Levy Economics Institute of Bard College

Public Policy Brief

CAN WE AFFORD THE GREEN NEW DEAL?

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Preface

As the scope of the climate crisis unfolds and the worst-case warming scenarios begin to look unavoidable, some are debating a sweeping approach to climate policy in the form of a Green New Deal. The idea is to combine a comprehensive set of policies designed to reverse climate change (public investment to create a carbon-neutral energy policy, retrofitting buildings and updating infrastructure to increase energy efficiency, etc.) with measures like the job guarantee that would aid vulnerable households in this transition to a more sustainable economic model.

Predictably, concerns have been raised about the fiscal costs of such a sprawling program. Critics argue that the Green New Deal must be "paid for"—that is, rendered deficit-neutral or close to it—and that the necessary tax increases and other offsets would be economically and/or politically damaging. One problem with these objections is that they commonly fail to consider the estimated costs of inaction or insufficient action.

Yeva Nersisyan and Senior Scholar L. Randall Wray argue there is another fundamental problem with these concerns about the Green New Deal's purported financial burden. In their view, the question of whether we can afford this battery of programs is not best answered by merely summing up all the proposed spending commitments. According to Nersisyan and Wray, there are no meaningful *financial* barriers to taking action: the US government, they argue, can make whatever payments are required. Rather, the question is whether sufficient real resources—workers, plant and equipment, raw materials—can be marshalled to implement the Green New Deal. Nersisyan and Wray find a model for their approach in John Maynard Keynes's *How to Pay for the War* (1940)—not just based on the grave stakes involved, but for the approach Keynes takes to analyzing the cost of the endeavor in terms of real, rather than primarily financial, resources.

Following Keynes, their argument is that if the resource needs of this series of policies exceed the resources that can be made available, inflationary pressures will develop. It is only in such circumstances that tax increases need be considered (and, as the authors emphasize, taxes are not the only means of countering inflation). Moreover, in such a scenario the purpose of raising taxes would not be to raise revenue—reducing the impact on government deficits is not the goal—but to effectively curtail aggregate demand.

In this policy brief, Nersisyan and Wray attempt to produce estimates of the resources required and available for implementation of the Green New Deal's major elements, including estimates of the net resource impacts of the greening projects, the job guarantee, a single-payer system along the lines of Medicare-for-All, and the curtailing of military adventurism. Their analysis takes into account that some resources would be released or shifted from one use to another (investment of resources in exploration and generation of nonrenewable energy would decline, for instance), while in some instances resources would be created by newly implemented programs (such as the greening projects carried out by participants in the job guarantee program). Overall, Nersisyan and Wray find that the net increase in resource use due to the Green New Deal's implementation would amount to roughly 1.3 percent of GDP on an annual basis.

Even if not offset by tax increases or other measures, this may not cause significant inflation, they argue: there is still substantial unused capacity in the US economy, and potential growth can itself be raised (just as potential output has been degraded by running below capacity for so long, so potential output can be raised by running the economy closer to full employment). Nevertheless, with so many moving parts and unavoidable uncertainty, Nersisyan and Wray, following a related proposal by Keynes, recommend a policy of deferred compensation designed to reduce consumption in case inflation poses a problem. A temporary employee-side payroll tax surcharge averaging 4.6 percent (applied in a progressive manner) would be paired with higher Social Security benefits (once again progressively allocated) to be disbursed when the inflationary danger has passed. With the payroll tax surcharge included, they calculate the Green New Deal would roughly net out to zero in terms of the overall increase in resource use.

Nersisyan and Wray provide a first attempt at doing the real resource budgeting they believe is necessary to discern the limits of the possible in this case—to determine what this nation can "afford" in the fight to reverse climate change and ensure a just transition. Given the complexity of the exercise and the uncertainties involved (including the scope of final program design), their goal is less to insist on the particular estimates they arrive at than it is to argue for the necessity of changing the framework by which we analyze the cost of significant public policy changes.

As always, I welcome your comments.

Dimitri B. Papadimitriou, *President*
January 2020

Introduction

Advocates of the Green New Deal (GND) strive to change the way we approach a variety of problems facing society: climate change and destruction of our natural environment, rising inequality, and an economy that leaves too many with inadequate access to food, shelter, healthcare, and affordable education. They see these problems as linked, and so insist on tackling them with an array of programs that have hitherto been seen as disconnected: a carbon-neutral energy policy and reversing climate change; universal single-payer healthcare; student debt relief and free public college; prison reform; ending "forever wars"; increasing care for the young, sick, and old; and the job guarantee.

Many supporters and proponents of the GND are worried that large—perhaps confiscatory—tax hikes will be needed to "pay for" it. They typically warn of the high financial costs, and hence of prospective dangerously high government deficits. From the perspective of Modern Money Theory (MMT), these arguments are beside the point. A sovereign government's finances are not like the budgeting by households and firms; the government uses the monetary system to mobilize the *nation's* real resources and to move some of them to pursuit of the public purpose. Whatever the financial costs, we already have a financial system that can handle them.

What is less certain is whether there are suitable real resources that can be mobilized for a GND. To determine that, we need to do an accounting of available resources (including potential excess capacity and resources that can be shifted away from existing production) and to weigh those against what will be needed. If we can identify technologically feasible projects that would achieve the GND's goals and the resources to devote to these projects, then we can arrange for the financing of the programs. Only after a careful resource accounting can we address the question of whether taxes and other means might be needed to reduce private spending to avoid inflation as the GND is phased in.

This policy brief summarizes findings presented in detail in our Levy Institute working paper (Nersisyan and Wray 2019). Here we use estimates of resource sources and uses that we generated from our literature survey and from our own calculations. Interested readers are referred to the working paper for more details on our methodology and calculations. We hope our attempt spurs further research to carefully assess resource availability to compare against the resource needs of full implementation of the GND we outline here.

Our approach closely follows that of John Maynard Keynes in *How to Pay for the War* (1940). In order to determine the net resource requirements for the GND, we evaluate the main GND projects to gauge whether they would be a source or a use of resources. We largely follow Keynes's method, which is to mostly use monetary measures (dollars in our case) as proxies for resource quantities. Ideally, we would use a measure of real productive capacity—the ability of a resource to produce output—but as we have heterogenous resource inputs and heterogenous outputs, this is difficult. As such, the estimates can provide only a very rough guide. Uncertainties remain concerning the technologies, the quantity of resources needed, the suitability of the resources that can be made available, the political feasibility, and the capacity of our democracy to successfully face the challenges ahead. But we believe that our approach, informed by MMT and Keynes, provides more guidance about the question of the GND's "affordability" than the conventional approach of merely adding up the dollar "costs" of GND projects. Assessing economic feasibility of the GND needs to focus on technological know-how and resources, not on the dollar costs.

Affordability: The MMT Approach

MMT maintains that a sovereign government is not financially constrained; it spends through electronic entries in bank accounts and can neither run out of them nor save them for the future (Wray 2015; Nersisyan and Wray 2019). What should constrain the spending of a sovereign government is the nation's available real resources. Excessive spending, therefore, creates problems not in terms of higher government deficits and debt, but in terms of true inflation. Similarly, taxes are used not to finance government spending, but to withdraw demand from the economy, creating space for government spending to move resources to the public sector without causing inflation.

The more sensible critics of MMT accept the argument that we can financially afford the GND, but insist we need to raise taxes more or less in line with spending to avoid causing inflation. They go on to assert that increasing spending without raising taxes is a particularly dangerous practice as it injects excess money into the economy that will cause inflation. For instance, Brad DeLong has argued, in reference to boosting federal government spending, that it is unreasonable to believe that "the

US can have Swedish levels of government spending without Swedish levels of taxation."[1]

The argument that taxes must be increased alongside the GND presumes that, first, implementing the GND will lead to a large increase in the demand for resources, and, second, that raising taxes is the best way to relieve pressure on demand. We believe that those arguing for tax hikes have not carefully assessed the GND's inflationary potential, since there have been no studies of the GND that look at resource demands and savings. Instead, they rely on estimates that merely sum up the estimated *dollar* costs of GND programs, presuming this equates to additional government spending that requires taxes to "pay for" it. Whether or not we need tax hikes depends on the net increase of demand on the nation's resources and not on some scary prediction of trillions of dollars of government red ink. We provide a first attempt to quantify the net resource demands in order to obtain some idea of the reduction of current aggregate private demand (consumption and investment) that might be required to release resources to the GND efforts—which allows us to deal with what would otherwise create an inflationary excess demand.

It is not a foregone conclusion that the net increase will be beyond our available capacities. The GND will in many areas reorient currently employed resources, cutting environmentally and socially destructive uses of resources and shifting them to better use. Moreover, we have substantial unused capacity, and we will, along the way, further increase capacity. That is obvious in Euroland, which is probably operating at 25 percent or more below full capacity, but even the US has substantial excess capacity, in spite of claims that we are at full employment. Over the past quarter century, we have had to repeatedly lower our estimate for the natural rate of unemployment—the rate below which inflation is supposed to pick up—in every recovery, because inflation never arrives as unemployment falls. Most recently, in the immediate aftermath of the financial crisis, economists claimed that the natural rate of unemployment had increased to over 5 percent; yet the unemployment rate kept coming down, while inflation never materialized. Even the Federal Reserve has admitted that the inverse relationship between unemployment and inflation that underpins their policy decisions does not seem to exist anymore (if it ever did) (Li 2019). We will not know precisely where the true inflation barrier is until we ramp up aggregate demand.

Further, there is nothing "natural" about potential growth. We can raise our potential by prudent investment of our resources. Operating close to full capacity over a period will bring forth investment and more capacity—so potential output is to some degree determined by actual capacity use. Through the GND, we will also shift resources to better uses and (gradually) reduce the need to devote resources to dealing with the problems created by destructive processes (dirty production processes require us to devote resources to cleanup; high inequality forces us to devote resources to dealing with the consequences of poverty, idleness, inadequate access to preventive care and early treatment, social isolation, and crime).

To sum up, we need to obtain an inventory of the resources that can be made available to the GND projects to compare against the resources that will be required to implement the GND. This would include resources in excess supply plus those that can be released from uses that will be eliminated by the GND's adoption. This is the true cost of the GND, and it will allow us to get some idea of the magnitude of the reduction of aggregate demand necessary to avoid inflationary pressures. Admittedly, this is difficult, and we are only providing a first step, using gross measures of underutilized resources currently available, resources that can be shifted, and resources that will be needed by GND projects.[2]

To be clear, we do recognize that implementation of the GND will shift spending from the private sector to the government sector. However, unlike other studies that evaluate the GND, we do not assume that we need to raise taxes merely because government spending rises. Instead, our position is that taxes should be raised only if the additional spending creates inflationary pressures. In general, it makes no difference *in terms of inflation* whether the dollar spent to hire resources comes from the government or from the private sector. Thus, a shift in spending from the private sector to the government required by the GND need not be inflationary. However, if the GND does take us to and beyond full employment of resources, we can adopt measures to counter inflation pressure, including raising taxes.

"Costing" the Green New Deal

The American Action Forum (AAF), led by the former director of the Congressional Budget Office Douglas Holtz-Eakin, is the source of an oft-cited GND cost estimate of $93 trillion—a

number various commentators and opponents of the GND have used to argue that it is wishful thinking at best and a terrible policy that will bankrupt our grandchildren at worst (Holtz-Eakin et al. 2019). However, this number is obtained by grossing up wild estimates of the individual costs of each component of the GND—without accounting for potential savings as we phase out wasteful and damaging uses of resources.

What we do instead is consider the resource savings that will accrue from the various programs, as well as the resource costs of GND programs, to determine whether the GND would be affordable in terms of the *available real resources*. As we demonstrate, some parts of the GND are resource-using while others are resource-saving, and it is highly misleading to simply tally the projected dollar costs. In what follows we briefly summarize our estimates for resource savings and needs for the GND's main components.

The job guarantee path to jobs for all, and a source of resources for the GND

While there are many job guarantee (JG) proposals floating around, the Levy Economics Institute's proposal is among the most ambitious (Wray et al. 2018). The Levy proposal includes paying $15 per hour plus generous benefits (at 20 percent of the wage bill, including Medicare-style healthcare and free childcare), plus an amount of spending equal to 25 percent of the wage bill to cover materials costs. Thus, the JG not only provides full employment, it also ensures an effective national minimum wage of $15 per hour—and this is accomplished whether or not $15 is the legal minimum.[3]

The Levy simulation of the JG puts the net annual impact on the federal government's budget at around $400 billion per year for the first 10 years; state budgets improve by $53 billion annually. The boost to GDP is around $560 billion annually, while the boost to employment is around 19 million new workers (15 million in the program, plus 4 million private sector jobs).[4] What is important here is the impact on resource use, not the budgetary impact on the federal government. The net $400 billion boost to federal government spending (about 2 percent of GDP) means that aggregate net wages have been increased by about that amount.[5]

While in financial terms the JG represents a cost, in real terms it is both a cost (it uses resources—mostly the increased consumption out of wages by employees over what they consumed with their previous level of income) and a source of resources for GND projects. In particular, JG workers can be employed for many of the GND projects. By design, JG projects would be able to utilize labor with below-average skills and experience and the jobs would be labor-intensive, requiring little expensive capital investment or materials. These could include care services (care for the environment, community, and people) plus small construction and retrofitting projects (making homes more energy efficient, for example). Clearly, these workers would not be used as skilled labor in major infrastructure projects, a core component of the GND.[6] Importantly, the JG would be directly employing labor resources that are not currently being used by the private sector.

Let us assume that half the JG workers are in projects devoted to "greening," while the other half are devoted to what Pavlina Tcherneva (2018) calls "care for community" and "care for people" projects: service projects related to senior and youth care, teacher's helpers, neighborhood and park cleanup, artistic projects, and so on. Thus, the JG program can provide resources needed for green projects in an amount equal to 1 percent of GDP (and resources equal to another 1 percent of GDP for other care services).

To conclude, we count the JG as using an amount of resources equal to 2 percent of GDP. However, we count it as supplying an amount of resources for green projects equal to 1 percent of GDP—hence, the net cost in terms of resource use is 1 percent of GDP.[7]

Renewable energy and energy efficiency

For our estimates of resource use required to transition fully to renewable and efficient energy sources, we use "greening" estimates (100 percent renewable energy, a smart power grid, and upgrading and retrofitting buildings) from a variety of sources, including a 2014 report from the Center for American Progress (CAP) and the Political Economy Research Institute (PERI) (Pollin et al. 2014); the AAF (Holtz-Eakin et al. 2019); a plan by Mark Jacobson from Stanford (Jacobson et al. 2017); one by Geoffrey Heal of the Columbia Business School (Heal 2017); and Senator Bernie Sanders' plan (Bernie 2020 n.d.). Table 1 summarizes the estimated costs of "greening" the economy, using an average of various proposals, including the one by the conservative AAF, as well as Bernie Sanders' plan, which is the most expensive (and detailed). An average of all the estimates is $1,104 billion annually, or 5.66 percent of 2017 GDP, which is what we use in our estimates going forward.

Table 1 Summary of Various "Greening" Proposals

	$ Billion	Percent of 2017 GDP
Jacobson	1,250	6.41
AAF	1,030	5.30
CAP/PERI	1,021	4.98
Heal	580	2.97
Sanders	1,638	8.40
Average	1,104	5.66
Fossil Fuel Investment	-127	-0.65
Net Cost	977	5.01

To transition to a zero-emissions system, however, we would stop all investment in the nonrenewable sector and gradually dismantle existing nonrenewable capacities. According to the Bureau of Economic Analysis, private investment in "mining exploration, shafts, and wells" was $140.9 billion in 2018, or about 0.7 percent of 2017 GDP (BEA 2019). We estimate that about 90 percent of that, or $127 billion (0.65 percent of GDP), is investment in petroleum and natural gas.[8] To get the net cost of "greening," we then subtract the sum of our current spending on nonrenewables from our estimates. Furthermore, since we are already investing in renewables, that cost may need to be subtracted as well. However, since it is not always clear whether the proposals we examined are estimating net or total costs of greening, we will err on the side of caution and will not subtract current renewable investment.

Universal single-payer healthcare

The universal single-payer system, or Medicare for All (M4A), is deemed the most expensive GND program. However, as we explain below, M4A is actually a source of resources in real terms. The US healthcare system is notorious for its high costs and below par outcomes. We already spend 18 percent of GDP on healthcare, and that is projected to reach 20 percent soon. This is approximately twice as much as our peers—other rich, developed, capitalist countries—with no discernably better health outcomes (and even worse on a number of measures).[9] Our excessive spending when compared to that of our peers can be attributed to the use of for-profit insurance to pay for healthcare, higher pharmaceutical and provider costs, and higher administrative costs. Study after study has confirmed that prices and administrative costs in the US are out of line with those in the rest of the developed world, and especially compared to countries that have some type of a single-payer

system. Americans do not get more healthcare in real terms, but they pay more for it (see Nersisyan and Wray [2019] for a brief survey of literature).

The adoption of a single-payer system (replacing for-profit private insurers) would significantly reduce the resources devoted to our unusual way of paying for healthcare. It would eliminate the private insurance sector's participation, reduce employers' costs of administering healthcare plans, reduce the costs incurred by doctors and hospitals due to billing insurers as well as pursuing patients for uncovered costs, lower the costs of appealing denials, and cut costs associated with patients avoiding early treatment of diseases (because of the actual or expected out-of-pocket costs) that become chronic and expensive maladies. If M4A could control prices and lower administrative costs, we could spend significantly less on healthcare than we do currently, while expanding coverage to everyone. All else equal, if we were able to reduce our spending on healthcare to the level of our peers, we would be creating deflationary pressures, not inflation.

We estimate that in the short term M4A could save about 3.7 percent of GDP while providing healthcare to the whole population (Nersisyan and Wray 2019).[10] Even if we lowered healthcare spending by 3.7 percent of GDP, we would still be spending more on healthcare than all of our peers. We believe our estimates are just the savings possible in the short term. In the long term, increased use of healthcare could reduce spending on chronic diseases. With universal access, cost controls, and elimination of a highly inefficient private insurance system, the single-payer system could shrink US spending on healthcare by much more, bringing us in line with other rich countries at about 10 percent of GDP. However, for the purposes of this analysis we will use our estimate of savings equal to 3.7 percent of GDP.

Some will object that the savings largely accrue to the private sector, while the government will face additional costs. While it is true that the distribution of spending between the private and public sectors would change, there is nothing about government spending that necessarily makes it more inflationary than private spending—all else equal. If private spending on healthcare costs falls by more than the increased government spending, the movement to single payer will be deflationary, not inflationary. Only a net increase in demand for resources would be inflationary. And if M4A is implemented as a part of the GND, what will matter is the overall increase

of demand resulting from all of the GND. If healthcare savings offset increased resource use in other GND projects, then the net impact of the GND will not be inflationary.

End the forever wars

Some GND advocates (including Senator Sanders) have proposed to end the "forever wars."[11] This will reduce environmental destruction and free up resources for the GND. It is hard to calculate the total amount of resources devoted to the forever wars, as so much of the defense budget is hidden in other programs. The reported spending on defense is $716 billion, of which reported war spending is about 10 percent (say $72 billion). However, much more is hidden, and this figure does not include indirect costs (e.g., treating veterans and their families). As military spending does not lead to production of output for civilian consumption, it is akin to transfer payments in terms of its inflationary impact. There is probably at least $1 trillion of "unproductive" military spending annually. In 2008, Joseph Stiglitz projected the cost of the Iraq War alone would run about $3 trillion; two years later, he argued that could be an underestimate (Stiglitz and Bilmes 2010).[12] Senator Rand Paul claims the war on terror has cost $6 trillion since 2001, or about $330 billion per year (Shane 2019). Senator Sanders has put the cost at $5 trillion already, with another trillion to be spent on healthcare for veterans over the future.

While there are great uncertainties surrounding estimates of the resources that can be saved by ending the forever wars, we will use a conservative estimate that $210 billion of savings could be realized annually (perhaps two-thirds of the spending on the war on terror) in terms of wasted resources, or approximately 1 percent of GDP. We expect that the savings would be lower in the early years but would gradually rise—probably significantly above 1 percent of GDP—as the longer-term costs of caring for veterans and their families would decline over time.

Achieving net zero carbon emissions in agriculture

Global agriculture accounts for about a quarter of all greenhouse gas emissions. Hence, some GND supporters have recognized that achieving carbon neutrality will require a major reduction of agricultural emissions—and in particular, a reduction of greenhouse gases produced by livestock. According to the United Nations Food and Agriculture Organization, global livestock production accounts for nearly 15 percent of emissions, "with beef and milk cattle production comprising 41 and

20 percent of the sector's total, respectively. Greenhouse gases also stem from feed and animal transportation, manure storage and processing, and cutting down forests to expand farmland for crops and grazing, particularly in developing economies" (Dmitrieva 2019). Obviously, agriculture has other significant environmental impacts in addition to carbon emissions and loss of forests. Factory farmed beef, pork, and fowl is a significant source of air and water pollution. Finally, eating large quantities of meat is not only a very inefficient use of agricultural resources, it also contributes to a wide range of detrimental health outcomes—raising healthcare costs and reducing labor productivity.

For all these reasons, a comprehensive GND must include policies to address the pollution, deforestation, carbon emissions, and health implications of today's agricultural practices. However, it is difficult to assess the implications of such reforms for resource use. It is possible that natural resource exploitation would fall, but use of labor resources would rise if we shifted from huge factory farming to local, sustainable farming methods. It is possible that the net impact on labor demand could be positive, generating pressure on wages. This could be somewhat offset by lower demand for some kinds of resources (petroleum, pesticides, fertilizers) and lower costs of dealing with factory farming's negative impacts . However, given the current uncertainties involved, we cannot provide an estimate of the impacts on resource use or on prices.[13]

Other sources of inflationary pressures

Many fear that if the costs of medical care are shifted to the government, that creates a large windfall for both employees and employers—who no longer must pay health insurance premiums—causing inflation. Employers would face substantially reduced labor costs as M4A replaces private insurance plans. For instance, in 2017, employers paid a median of about $13,000 in premiums per worker for an employer-based family coverage plan.[14] It is difficult to know how employers would react to the elimination of healthcare costs. If unions were strong, they might be able to induce employers to offer other kinds of benefits, or to raise wages, which would increase incomes and thus consumption. Some have argued that employers would oppose the movement to M4A because they use good healthcare coverage as a recruiting device, so offering other kinds of benefits would be an option. We think that in the current environment, most of the savings will be retained by employers—although

some might indeed offer longer vacations, shorter workweeks, or childcare as attractive benefits. Perhaps the savings would show up as profits—to be consumed by owners or highly paid executives, invested in new plant and equipment, or simply saved and perhaps used for stock buybacks that push equities prices ever higher.

If this windfall is spent, it would absorb resources, and hence our estimates of the resources released by M4A would be overstated. We think that is highly unlikely. When oil or other input prices rise, raising firms' costs, their spending on inputs rises and there is some pressure on inflation; when input prices fall, their spending on inputs falls. The pressure on aggregate prices is downward when production costs fall. We suggest that the main effect of removing healthcare costs from employer costs will be deflationary, not inflationary. We believe US employers will use the savings to make their production more competitive, domestically and internationally, by lowering prices.

However, as workers' spending on healthcare premiums falls and take-home pay rises, some portion of this can go to increased consumption. Certainly workers will use some of that to raise their consumption, but they can also reduce debt and increase saving. Still, there could be some increased consumer demand and some pressure on inflation.

Responding to Inflationary Pressures

Taxing the rich

If we find that the resources released from destructive uses and mobilized are not sufficient to meet the requirements of the GND programs, inflation pressures will arise. It is difficult to know how large these will be, but if we do face inflation we need to have a plan for addressing it.[15]

Many advocate raising taxes on the rich to provide revenue to finance the GND. However, as we explained in this policy brief, the function of taxes is to release resources, rather than raise revenue. Hence, the type of taxes we use becomes an important consideration. For instance, taxes such as financial transaction taxes and offshore income taxes would have little benefit, since they may not be very effective in reducing spending and hence releasing resources for the GND.[16] Ironically, these kinds of taxes are often cited by GND proponents as particularly good sources of finance.

Taxing the rich can release resources if it reduces their spending on resource-using output.[17] Direct taxes on high incomes and wealth can also reduce inequality at the top. If resource use by the rich can be reduced, that will free up resources to be used in GND projects. Instead of building a third or fourth mansion for the rich, public housing for the poor could be provided. Instead of producing (and fueling) private jets, efficient forms of mass transit could be built and operated. The potential release of resources could be significant. However, to obtain these advantages would require high tax rates on both wealth and income—perhaps even higher than what Representative Alexandria Ocasio-Cortez has advocated (a top marginal tax rate of 70 percent). The political and technical barriers to imposing sufficiently high tax rates would also be significant: the rich have the means and incentive to fight any move to raise their taxes, as well as to avoid tax payments if rates are raised.[18] We will not attempt to calculate how many resources might be made available, because the uncertainty of passing tax hikes is too great. We will focus instead on alternative ways of combating inflation should it arise.

Taxes on wages—deferred consumption

Taxes on consumption and wages, on the other hand, are highly effective in lowering demand. But they will be neither politically popular, nor especially fair, given the stagnant wages for the last 50 years. Workers have been "paying for" neoliberalism for two generations. We cannot ask them to pay more to reverse the damages done.

We thus propose a policy along the lines of Keynes's recommendation to "pay for" WWII, applying it to the GND "war" to save the planet. To reduce resource consumption, we would need "targeted" taxes that would be effective in lowering aggregate demand. We need to reduce consumption demand by the less fortunate bottom 90 percent of Americans. However, this should be imposed in a progressive manner (with exemptions for the lowest-income earners), and any reduction of consumption should only be temporary and accompanied by a clear promise of a better standard of living later.

Senator Sanders has formulated a plan to "pay for" M4A, proposing a supplemental payroll tax on employers equal to an additional 6.2 percent of payroll, plus an additional payroll tax surcharge on employees of 2.2 percent, plus an array of other progressive taxes that he has projected would raise $1.4 trillion annually.[19] While we do not agree with his goal of raising revenue to "pay for" programs, we follow his lead in designing a method of reducing consumption to alleviate inflationary pressure.

To allay fears of inflation, we propose to repurpose the payroll tax part of Senator Sanders' proposal. We would impose an average surcharge of 4.6 percent on the employee portion of the payroll tax. This could be applied in a progressive manner, with a lower surcharge on lower wages (and with the lowest wages exempt). The goal is not to raise funds to "pay for" benefits, but rather to defer employee compensation—based on Keynes's plan for WWII. In this case, the purpose of the tax is to *temporarily* reduce workers' compensation. Over time, Social Security benefits would be raised to compensate workers for their sacrifice during the implementation of the GND projects that are required to reverse climate change. The payroll tax surcharge on workers could be phased out in the future as the GND's resource demands decline and as the nation's productive capacity increases.

As Keynes recommended, the deferred compensation (given as a boost to Social Security benefits) can be allocated in a progressive manner: with larger supplements paid to those currently receiving the lowest retirement benefits, tapering down for those earning the highest. Also, as Keynes recommended, the payroll surcharge (similar to his capital levy) would be imposed as soon as the GND begins, while the benefit supplements would be delayed until the inflation danger has passed. The surcharges paid by employees would also be phased out only after inflation pressures subside.

If we presume that these surcharges will be levied on the hospital insurance portion (HI) of taxable payroll (which, at about 45 percent of GDP, is 25 percent larger than the Old-Age, Survivors, and Disability Insurance [OASDI] payroll[20]), they would remove about $400 billion of income annually, equal to 2 percent of GDP.[21] We will add this as a net source of resources to offset GND requirements.

The surcharge on payroll taxes acts like a sinking fund—not to be used to "finance" future Social Security or the expansion of Medicare spending to all, but to reduce aggregate demand now on the promise that Social Security retirement will be boosted as deferred compensation. Note that workers are generally better off with the single-payer plan, even with the payroll tax surcharge.[22]

Lastly, we have not discussed imports as a source of resources to meet higher demand. We should not rely excessively on imports of the production needed for greening projects (solar panels, wind power equipment, and electronic transportation, etc.), at least to the extent that other countries are mobilizing to use their resources to fight climate change themselves. However, as employment rises to boost general consumption, at least some of that will be met by imported consumer goods. This is not necessarily something to be avoided, as many nations need to export consumer products to obtain dollar earnings they need to import green technology. This will help to attenuate inflation pressure—as it has done over the past two decades.[23]

Conclusions

With appropriate policies, Keynes thought we could "snatch from the exigency of war positive social improvements" (Keynes 1940, iii). The same thing is true today: we can either be reactive and respond to the calamities created by climate change as they happen (as we already do with droughts and hurricanes), or we can use this crisis as an opening for progressive change. This is why the GND includes a wide range of social initiatives: jobs for all, ending forever wars, taxing the rich, student debt relief, free public colleges, access to child and elder care, and so on. At the same time, we need to plan for the implementation of these GND components on a pace that does not significantly raise inflation. What Keynes was arguing against in *How to Pay for the War* was the policy of allowing the economy to adjust to the realities of the war through an "inflation tax." If we do have to fight inflation, we need to ensure the battle is not waged on the backs of workers. The inflation tax permanently lowers consumption; deferred compensation only postpones consumption.

Table 2 provides resource numbers for each category: resources released, resources needed, and net increase in the demand for resources. Our plan would be approximately net zero in terms of resource use if we impose the payroll tax

Table 2 **Summary of Net GND Resource Use (percent of GDP)**[24]

Job Guarantee	1.0
Greening Projects	5.0
Medicare for All	-3.7
Miscellaneous GND Projects[25]	0.0
End Forever Wars	-1.0
Payroll Tax Surcharge	-2.0
Net Increase in Resource Use (*without* payroll tax surcharge)	**1.3**
Net Increase in Resource Use (*with* payroll tax surcharge)	**-0.7**

Note: Source of resources is negative; use of resources is positive.

surcharge. We do not believe that an increase in demand equal to 1.3 percent of GDP (our projection in the absence of a payroll tax surcharge) would cause significant inflation anyway—so even without the payroll tax surcharge, we do not anticipate inflationary pressures. However, we leave that as an option, and of course the surcharge could be higher or lower as necessary. Even with the surcharge, households would be better off in the short run—and substantially better off in the long run as their retirement pay is boosted.

Our main goal has been to set out a framework for analyzing the GND's true costs—not to promote any particular estimate. As we noted above, there are considerable uncertainties associated with estimating the resource needs and savings from major economic programs. Our goal is to change the debate from estimating financial costs to a careful assessment of resource needs and availability. We need an informed discussion of the best method of reducing resource use—should that become necessary—so as to free up resources for the GND. We have discussed deferred compensation as a preferred method. However, we believe that if the requirements turn out to be much larger than what we have estimated, we can also explore the other methods that were successfully used in WWII: patriotic saving (which is voluntary deferred consumption), price controls, rationing, and additional taxes. Most importantly, if taxes are to be used, they must be formulated to reduce resource use—not to "raise revenue."

Notes

1. See Wray (2019). DeLong is wrong. American workers already pay Northern European levels of "taxation" if you use an inclusive measure: all the mandatory deductions from American paychecks (pensions and health insurance, including the Obamacare mandates, called "non-tax compulsory payments," or NTCPs) add up to a greater burden than what our rich peer countries' workers pay. For comparison purposes, Canadian workers pay an effective "tax" rate (including NTCPs) of just 11.5 percent; in Denmark they pay 26.7 percent; in Norway 32.4 percent; in Sweden 38.3 percent; and in the United States a whopping 43.2 percent (Bruenig 2019). In sum, we already pay higher taxes than the Swedes; we just don't call them taxes, even though they are as mandatory as Swedish taxes. Americans' take-home pay is already below that of the Swedes, which is

obvious to anyone who travels to Northern Europe to envy the standard of living we do not enjoy.

2. In this policy brief, we do not assess the technological feasibility of the part of the GND that is focused on reversing climate change. We will assume that the science and technology exist. We have no expertise in that area. Instead, we focus on resource availability.

3. The JG wage will become the effective minimum wage—assumed to be $15 per hour plus benefits. Without a JG, a legal $15 minimum wage may not be an effective minimum wage, because those who cannot obtain a job in the formal labor market will not receive that wage (they might remain unemployed or be forced to work in informal labor markets at less than the minimum).

4. These are high estimates, since the Levy simulation does not include likely cost reductions, such as lower spending on social programs and the penal system that would result from poverty reduction through job creation. We assumed some budgetary savings from lower Medicaid spending and reduction of the Earned Income Tax Credit—as program workers would have higher incomes that would raise them above program thresholds.

5. Also note that Medicare-style healthcare as well as childcare coverage is included in this simulation of a JG program. With M4A, JG workers would get healthcare through that program. Hence the spending on the JG itself would actually be lower than the Levy estimates if the entire package of GND programs was adopted.

6. The Levy report (Wray et al. 2018) discusses the importance of respecting prevailing wage legislation and avoiding competition with union labor. Further, most public infrastructure projects will continue to be undertaken through contracts with private firms—hence, would not be performed by the JG program.

7. We have chosen not to directly count the contribution of JG workers in "care" services as a net resource because we do not include an estimate of the care services' resource costs. Thus, we are assuming that the JG care services essentially "pay for themselves" in terms of resource use; however, the JG care workers will consume 1 percent of GDP, so they are treated as a GND resource cost.

8. While Table 5.3.5 (BEA 2019) does not provide a further breakdown between petroleum and natural gas and other mining, Table 5.4.5, "Private Fixed Investment in Structures

by Type," does. According to that table, oil and natural gas investment comprised about 93 percent of total investment in structures, while investment in other mining was less than 7 percent. We are using a 90/10 breakdown in our estimates.

9. The OECD country with the next-highest share of health spending is Switzerland, which spends a little over 12 percent of its GDP on healthcare. Canada, on the other hand, spends 10.4 percent of its GDP on healthcare (OECD 2019).

10. Others have estimated savings from 1.58 percent of GDP (Pollin et al. 2018) to 4.5 percent of GDP (Baker 2019a).

11. "According to a recent study by the Costs of War Project at Brown University, the War on Terror will have cost American taxpayers almost $5 trillion through Fiscal Year 2019. When taking in to account future health care obligations for veterans injured in post-9/11 wars, the bill comes closer to $6 trillion" (Sanders and Lee 2019).

12. Stiglitz and Bilmes (2010) argue the opportunity costs probably add more: "For instance, many have wondered aloud whether, absent the Iraq invasion, we would still be stuck in Afghanistan. And this is not the only 'what if' worth contemplating. We might also ask: If not for the war in Iraq, would oil prices have risen so rapidly? Would the federal debt be so high? Would the economic crisis have been so severe?" Nine years after that update, the "forever wars" continue.

13. See Gerber et al. (2013) and Dmitrieva (2019) for a discussion of some of the difficulties involved.

14. In 2010, the median employer cost of healthcare was 12.8 percent of payroll (Claxton and Damico 2011). In 2017, employers paid about 70 percent of the family plan coverage's cost, while workers paid about 30 percent (KFF 2017).

15. Note that we do assume that government will use other means to constrain prices, including cost controls in the single-payer system as well as prioritizing spending over the decade during which GND projects are phased in.

16. They might reduce high-speed trading and the incentives to move profits offshore—and to the degree that they are effective, tax revenues from those sources fall anyway, so they cannot be counted as a financial source of revenue in any case.

17. We are not arguing against higher income and wealth taxes on the rich, which can be used to reduce inequality and restore democratic governance. However, we cannot think of these as a source of "financial" resources for the GND and consequently tie our ability to implement the GND to the taxes paid by the rich.

18. Dean Baker (2019b) makes a similar argument.

19. He includes progressive income tax rates, taxing capital gains and dividends at the same rate as income from work, limiting tax deductions for the rich, adjusting the estate tax, and savings from health tax expenditures. His total tax take is estimated at nearly $1.4 trillion annually. We are not including the other tax changes here, nor are we adopting the tax increase to raise revenues to "pay for" M4A. The purpose is to release resources—in this particular case, it is to postpone consumption by deferring income.

20. The logic behind applying them to HI rather than to OASDI is not only that the base is larger, but also that the tax is designed to offset some of the benefits of moving to a universal single payer.

21. See SSA (2018) and CMS (2018).

22. The median wage is about $32,000. The average annual premium for family coverage is over $19,000, of which about $13,000 is paid by the employer and $6,000 is paid by the employee. By contrast, the payroll tax surcharge would be $1,472 on the median worker's wage.

23. This helps explain why the Fair model's simulation of the JG program (see Wray et al. 2018)—which boosted employment by 19 million, raised wages to or above $15 per hour, and increased annual GDP by half a trillion dollars—projected almost no inflation pressure.

24. We acknowledge that some of the resources released by the fossil fuel and healthcare sectors may not be appropriate for GND projects, although a good case can be made that a lot of the workers would be able to contribute to either working in GND projects or helping with administration.

25. Includes student debt relief and free college, public infrastructure, and universal childcare (some of which is included in the JG resource requirements). While many of the "miscellaneous" GND projects (additional public infrastructure, free public colleges, job training, childcare) will require resources, by increasing productivity they will also supply resources—so we have assumed their resource use nets to zero. While this should be true over the long run, there could be a net demand for resources in the early years. Whether this is inflationary depends on whether they are phased in as resources are made available; that, in turn, requires careful planning.

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