On the Anti-Austerity Green New Deal

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About the Green New Deal Policy Research Group

Today, the world is facing an unprecedented crisis, not only in terms of rising inequality and poverty and climate change, but also in terms of pandemic caused by a new type of corona virus.

Our Study Group was established in July 2020 by a group of researchers, non-partisan political figures, and members involved in diverse civic movements to study and advocate for the transformation of the Green New Deal into a sustainable and just society and economy, and for a new post-Corona world. In particular, we aim to create and propose a Japanese version of the Green New Deal based on anti-austerity economic theory, which is espoused by progressive political forces around the world.

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Abstract

In response to the climate crisis and the growing inequality and poverty due to neoliberalism, a series of anti-austerity Green New Deal (GND) proposals have been presented in Europe and the United States since 2018. A GND is a radical policy approach combining environmental and economic policies. In order to mitigate climate change, the transition to a zero-carbon society needs to happen in a shorter timespan than was previously anticipated. Addressing this need, the GND calls for massive investments while also keeping in mind the 'just transition' of jobs as well as the rectification of injustices related to wealth, gender, race, generation and so forth. The approach is based on an anti-austerity economic theory, meaning that its main source of funding is not additional taxes but rather the mobilisation of large-scale private- sector funds (e.g. pension funds) and, for countries whose governments have the power to create money, deficit spending.

Keywords:

1. Introduction

We are currently facing two historic crises – climate change and austerity policies. Climate change has been a key factor behind the exacerbation of typhoons, droughts, wildfires, heavy rains and other natural disasters as well as the rise of military conflicts and refugee crises, and its effects have been particularly devastating for those who are economically disadvantaged. The Intergovernmental Panel on Climate Change (IPCC) estimates that the world needs to reduce its CO_2 emission levels by 45% by 2030 compared to 2010 and achieve carbon neutrality by 2050 in order to keep global warming below 1.5°C (IPCC, 2018).

Against this background, sixteen-year-old Greta Thunberg went on a school strike, demanding that the climate crisis be averted and climate justice[1] be achieved. Her act resonated with young people and blossomed into a global movement known as Fridays For Future. An estimated 7.6 million people joined the Global Climate March in September 2019 and demanded that the climate crisis be taken seriously.[2] Thunberg's famous United Nations (UN) speech, delivered in New York on 23 September 2019, was widely reported by the media around the world.[3] In her speech, Thunberg stated: 'We are in the beginning of a mass extinction, and all you can talk about is money and fairy tales of eternal economic growth. How dare you.'[4] Thunberg's activism and the Global Climate March played a pivotal role in marking the urgency of the climate crisis and the need for a solution. On the other hand, the apocalyptic tone in which it emphasises the seriousness of the climate crisis and the way it downplays economic factors have made the movement socially divisive, as some critics have pointed out (cf. Wohlfarth, 2019).

In addition to climate change, we are also facing another crisis, that of growing inequality and poverty due to austerity policies. In this essay, we define 'austerity policy' as a certain policy stance which, out of fear of inflation and insolvency, avoids the use of monetary easing policies and expansionary fiscal policies, makes cuts to social security and other government spending programmes, and raises taxes on the people. Neoliberal austerity policies and structural adjustment programmes have allowed a small number of rich people

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[1] Friends of the Earth Japan defines climate justice as 'rectifying the injustice that developing nations are suffering as a result of climate change, which was caused by the mass consumption of fossil fuels by developed nations.' http://www.foejapan.org/climate/about/climatejustice.html

[2] Global Climate March (20 September 2019) website: https://ja.globalclimatestrike.net/1001-2/

[3] NHK, *Today's Close-Up* (26 September 2019): https://www.nhk.or.jp/gendai/articles/4333/

[4] TV Asahi, 'Greta Thunberg's speech at the United Nations (full text)' (25 September 2019): https://news.tv-asahi.co.jp/news_international/articles/000165216.html

to monopolise wealth while decimating the middle class and worsening inequality and poverty. As a result, economies have stagnated, unemployment and precarity have worsened and anxieties around childcare and old age have deepened. Mass anxiety has led to the rise of extreme right-wing forces, producing tensions around the world.

What strategy can we rely on to overcome these two crises? Anti-austerity Green New Deal (GND) proposals, many of which have been recommended since 2018, aim precisely to fight back against austerity and address these issues. A GND is a set of policies which demand not only a structural transformation of our economy but also a huge paradigm shift. Based on ambitious targets for emissions reduction, renewable energy adoption and energy conservation, and based on an anti-austerity economic theory, the GND aims to mobilise massive public investment, going beyond the limits of tax revenue and fiscal discipline. In doing so, the GND becomes a radical and comprehensive strategy to enact w a just transition to a low-carbon economy as well as to address inequalities between developed and developing nations, inequalities related to income, wealth, race and gender, and other injustices. In this essay, we explore and analyse the GND by taking a look at its historical and political background, examining the anti-austerity economics at its basis and presenting an overview of the relevant scholarship.

Fridays for Future in Kungsträdgården in Stockholm on September 27, 2019.

2. Two Waves of the GND, the Green Parties, and the US Economists' Statement on Carbon Dividends

2.1. What Is a Green New Deal?

The phrase 'Green New Deal' derives from US President Franklin D. Roosevelt's New Deal, whose aim was to combat the Great Depression in 1929. Beyond that, however, there is no internationally agreed- upon definition of what a GND is, and the definition and substance of the term vary depending on who uses it. Nonetheless, the general idea may be summarised as 'a programme, driven by investments in environmental, renewable energy and other relevant sectors, which aims to create jobs and stimulate the economy in the short term while transforming the structure of both industry and society in order to reduce our ecological footprint in the long term' (Morohashi, 2009, p.2).

GNDs to date may be roughly categorised into two waves based on time period, social context, relevant actors and the underlying economic theory. The first wave came between 2008 and 2009, whose most noteworthy example is US President Barack Obama's proposal (Morohashi, 2009). The second wave consists of a slew of proposals released after 2018, epitomised by the plan put forth by United States (US) Representative Alexandria Ocasio-Cortez (AOC) among others.[5] In addition to these two waves, GNDs have been proposed by Green parties who, with their characteristic emphasis on the environment, have unified and further developed their environmental and economic policies along those lines.[6]

2.2 The First GND Wave

In July 2008, in the heat of the global financial crisis triggered by the bankruptcy of Lehman Brothers, the Green New Deal Group, comprised of politicians, journalists, researchers and environmental groups in the United Kingdom (UK), published a set of policies for 'extricating the world from economic and environmental meltdown' under the title *A Green New Deal* (The Green New Deal Group, 2008). The eponymous publication identified climate change, the global financial crisis and fossil fuel depletion as 'the three major crises of our time' and proposed a set of policies centred around the rebuilding of our financial and tax systems as well as the mobilisation of public spending for renewable energy resources and other projects. In a time of rising unemployment due to the global financial crisis, of growing international climate movements and of increasing public attention towards renewable energy due to crude oil price hikes and oil conflicts, *A Green New Deal* struck a chord with the people.

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[5] H.Res. 109 (7 February 2019): https://www.congress.gov/bill/116th-congress/house-resolution/109

[6] Bütikofer et al. (2009); European Greens (2012); Green Party US (2012)

In the wake of *A Green New Deal*, a wave of 'green' strategies for economic and job growth have followed in 2009 (Morohashi, 2009). In December 2008, UN Secretary-General Ban Ki-moon advised the nations at COP14 to implement a GND (UN News Center, 2008). In March 2009, the United Nations Environment Programme (UNEP) released a policy brief titled the *Global Green New Deal*, arguing the importance for investing 1% of global GDP (approximately 750 billion USD) in five areas: (1) energy-efficient buildings and other infrastructure; (2) renewable energy; (3) sustainable transport; (4) ecological infrastructure such as freshwater and forests; (5) sustainable agriculture such as organic farming (UNEP, 2009).

In the US, President Barack Obama proposed a GND-type policy as one of the centrepieces of his manifesto, followed by an announcement of its implementation in January 2009 right after his inauguration. Although Obama himself did not use the term, the policy nonetheless was internationally acclaimed as 'Obama's GND' (Terashima et al., 2011, p.86). During his campaign, Obama promised, among other things, to support the creation of 5 million new jobs through a strategic investment of 150 billion USD in renewable energy, manufacturing one million plug-in hybrid vehicles domestically in the US, increasing the share of renewable energy to 25% by 2025 and introducing a cap and trade system in order to slash greenhouse gas (GHG) emissions by 80% by 2050 (Morohashi, 2009). However, Obama's stimulus plan, implemented after his election, was met with resistance from the Republicans who were critical of expanding the budget deficit (Noguchi, 2015, p.11). After that, public interest in the GND waned for a while.

2.3 The Second GND Wave

During the midterm elections of November 2018, AOC became the youngest congresswoman to be elected to the US House of Representatives. Encouraged by the Sunrise Movement (a youth-led movement for mitigating climate change and creating millions of new jobs in that process) right after her election, AOC launched a resolution to establish the House Select Committee on a Green New Deal (Yamagishi, 2019), reigniting public interest in the GND. AOC's initial GND proposal was incredibly ambitious, aiming to achieve a fully renewable energy system and zero GHG emissions by 2030 (DiChristopher, 2019) as well as addressing inequality and poverty through a 'job guarantee programme (JGP) to assure living-wage jobs for all', a basic income (BI) programme and a menu of other economic and social security policies (Friedman, T., 2019). More radically, the proposal demanded that workers in carbon- intensive sectors be given a just transition to high-quality low-carbon jobs and that social inequalities such as gender discrimination and discrimination against immigrants be rectified (Yamagishi, 2019). AOC worked with Democratic Senator Ed Markey, among others, on the GND draft resolution, managing to win the endorsement of ninety-four Democratic members of congress including Elizabeth Warren (Rizzo, 2019). However, not only Republicans but also Democrats voted 'nay' or 'present' in the Senate, resulting in the resolution being voted down (Reuters, 2019). Note that progressive policies such as BI were not included in the final draft due to criticisms from within the Democratic Party (Coelho, 2019).

Bernie Sanders, a 'democratic socialist' who became a youth-led political sensation during the 2016 US presidential elections, also released a GND in August 2019 (Friedman, T., 2019). Sanders characterises his GND as 'a ten-year, nationwide mobilisation centred around justice and equity during which climate change will be factored into virtually every area of policy' (Sanders, 2019). The Sanders proposal aims to end unemployment by creating 20 million jobs for solving the climate crisis, reach 100% renewable energy for electricity and transportation by 2030, reduce domestic emissions by at least 71% by 2030 and completely decarbonise the economy by 2050 at the latest. It is important to note how the Sanders proposal takes into consideration the fact that black people and Native Americans were excluded from the original New Deal in the 1930s. The proposal therefore expands the scope of climate justice not only to developing nations but also to Native Americans, communities of colour, working-class people and other historically marginalised groups as well as disabled people, children and elderly people, thereby enacting a just transition with high-quality jobs and support programmes.

On 14 November 2019, Sanders and AOC released the *Green New Deal for Public Housing Act* which includes an investment of 172 billion USD to upgrade 1.2 million social housing units to energy- efficient, low-carbon buildings using renewable energy technology (Nilsen and Irfan, 2019). The bill purported to create approximately 240,000 jobs annually and achieve a reduction in GHG emissions equivalent to retiring 1.2 million cars.

© Senate Democrats on Wikimedia

Representative Alexandria Ocasio-Cortez (center) speaks on the Green New Deal with Senator Ed Markey (right) in front of the Capitol Building in February 2019

In Europe, the British Labour Party passed, at the Labour Conference with an overwhelming majority, a motion to introduce a GND, a 'progressive policy package to increase social and economic justice' and 'climate justice' with a commitment to 'decarbonise Britain by 2030' (O'Hagan, 2019). This GND was drafted and promoted by *Labour for a Green New Deal*, a grassroots movement founded by thousands of young Labour members in March 2019, and by young Labour members of parliament (MPs) in view of the Conference. Notably, the unions, who constitute the base of the Labour Party and will probably get hit hardest by the shifts in industrial structure, supported the GND. On 21 November, the motion was incorporated into the *Green Industrial Revolution* (GIR), the GND equivalent in Labour's manifesto, a gesture which was well received by the originators of the motion.[7] The manifesto includes promises to achieve the substantial majority of the UK's emissions reductions by 2030, to deliver nearly 90% of electricity and 50% of heat from renewable and low-carbon sources, to introduce a 'windfall tax'[8] on oil and gas companies, to bring the supply arms of the Big Six energy companies into public ownership, to create one million green jobs and to spend 3% of GDP on research and development by 2030 for the purpose of achieving GND-related targets (The Labour Party, 2019). In order to help workers to adapt to the decarbonisation of the economy, Labour made a just transition an important pillar for policy-making, guaranteeing green jobs and job training programmes as well as enacting a ground-up, workers-led democratisation of the economy.

The Democracy in Europe Movement 2025 (DiEM25), led by former Greek Minister of Finance and anti-austerity economist Yanis Varoufakis, is paving the way for another GND movement called the Green New Deal for Europe.[9] DiEM25 have established the 'ten pillars' of a GND, arguing that any programme which fails to satisfy these conditions cannot be considered a GND.[10]

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[7] 'Labour For A Green New Deal hails manifesto's "groundbreaking" climate programme' (21 November 2019): https://www.labourgnd.uk/news/2019/11/8/labour-for-a-green-new-deal-hails-manifestos-groundbreaking-climate-programme-

[8] This is a tax on 'windfall' profits which are due to natural resource (mainly crude oil) price hikes and independent of marketing efforts made by the producers. In the US, oil prices surged during the first and second oil crises, and fossil fuel companies saw their profits skyrocket as a result. In order to deal with such problematic profits, the windfall profit tax (surplus profit tax) was introduced in 1980.

[9] Green New Deal for Europe, 'Our Coalition': https://www.gndforeurope.com/our-coalition

[10] '10 Pillars of the Green New Deal for Europe': https://www.gndforeurope.com/10-pillars-of-the-green-new-deal-for-europe

These ten pillars are:

1. Meeting the Scale of the Challenge

   The science is clear: We must limit the global temperature rise to 1.5 degrees and reverse the collapse of our ecosystems, or risk it all.

2. Pressing Idle Resources into Public Service

   The Green New Deal calls on public institutions to drive the economic and ecological transformation. The burden of our transition should not fall on the shoulders of working families.

3. Empowering Citizens and Their Communities

   Europe's green transition will not be top-down. It must empower citizens and their communities to make the decisions that shape their future.

4. Guaranteeing Decent Jobs

   The Green New Deal for Europe provides a decent job to all those who seek one.

5. Raising the Standard of Living

   The Green New Deal for Europe lifts all communities towards greater prosperity, security and liberty.

6. Entrenching Equality

   The Green New Deal combats financialisation and entrenches equality at the heart of Europe.

7. Investing in the Future

   The Green New Deal is more than an environmental adjustment programme. It is an investment in the future of our societies, and an opportunity to reimagine it.

8. Ending the Dogma of Endless Growth

   We must abandon GDP growth as the primary measure of progress. Instead, we need to focus on what matters: health, happiness and the environment.

9. Supporting Climate Justice Around the World

   The environmental crisis is global in scope, and the Green New Deal must be, too. Europe must support others in combating environmental destruction and the supply chains that power Europe's green transition must be grounded in principles of justice.

10. Committing to Action Today

   The Green New Deal is not a framework, a treaty or an agreement. It is a set of concrete actions that move us quickly towards our climate goals.

It is safe to say that much of the above is shared by AOC's and Labour's GND proposals. Item (2) is particularly important from an anti-austerity perspective, for it states that the main source of funding will not be taxes but rather the mobilisation of financial assets in the private sector. We will come back to the question of funding in subsection 3.4.

Moreover, a whole host of new GND-related books were printed after September 2019. Examples include *The (Burning) Case for a Green New Deal* by world-famous journalist Naomi Klein (Klein, 2019), *The Green New Deal* by economic writer Jeremy Rifkin (Rifkin, 2019) and *The Case for the Green New Deal* by the left Keynesian and Labour Party adviser Ann Pettifor (Pettifor, 2019). Furthermore, the New Economics Foundation (NEF), who published the first GND policy proposal in the world, released on 28 November 2019 a report and a video titled 'Five Ways to Fund a Green New Deal' (Powell et al., 2019). The report presented five sources of funding for a GND as: (1) public borrowing; (2) multipliers (valuing future benefits); (3) taxing those most responsible; (4) re-directing dirty subsidies; and (5) transforming the Bank of England.

Since 2018, there has been a proliferation of GND proposals. In addition to the worsening of the effects of climate change, another driving factor is the growing inequality and poverty caused by neoliberal austerity policies, imposed after the 2008 global financial crisis, which further gave rise to widespread mistrust in the status quo as well as hope for a new kind of politics. Political forces searched for a strategy to break free from neoliberal austerity policies and implement a fundamental solution to the climate crisis, eventually adopting an anti-austerity GND.

2.4 The Green Parties and the GND

Since their inception in the 1980s in Europe, Australia, New Zealand and other regions, Green parties have always placed environmental protection front and centre to their politics and played a leadership role in environmental economic policies well before the advent of the GND. In 1998, the German Greens formed a coalition government with the Social Democratic Party of Germany (SPD), managing to reform the environmental tax system, introduce pro-renewable energy laws (Park, 2009, Ch.11) and phase out nuclear power plants (Kumagai, 2012, pp.57–8). In the UK, former co-leader of the Green Party of England and Wales and former member of the European Parliament (MEP) Caroline Lucas co-authored *A Green New Deal*. In 2009, *The Green New Deal* was released under the leadership of the German Greens (Bütikofer and Giegold, 2009), while in 2012 the European Green Party released *The Social Dimension of the Green New Deal* (European Greens, 2012). Some have pointed out that Varoufakis' GND has been influenced by the GNDs of Green parties in Europe (Tanaka, 2019). Moreover, in 2012 the Green Party of the US also released its GND (Green Party US, 2012). Some have suggested that AOC's GND, particularly its environmental and energy policies, is based on the GND developed by the Green Party of the US (Atkin, 2019). At the heart of the GND is the idea of strengthening both the environment and the economy in order to transition to a better society, an idea

which Green parties have pioneered and developed. It is therefore reasonable to say that Green parties have played an important role in the creation of the GND.

2.5 The US Economists' Statement on Carbon Dividends

Although not directly related to the GND, it is worth highlighting the US 'Economists' Statement on Carbon Dividends – The Largest Public Statement of Economists in History', which was released in the US in January 2019 and was signed by over 3,000 economists, including twenty-seven Nobel laureates and four former Chairs of the Federal Reserve (*The Wall Street Journal*, 2019). This was a radical statement supporting the introduction of a carbon tax as a solution to climate change as well as the distribution of the tax revenue in the form of a carbon dividend (a type of basic income).

In general, taxation is not the main source of funding for the GND. Regarding a carbon tax, GND advocates tend to either avoid relying too much on it or criticise it for being regressive against low-income earners (cf. Pettifor, 2019, p.105). In this context, the fact that such a vast number of US economists from different schools of thought managed to agree on the 'carbon dividend' proposal is truly noteworthy, not only as a non-regressive carbon tax plan but also as inspiration for reflecting on the content and significance of the GND (see subsection 3.4 and section 5).

3. Outline of a Theory of Anti-Austerity Macroeconomic Policy

3.1 Anti-Austerity Macroeconomic Theory as the Foundation of the New Euro-American Left

Over the past few years, Europe has experienced a political upheaval, with the rise of anti- immigrant, pro-EU-withdrawal political forces on the one hand and the surge of new leftist parties such as Spain's Podemos, France's La France Insoumise led by Jean-Luc Mélenchon and Greece's MeRA25 (a political wing of DiEM25) led by Yanis Varoufakis on the other. In the UK, the Labour Party saw the far-left Jeremy Corbyn gaining support from young people and becoming the party leader. In the US, Sanders and AOC from the Democratic Party are rising in popularity. What binds the new left-wing parties with the more traditional leftist and progressive parties is the shared adoption of an anti-austerity economic theory. According to this theory, 'the notion of a "fiscal crisis" is nothing more than propaganda used by neoliberal actors to rationalise their imposition of fiscal austerity, that is, cutting public and social spending in order to discipline the workers and create new business opportunities for private sector actors as well as selling off public assets to line up the pockets of Big Capital. "Anti-austerity", the opposition to fiscal austerity and the fearless expansion of public spending against the fiscal doomsayers, must become the pillar of economic policy' (Matsuo, 2019).

An 'anti-austerity' policy aims to tackle the problem of economic stagnation by putting more resources into social services such as guaranteed healthcare, free public education and the expansion of social security, and by stimulating the economy through the creation of jobs and income. It also tackles inequality by raising taxes on large corporations and the rich. On this view, the absolutisation of public debt repayment and a balanced budget is seen as a neoliberal error, while moves such as 'monetary financing' – public spending based on money created by the central bank – and 'quantitative easing' – bond purchases made by the central bank – are not seen as taboo but are rather encouraged.

3.2 Three Currents of Anti-Austerity Economic Theory and Their Commonalities

These policy positions reflect certain recent developments in Western economics which avoid stigmatising budget deficits and support the creation of money for the purpose of funding the government. This is essentially a contemporary form of Keynesianism as defined in opposition to the neoclassical macroeconomics underpinning the pro-austerity budget hawks. The position has garnered support against the backdrop of prolonged economic stagnation. Based on Matsuo (2019), we would now like to explore some of its main currents.

The first current comprises mainstream Keynesianism represented by UK left New Keynesian Simon Wren-Lewis, US left New Keynesian and Nobel laureate Paul Krugman, US left Keynesian and Nobel laureate Joseph Stiglitz, US New Keynesian heavyweight Michael Woodford and Spanish New Keynesian Jordi Galí. Here, 'mainstream Keynesianism' refers to a school of thought which works with the same assumptions and mathematical tools as neoclassical macroeconomics – such as 'rational expectation' and 'microfoundations' – in order to demonstrate the effectiveness and necessity of government interventions in the form of fiscal and monetary policies.

Outside the mainstream, major contributions have been made by Modern Monetary Theory (MMT), a school of thought which partly originated from the work of post-Keynesian Hyman Minsky. MMT is represented by figures such as L. Randall Wray, Warren Mosler, Bill Mitchell, Stephanie Kelton and James Galbraith. These theorists reject the tenets of the mainstream approach including New Keynesianism (exogenous theory of money, confidence in the effectiveness of monetary policy, use of mathematical formulae which have little relation to reality, etc.) (cf. Wray, 2019). Since 2019, MMT became both quite popular and widely misunderstood in Japan. MMT is not a 'policy' but rather a 'theory', a 'lens for correctly understanding the economy'.

Another influential non-mainstream current of anti-austerity is public banking (public money, helicopter money, positive money, etc.), which opposes credit creation (private money creation) altogether. According to this view, the main source of economic instability today is the fact that the vast majority of the money supply is created in the form of private bank loans (i.e. credit creation). Therefore, the solution is said to be the abolition of credit creation and the transition to a new system where money is created only when governments spend it to serve the people. This current is perhaps epitomised by the positive money movement which seems to be popular in the NEF, the aforementioned UK thinktank. Others who have made similar arguments include post-Keynesian Anatole Kaletsky, Richard Werner and notable helicopter money theorist Adair Turner.

There are many disagreements among these schools of thought, where policies proposed by one current are often criticised by another, a state of affairs which may lead to confusion when considering policy options. Nonetheless, there is also significant overlap between these currents, such as that the Japanese government should not increase the consumption tax until the problem of deflation is solved and an appropriate level of inflation is achieved. The following is a list of positions which are common to all three currents.

- A government with the power to create money (i.e. a sovereign government) cannot become insolvent.

- Taxation is a way to control inflation by diminishing the purchasing power in the market; there is no intrinsic reason for balancing the budget.

- Until full employment is reached, creating money to fund government spending does not cause inflation.

- Excess savings in the private sector go hand in hand with government deficits.

- The central bank is *de facto* an arm of the government; the two should therefore be treated as a 'consolidated government'.

3.3 Anti-Austerity Policies of the Euro-American Left

In Europe and the US, new leftist parties and traditional left-wing and progressive parties have taken the lessons of anti-austerity economics into account and have since presented the following anti- austerity policies.

In the UK, Corbyn hired MMT scholar and Trades Union Congress (TUC) member Richard Murphy as his economic adviser. During the party leadership elections, Corbyn advocated for a 'quantitative easing (QE) for the people' as his flagship proposal. The idea was to take the Bank of England's QE money, channel it through the National Investment Bank and invest it in housing and other public services. After becoming party leader, Corbyn hired as his adviser New Keynesian Wren-Lewis, who advocated for central bank-created money to be directly distributed as helicopter money (in the narrow sense). He also hired the aforementioned Ann Pettifor. Moreover, Corbyn promised to raise taxes on large corporations and the rich and make a corresponding increase in permanent social services such as free college. He also promised to invest 250 billion GBP over ten years in infrastructure – including high-speed railways and housing – through the National Transformation Fund, funded by low-interest loans in the context of QE programmes by the central bank.

Voters, especially young voters, generally supported Labour's manifesto. During the national elections, Labour made huge strides and broke the majority of the Tories. Note that Pettifor is one of the authors of the world's first GND policy document, *A Green New Deal*. Pettifor has strongly criticised the doctrine of former British Prime Minister Margaret Thatcher and former British Prime Minister David Cameron, according to which the only source of government funding is taxation and that all government spending should be covered by tax revenue. Pettifor argued that governments are not like households and thus do not need to balance their budget, and that if the fiscal authorities worked closely with the monetary authorities then it would be possible to fund a GND without relying on tax revenue (Pettifor, 2018).

In the US, 2016 Democratic presidential candidate Bernie Sanders included in his manifesto a 1 trillion USD public investment plan over five years to rebuild the country's infrastructure – old roads, bridges, railways, airports, public transportation systems, ports, dams and sewage systems – and create 13 million jobs. Sanders also promised to invest 5.5 billion USD in youth job programmes to create 1 million jobs for young people. In his op-ed to the *New York Times* dated 23 December 2015, Sanders called for the continuation of monetary easing and argued for a 'negative interest rate policy'. During the 2018 midterm elections, not only did Sanders himself win a seat in the Senate in a landslide, but Sandersian

candidates also staged a huge surge by winning ten seats in the House and thirty-six seats in state legislatures.[11]

One of Sanders' economic advisers is MMT scholar Stephanie Kelton. While Sanders himself does not necessarily lend his full support to MMT, AOC, a Sandersian, has publicly stated her support for MMT (Holland, 2019). In addition to universal healthcare and free public schools and vocational schools, AOC's flagship policies include a job guarantee programme (JGP) for all who want to work, which is also one of the central policies of MMT. After her election, AOC caused controversy when she stated that MMT, which maintains that 'the government doesn't need to balance the budget and that budget surpluses actually hurt the economy', should 'absolutely' be 'a larger part of our conversation' (Relman, 2019).

Both the UK and the US have sovereign governments which can create their own currencies. Note that European Union (EU) member states are not sovereign governments and hence cannot engage in deficit spending (i.e. monetary financing) via the government's and the central bank's power to create money.

DiEM25, a political party led by Varoufakis, who was Minister of Finance in Greece (an EU- member state which became insolvent), presented a 'large-scale green investment', an 'employment guarantee scheme', an 'anti-poverty fund', a 'universal basic dividend' and 'anti-eviction protection' as five central policies of the 'European New Deal'. As for the source of funding for these investments, DiEM25 maintains that the European Investment Bank and the German KfW, among others, should issue investment project bonds, which the European Central Bank maintains willingness to buy, thus guaranteeing their value (Varoufakis, 2017).

Naturally, these GND proposals are based on an anti-austerity economic theory.

3.4 Anti-Austerity in Euro-American GNDs

AOC's GND in the US is, like other versions of the GND, based on an anti-austerity economic theory. Its source of funding generated considerable debate. AOC stated clearly that funding will come from large-scale deficit spending (Aronoff, 2018), a proposition which was met with much controversy. AOC's position reflects the view that a sovereign government cannot become insolvent. On the other hand, in an interview on *60 Minutes,* AOC suggested that part of her GND will be funded by raising the marginal tax rate on the super-rich to 70%, which was heavily criticised by conservatives (Choi, 2019). However, some have pointed out that this funding method only covers 0.2% of the amount needed for the GND (Toyo Keizai

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[11] Our Revolution, 'Political Revolution Picks Up Momentum in 2018 Midterm Elections' (8 November 2018): https://ourrevolution.com/press/political-revolution-picksmomentum-2018-midterm-elections/

PLUS, 2019), which shows that the main source of funding has to be something other than tax revenue.

Sanders, on the other hand, proposes that the government make direct large-scale investments of 16.3 trillion USD in order to achieve the goals of his GND. This will be funded over fifteen years through a combination of generating revenue from the wholesale of energy produced by the regional Power Marketing Authorities, eliminating fossil fuel subsidies and imposing new taxes on fossil fuels, scaling back military spending on maintaining global oil dependence, making rich, large corporations pay their fair share, collecting income tax revenue from 20 million newly created jobs and reducing the need for federal and state safety net spending due to job creation (Sanders, 2019). Sanders' GND is a highly progressive programme which aims to achieve many ambitious goals within a decade. Since a huge amount of public investment is needed to kickstart the Sanders GND, it is reasonable to say that the main source of funding needs to be something other than tax revenue.

In the UK, the GIR, which is the GND proposal of the Labour Party led by Corbyn, states that it will launch a National Transformation Fund of 400 billion GBP, 250 billion GBP of which will directly fund the transition through a Green Transformation Fund dedicated to renewable and low-carbon energy and transport, biodiversity and environmental restoration (The Labour Party, 2019). The GIR also states that it will 'create a National Investment Bank, backed up by a network of Regional Development Banks, to provide 250 billion GBP of lending for enterprise, infrastructure and innovation over 10 years' (ibid). As well as large-scale national and regional projects, smaller loans will be available through their new Post Bank based in Post Office branches, enabling start-ups, small businesses, local co-operatives and community projects. According to the GIR, these goals will 'require a full mobilisation of national resources, both public and private' (ibid), a position which seems to encourage both public and private investments at scale.

In the case of DiEM25 led by Varoufakis, their proposal needs to be understood in the context of an EU-member state which lacks the power to create money and thus must work within a strictly limited deficit capacity. DiEM25 maintains that at least 5% of European GDP will be invested in the GND. Sources of funding include massive private bank savings generated by QE programmes as well as Eurobonds (green bonds) issued by the European Investment Bank (EIB) whose value is guaranteed by the European Central Bank (ECB)'s readiness to buy.[12] One noteworthy debate regarding green bonds was that between German Greens MEP Sven Giegold (who was a candidate at the time) and Yanis Varoufakis (Meyer, 2019). The German Greens have their own GND which is not anti-austerity but rather emphasises the role of taxation as a source of funding. In the debate, Giegold argued that it would be illegal for the ECB to buy green bonds. In response, Varoufakis drew on his experience of serving as a board member of the EIB – a duty which automatically fell on him during his tenure as Minister of Finance – and argued that similar bond-buying operations

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[11] Green New Deal for Europe website: https://www.gndforeurope.com/campaign

happen all the time at the ECB and are therefore perfectly legal. While supporting the idea of a common corporate tax, Varoufakis also argued that taxation should not be considered as the main source of funding for a GND, since a common corporate tax is difficult to implement and the expected tax revenue would be no more than 50 billion EUR over a three- to five-year period, whereas green bonds can generate around 500 billion EUR or 5% of European GDP every year.

Prior to this debate, Varoufakis took part in a similar debate with French economist and world- famous author of *Capital in the Twenty-First Century* Thomas Piketty on *Social Europe*, a magazine featuring leftist and radical voices in Europe (Tanaka, 2019). In December 2018, Piketty, alongside 120 politicians and academics, released the *Manifesto for the Democratization of Europe*, [13] in which he proposed a new budget equivalent to 4% of European GDP and a funding mechanism comprised of four new European taxes.[14] In response, Varoufakis, his long-time colleague James Galbraith and British Labour MP and economist Stuart Holland each presented critical feedback. They pointed out that when French President Macron tried to balance the budget by raising the fuel tax in 2018, he was met with massive resistance from the 'Yellow Vests' movement, an episode which suggests that new taxes might erode the political base and would end up being highly unreliable sources of revenue. Moreover, Piketty's proposal implies that taxes will be imposed before spending begins, which, according to the critical voices, was nothing more than fantasy (Tanaka, 2019). While both sides agree on the need for an EU-wide green and ecological transformation funded by massive investments, they disagree on whether the money should come from taxes or from green bonds encouraging private investments. Piketty's proposal cannot be called anti-austerity, for it relies too heavily on taxation. In any case, if we take into account the fact that in 1998 the German Greens lost support by supporting an increase in vehicle fuel taxes (Park, 2009, pp.173–4) and that France experienced the aforementioned 'Yellow Vests' movement, it is clear that tax increases are generally very difficult to implement. In this sense, taxation is not a very dependable source of funding.

Pettifor has also pointed out that on a global scale there is a huge reserve of private funds in addition to the 43 trillion USD pension funds in the Organisation for Economic Co-operation and Development (OECD) area (Pettifor, 2019, p.148). Rifkin concurs, pointing out further that there exist over 40 trillion USD in global pension funds and 25.4 trillion USD in the US alone, many of which have shifted their investment significantly away from fossil fuel industries and towards renewable energy (Rifkin, 2019, p.9). These private funds are the key to any funding strategy.

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[13] 'Manifesto for the Democratization of Europe': http://tdem.eu/en/manifesto/

[14] The budget will be funded through four European taxes – a tax on profits of major firms, a progressive income tax on high income earners (over 200,000 EUR per annum), a tax on high personal wealth owners (over 1 million EUR) and a tax on carbon emissions (minimum price of 30 EUR per tonne). See *Manifesto for the Democratization of Europe*.

To summarise, the anti-austerity GND advocated by new leftist parties and traditional left-wing and progressive parties in Europe and the US is based on an anti-austerity economic theory, supporting large-scale public investments in energy transformation and public infrastructure projects, economic and employment stimuli and social security programmes. Moreover, the anti-austerity GND approach does not rely on taxation as its main source of funding. Progressive income taxes play a role in resource redistribution, while carbon taxes and energy taxes are seen to function as a tax on 'bads' for curbing GHG emissions and energy consumption. As for funding, one suggestion is to mobilise private funds by issuing green investment bonds. While difficult for EU member states, deficit spending based on monetary financing may be considered an option for sovereign governments such as those of the UK and the US. Although debt monetisation seems to take a back seat in current extant proposals, considering how the idea itself is central to auti-austerity funding methods, it is quite possible that it will be adopted as a funding source depending on the development of public opinion and trends.

4. Survey of Current GND Scholarship

1. Current Literature on the Technical Prospects of a GND

Since the advent of the anti-austerity GND in autumn 2018, there have been only a few academic essays devoted to the topic apart from articles in newspapers and magazines. One notable contribution is a work co-authored by MMT scholars Nersisyan and Randall Wray titled 'How to Pay for the Green New Deal' (Nersisyan and Wray, 2019). Emulating Keynes' method in *How to Pay for the War*, Nersisyan and Wray evaluate not only the amount of required funds but also the potential utilisation of material resources. According to the authors, funding is not an issue for sovereign governments such as the US government. The main issue is the inflation of real resource prices during times of scarcity, but the authors conclude that even this can be solved through a combination of well-targeted taxation, regulations on wages and prices, rationing and encouragement of voluntary savings.

On the other hand, several analyses exist regarding the technical feasibility of a future transition to a carbon-free society and its costs, parts of which are presented in Rifkin (2019) for a general readership. For example, Jacobson et al. (2017) from Stanford have laid out a roadmap for achieving 100% renewable energy through full electrification in 139 countries by 2050. As for the costs and benefits of a US-wide introduction of smart grids and battery storage systems, the Electric Power Research Institute (EPRI) (2011) estimates it to be 476 billion USD in costs, 1.3 trillion – 2 trillion USD in benefits and 58% in GHG emission reductions. According to Brattle Group's Weiss et al. (2019), an annual investment of around 40 billion USD is needed after 2031 in order to enhance the robustness and flexibility of electric distribution networks. In Japan, see Asuka et al. (2019) for a roadmap to achieve 100% renewables and Morotomi ed. (2019) for required reforms to the current electric power system in line with large-scale adoption of renewable energy sources.

In April 2019, Finland's LUT University and Germany's Energy Watch Group produced a report (Ram et al., 2019) which opens with a remark on Fridays For Future led by Greta Thunberg among others. The report then proceeds to lay out a scenario for a transition to 100% renewable energy within the next twenty to thirty years which aims to keep global warming below 1.5°C while avoiding the use of risky technologies such as nuclear power and carbon capture and storage (CCS).

4.2 GND Research during the Obama Era

In the past, there have been a number of quantitative analyses and empirical studies dealing with Obama's GND (the American Recovery and Reinvestment Act of 2009 [ARRA] or the 'Stimulus' bill).

Gimpel et al. (2012) analyse, from a policy studies perspective, the regional differences of the 2009 ARRA's funding distribution. The study found that funding was distributed to districts not according to unemployment and foreclosure rates but rather according to the presence of infrastructure and research hubs. Quantitative analyses have shown how this was not so much due to interest-based decisions by politicians as it was due to the way the ARRA was passed through the post-crisis 'political window' and thus ended up becoming a 'dumpster' for important policies pertaining to renewable energy, healthcare and other issues. Hartmann (2009) evaluates the financial crisis and the Stimulus bill from the perspective of labour economics with an emphasis on gender, demonstrating that while infrastructure projects do not necessarily contribute to women's employment, the bill nonetheless contained numerous items of spending – including education, childcare and protection against domestic violence – which cater to women's jobs and lives.

As for a 'just transition' for the coal-mining regions, research on *A Green New Deal for Appalachia* has been conducted by political scientists (Taylor et al., 2017; Tarus et al., 2017). These studies have brought to light the economic, political and cultural challenges facing the coal industry led by Big Capital, arguing for a ground-up approach to policy formation regarding economic recovery and job creation for regions where coal mines have been closed.

4.3 Potential of Economic Models for Analysing the GND

Current literature tends to focus on technical and economic analyses pertaining to drastically cutting (80% or more in many cases) or completely eliminating GHG emissions by 2050 in order to achieve the 2°C warming target. The synthetic model used to analyse climate change, which combines modules on the economy, energy and climate effects, is generally known as the Integrated Assessment Model (IAM). One of the simplest examples of an IAM is the DICE model developed by 2018 Nobel laureate William Nordhaus (for relatively recent results see Nordhaus, 2017; see Lee et al., 2019, p.6 for critical feedback). The 2018 IPCC report uses multiple complex IAM models in order to analyse the effects of climate change mitigation policies and its economic effects (Rogelj et al., 2018; for details on the nineteen IAMs used, see supplementary material 2.SM.1.2).

Some IAMs do not contain a detailed economic analysis model. For those that do have an economic module, the model tends to be either an optimal growth model or a computable general equilibrium (CGE) model assuming optimising behaviour and perfect markets (the above-mentioned nineteen IAMs do not include Keynesian and other disequilibrium models). These economic models assume full employment and the maximisation of net social benefits, which means that (except for marginal cases) when they are applied to the analysis of environmental policy interventions, they naturally lead to the conclusion that direct regulations and carbon taxes tend to produce negative economic effects (Pollitt et al., 2016). Also note that current investments are necessarily crowded out by investments for decarbonisation. These considerations show that these economic models are not suitable for

the analysis of the GND which, after all, is a policy approach geared towards encouraging investments.

Disequilibrium models, on the other hand, produce different results. If we assume that idle resources and labour exist in our current economy, we can show how it is possible to improve real GDP and other economic metrics by promoting renewable energy and investing in low-carbon projects. Effects pertaining to environmental tax reform (the introduction of carbon taxes coupled with tax cuts in other domains) will also differ from CGE and other models.

One example of an IAM using a macroeconometric disequilibrium model is the E3ME-FTT-GENIE (Mercure at al., 2018). At its core is the E3ME model by Cambridge Econometrics, a large-scale, multisectoral, multiregional macroeconometric E3 (Economy, Energy, Environment) model which enables the analysis of the economy, energy and emissions of environmental pollutants. E3ME is based on a post-Keynesian theory while also incorporating the assumption of endogenous money which is key to MTT (Pollitt and Mercure, 2018). This has recently been used in conjunction with Future Technology Transformations (FTT), a non-optimising technology selection simulation model applied to electricity, transport, steel and other sectors. E3ME-FTT is still an E3 model, yet by combining it with the climate module GENIE, it becomes usable as an IAM.

As an example of the E3ME-FTT in action, Lee et al. (2019) demonstrate that carbon tax revenues can be used for reducing the consumption tax and other taxes to achieve an overall positive effect (a double dividend) for GDP.

Analyses of ambitious GND scenarios, where the goal is to achieve net-zero GHG emissions for all major countries by 2030, are still forthcoming. E3ME-FTT may be considered as one of the best tools available for conducting just such an analysis in future.

5. Discussion of the Anti-Austerity GND

'Anti-austerity GND' refers to the intersection between anti-austerity and GND policies. Not all anti-austerity policies respond to the environmental crisis, and not all GND policies are anti-austerity (e.g. the GND by the German Greens is not anti-austerity). To recap, an anti-austerity GND calls for massive public and private investments to be made to combat environmental and economic crises, which in turn should be funded not by raising taxes but rather by mobilising private-sector funds and, in the case of sovereign governments, by utilising the power to create money (i.e. deficit spending backed by the central bank).

As a set of policies demanding a structural transformation of our economy accompanied by a bold paradigm shift, the anti-austerity GND is positioned as a particularly effective solution to the twin crises of climate change and inequality-poverty.

Nevertheless, a few challenges remain for any anti-austerity GND.

The first challenge concerns taking a stand on nuclear power. Both first- and second-wave GNDs have never explicitly opposed nuclear power. Indeed, some have even promoted it. The GND by the British Labour Party, which works with arguably the most progressive GHG emission reduction targets, explicitly states that new nuclear power plants should be built. By contrast, the Sanders GND includes a 'moratorium on nuclear power plant license renewals', which notably endorses a *de facto* phaseout. Other anti-austerity GNDs seem to implicitly take a no-nukes position by aiming for a 100% renewable energy system, yet they do not explicitly oppose nuclear power.

Secondly, extant GNDs tend to downplay the introduction of a carbon tax which is, after all, potentially a highly effective way to reduce carbon emissions. A notable exception is the DiEM25 proposal which calls for the introduction of a carbon fee and dividend. DiEM25 also proposes to introduce an environmental damages tax against air pollution and other forms of environmental breakdown. Because carbon taxes tend to be politically difficult to implement and regressive, anti-austerity GNDs tend to avoid them in order to simultaneously combat climate change while also reducing inequality and poverty. In this context, the US 'Economists' Statement on Carbon Dividends' becomes particularly relevant, for it considers ways to correct the regressive nature of carbon taxes.

The third problem is that all anti-austerity GND proposals to date have been driven by opposition parties. In order to actually implement the GND policies, it is paramount to win voter support and take power.

Fourthly, anti-austerity GNDs tend to have extremely ambitious goals. Many of these proposals aim for a 100% renewable energy rate and a drastic or total reduction of GHG emissions by 2030. These are incredibly ambitious, and it is quite natural for some to wonder whether these goals really are achievable.

The fifth challenge is to see to what extent an anti-austerity economic theory will be accepted. While austerity policies have brought stagnation and scarcity to many countries, anti-austerity has been advocated by many prominent economists, combining rich theoretical

resources with strong empirical promises. Nonetheless, due to its clear opposition against the dominant austerity outlook of politicians, bureaucrats, media persons and economists around the globe, anti-austerity needs to be continually disseminated in an intellectually energetic and rigorous manner before it is properly understood by the general public.

Conclusion

Against the backdrop of the climate crisis and the growing inequality and poverty due to neoliberalism, many anti-austerity GND proposals have been put forth since 2018, overturning 'common sense' dogmas while also unifying environmental and economic policies. By investing in environmental, renewable energy and other relevant sectors, an anti-austerity GND aims to create jobs, correct inequalities and stimulate the economy in the short term while transforming the structure of both industry and society in order to reduce our ecological footprint in the long term. Such a transformation involves not only the just transition of workers but also rectifying inequalities between developed and developing nations, inequalities in income and wealth, inequalities related to profession, race and gender, generational inequalities and other injustices. An anti-austerity GND is based on an anti-austerity economic theory, meaning it does not rely on raising taxes as a source of funding but rather encourages private-sector investments while, in some cases, also tapping into government spending based on the power to create money. It also incorporates progressive policies such as a basic income or a job guarantee programme. In an academic context, anti-austerity economic theory generally branches out into three currents: Keynesianism, MMT and public banking (opposition to credit creation). On the other hand, in the context of politics, anti-austerity economic theory is rapidly becoming the consensus view among progressive politicians in new leftist parties and traditional left-wing and progressive parties.

We have also looked at several challenges for an anti-austerity GND. Topics such as nuclear power and carbon taxes remain rather underexplored. Its ambitious goals may invite scepticism regarding their feasibility. Although anti-austerity economic theory is built on robust theoretical and empirical foundations, its opposition to 'common sense' austerity means that it needs to be further disseminated in an intellectually sound manner.

Xenophobic far-right forces are on the rise, feeding on the ever-deepening anxiety of the people as a result of growing inequality and poverty. In this political climate, left-wing progressives need to present a radically new proposal which is distinct from the traditional middle-of-the-road compromise with neoliberalism. This is why we have no choice but to pursue a GND which puts our environmental and economic struggles front and centre. Scholarly analysis and political debate will become all the more vital in order to counter some of the concerns raised against the GND. We look forward to the continuous development of an anti-austerity GND.

Acknowledgements

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