

Greening Keynes? Productivist lineages of the Green New Deal

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Abstract

Climate change has propelled the Green New Deal to prominence as a strategy for greening the economy. This article interrogates the Green New Deal's coherence and suitability as a response to ecological crisis. Retracing the intellectual lineages of New Deal-era economic thought, the article reveals a common Keynesian inheritance of productivist preoccupations with full employment, rising income and productivity, that links Green New Deal proposals with their New Deal progenitors. This Keynesian inheritance generates internal inconsistencies within Green New Deal proposals, undermining their coherence and suitability as visions of green transition. Green New Deal proponents seek a political economy that respects ecological limits but they rationalize and legitimate their visions of green transition through a Keynesian commitment to a virtuous circle of rising investment, full employment, increasing income, and economic growth. This Keynesian inheritance is both premised on the denial of ecological limits and tarnished by its historical association with environmental destruction. Outlining an alternative approach, the article revisits the methodological historicism of New Deal-era economic thinking as a guide for redefining strategies of green transition. Drawing on Keynes's reflections on the historical impermanence of the 'economic problem' and mapping contemporary institutional dynamics, the article proposes a more consistent, transformative, and radical rupture from incumbent macro-economic imaginaries

Keywords

Anthropocene, climate change, decarbonization, Green Keynesianism, Green New Deal, green transition, net zero, New Deal, productivism

Introduction

The Green New Deal has become the dominant progressive strategy for responding to climate change. It has inspired new economic policies across the developed world, from the EU's Green

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Deal to President Biden's landmark Infrastructure Investment and Jobs Act.¹ Visions of the Green New Deal come in a variety of shades. They differ over whether the original New Deal provides a template, or merely inspiration, for contemporary policies. They take distinctive positions on the appropriate balance between state and market. But they are united by a commitment to large-scale and rapid economic transformation linking decarbonization with major investment and job creation, anchored by the benevolent stewardship of public institutions. This emerging progressive consensus around green transition makes it all too easy to neglect a fundamental question – is the Green New Deal an appropriate vision for reorganizing economy and society in response to ecological threats in the Anthropocene?

Green New Deal proposals have been critiqued along a range of dimensions. From an energy perspective, the Green New Deal's assumptions about the possibility for continued growth while switching to renewable energy sources have been questioned (Trainer, 2022). Degrowth advocates argue that reliance on economic growth to fund renewable energy investments will increase total energy demand, making vital emissions reductions harder to achieve (Mastini et al., 2021). Socialist critics have attacked Green New Deal proposals for outlining a 'win-win' approach to green transition that emphasizes mutual benefits for both environment and capital, while obscuring capitalism's hierarchical, exploitative, and commodifying logics (Selwyn, 2021; Seymour, 2019; 785–786). Others have attacked the 'blind faith in technology' characteristic of many Green New Deal arguments (Ajl, 2021: 19).

In this article, I take a different approach to appraising the Green New Deal. Revisiting the political economy of the New Deal-era, I unearth a Keynesian continuity of productivist assumptions connecting Green New Deal proposals to their New Deal forebears. I argue that this Keynesian inheritance generates internal inconsistencies within Green New Deal proposals, undermining their coherence and suitability as visions of green transition. Green New Deal proponents seek a political economy that respects ecological limits but they rationalize and legitimate their visions of green transition through a Keynesian commitment to a virtuous circle of rising investment, full employment, increasing income, and economic growth. This Keynesian inheritance is both premised on the denial of ecological limits and tarnished by its historical association with environmental destruction. Its foundations and macro-economic imaginaries are unfit as a response to the Anthropocene.

Historicizing the Green New Deal's internal inconsistencies, I provide a genealogy of original New Deal-era economic thought, and the ideas of John Maynard Keynes in particular. Responding to the Depression, New Deal thinkers were committed to increasing production, consumption, and employment to stabilize capitalism. I show how contemporary Green New Deal proposals abstract these Keynesian ideas from their historical context, using them as a transhistorical template to guide contemporary green transition. Core elements of the original New Deal, from the emphasis on public institutions to the enlarged role for planning, remain vitally relevant today. But Green New Deal advocates neglect a more properly transposable aspect of the New Deal – the methodological emphasis of the era's economic thought. New Deal thinkers worked with a historicist approach that grappled with the specificity of distinctive conjunctures, recognizing the limited life-span of concepts and theories. A similarly historicist sensibility might, I argue, serve as a useful guide for thinking through green transition today.

The article proceeds as follows. Firstly, I discuss the Green New Deal's emergence and define its core principles. In the second section, I retrace the development of New Deal-era economic thinking, identifying the historicist approach and productivist consensus that underpinned it. The third section reviews recent scholarship on the Green New Deal, highlighting its common Keynesian inheritance and the policy paradoxes that this produces. The fourth section repositions the problem of green transition within the context of the Anthropocene, developing Keynes's

thoughts on economic abundance to highlight alternative foundations for transforming contemporary capitalism. I conclude by calling for Green New Deal proposals to break more fully from the legacies of New Deal-era economic thinking and practices.

What is the Green New Deal?

Calls for a Green New Deal have been around for some time. Prominent American journalist Thomas Friedman popularized the concept as early as 2007 in a *New York Times Magazine* article. Proto-typical evocations of the idea can be found dating back to the Clinton presidency (Luke, 2009; Pettifor, 2019: 3). The concept moved from the margins and connected with political movements in the wake of the 2007/8 crisis, as environmentalists aligned plans for recession-busting economic stimulus with green objectives. In the UK, long-time climate activists came together to form the Green New Deal Group and produced a detailed declaration (Pettifor, 2019; Rifkin, 2019: 38). The idea began to receive sustained international attention after US Congresswoman Alexandria Ocasio-Cortez joined Sunrise Movement protesters in occupation of House Minority Leader Nancy Pelosi's office in November 2018. By February 2019, Ocasio-Cortez and her allies proposed a Congressional resolution to enact sweeping policy changes to bring about a Green New Deal in the US. The proposal envisaged a wholesale shift to renewable energy, major expansion of federal employment through a job guarantee scheme, and massive public investment in infrastructure (United States Congress, 2019).

Despite distancing himself from the Green New Deal during the 2020 presidential campaign, in contrast to left wing Democratic candidate Bernie Sanders' explicit endorsement, President Biden's legislative initiatives have taken inspiration from Green New Deal proposals. Echoing the New Deal's 'Civilian Conservation Corps', Biden's Executive Order of January 2021 called for the establishment of a Civilian Climate Corps to 'mobilize the next generation of conservation and resilience workers' and create jobs and training opportunities (United States White House, 2021a). His \$1.2 trillion bipartisan Infrastructure Investment and Jobs Act, passed in November 2021, included large-scale investment in public transport, railway improvement, provision of electrical vehicle charging stations, and spending on clean energy transmission and grid. It also includes funding for protection against extreme weather and remediation of environmental harms. These measures are rationalized in terms of their impact on ameliorating climate change and aiding communities of colour, who are disproportionately reliant on public transport and exposed to environmental risks (United States White House, 2021a). Biden's 'Justice 40' initiative responds to current and historic racial inequalities by aiming to deliver 40% of relevant federal investments to 'disadvantaged communities', using an Environmental Justice Scorecard to monitor progress (United States White House, 2021b). The recently passed Inflation Reduction Act provides a further \$369 billion investment in climate and energy policies (Cox, 2022).

The Biden government's proposals mobilise large-scale investment for developing greener infrastructure. They engage with both the racial legacies of the original New Deal and calls from current Green New Deal advocates to prioritise racial justice as part of a green transition strategy. These proposals nonetheless fall short of the ambition of the Ocasio-Cortez/Markey resolutions' calls for a job guarantee and high quality public healthcare and accessible housing for all (Berardelli, 2020; United States Congress, 2019). They do not match up to the more radical agendas outlined in Green New Deal proposals examined later in this article. In terms of net zero targets, the Biden government's 2050 target falls short of the Sunrise movements original demand for net zero by 2030, but matches the target set out in the Ocasio-Cortez/Markey resolution and proposed by some Green New Deal plans.² Biden's approach cleaves closely to the legacy of Keynesian demand-side intervention. This approach sees government spending and taxation policies as critical to financing

the green transition and realizing ambitious goals of green job creation, renewable energy infrastructure, and other public benefits (Galvin and Healy, 2020).

Variants of the Green New Deal have now been proposed throughout developed economies.³ Fundamentally, Green New Deal proponents make three core claims. Firstly, the threat of human-induced climate change necessitates an urgent and large-scale economic transformation to achieve environmental sustainability. Secondly, the institutional and ideational legacies of Franklin Delano Roosevelt's original 1930s New Deal are instructive as a guide to achieve this. Thirdly, this is an opportunity for large-scale job creation alongside other (broadly progressive) social and economic objectives. Beyond the common commitment to these three claims, however, there is substantial diversity. Advocates of the Green New Deal vary in their understanding of what constitutes a green transition.⁴ They differ on the appropriate balance between state and market provisioning, and the degree of wealth and income redistribution required (or desirable). And although Green New Deal proponents agree that the speed and scale of the transformation required is comparable to the original New Deal, they differ over the extent to which the original New Deal provides a useful template, or merely inspiration, for contemporary policies.

This variation is evidenced by the range of definitions offered by authors. Rifkin (2019: 8) frames the Green New Deal in comparison to its 1930s forerunner as a 'plan for addressing climate change, akin to the New Deal mobilization in the 1930s', with transformed industrial and social infrastructure at its core. Aronoff et al. (2019: 12–18) define the Green New Deal more loosely, as a 'program of economic transformation'. Acknowledging the original New Deal was 'rife with failings and exclusions', it nonetheless remains a 'useful touchstone'. The original New Deal is identified as an evaluative frame against which contemporary goals can be judged, rather than a historically transposable blueprint for policy-making. Pettifor (2019: 9) suggests that the Green New Deal is not merely an idea, but rather 'a comprehensive plan for stemming the breakdown of earth's life support systems'. Klein (2019: 26) views the Green New Deal less programmatically and expresses scepticism about the practical utility of the New Deal legacy. She suggests that the Green New Deal is an 'idea' which evokes the original New Deal, 'in scale if not specifics'. Finally, Chomsky and Pollin (2020: 18, 37) view the Green New Deal as an 'insurance policy' against ecological collapse that offers a 'unified programme for both human equality and ecological sanity'. More specifically, they revive the full employment objectives of the original New Deal as a leading goal for green transition (Chomsky and Pollin, 2020: 122–123).

As the remainder of the article reveals, the precise resonance of the original New Deal framing is often ambiguous and, when invoked, in tension with more innovative and ecologically-minded proposals. Even for authors taking looser inspiration from the New Deal, implicit assumptions derived from New Deal-era economic thought shape proposals in important ways, leading to an emphasis on a virtuous circle of publicly financed investment, rising national income, and full employment. Tracing the lineages of these New Deal-era assumptions requires us to revisit the historical origins of Roosevelt's transformative vision.

Productivist legacies of New Deal economics

Franklin Delano Roosevelt's New Deal stabilized an economy rocked by the storm of Depression. The Depression ravaged the United States, trailing behind it the wreckage of hunger, misery, and unemployment. By 1932, almost 20% of the US workforce were unemployed (Kennedy, 1999: 87). Roosevelt's plan for economic recovery was founded on the twin themes of work and economic security (Bindas, 2017: 39; Kennedy, 1999: 365; Szalay, 2000: 56). The route to more and better work, alongside enhanced economic and social security, would come through the enlarged budgetary and institutional capacities of the Federal state. During the '100 days' of furious legislative

activity that inaugurated Roosevelt's first government in 1933, a wide-ranging apparatus of new institutions was rolled out.

This apparatus was overseen by the National Recovery Administration (NRA), which became the hallmark innovation of New Deal government. Tasked with coordinating production, prices, and wages throughout the economy, the NRA was flanked by the Public Works Administration (PWA), which would oversee an ambitious programme of public investment to increase spending in the economy and lift the US out of recession. Funded by the PWA, the subsidiary Civil Works Administration (CWA) had put 4.2 million men and women into jobs by early 1934 (Kennedy, 1999: 151–175). These were the first momentous moves in a period of government that transformed the US economy and society, shaping progressive policy for decades (Jeffries, 1990: 417).

To identify and achieve these ambitious goals, Roosevelt's New Deal Administrations tapped a rich vein of new economic thinking. The economic ideas that shaped the New Deal differed in their emphasis on the precise maladies ailing the stricken US economy, but they shared a 'long-run' or 'evolutionary' approach to economics. They viewed the economic system as a deeply historical phenomenon, and recognized that the old neoclassical view of static equilibrium was unfit for understanding how changing conditions, from technological progress to demographic growth and geographic expansion, transformed the nature of the economy. Rather than a timeless entity operating under the sway of immutable laws, the economy was shaped by the subtle undulations and radical ruptures of historical transformation. The towering intellectual influences on the New Deal, first Gardiner Means, and then later John Maynard Keynes and Alvin Hansen, shared this approach (Rosenof, 1997: 1–6).

In addition to their historicism, New Deal economists emphasised the need to raise production and consumption to deliver the promise of secure abundance at the heart of Roosevelt's vision. This problem of 'underconsumption' galvanized New Deal thinking from start to finish (Barber, 1987: 204; Blyth, 2002: 50–51, 64; Kennedy, 1999: 374).⁵ Within the early New Deal, the most prominent advocate of the underconsumptionist thesis was Rexford Tugwell. Tugwell suggested that the owners of industry had failed to pass the gains of rapid productivity increases during the 1920s on to workers or consumers, through either higher wages or lower prices. As a result, a demand-depressive cycle set in, with workers' purchasing power outstripped by industrial productivity, leading to piled up inventories, factory closures, and job losses. More fundamentally, an era of stagnation blighted the mature US economy, with slowing technological progress, declining immigration, and decelerating population growth sapping momentum. Tugwell's influence was such that Roosevelt explicitly referenced these ideas in a 1932 campaign speech, alluding to, 'the problem of underconsumption, of adjusting production to consumption, of distributing wealth and products more equitably' (Kennedy, 1999: 122–123).

Other influential early New Deal voices offered comparable diagnoses. Structuralist explanations of the Great Depression held sway during the first New Deal (Rosenof, 1997: 8).⁶ With Gardiner Means foremost among them, the structuralists blamed long-run institutional changes, arising from technological development and an overly concentrated economy dominated by large corporations, for the Depression. Corporate power had distorted the equilibrating effects of market forces, leading to inflexible administered prices that skewed the distribution of income towards capital. This led to deficient purchasing power and opened a gap between production and consumption. Large-scale federal economic planning, wage and price controls, and structural reform were required to achieve the 'secure abundance' at the heart of the New Deal mission (Jeffries, 1990: 400).

After the recession of 1937–38 shook confidence in the viability of the New Deal vision, a lengthy period of policy re-evaluation occurred within the administration (Jeffries, 1990: 400). The structuralists were surpassed by the newly ascendant Keynesian-inspired 'spenders' who placed

greater emphasis on the need for compensatory fiscal policy, rather than structural-institutional reform, to escape from Depression (Salant, 1989: 36).⁷ John Maynard Keynes and Alvin Hansen were the leading figures of this group. Their imprint decisively shaped the remaining years of New Deal policy-making and the legacy of New Deal economic thought.

Keynes's economic ideas were formative for the ascendant spenders. Like the structuralists, Keynes took a historicist approach. He believed that each century had a distinctive outlook on politics, economy, and society. Raised within the 19th century view, he saw his task as shaping a new 20th century vision (Markwell, 2006: 15). Rather than focussing on the endogenous historical transformation of institutions themselves, Keynes couched his arguments in an understanding of the changes affecting the wider environment within which economic institutions operated. This included external factors like technological change, geography, and demography (Rosenof, 1997: 20–22). The specific challenges for political economy in the 20th century arose from a less auspicious set of exogenous conditions for growth, with the exhaustion of new geographical frontiers, slowing population growth, and a prevailing mood of uncertainty that punctured confidence weakening the underlying psychological basis for investment.

Grappling with the paradoxical persistence of poverty and unemployment within wealthy, technologically advanced societies, Keynes highlighted the destabilizing effects of volatile intersubjective expectations at the heart of modern liberal capitalism. In his 1936 *General Theory of Employment, Interest and Money*, Keynes challenged the classical liberal faith in the capacity of the economy to achieve sustained growth through the natural equilibrium between supply and demand (Laidler, 2006: 39). Keynes argued that capitalist economies might not always achieve balance. Instead they could remain trapped in a long-term state of depressed growth, falling income, and declining employment. There was no necessary inducement for private capitalists to invest that emerged automatically from within the system. Unemployment was now the dominant economic problem of the 20th century (Kelly, 2020; Mann, 2017: 131).

Government intervention offered the solution to this problem. By lowering interest rates and spending to stimulate investment and consumption, the government could raise effective demand within the economy and restore growth (Heilbroner, 2011: 147–152; Rosenof, 1997: 24). Public investment was critical to creating a conducive environment for stable private economic activity. Keynes envisaged a more activist role for government, adjusting interest rates, spending and taxation to achieve a volume of overall economic output that would enable full employment (Skidelsky, 1979).

Keynes's thinking became influential on both sides of the Atlantic. He visited Roosevelt in the White House in 1934 and then wrote to the President in 1937, praising Roosevelt's economic policies but urging greater public investment to create jobs and raise incomes (Kennedy, 1999: 197–198, 357). The most important conduit for Keynes's rising intellectual influence within the US was not, though, Roosevelt himself. It was the American economist Alvin Hansen, who became the leading American apostle of Keynesian theory. After initially taking a sceptical stance towards underconsumptionist theories and aligning himself with the orthodox position into the early 1930s, Hansen performed a significant volte face between 1936–38. Hansen moved to Harvard and, influenced by the younger economists that now surrounded him and the ongoing economic recession, became more receptive to the idea that fiscal intervention could help stimulate growth. He began to incorporate Keynesian concepts of macroeconomic aggregates and by 1938 he had, 'assimilated the Keynesian position in all essential respects' (Barber, 1987: 200–203).

Hansen was not merely a mouthpiece for Keynesian economic ideas. He aligned his newfound Keynesian conceptual vocabulary with a preexisting focus on the long-term historical factors that shaped economic change, moulding Keynesian insights to fit the US context. Hansen's paradigmatic thesis was the notion of 'secular stagnation'. Mobilizing the historicist approach common to

New Deal economic thought, Hansen suggested that long-term structural changes in the makeup of the economy, rather than short-term business cycle fluctuations, arrested growth and provoked unemployment. A declining rate of population growth was the most significant change. As population growth declined, the demand for economic output shifted. Rather than requiring the capital-intensive development of new housing stock for a growing population, demand adjusted to a much less capital intensive emphasis upon personal service provision for the elderly. Alongside other structural changes, such as declining requirement for capital-intensive new technologies and the exhaustion of new geographical horizons for market expansion, a new-normal of sustained low investment, low consumption and low growth took root, producing a ‘seemingly immovable core’ of unemployment (Hansen, 1939). To counteract these structural tendencies, Hansen vigorously championed the role of a planned and permanently compensatory fiscal policy (Jeffries, 1990: 402).

The Keynes-Hansen intellectual synthesis, with its emphasis on fiscal activism to counter persistent unemployment, became the dominant influence on New Deal policy from spring 1938. To overcome the recession, Roosevelt committed to a large spending-led fiscal programme with an emphasis on work relief and investment in public works. Hansen influenced a generation of young economists and New Deal bureaucrats and guided the pursuit of a high consumption, full-employment economy (Jeffries, 1990: 400–402).

Despite differences of emphasis regarding both the diagnosis of causes and the prescription of appropriate remedies for the Depression, both structural reformers and spenders were united in the pursuit of a, ‘full production, full employment, high consumption economy’ (Jeffries, 1990: 401). These productivist objectives spanned across the entirety of the New Deal project (Maier, 1977: 607–633).⁸ They ploughed the path towards the normative ideal of secure abundance and formed the hard-core of New Deal economic thought. Productivist ideas underwrote the major policy changes enacted during the New Deal. Landmark policies, like the Wagner Act that legalized trade unionism and the Social Security Act that founded the modern US welfare state, were justified on the basis of underconsumptionist arguments that stressed the need to boost purchasing power (Brinkley, 1996: 202). By the end of the New Deal-era, even as the reformist momentum was halted by growing conservative opposition and the exigencies of wartime production, the quest for full employment in a high productivity economy had become the intellectual loadstone.⁹

Antinomies of the Green New Deal

Returning to the New Deal’s 1930s intellectual origins reveals the inadequacy of core Green New Deal assumptions. The Keynesian macroeconomic paradigm and productivist concerns with public investment, full employment, and rising national income emerged from the specific historical context of the 1930s to shape New Deal economic policy. This Keynesian inheritance, largely unexamined by Green New Deal authors, haunts the intellectual foundations and policy proposals of contemporary proposals. As I demonstrate below, it generates a series of deep antinomies within visions of the Green New Deal.

Rifkin’s (2019) approach to the Green New Deal centres on the need for a zero-carbon ‘Third Industrial Revolution’ encompassing a broad suite of technological transformations (Rifkin, 2019: 63).¹⁰ Rifkin (2019: 16, 39, 125) suggests that the Third Industrial Revolution can improve energy efficiency, dramatically increasing productivity and driving the transition to post-carbon renewable energy industry and a circular economy. Rifkin also champions the Third Industrial Revolution’s potential to usher in a post-capitalist future.¹¹ This potential is rooted in a ‘Sharing Economy’, a core feature of the Green New Deal that Rifkin champions as the first new economic system since the arrival of capitalism and socialism. It creates a circular economy allowing resources and goods

to be passed on by different users, reducing emissions, and preventing resource waste. Associated efficiency gains are likely to drastically squeeze profit margins and, importantly, challenge capitalist logics. Elsewhere Rifkin (2019: 85, 158) calls for a 'post-carbon ecological civilization' suggesting that this represents 'the next stage of human history'.

This bold imaginary of a post-capitalist future is ultimately thwarted by tensions within Rifkin's techno-optimist framework. Paradoxically, the arrival of this 'entirely new' economic system also renews and reinforces conventional 'social market' capitalism by bringing together civil society, public and private sector institutions. As with the broader Green New Deal corpus, Rifkin (2019: 19, 21, 49, 70, 82) advocates green transition based on its potential to create 'mass employment', business opportunities, and investment returns. Rifkin reproduces the productivist vocabulary and emphases of 20th century economic thought without reflecting on the adequacy of its underlying premises, or considering whether incumbent macro-economic categories and priorities are well-suited to contemporary conditions. Rather than a deeper reckoning with the ecological foundations of capitalism in the Anthropocene, Rifkin presents a vision of the Green New Deal stranded between envisaging post-carbon foundations for society and reaffirming modernist visions of technological progress within the Keynesian social market economy.

Radical proponents of the Green New Deal call for a more confrontational approach to contemporary capitalism. Aronoff et al. (2019: 12, 18) put social justice at the heart of green transition, emphasizing egalitarian policies geared towards public goals and targeting investment in working class, racialized, and poor communities (Aronoff et al., 2019: 111). Astutely noting the New Deal's limitations, they nonetheless make considerable comparative usage of the 1930s experience. Despite its flaws, the original New Deal, 'excelled in creating a positive feedback loop between public spending on collective goods and mass mobilization' (Aronoff et al., 2019: 17). They suggest that the original New Deal's public power initiatives, with their emphasis on public planning and large-scale transformation, are instructive for thinking about decarbonization and the shift to renewables. They acknowledge that the original New Deal is still 'the landmark for worker protections and public sector employment in the United States' (Aronoff et al., 2019: 58). Endorsing the Ocasio-Cortez/Markey 'Job Guarantee', they view the Green New Deal as an opportunity to boost employment and better quality work.

Their Green New Deal proposals also commendably foreground the need to draw connections between environmental and racial justice, empowering racialized and marginalized communities (Aronoff et al., 2019: 20, 29, 126). Echoes of this emphasis can be seen in Biden's Justice 40 Initiative, which responds to the racial injustices of the original New Deal. Black Americans were marginalized from the benefits of Roosevelt's progressive social programmes (Katznelson, 2006: 9). Southern Democrats' support for the preservation of white racial hierarchy in the South set limits on the New Deal's progressive agenda (Katznelson, 2013). Landmark programmes like the Civilian Conservation Corps were premised on the segregation and subordination of black workers, while women were excluded altogether (Katznelson, 2013: 24; Maher, 2008: 109). Writing in the mid-1930s the African-American scholar, Du Bois (1935: 266), lamented the exclusion of black Americans from New Deal policies. Aronoff et al. (2019: 85, 126, 185) tackle the New Deal's troubled racial legacies head on, offering the most thorough engagement of any Green New Deal advocates.

Endorsements of New Deal policies are further tempered by recognition that the New Deal skirted distributional and environmental issues with 'dire' consequences (Aronoff et al., 2019: 64–71). They also challenge the growth paradigm head on – rejecting the notion that economic growth can be substantially decoupled from resource use and accepting limits to materially intensive growth (Aronoff et al., 2019: 31). Evoking Christian symbolism, they press the demand for a 'Last Stimulus' to pump-prime the economy before breaking with capital and abandoning growth (Aronoff et al., 2019: 70–71).

New Deal legacies can, as they demonstrate, inspire responses to climate crisis. But there is an unresolved antinomy here between the progressive extension of the New Deal framework – with its resource-intensive and extractive emphasis on increasing production, consumption, and employment – and the attempt to deepen the Green New Deal’s ecological grounding by transcending the growth paradigm. Large-scale public investment geared towards decarbonization is critical to tackling the ecological crisis. But should this be achieved through a Keynesian-style full employment paradigm? Can we move towards massive public investment, mobilizing a discourse of green full employment productivism and going, ‘all out for a decade or two’, and then invert this logic, overnight, to something entirely opposite? Despite its strengths, this vision of the Green New Deal is caught between a 20th century vision of secure, full employment economic abundance, and a green post-capitalism. There is a fundamental tension between a green post-capitalist utopianism and the reproduction of Keynesian fiscal and employment paradigms. Distinguishing, politically and institutionally, between shorter and longer-term strategies doesn’t do enough to reconcile how these counterposed logics of political-economic development might coherently co-exist.

In common with Aronoff et al., Klein (2019: 27, 259–262) stresses the importance of social movement agency and social justice to the Green New Deal. She highlights the original New Deal’s legacies of racialized exclusion and the violation of indigenous land rights by infrastructure projects and conservation efforts (Klein, 2019: 60–65). Klein is also critical of the consumption premises of 20th century economic approaches, observing that today’s crisis is one of overconsumption by the wealthy. She offers the clearest critique of ‘Climate Keynesianism’, making links between post-war economic expansion and unsustainable patterns of urbanization and global consumption (Klein, 2019: 122, 264).¹²

Yet much like the wider Green New Deal literature, Klein highlights fundamental limitations of 20th century economic thinking while reproducing core pillars – in particular the public investment/full employment axis derived from New Deal-era economic thought. The focus on the link between public investment and full employment resurfaces as a centrepiece of the case for green transition (Klein, 2019: 34–35). Klein echoes calls for a job guarantee as both a platform for just transition and antidote to economic insecurity. She repeatedly emphasizes the ‘mass job creator’ credentials of the Green New Deal.¹³ This skirts an important question – do we want or need full employment within a green political economy? Klein assumes the appropriateness of a 20th century full employment paradigm rather than making an effective argument for it.

The arguments reviewed above have little to say on the subject of how to pay for the Green New Deal.¹⁴ Pettifor (2019) examines the monetary dimensions of green transition, evoking Roosevelt’s ‘revolutionary Keynesian monetary policies’ to renew the case for monetary radicalism (pp. 9, 46–48). Pettifor argues that financing the Green New Deal requires nation-states to bring offshore credit back onshore, restoring control over the dollar-centred ‘spigot of globalized credit creation’. For Pettifor (2019: 27–28), the Green New Deal’s viability hinges on whether credit creation can be rerouted away from carbon-intensive and ecologically destructive activities and towards green investment. Reviewing different monetary and fiscal policy levers that can be pulled, she ultimately favours a traditional Keynesian approach of financing investment through government borrowing (Pettifor, 2019: 132–142).

Pettifor fuses Keynesian macroeconomic theory with principles of ecological sustainability. This awkward marriage generates inconsistencies. Pettifor (2019: 67, 99–103) argues that full employment is, ‘fundamental to the Green New Deal’, and suggests that a de-carbonized economy will also be ‘job-rich and labour intensive’. She makes the case for debt-financed public investment by appealing to its ability to stimulate public and private employment, generating income needed to fund transition and pay down debt. And she endorses the desirability of a mixed economy Green New Deal with markets complementing state activity. This is an approach grounded in Keynesian arguments about the virtuous circle between public spending, employment, and income.

In a context of continuing economic growth, rising incomes and job creation, this is reasonable. But Pettifor's vision of the green economy also departs from established economic imaginaries. Pettifor (2019: 113) endorses the need to move towards a 'steady state economy' – contained within ecological boundaries and with the capital stock (e.g. capital goods, the inventory of consumer goods and human population) held constant. She aspires to move towards an economy defined by 'strict limits on the apparently limitless consumption of capitalist economies and societies' (Pettifor, 2019: 95).

This raises a fundamental question – absent normal drivers of economic growth, from population increase to rising investment in capital stock and increased consumption, how will the economy generate dynamic flows of rising individual, household, corporate and national income? If incomes do continue to rise, in relation to a static volume of goods and assets, how will inflationary problems be avoided? These questions are critical because Pettifor's Keynesian macroeconomic framework requires rising, not static, national income. How else will the goals of a high standard of living, full employment and the capacity to make debt repayments be met? Pettifor's Keynesian macro-economic assumptions and her ecological vision of the steady state economy are based on contradictory premises.

A comparably Keynesian emphasis on the importance of money shapes Chomsky and Pollin's (2020) Green New Deal. They echo demands for a Green New Deal that generates full employment by prioritizing, 'expanding job opportunities and raising mass living standards for working people and the poor throughout the world' (Chomsky and Pollin, 2020: ix). Unlike other Green New Deal proponents, though, they endorse neither agnosticism nor opposition towards economic growth. Instead, they make the case for green growth based on renewable energy, explicitly rebutting degrowth perspectives that advocate decarbonization and ecological restoration through rejecting the growth paradigm.¹⁵

Chomsky and Pollin rightly recognize that large-scale and rapid investment mobilized by the state will be critical to renewable energy transition. They make valuable efforts to cost the specific requirements for investment in energy efficiency and renewables relative to GDP. They highlight specific funding measures needed to pay for transition, from a carbon tax to monetary financing of green bonds by central banks (Chomsky and Pollin, 2020: 102–112). Unambiguously endorsing a green growth perspective that treats expanding production and consumption as unproblematic within the context of a decarbonized economy, Chomsky and Pollin circumvent some of the sharper paradoxes found elsewhere. If environmentally sustainable economic growth is considered to be feasible we need not doubt the viability of future expansion. A full employment Green Keynesianism grounded in the virtuous circle of investment, employment, rising income, and growth is potentially a viable alternative to climate catastrophe.

The problem is that this internal Keynesian consistency rests on dubious ecological foundations. Chomsky and Pollin's argument focusses on the problem of fossil fuel-driven climate change and the need for emissions reduction.¹⁶ Cutting emissions to curb global warming must be a priority for any green transition. But focusing so overwhelmingly on the challenge of decarbonization skirts broader Anthropocene challenges that encompass 'far more than climate change' – from human alteration of the nitrogen cycle to overfishing of the world's oceans and the wider collapse of biodiversity (Steffen et al., 2015: 82). The problem is not only one of carbon-intensive economic activity, but intensive economic activity and its associated ecological footprint more broadly.

If the challenge for a green transition is not only to rapidly decarbonize, but to disrupt the extractive and unsustainable logic of resource-intensive global consumer capitalism, then Chomsky and Pollin's solution is insufficient. This is evidenced by their endorsement of a high employment, high income, and high consumption economy whereby, 'as employment levels rise, so does total purchasing power in the economy, since people have more money in their pockets to spend'

(Chomsky and Pollin, 2020: 121). This sidesteps problems of overconsumption and extractivism. It conspicuously neglects the tradition of ecological economics and its emphasis on the material ‘throughput’ and resource intensiveness of economic activity (Daly, 1974; Georgescu-Roegen, 1971; Jackson, 2009; Meadows et al., 1972).

What will increased incomes be spent on if current levels of consumption are ecologically unsustainable? Similarly, their faith in the viability of future growth based on switching from fossil fuels to renewables ultimately reproduces the cornucopian conceits of a world without limits. Rather than focussing on growing specific sectors key to green transition, they focus on indiscriminate aggregate growth (Mastini et al., 2021: 5). Assuming rather than demonstrating the possibility of green growth, they evade the empirical flimsiness of claims for the possibility of an absolute decoupling of economic growth from carbon emissions and damaging resource exploitation.¹⁷ Positive estimates for the possibility of a wholesale renewable energy to meet current global demand at affordable costs are often based on dubious assumptions (Trainer, 2022: 2). Energy return on investment for renewable energies are between 10:1 and 20:1, compared to more than 50:1 for oil and coal deposits. As diffuse energy sources, solar and wind power require greater amounts of energy to collect and concentrate (Kallis et al., 2018: 296).

Productivist premises of New Deal-era economic thought haunt the macroeconomic imaginaries of the Green New Deal, creating troubling paradoxes. New spending priorities are legitimized via their employment-generating potential (Aronoff et al., 2019: 58–60; Chomsky and Pollin, 2020: ix; Klein, 2019: 268–269, 281; Pettifor, 2019: 67, 99–103; Rifkin, 2019: 18). Capitalism and growth are said to be incompatible with environmental sustainability, but profit-oriented green bond markets are targeted to fund green investment (Aronoff et al., 2019: 16, 31). It is claimed that we can realise an ‘ecological civilization’ through recourse to a ‘social-market economy’ (Rifkin, 2019: 26, 85). The case for respecting ecological limits is made persuasively, but the relevance of New Deal financing techniques is justified on the grounds that economic recovery, job creation, and rising tax revenues will pay down public debt (Pettifor, 2019: 49, 93–95). These arguments suggest that the pathway towards a post-capitalist green transition lies, paradoxically, through the macro-economic tools developed during the century that cemented the hegemony of capitalism and growth (Coyle, 2015; Schmelzer, 2016).

Reading Keynes in the Anthropocene

Proponents of the Green New Deal activate the wrong kind of historicism – attempting to recover the past as an instructive guide to an Anthropocene future marked precisely by its profound *difference* from previous experiences. The problem of the Depression-era was too little growth, not too much. It was underconsumption not overconsumption. The New Deal sought to remedy class conflict by solidifying social consensus through access to an expanding stock of national wealth (Maier, 1977). This was the productivist framing at the core of the project. How can these assumptions hold alongside a commitment to a steady-state economy and the need to reduce consumption and production? In what sense do they enable a ‘post-capitalist’ future? Why should we elevate the full employment paradigm if a high production and high consumption economy is no longer our main goal? These are fundamental questions that proposals for the Green New Deal neglect to ask.

We can learn important lessons from the history of the New Deal – about the possibilities of state capacity, of political-economy in a time of urgency, of the importance of money as a social technology, and the transformative power of public investment. But we should also heed the methodological approach of its major economic thinkers – recognizing that economic and political problems of each century, each conjuncture in global history, must be understood on their own terms.

Taking the Anthropocene seriously challenges the productivist assumptions behind the Green New Deal. The enlightenment fiction that we existed above and beyond our ecological entanglements, within a sharply delineated ‘social’ realm that could be analysed in abstraction from the ‘natural’, is no longer tenable. The Anthropocene forces us to confront the abundant evidence of our inescapable and destructive entanglement within the broader web of life (Moore, 2017). During the post-WWII Great Acceleration, measures of human socio-economic development, ranging from industrialization to urbanization, are correlated with comparably sharp increases in indices of ecological deterioration, from rising carbon dioxide emissions to intensifying ocean acidification. The cumulative impact of these processes is provoking a rapid and unstable transformation of the Earth System with perilous consequences (Steffen et al., 2018). This intensifying ecological deterioration was ignited during the post-war decades in which the paradigmatic dominance of Keynesian political economy was most pronounced (McNeill and Engelke, 2016). Dominant macro-economic categories of the last century and the onset of the Great Acceleration are causally intertwined. From its foundation, the project of modern political economy has been grounded in cornucopian ideas about the possibility and desirability of endless growth. Cornucopian ideas triumphed over rival interpretations that reflected environmental anxieties and stressed the importance of physical limits on growth (Jonsson, 2014: 151–168). Modern mainstream economics has systematically excluded ecological considerations.

This is equally true of Keynesianism. Focussing on the economy as the sum of all the moments when money changed hands, and promoting the development of national income statistics to map these dynamics, Keynes created a representation of economic growth increasingly detached from physical limits. Economic expansion had previously been connected to physical processes such as urbanization or colonization, or the tapping of new mineral reserves. National income in a monetary sense could grow beyond these physical limitations. Keynes’s approach was also premised on historically specific assumptions about energy, relying upon a favourable conjuncture of continually declining oil prices. The low cost of oil entrenched the impression that it was inexhaustible and that growth could proceed without limits (Mitchell, 2011: 136–141).

Alongside wider New Deal economic thought, the rise of Keynesianism created a body of technical economic knowledge that could be deployed to regulate a distinctive ‘economic’ domain. Through the development of measures of national income, led by Simon Kuznets’s work on GDP in the US and the work of Colin Clark, Richard Stone and Keynes’s within the UK during the 1930s and 1940s, the rise of New Deal-era economic policy was matched by the emergence of new statistical imaginaries that constructed the modern economy (Coyle, 2015: 12–17; Desrosières, 2002: 172; Schmelzer, 2016: 88–92). These measures did not account for the depletion of energy resources nor other environmental damage caused by economic expansion (Mitchell, 2011: 124, 140; Schmelzer, 2016: 100).

Green New Deal proposals engage selectively with these New Deal-era economic lineages. They critically address some of the practical policy legacies of the period, using the template of New Deal policies to make a strong case for the importance of public investment, rapid state-led action at scale, and economic planning to achieve rapid decarbonization today. But much of the troubling productivist and growth-oriented architecture of New Deal economic modernity, including the dominant statistical imaginaries, is left unexamined. While some Green New Deal proponents hint at the environmental limits of New Deal-era conservation efforts (Klein, 2019: 65), they don’t engage substantively with the ideas of New Deal-era critics. Even the most environmentally oriented features of the New Deal, such as the Civilian Conservation Corps, were challenged on ecological grounds. While the New Deal pioneered new forms of conservation and used environmental initiatives to build a broad coalition of support for federal policies, it also provoked opposition. Federal environmental projects were met with opposition from more ecologically oriented

ideas about conservation that stressed biological equilibrium and a more holistic approach to conservation. This broader and deeper view of conservation became increasingly critical of the Corps and spread throughout newspapers, magazines, and universities across the US (Maher, 2008: 165–184). A more granular engagement with the environmental legacies of New Deal initiatives might expose more clearly its unsuitability as a guide to the Anthropocene.

Keynesianism is driven by material throughput and fundamentally premised on the assumption of a resource-intensive economy. Even in the context of decarbonized renewable energy sources, the high employment economy and rising national income required to secure an attractive rate of return on private investment and sustain the virtuous Keynesian circle of investment, consumption, and job creation will depend on more factories, more production, more goods and more services (Wainwright and Mann, 2018: 152). It may be possible to find less resource-intensive ways to achieve this, particularly in an economy geared towards services. But we should be sceptical about this prospect – the evidence for long-term and large-scale decoupling of economic growth from resource intensive ecological impacts is extremely weak (Hickel and Kallis, 2020). Models projecting that climate stabilization can be achieved alongside continued normal economic growth rates (c. 2%–3% per year) rest on assumptions about the possibility for negative emissions technologies that have never been proven at scale (Anderson, 2015; Fuss et al., 2014; Mastini et al., 2021). Arguments for the possibility of absolute decoupling of economic growth from resource use and emissions have been refuted by several large-scale reviews of the evidence (Hickel and Kallis, 2020; Parrique et al., 2019).

The problems facing advanced political economies today are fundamentally different from those that Keynes and his contemporaries grappled with. Returning to Keynes's more speculative writing illuminates these distinctions and reveals the historical specificity of his New Deal-era arguments. In a 1930 essay Keynes took a multi-generational view and posed the question, 'what are the economic possibilities for our grandchildren?'. Reflecting on the tremendous progress of science, technology, and economic productivity, Keynes speculated that humanity might solve the 'economic problem' – the struggle for subsistence – 100 years hence. Keynes distinguished between 'absolute' (necessary regardless of our social position) and 'relative' needs (positional goods desired for their capacity to elevate us above others). He recognized that the demand for relative needs may be insatiable but that, regarding absolute needs, we might feasibly envisage a scenario in which, 'these needs are satisfied in the sense that we prefer to devote our further energies to non-economic purposes' (Keynes, 2008: 21). For Keynes the economic problem, of how to provide subsistence and escape the bounds of scarcity, was not immutable. It was historically contingent. With the economic problem confined to the past, man would now be faced with, 'his real, his permanent problem' – 'how to occupy the leisure, which science and compound interest will have won for him, to live wisely and agreeably and well' (Keynes, 2008: 21). Arguments for achieving full employment through a Green New Deal fail to recognize that Keynes's own pursuit of full employment, and the tools that he envisaged to realize it, were historically contingent. They were solutions to the economic problem, not to the human problem.

For the countries of the rich world, we are already living in the age that Keynes foresaw. The peak of abundance has been scaled. In the UK, around 9.5 million tonnes of food are wasted per year (Waste and Resources Action Programme, 2020). In France, the figure is 10 million tonnes (Dumas and Pasquier, 2017). In the United States, around 30%–40% of the food supply is wasted (United States Department of Agriculture, 2020). Strengthening the focus on questions of agrarian sustainability and a broader, egalitarian transformation of the food system should be central to the politics of green transition (Patel and Goodman, 2020: 452; Selwyn, 2021). The deep irony of the Anthropocene, though, is that the solution of the economic problem that Keynes envisaged now threatens to impose a return to the Malthusian realm of scarcity that he grappled with in his more

pessimistic moments. Escaping the economic problem, through abundance, has created a catastrophic ecological context in which, absent radical and rapid action, scarcity will become more acute (Wallace-Wells, 2019). This Malthusian recurrence will be decidedly uneven in its geographical and socio-economic impacts. Its most acute effects will likely be felt by the regions of the world least responsible for causing it. What Keynes did not see was that reaching the horizon of abundance in human generational time might provoke an altogether less auspicious horizon through the deeper forces of geological-time. The Earth System has the capacity to reimpose the economic problem, more sharply than ever, if we do not recognize that we have already solved it and adjust our political-economic priorities accordingly.

Today's challenge is not one of how to maximize total economic wealth and productivity. It is a problem of how to effectively distribute existing wealth, both within and between nations. This involves redistribution from the top 1% and, in the name of climate justice, global wealth transfers from North to South through forms of globalized solidarity. Aggregate production and consumption must be scaled down to meet the parameters of ecological sustainability. This should be the starting point for thinking about the political economy of green transition – redistribution within and between societies and the transcendence of the growth-oriented investment, production, consumption cycle as the regulative socio-economic principle.

Government responses to the COVID-19 pandemic revealed the power of the monetary system in advanced capitalist states to achieve desired social outcomes, relaxing the pressures of market discipline and enabling incomes to flow to millions of workers whose jobs had been lost or suspended as labour markets seized up. The sweeping changes implemented to counter the effects of the pandemic demonstrate the protean nature of modern capitalism – the capacity of sovereign power to reconfigure the parameters of economic normality. More broadly, the slowing of economic activity had some positive environmental impacts, with a rapid decline in carbon emissions (Le Quéré et al., 2020).

We should aspire to a decelerated political economy, in which a diminished volume of carbon and resource-intensive economic flows and transactions occur, within a context of reduced consumption. A society that is less dependent on the expansionary logics of the capitalist market for sustaining incomes and livelihoods. This, not the full employment productivism of the 20th century, should form the template for a new political economy. Recognizing the power of monetary design, backed by the sovereign power of the state, to loosen private control over credit creation and fulfil democratic ecological goals will be critical to producing a new political-economic imaginary for the Anthropocene (Galvin and Healy, 2020: 8; Mastini et al., 2021: 6). The transformation of the monetary system has already been underway for over a decade as central banks and treasuries responded first to the financial crisis of 2007/8 and now to COVID-19 (Raworth, 2017: 166). It is likely that further large-scale intervention will soon be required to counteract the effect of massive financial losses due to stranded fossil-fuel assets (Tooze, 2019).

This emerging pattern gives such an approach the advantage of working to extend and democratize existing institutional tendencies, while bending them towards different socio-economic and ecological goals. Democratizing the sovereign institutional power of treasuries and central banks, by gearing them towards the needs of the public interest rather than reinforcing the privileges of corporate oligopoly, is fundamental to this project. Corporate concentration over recent decades has led to declining tax revenues, declining wages, rising inequality, and the rising political power of big business (Hacker and Pierson, 2010; Hager and Baines, 2019). Corporations have committed vast financial resources and political energy to the maintenance of an ecologically devastating status quo (Skocpol and Hertel-Fernandez, 2016). Realizing the vision of sustainably (re)distributed abundance, and furthering the democratization of monetary power, requires a political project that identifies and confronts corporate concentration as a major obstacle to reconfiguring political economy.

Identifying the critical institutional sites to target in a green transition is vitally important. But so too are the intersubjective dimensions. In the spirit of the New Deal-era, we should aspire to the construction of new statistical imaginaries that work in tandem with the new institutional designs of the monetary system to displace the dominance of GDP. Weakening the link between employment and income and loosening the constraints of market discipline can open up new social possibilities, freeing time for democratic revitalization, voluntary work, and community engagement. Some of these possibilities are already being explored through the prism of Universal Basic Income and automation (Graeber, 2018; Van Parijs, 2013). These are developments that Green New Deal proposals have little to say about. There is no *a priori* value to falling back on the Weberian protestant work ethic, refracted through the prism of full employment, as the moral anchor for a green political economy in the Anthropocene.

Conclusion

Making a powerful case for rapid and large-scale green economic transition is critical to averting the worst consequences of ecological devastation. Proposals for a Green New Deal remind us of historical precedents for the democratic transformation of capitalism, showing us that it can be done at scale and speed. In an age of market dominance, they renew the positive case for harnessing the power and capacity of the state. They detail how state power can be progressively deployed to decarbonize our economies, reinvigorate communities, and curb emissions. Critically appraising aspects of the New Deal inheritance, they show us how we can use the institutional legacies of the past as an inspirational guide and evaluative standard for green transition.

For all its merits, though, the Green New Deal cleaves too closely to the legacies of New Deal-era economic thought and practice. The institutional and policy legacies of the New Deal are critically engaged, but the underlying economic epistemologies of the period are left undisturbed. This creates a series of debilitating paradoxes within arguments for a Green New Deal; seeking a post-capitalist future through capitalist macroeconomic techniques, promising to break from growth while legitimizing financial strategies through the language of job creation, rising incomes and returns on investment, first speeding up economic and employment intensity to then slow it down, rejecting the environmental consequences of capitalism while reaffirming its dominant statistical imaginaries.

Rather than historicizing the full employment paradigm and investigating the assumptions underpinning Keynesian economic policies, Green New Deal proposals reproduce a productivist approach grounded in a virtuous circle of increased public investment, full employment, rising national income and economic expansion. This sits uncomfortably with promises of an ecological civilization and steady-state economy. As an alternative, I have suggested that arguments for green economic transition should recover the historicist spirit of New Deal-era economic thought, by first thoroughly mapping the distinctive foundations of the contemporary global political-economic conjuncture and then building a transformative project fit for purpose.

This requires that we take the Anthropocene seriously and recognize that the central problem is one of sustainably (re)distributing abundance in order to avoid the resurgence of scarcity. Proposals for green economic transition need to move beyond the inherited economic epistemology and pre-occupations of the previous century. Institutionally, they should prioritize redesigning the monetary system to facilitate a decelerated economy and a vision of progressive transformation. This requires a diminished volume of carbon and resource-intensive economic flows and transactions within a context of reduced consumption. It entails a rethinking of established employment paradigms, centred around the relaxation of market dependency and a progressive weakening of the relationship between traditional understandings of employment and decent income. Politically,

building coalitions to harness state power in the interests of disassembling corporate oligopoly is indispensable. As the global economy enters a new phase of emerging stagflationary dynamics and sharpened geopolitical rivalry, the temptation to respond to the intensified distributional conflicts through the salve of productivism must be avoided.

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Notes

1. For an excellent schematic overview of different Green New Deal proposals and the countries where they are prevalent, see: Mastini et al. (2021: 4).
2. Chomsky and Pollin (2020: 74), for example, aim to establish a Green New Deal that matches the IPCC’s 2050 net zero target.
3. In June 2019, Canada’s New Democratic Party committed to a version of the plan (Clark, 2019). In September 2019, the UK Labour Party membership and trade unions voted to support a Green New Deal Plan that would decarbonize Britain by 2030, nationalize major energy companies, and guarantee unionized green jobs (Proctor, 2019). And by December of 2019 the European Union’s Commission proposed a European Green Deal aiming to achieve zero net emissions of greenhouses gases by 2050 and decouple economic growth from resource use (European Commission, 2019).
4. All approaches are committed to de-carbonization, but authors adopt different views on whether green transition requires green growth, reduced growth or degrowth.
5. American ideas on the problem of underconsumption were influenced by the work of the English political economist, J A Hobson whose work in the late 19th and early 20th centuries had identified problems owing to excess savings linked to the monopoly power of producers and the maldistribution of income (Backhouse and Boianovsky, 2016: 149–150).
6. The structuralists were particularly influential within the Department of Agriculture and the National Resources Committee (Rosenof, 1997: 14).
7. By the late 1930s, Keynesians occupied positions in the Treasury, the Budget Bureau and the Department of Commerce. The influence of Keynesians was further enhanced during war, as they staffed the Office of Price Administration and National Resources Planning Board to begin planning for the organization of the post-war economy (Weir, 1989: 56).
8. This productivist paradigm, activated into a ‘politics of productivity’, would form the bedrock of the post-war US vision of political economy, both at home and abroad. Internationalised through the impact of Marshall Plan spending to aid the recovery of war-scarred European countries, it sought to alleviate distributional class tensions and blunt the threat of communism through a common apolitical commitment to maximizing economic growth (Maier, 1977: 607–633).
9. The push for full employment reached its apogee with the 1944 call for a second Bill of Rights that would guarantee a job for every citizen. The Bill was watered down in the face of opposition from Congressional conservatives who had already dismantled many of the signature New Deal agencies by this point (Jeffries, 1990: 417; Kennedy, 1999: 783–786).

10. The Third Industrial Revolution marks one more stage in the development of modern industrial paradigm shifts that began with the first industrial revolution in the 18th century. Unlike previous industrial transitions, though, this one seeks to sever the link between economic activity and fossil-fuel consumption (Rifkin, 2019: 125).
11. Rifkin echoes some of Mason's (2016) arguments about the possibility for new networked digital technologies to subvert private property rights and break the stranglehold of corporate oligopoly on the economy.
12. Klein (2019: 122, 264).
13. Making the case for major investment in renewable energy infrastructure, Klein (2019) notes that investment in these sectors, 'creates six to eight times more jobs than putting that money in oil and gas' (pp. 179, 268–269, 281).
14. The cost of refitting/replacing carbon-intensive infrastructure has been estimated at around 1.5%/2% of global GDP per year. See, Pollin (2018), 'De-growth vs a Green New Deal', NLR II2, July. Aronoff et al. skirt the question beyond offering a cursory mapping of the current global financial conjuncture and suggesting that low interest rates and nascent green bond markets are conducive to financing fiscal expansion. Along with Klein, they largely call for progressive taxation on the rich to pay for increased public investment. Rifkin (2019: 133) offers a more detailed summary of the fiscal dimension with a similar emphasis on taxing the super-rich to fund investment grounded in an argument about inequality. Alongside more common proposals such as tapping pension fund capital and collecting carbon taxes, Rifkin suggests redirecting funding from the Pentagon's bloated defence budget.
15. For a useful overview of degrowth perspectives, see Kallis et al. (2018).
16. The authors acknowledge their narrow focus on the climate crisis rather than attention to the broader context of 'planetary boundaries' but defend this on the basis of the greater urgency of the former (Chomsky and Pollin, 2020: 147).
17. On the gloomy prognosis for absolute decoupling in time to meet required emissions reductions targets, see, Jackson (2009) and Hickel and Kallis (2020).

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