also become spaces where workers from diverse sectors can experiment with and embrace novel career paths? We should look to build upon existing relationships of trust and co-operation, and trade unions (alongside similar and complementary organisations) could play a role in 'backstopping' some of the risks individuals take on when they embark on certain career choices. There is a case for making public resources available to trade unions to enable them to play this role, rethinking the conventional training and R&D funding pathways.

[85] Hilary Cottam, Radical Help: how we can remake the relationships between us and revolutionise the welfare state, Virago, 2018.
[86] Kayley Hignell, 'Detached from reality', March 2023, available at: https://medium.com/@kayley.hignell/detached-from-reality-72bba55961f1.

4. Conclusion

It is reasonable – indeed a moral imperative for some – to pursue equality for the sake of equality. However, this paper has not sought to adjudicate on the ethical merits of egalitarianism. Instead, its more modest aim is to think about how equality supports innovation (as well as how inequality impedes innovation), and how we might pursue equality in a way that maximises its potential to support innovation. This is of course not a one-way street: we also recognise that innovation has the potential to address social problems such as inequality, and there is value to thinking about policy interventions which enhance this prospect too. But there is a danger that treating greater equality as a potential outcome of publicly-purposeful innovation overlooks the possibility that already-existing inequality is an impediment to innovation.

There are various tools by which we can pursue greater equality to unlock the benefits for innovation. We have discussed redistributive mechanisms and their limitations, as well as the role of both state and civil society in creating an environment in which more people have the resources, opportunities and incentives to engage in innovation. One of the most impactful things we could do is to encourage greater interaction between the richest and the rest, so that access to innovation-related resources is not spatially occluded and demand for innovation reaches even the most disadvantaged areas.

Moreover, the analysis and agenda of entrepreneurial egalitarianism directly addresses prevailing political demands for more socially and geographically inclusive forms of growth – as well as for more growth at the aggregate level, too. In the UK context, these demands are reflected both in the Conservatives' pledge to 'level up' as well as in the Labour Party's ambitions to build sustained growth 'from the bottom up and the middle out', part of Keir Starmer's 'five missions for a better Britain'. Yet this rhetoric is ambiguous. On the one hand, it seems to imply a redistribution of resources from richer households and regions to their poorer counterparts, to improve the productivity of those who are presently lagging behind. On the other, it can be taken to imply that catch-up growth is the *means* by which we will achieve greater equality between the richest and the rest. The evidence gathered in this report suggests that policymakers need to focus instead on the first mechanism, reducing inequality in order to foster innovation (and thus growth), rather than expecting catch-up growth to reduce inequality. Over the medium term, purposeful redistribution that unlocks growth will cost us far less than reactive redistribution that attempts to compensate for economic stagnation.

In addition to entrepreneurial egalitarianism's policy implications, this analysis also offers an important contribution to innovation theory. The state's role in fuelling innovation has been firmly established by the work of scholars such as Mariana Mazzucato, Rainer Kattel and others. Economists such as Carlota Perez have highlighted the importance of distributional issues (and redistributive policies) within various parts of the innovation process. However, the role that the socio-economic order as a whole plays in enabling (or inhibiting) the development of capabilities to innovate, and shaping the incentives structures in which individuals choose to engage in innovation, remains under-theorised.

We have drawn upon scholarship from across the social sciences to suggest that, contra the implicit assumptions of much mainstream scholarship on innovation, policies that produce greater levels of equality support innovation by reducing insecurity, widening opportunity, raising aspiration and deepening trust. This adds weight to the emerging literature on the positive relationship between equality, productivity and growth, with a specific focus on how this relationship operates at the micro-level. Further research into these mechanisms would of course be welcome. Nevertheless, given the evidence already available and the extent to which countries such as the UK have struggled to achieve durable innovation-led growth in recent decades, we contend that the time to embrace entrepreneurial egalitarianism may have already arrived.

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