Marketcrafting:
A 21st-Century Industrial Policy

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May 2023

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Acknowledgments

The authors thank Tim Barker, Isabel Estevez, Natalie Foster, Suzanne Khan, Steven Vogel, and Felicia Wong for their comments and insight on earlier drafts. Sonya Gurwitt and Claire Greilich also contributed to this project.

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I. INTRODUCTION: INDUSTRIAL POLICY AS MARKETCRAFTING

The tectonic plates of political economy are shifting in the United States. In the past two years, policymakers have passed three large-scale, state-directed economic policy programs that intend to reorganize markets for better outcomes: onshoring semiconductor manufacturing, updating the nation's infrastructure for the 21st-century, and accelerating technological development to combat climate change.[1] Many analysts are calling this an "industrial policy moment," reviving an old term to describe a historic turn in American political economy.[2] Others see in the moment evidence of a "supply side progressivism" (Klein 2021), "new productivism" (Rodrik 2022), or "a liberalism that builds" (Klein 2022).

We believe we are witnessing a new embrace of a policy approach known as "marketcrafting": the creation and implementation of frameworks of market governance and public investment to pursue certain social and economic goals.[3]

The surge of interest in a proactive approach to shaping industries and markets is the result of many factors. Americans have lived through a decade of tepid wage growth, coming on the heels of the largest financial crisis since the Great Depression. There is a growing recognition that the neoliberal policy agenda of deregulation, austerity, and globalization has been a failure for the majority of the population. At the same time, the accelerating climate crisis has forced many to reckon with the scale and speed at which we need to build out our clean energy infrastructure. Likewise, growing concern over China's rising power has contributed to increased interest in ramping up domestic production of essential goods. And, most recently, a pandemic-driven shift in consumption patterns, coupled with major supply chain disruptions, large fiscal expenditures, and the outbreak of the largest ground war in Europe since World War II, pushed inflation in 2021 and 2022 to its highest level in four decades. In search of ways to control inflation that avoid precipitating high levels of unemployment, many progressives have focused on ways to restructure markets to lower prices and enhance output.

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[1] Specifically, the CHIPS and Science Act's bid to revive US semiconductor fabrication, the big green energy push in the Inflation Reduction Act (IRA), and the massive infrastructure programs in the Infrastructure Investment and Jobs Act (IIJA).

[2] See, e.g., the *Boston Review*'s 2021 "Industrial Policy's Comeback" forum; the 2022 forum "Reimagining Industrial Policy for the Service and Tech Sectors" hosted by the Hamilton Project of the Brookings Institution; and the 2022 Roosevelt Institute conference "Progressive Industrial Policy: 2022 and Beyond."

[3] The term "marketcraft" was introduced by the political scientist Steven Vogel. We explain it in more detail later in this section.

The proliferation of terms analysts use today to describe this sea change in policy all fundamentally describe a new policymaking approach in which the state shapes markets toward certain social and economic ends. This marketcrafting approach stands in direct contrast with the neoliberal ideology that has dominated the political economy of the past generation. In the neoliberal view, markets are natural, spontaneously arising features of the economy imbued with their own operating logic, dictated by supply and demand, and communicated to individuals through prices. In this view, left to themselves, markets produce the correct price signals, allocate resources efficiently, and maximize aggregate well-being. To be fair, there is some diversity of views within neoliberalism regarding the status of markets, with some believing that markets are always efficient and others seeing a limited but important need for a regulatory state. In all conceptions, however, public policy "intervenes" in otherwise free and natural markets, exhibiting a tendency to distort their outcomes and threaten their efficiency.

The neoliberal framework offered both a paradigm-setting way of understanding political economy and a set of concrete prescriptions for public policy. This report argues that marketcrafting offers a similarly broad framework built upon a very different ideological foundation, while also helping to shed light on specific policy challenges of today. In this report, we examine policy responses to issues like our country's housing and climate crises through the lens of such a framework.

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The term "marketcraft" emerged in the past decade from the work of political scientist Steven Vogel (2018), who argued that, since markets are constructs of public policy, no market is free and the state is regularly and necessarily engaged in creating and shaping markets.[4] Proper recognition of the state's visible hand can lead to better policymaking, Vogel contends. Working along similar lines, scholars like Marianna Mazzucato (2015, 2021) and Todd N. Tucker (2019) have emphasized the important role of government in aligning market activity with public policy goals. This report seeks to expand on their collective work, arguing for a specifically progressive marketcrafting vision that can achieve major policy goals in a just and equitable manner while also minimizing inflationary impacts.

Legislators, administrators, and regulators wielding the power of government to design, manage, and harness markets to meet the policy demands of the moment will need to think broadly about how to use all the governance tools available to craft markets to meet our public policy goals. These include the kinds of centralized, state-led *public investment*

[4] Vogel's work is part of a broader scholarship exploring the political embeddedness of markets. (See, e.g., Chang 2002; Evans 1995; Wade 2003; Polanyi 2001).

programs that would fall under most definitions of industrial policy, such as military investment and infrastructure spending. It also includes the use of state programs to provide incentives and subsidies for private investment, such as the current effort to reshore semiconductor manufacturing or support industries that transition the economy to renewable energy sources. These public investment programs can often take the form of public options like Medicare or the US Postal Service.

Marketcrafting, however, does not just revolve around public investment. It also includes the many forms of *market governance* through which the state continually creates and shapes the architecture of markets. Competition and antitrust policy, for example, structure markets to meet certain social ends. The state can pursue changes in the law that encourage competition through limits placed on consolidation or changes that make it easier for new entrants to emerge. Alternatively, the state can—and does—manage the cost of essential goods through the use of centralized stockpiles, like the strategic petroleum reserve. Tax policy, meanwhile, designs markets to change the relative value of certain kinds of labor and to promote certain consumption patterns, rewarding home ownership over renting, for instance. Intellectual property law can structure markets to encourage or stifle research and development, depending on the structure of patent and copyright protections.

These policies all intend to shape the structure of the market. They are marketcrafting rather than merely market-affecting because they alter foundational decisions about what market actors do through the use of rulemaking, public investment, or competition policy, among others. Policymakers engineer markets, harnessing their power to accomplish a collective good.

Because marketcrafting involves shaping how markets function, it is distinct from a wide range of economic policies that are largely focused on providing financial or material assistance to compensate retrospectively for adverse market outcomes. Food assistance, unemployment benefits, Social Security benefits and certain income guarantee programs are indispensable in providing critical economic security to millions of Americans. They are not, however, intended to prospectively shape specific markets to be more productive or fair. This is in contrast to state actions that are "predistributive" like minimum wage laws, collective bargaining frameworks, and higher education and job training programs. Such initiatives would fall under the category of marketcrafting policies.[5]

The dividing line here is the purpose of the state action: Marketcrafting is about harnessing the power of markets in the pursuit of social and political goals, whereas redistribution is a

[5] Predistributive policies seek to craft markets so that they produce more equitable and just outcomes (see Hacker 2011).

remedial measure to provide a foundation for the satisfaction of basic needs. Even though marketcrafting and redistributive policies are distinct, they can also be complementary. Policymakers can craft markets to achieve more equal and just outcomes—for example, by enhancing the power of labor unions, increasing the minimum wage, or setting standards for mandatory paid family and sick leave. Such policies are particularly powerful when paired with redistributive tools like income support programs.

Importantly, marketcrafting can be done well or poorly, and there is no reason to assume that crafting markets is necessarily progressive; conservative policymakers have shaped markets to deemphasize equality, stability, and prosperity. Even in the period of so-called "deregulation" of the neoliberal era, state actors were crafting markets to favor consolidation, innovation, and liquidity-enhancing policies, choosing those goals over alternatives like stability or equality.[6] And, recently, Republican Senators like Marco Rubio (R-FL), Josh Hawley (R-MO), and Ted Cruz (R-TX) have all chosen to lean into conceptual frameworks that put the state center stage in shaping markets to achieve policy outcomes.[7]

At its heart, marketcrafting is a policy approach that seeks to achieve optimal outcomes through the proactive and purposeful use of the power of the state. It is not in itself an agenda, but rather a way of thinking about how to create a particular political economy. The tools of marketcrafting are the tools of public investment—including public options—and market governance measures.

In this report, we articulate a framework for designing an effective, explicitly progressive marketcrafting policy—that is, policy that supports robust growth and prosperity that is widely shared and fairly distributed—and we show how it can be used to combat some of the

[6] In recent years, scholars like William A. Darity, Jr., Mark Paul, and Darrick Hamilton have made a forceful and convincing case for a 21st-Century Economic Bill of Rights (Darity et al. 2018). They put a strong emphasis on the role of public policy to create "a national obligation to provide every American with economic security and opportunity," which includes the right to a job, housing, and a clean environment, among others. We believe that a marketcrafting framework is consonant with a rights-based economic framework, and in fact, would enhance the state's ability to effectively implement it. Public provision of key goods—housing, health care, education—will inevitably have an important role to play in delivering on the promise of an Economic Bill of Rights, but policymakers will inevitably also need to work through markets to meet their goals. These markets will need to be crafted to ensure that affordable, quality options are available to all. This report speaks to how this might be done in several key areas, including housing, energy, and shipping markets.

[7] See, e.g., the 2019 report by the Senate Committee on Small Business and Entrepreneurship (chaired by Senator Rubio), *Made in China: 2025 and the Future of American Industry*; Senator Hawley's 2021 Make in America to Sell in America Act; and Senator Cruz's calls for government action to support domestic mining of critical minerals and to modernize Texas ports.

most pressing political issues of our day, including the green energy transition, the housing crisis, and inflation.

A strong progressive marketcrafting policy requires a focus on three key areas:

1. ***Mission:*** Policymakers must clearly articulate the goals of the policy and organize political and institutional coalitions to sustain support for it.
2. ***Implementation, coordination, and maintenance:*** Policymakers must develop a plan both for the policy's immediate implementation and for the ongoing actions necessary to maintain the conditions for its success.
3. ***Accountability:*** The policy must be designed to effect a just distribution of economic and political gains and include mechanisms for ongoing review and revision to hold both political and market actors accountable.

In the remainder of this report, we explain why each of these areas is crucial to the success of a progressive marketcrafting program. In Section II, we shed light on the content of marketcrafting policy by exploring several past examples. In Section III, we discuss the particular importance of mission; implementation, coordination, and maintenance; and accountability to progressive marketcrafting. Finally, in Section IV, we explore the possibilities for progressive marketcrafting in practice by evaluating recent major economic policy initiatives through our framework, noting where they are effective and where they could be improved.

II. MARKETCRAFTING IN THE RECENT PAST

Think tanks and political journals on the left and right are full of debates about the value of industrial policy, but few disagree that we have entered a new era of states shaping markets.[8]

It is important to recognize, however, that the state has regularly been involved in shaping markets to achieve certain social and political goals, even if it has not always done so openly and transparently. Because of a perceived need to adhere to so-called free-market principles—especially in the neoliberal environment of the past several decades—US policymakers have often hidden or de-emphasized the market-shaping effects of their

[8] For the debate on the left, see, e.g., recent forums in *The Boston Review* (2021) and *The American Prospect* (2020). For the debate on the right, see, e.g., the debate between American Compass Executive Director Oren Cass and Duke Political Scientist Michael Munger (2020), "Is It Time for an American Industrial Policy"; the debate between Cass and Scott Lincicome of the Cato Institute (2021), "Should the U.S. Adopt an Industrial Policy?"; and Keith B. Belton (2021), "The Emerging American Industrial Policy," *American Affairs* 5, no. 3 (Fall).

policies. This has led both to the perception that the US does not regularly engage in marketcrafting and to a piecemeal approach to marketcrafting that is less effective and more prone to special interest capture (see, e.g., Block 2008; Mettler 2011). What is different about the present moment is not that policymakers are marketcrafting, but rather that they are attempting to do so openly and systematically.

Surveying the past several decades of economic policymaking, two sectors in particular—defense and finance—provide good examples of marketcrafting policy in action. Few political leaders or policymakers applied the language of marketcrafting to the development of public policy in defense and finance, but in reality, the state purposefully organized these markets to meet certain public policy goals.

Perhaps the clearest example of a state-organized market is the defense industry. The government is the only consumer of much advanced weaponry, and it is by far the largest employer of war-fighting personnel. Over the past 30 years, military spending has hovered around 4 percent of GDP,[9] and in 2021, it exceeded $700 billion.[10] Much of the budget goes to personnel, operations, and maintenance costs to fund the world's largest standing army (Peter G. Peterson Foundation 2023), and roughly half is paid to private contractors (Semler 2021). The budget decisions made every year by the Department of Defense (DOD), the president, and Congress determine the contours of an entire sector of the economy. Defense policy is, therefore, always heavily market-*affecting* and often involves deliberate market*crafting* to achieve its goals.

We can see this clearly in the parallel evolution of DOD procurement policy and the shape and composition of the defense industrial base. In the immediate aftermath of the end of the Cold War, the Clinton administration was faced with the question of how to reconcile the continuing mission of maintaining a globally dominant military force with the new reality of an apparently diminished immediate need for military power and the administration's own political commitment to fiscal austerity. Clinton's DOD decided on a policy of sharply reducing government support for the defense industry and marshaling in an era of significant consolidation in private defense contractors, under the justification of allowing market forces to determine the proper market structure. Commenting on the new policy in 1993, then-Deputy Defense Secretary William Perry put the point bluntly: "We expect defense companies to go out of business, and we will stand by and let that happen" (Mintz 1993).

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[9] Source: Stockholm International Peace Research Institute (SIPRI). 2021. "Military Expenditure (% of GDP - United States." Yearbook: Armaments, Disarmament, and International Security. https://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS?locations=US.

[10] US Department of Defense, Office of the Undersecretary of Defense (Comptroller)/Chief Financial Officer (2022), p. A-2.

Consolidation was only the top-line impact. The policy's deeper effect was to transform the nation's defense industrial base from one structured around the public mission of national defense to one governed increasingly by the logic of private profit.[11]

In the ensuing decades, it became clear that this market-shaping effect of the policy shift had left defense supply chains brittle and vulnerable (see, e.g., Rodriguez 2017). In 2017, the Trump administration began the process of reintegrating the defense industrial base into a broader, cross-department national defense procurement infrastructure.[12] And in 2021, the Biden administration institutionalized this policy shift by creating an Industrial Base Policy Office within the DOD to coordinate an economy-wide defense procurement policy (Weisgerber 2022).[13] The new policy is explicitly geared toward reshaping the market to be less concentrated in order to make the defense supply chain more resilient and, therefore, better able to achieve the national defense mission (The White House 2022a).

In the financial sector, the Treasury and the Federal Reserve collaborated for decades to create financial markets that prioritized global integration, concentration, and undirected financial innovation, often sacrificing financial stability in the process. Over the course of the 1980s and 1990s, financial policymakers and administrators[14] oversaw the birth of a series of new financial products, including new derivative products like interest rate swaps, foreign currency swaps, and credit default swaps, as well as new methods of securitization like collateralized debt obligations. These new tools were used to create increasingly globally integrated market transactions, enhancing liquidity and increasing the opportunities for leverage in the financial system. They were combined with legislative and regulatory changes that relaxed divisions between commercial and investment banking and encouraged larger national and global banks.[15]

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[11] Commenting on the impact of the policy shift in 1998, the chairman of Lockheed stated: "We will have American industry providing for national defense . . . But we will not have a national defense industry." The Under Secretary of Defense for Acquisition and Technology expressed a similar sentiment, stating: "We now think of the defense-industrial base as the U.S. industrial base" (Wayne 1998).

[12] Executive Order 13806, "Assessing and strengthening the manufacturing and defense industrial base and supply chain resiliency of the United States," July 21, 2017, at 82 Fed. Reg. 34,597.

[13] The position of Assistant Secretary of Defense for Industrial Base Policy was created by the 2021 National Defense Authorization Act, §903, at 134 Stat. 3,797.

[14] In this report, we refer to "policy administrators" to describe the individuals working in government to implement marketcrafting policy. This term is meant to sidestep the "regulator" framework, which implies a free-functioning market subject to the intervening actions of government regulators. The work of many "regulators" is often more akin to structuring the very definition of how markets work, who participants can be, and what they might do. The work of market administrators encompasses regulatory, supervisory, and policymaking decisions in the implementation of a particular marketcrafting mission.

[15] The 1994 Riegle-Neal Interstate Banking and Branching Efficiency Act removed many of the restrictions on opening bank branches across state lines. By 1990, 46 states had allowed out-of-state bank holding companies to

Legislators and administrators in this period believed that increasingly fast, integrated, global markets were largely self-regulating. Crises were not impossible; in fact, the institutions of economic governance all had to step in to handle the bankruptcy of Continental Illinois, the Savings and Loan Crisis, and the implosion of a major hedge fund, Long-Term Capital Management. However, the lesson from these crises was simple: The state and the central bank had the policy tools and institutional skills to address them. As a result, rapid advances in financial engineering continued, reaching a feverish pace in the years before the Great Financial Crisis. New non-bank financial institutions, sometimes called "shadow banks," became increasingly prominent sources of short-term credit—and systemic risk.

Many have called this period an era of "deregulation," implying that the state faded from the scene. In reality, the state purposefully chose to craft financial markets to reward speed, complexity, and integration. Administrators at many points stopped to consider what might be gained by structuring markets in a different fashion to reward stability. They considered creating new governance requirements for these markets to enhance their stability, like margin requirements on derivatives and a cap on the size of the mortgage portfolios of Fannie Mae and Freddie Mac, for example.[16] Until the Dodd-Frank reforms in the wake of the 2008 financial crisis, policymakers decided against these actions, thus crafting a market structure that promoted more risk and integration.

In addition to sector-specific policies, marketcrafting can occur in an economy-wide fashion, for instance, in the encouragement of corporate consolidation through the weakening of antitrust law. Beginning in the 1970s, policymakers came to believe that large companies could develop more efficient businesses, enhancing their profitability and lowering the cost to consumers. Government enforcement institutions like the Federal Trade Commission (FTC) and Department of Justice (DoJ) in the 1980s adopted an emergent ideology that mergers and acquisitions could only be blocked if they created an identifiable harm to consumers in the form of price increases. The so-called "consumer welfare" standard significantly narrowed the criteria that government actors used to develop merger guidelines and decide in specific cases whether a merger was appropriate. Supply chain resiliency or market power analyses could no longer factor into decisions. The spectacular and surprising emergence of this new

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acquire in-state banks (Davison 1997). Beginning in the 1980s and accelerating in the 1990s, the Fed relaxed the Depression-era restrictions on commercial banks pursuing investment bank activity. In 1999, the Gramm-Leach-Bliley Act repealed Glass-Steagall's restrictions against the combination of banking, securities, and insurance operations for financial institutions (Furlong 2000).

[16] In many cases, the financial innovations themselves defied easy categorization or definition, creating a "useful" confusion for regulators. As long as people didn't know how to define a financial instrument, they could not know who was responsible for ensuring it was used safely (see Funk and Hirschman 2014).

legal standard was grounded in a broader ideological belief that corporate leaders should have significantly more freedom to merge and consolidate. Globalization enabled and even rewarded size and scale, and American policymakers believed that public policy prioritizing competition should be deemphasized to enhance prosperity.

In pursuit of this goal, the DoJ issued new merger guidelines in 1982, making it significantly easier for previously competitive companies to merge and ushering in an era of rampant consolidation. Meanwhile, in 1984, Congress passed the National Cooperative Research Act, which created an antitrust exemption for companies engaging in cooperative research to produce new products. A decade later, Congress passed several new laws enhancing the rewards to consolidation, including the Telecommunications Act of 1996, the Interstate Banking and Branching Act of 1994, and the repeal of Glass-Steagall in 1999. Policymakers across government came to believe that consolidation was a virtue and adjusted public policy to craft more concentrated markets.

These examples are not meant to be exhaustive. They do, however, highlight three areas in which state actors have actively organized markets to meet certain social and political ends, even when they may have explained their actions as deregulation. The state has been pursuing a strategy of active marketcrafting for decades, even if it has not used the language to describe it.[17]

Today, government has the opportunity to embrace this power and ensure that it is being used to address the most important public policy goals.

III. A PROGRESSIVE MARKETCRAFTING AGENDA

We propose that, in general terms, the goal of progressive economic policy is to promote conditions within which all people can achieve their maximum potential—concretely, by supporting a high level of employment with good jobs and an equitable distribution of wealth and opportunity. Today's economy, however, faces issues such as secular stagnation and persistently diminishing expectations about productive capacity. The mainstream economic view ascribes this largely to natural or politically neutral forces—for example, population decline, decline in the relative price of capital goods, or a rise in global savings rates (Summers 2015). Progressives, in contrast, generally believe that these dynamics arise out of failures of the neoliberal capitalist model and the political and legal configurations that have concentrated power among owners of capital. These have resulted in upward redistribution of wealth—which leads to an excess of savings—as well as a financialization of

[17] For more on this, see Vogel 1996.

the real economy that encourages value extraction over reinvestment and value creation. Secular stagnation is not simply about underinvestment; it is about the complex of factors that make underinvestment chronic and endemic.

From the progressive perspective, then, the problems of the current economy are systemic. The response must be multilayered, addressing not only the symptoms of the dysfunction but also its causes. Specifically, marketcrafting policy of the future should be designed with attention to several interrelated kinds of problems: underinvestment in key sectors; structural rigidities in the economy that make it prone to inflation spikes in the case of adverse supply shocks and/or demand stimulus; and the network of laws, regulations, and norms that cause the current economy to distribute resources and power away from workers and toward capital, promoting value-extraction business models over investment and value-creation models.

It is only by addressing all of these areas that we can ensure that the resources of the economy are used to their fullest extent, and that the fruits of this productivity are distributed in a manner that is not only fair but also capable of sustaining the required level and breadth of economic activity.

In the remainder of this section we offer a framework to facilitate the design of policy programs that can meet this challenge. We propose that an effective, progressive marketcrafting policy program must have three features: a clear articulation of a mission; a sound implementation, coordination, and maintenance strategy; and a robust accountability framework. We present these as three distinct features of a marketcrafting agenda because doing so helps to clarify and focus the kinds of work involved in marketcrafting. But, as we will discuss below, it is also important to recognize that the different aspects of the work are highly interrelated. For example, effective implementation leads to successful outcomes, which bolsters support for the mission. Good accountability mechanisms can function in the same way by helping to build a broad coalition of support, which is essential to the task of maintaining support for the mission over the medium-to-long term. We discuss the three features in detail below.

1. Mission

Policymakers must clearly articulate the goals of the policy and organize political and institutional coalitions to sustain support for it.

The economist Mariana Mazzucato and others have proposed that the state is ideally placed to establish "missions" to harness human potential toward social and economic ends (See, e.g., Mazzucato 2021; Mazzucato et al. 2021; Vogel 2021). Specifically, this entails articulating an important public purpose—such as moving to a carbon-neutral energy system or reshoring manufacturing of strategically important resources—and providing sustained leadership in coordinating the public and private efforts necessary to ensure that the goals are achieved. As Mazzucato explains, although the state is responsible for articulating the goals and vision of the mission, in any liberal capitalist democracy the process for achieving the mission is very much a public-private partnership rather than top-down state planning. In the execution phase, the state's primary role is one of coordination and facilitation, providing a supportive environment for private-sector efforts in two important ways: through economic incentives such as tax credits and financing support, and through the commitment of sustained political and economic support that allows private actors to confidently plan over medium-to-longer term time horizons.[18] Missions are uniquely mobilizing in that they set a clear goal that makes sense to a broad and diverse set of political and economic actors. The clearer the mission, and the more concretely its benchmarks are articulated, the easier it is to evaluate its success.

The CHIPS Act of 2022 provides a good example of mission-oriented policy. The pre-pandemic semiconductor supply environment in the US was insufficiently prepared for shocks as a result of a chronic failure to maintain sufficient production capacity. Volatile prices and boom-and-bust cycles had led firms to resist investing in surplus production capacity even when it would have been profitable to do so under current prices (A. Williams 2022). For the semiconductor sector, the proximate chastening event was the bursting of the tech bubble,[19] in response to which the sector moved away from capital-intensive chip fabrication and toward higher-margin business like chip design and the production of chip-making equipment (Ip 2022). The vast majority of chips are now manufactured in Taiwan and China, and it is Chinese chips in particular that power the electronics of automobiles and other consumer durables (A. Williams 2022, 9). When Chinese chip supply was sharply curtailed by production shutdowns and other supply chain disruptions, the shock was transmitted throughout the US economy as auto price inflation because there was no domestic chip manufacturing capacity to compensate.

The CHIPS Act's explicit intent is to rebuild America's chip manufacturing capacity after decades of decline and loss of market share. Many of the bill's backers, however, have generally articulated their support in terms of a broader mission: countering Chinese

[18] As we will discuss in detail below, it is important for policymakers to put protections in place to ensure that the benefits of the state's support of private-sector activities are equitably distributed and not simply captured by powerful interests.

[19] The erosion of production capacity in the US semiconductor industry has been a long-term process driven in part by a shift in the character of government support. The bursting of the tech bubble was a major catalyst for additional erosion of capacity post-2000 (see Williams and Khan 2021; Ezell 2021).

economic domination. Senator John Cornyn (R-TX), the original sponsor of the Senate legislation, put the point plainly in remarks on the Senate floor in July of 2022:

> This funding will help kick start domestic production of these semiconductors in a way that will prevent a vulnerability of our supply chain since 90 percent of those advanced semiconductors currently come from Asia . . . The way we are going to compete with China and beat them is to out-innovate them, because no country in the world has better human capital, better brains, and a better system to encourage innovation . . . It's important for the United States to be in the game and not be left behind. (Office of US Senator John Cornyn 2022)

Senator Mark Warner (D-VA), the bill's primary Democratic cosponsor, echoed these sentiments in his own floor remarks, clearly foregrounding the mission of countering Chinese power:

> Simply put, ensuring that the United States has an assured supply of critical semiconductors that cannot be held hostage by a hostile power is critically important to our national security . . . With the right investments—like the ones this bill provides—we can unleash the ingenuity of the American people . . . we can reinvigorate American innovation and improve our national security while setting the country up to lead the way on the technologies that will define our future. (Office of US Senator Mark Warner 2022)

The Biden administration has continued to use mission-oriented language in remarks subsequent to the bill's passage, suggesting that the mission-orientation is a persistent and core aspect of the policy rather than simply a legislative tactic to whip votes.[20]

Articulation of the mission is only one aspect of the state's role in mission-building. There is the additional task of creating and sustaining political and economic coalitions in support of the mission. In practical terms, this latter task often involves broadening the scope of the mission—in the sense of enlarging the set of actions and motivations that count as contributing to the mission—while still maintaining the rhetorical and political focus of the core mission. Although the policy program of the CHIPS Act is still in its infancy, the president increasingly links the CHIPS Act's policy program to the broader goal of reinvigorating the

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[20] For example, in remarks on the CHIPS Act at an IBM plant in Poughkeepsie, NY in October 2022, President Biden said, "China is trying to move way ahead of us in manufacturing [chips]. It's no wonder, literally, the Chinese Communist Party actively lobbied against the CHIPS and Science Act . . . in the United States Congress . . . The United States has to lead the world in producing these advanced chips. This law is going to make sure that it will" (The White House 2022f).

American manufacturing labor base.[21] Such political and rhetorical broadening is a key tactic in sustaining coalitions of support for the policy program over the longer term.[22]

By passing the CHIPS Act, legislators acknowledged that no market was going to spontaneously create a robust semiconductor manufacturing industry in America. Instead, policymakers chose to shape the market through the use of public investment, tax incentives, and talent development to meet this shared political and economic mission. The strongest marketcrafting efforts are founded on a broadly shared mission, built on a consensus about shared social and political objectives.

2. Implementation, Coordination, and Maintenance

Policymakers must develop a plan both for the policy's immediate implementation and for the ongoing actions necessary to maintain the conditions for its success.

Defining a mission is necessary but not sufficient to the development of an effective marketcrafting policy. The process of developing and coordinating an implementation framework is where many of the hardest decisions are made. Even once a framework is in place, it must be maintained, adjusted, and updated to ensure that the policy program remains on track to achieve the goals of the mission.

The implementation of a well-designed marketcrafting policy program should include two related but distinct elements. The first—administrative implementation—comprises the tactics and mechanisms specific to the achievement of the policy program's explicit goals. This includes the appropriation of public funds, the plans for the employment of those funds, and the institutional, regulatory, and administrative arrangements required to implement the policy.

We can use the CHIPS Act as an illustration. The Act's explicit goal is to support the revival of chip manufacturing in the US. To achieve this goal, the Act appropriates roughly $56 billion over a five-year period to fund private-sector and nonprofit-sector activity directly and indirectly related to the production of chips in the US. The Act further provides initial

[21] For example, in the same speech, he explained, "[W]e need to make these chips here in America to bring down everyday cost[sic] and create good-paying American jobs. And don't take my word for it. Listen to the leaders of IBM and across the country. They're making decisions right now about where to invest to produce these chips. And they're choosing America because they see we're coming back, we're leading the way . . . [S]ince I came to office, our economy has created 10 million jobs—668 [thousand] manufacturing jobs—proof that 'Made in America' is no longer a slogan, it's a reality. And the CHIPS and Science Act makes historic investment in companies to build advanced manufacturing facilities here in America" (The White House 2022f).
[22] See, e.g., Mazzucato 2021 (77-88) on the importance of "spillovers."

guidance regarding the mechanisms for disbursing those funds. For example, $50 billion is directed explicitly to the CHIPS for America Fund—a fund administered by the Commerce Department's National Institute of Standards and Technology (NIST)—for the purpose of implementing two Commerce Department programs: the semiconductor incentive program, and the research and development and workforce development program (US Senate Committee on Commerce, Science, and Transportation 2022).

The task of designing the mechanisms through which the funds will ultimately be disbursed—e.g., grant, loan, and/or loan guarantee programs—is left to the NIST (US Department of Commerce 2022a; 2022b). The administrative implementation—in this case, decision-making and rulemaking process that will ultimately determine the contours of the disbursement mechanism—is critical to satisfying the mission of the CHIPS Act. The personnel, agencies, and offices involved on an ongoing basis with the disbursement, management, and monitoring of the Act's funds are all critical to successful administrative implementation of the marketcrafting policy.

The second implementation-related element required for well-designed marketcrafting policy—administrative coordination—comprises actions related to the ongoing management of the policy implementation, including, importantly, coordination of activities across agencies and departments. Ambitious policy agendas will generally involve a wide range of activities across multiple agencies and departments, with existing agencies having to take on new tasks and, in some cases, requiring the creation of new institutions.

The CHIPS Act provides a good example of the kinds of coordination challenges involved in major marketcrafting policy programs. While much of the new activity mandated in the Act is centered around the Department of Commerce (DOC), there are also significant new interagency and interdepartmental initiatives that require coordination. To take just three salient examples: Monitoring and enforcement of the Act's prohibitions against funding recipients siting manufacturing in countries that present a national security threat to the US require coordination between the Secretary of Commerce, Secretary of Defense, and Director of National Intelligence; the implementation of the Act's Advanced Manufacturing Investment Credit for qualified semiconductor-related investments will require coordination between DOC and Treasury; and the Act's workforce training and development provisions require coordination between DOC, the Departments of Labor and Energy, and the National Science Foundation.

Meeting the implementation and coordination challenges of ambitious marketcrafting agendas requires high levels of expertise, and administrative and bureaucratic capacity. One of the legacies of the neoliberal era, however, has been a steady erosion of state capacity and a political bias against the idea that the government should be funded at levels that allow it to take on big projects. This has both limited the scope and scale of policy and fostered a common practice of employing outside (generally for-profit) consultants as an ostensibly less expensive alternative to building and maintaining the requisite expertise and capacity within the state. Recent scholarship has shown, however, that this strategy can be enormously wasteful of public funds and ineffective at delivering successful outcomes (see Grabar 2023; Goldwyn et al. 2023; Mazzucato and Collington 2023). Worse still, the habitual outsourcing of policy research and design prevents the state from developing its own institutional knowledge and expertise, and therefore contributes to a cycle of chronic dependency on outside consultants. In light of this, a successful progressive marketcrafting agenda must include measures for building and maintaining (and, therefore, funding) the requisite expertise and capacity within the relevant agencies.

In addition to implementation and coordination concerns, it is also important for progressive marketcrafting policy agendas to include measures to address potential threats to the ongoing viability of the program—i.e., things that might erode support for the program even if it is successful in delivering on its stated objectives. We can call these "preventive maintenance" measures. In a sense, preventative maintenance is just general good practice—thinking ahead and anticipating negative side effects and other obstacles. The particular side effects and obstacles of concern will differ from program to program, but in our contemporary context with elevated levels of inflation, progressives should be mindful of ensuring that new public spending does not introduce further price instability.

There are two reasons to be concerned about inflationary effects. First, higher levels of inflation entail tangible costs to households, in the form of both a higher cost of living and the possibility of eroding real wages. In implementing any policy agenda, policymakers need to consider how such effects can be avoided or at least dampened. This requires understanding the mechanics of any particular inflation risk. The post-COVID inflation has demonstrated that even when increased public spending is a contributor to inflation, this is not always an indication that the spending *per se* was the root cause of the inflation or that the spending program was bad policy. Supply rigidities due to both idiosyncratic factors (like the pandemic and the Russian invasion of Ukraine) and chronic underinvestment have made the US economy especially prone to inflation in the face of exogenous shocks—including demand shocks from increased public spending. From a progressive perspective, the post-COVID inflationary surge shows that additional attention must be given to the alleviation of supply rigidities in the economy to accommodate higher levels of aggregate spending without increased inflation. Progressive marketcrafting agendas that include significant public spending should, where possible, include measures to address supply rigidities that could render the new spending inflationary.

The CHIPS Act provides a helpful example of implementation design that mitigates the inflationary effects of increased public spending. It promises to prevent the kind of semiconductor supply bottleneck that caused automobile prices to spike, making it at once a public investment and inflation-dampening program. CHIPS addresses bottlenecks only in one market, and any potential effects will take many years to materialize. But it is a useful example of how marketcrafting policy can address multiple public policy goals at once.

The second reason to be concerned about inflationary effects is that opponents of progressive policy regularly use the specter of increased inflation to undermine support for progressive policy programs. In the neoliberal era, this tactic—whether deployed in good faith or not—has been quite successful in preemptively limiting the scope and scale of public spending programs. Progressive policymakers should be proactive in addressing this tactic by emphasizing the specific ways in which measures to address supply rigidities in their policy program will prevent bottlenecks that might otherwise lead to increased inflation. The Inflation Reduction Act, for instance, devotes significant funding to the green energy transition, and it could easily have been presented to the public as a climate bill or an economic modernization bill. Congressional Democratic leadership, however, elected to foreground its inflation-reducing potential. Critics have called this a transparent bit of political marketing, but there is real value in associating the IRA's progressive marketcrafting with inflation reduction in the public's mind.

3. Accountability

The policy must be designed to effect a just distribution of economic and political gains and must include mechanisms for ongoing review and revision to hold both political and market actors accountable.

Congress translates political priorities into public policy, but this is only the first step in the process of effectuating those priorities. Legislation sets a framework within which the actual implementation of the policies will unfold, and the people responsible for that implementation often enjoy significant discretion. Government administrators who are responsible for disbursing funds and monitoring and enforcing compliance with funding conditions often have significant discretion in their work. Private-sector actors who use the funding to organize and execute production of the goods and services that are the end products of the policy enjoy discretion as well. Discretion needs to be built into good progressive marketcrafting policy, but it should be paired with "accountability mechanisms"—i.e., measures to ensure that policy implementation proceeds in a manner consistent with the legislative intent or at least in a manner that does not undermine it.

Accountability mechanisms may seem to be just a specific subgroup of policy implementation measures, but they represent a set of concerns that transcend any particular policy program. As many progressive commentators have pointed out, the US economy is far from a level playing field. The result of decades of neoliberal policymaking is a governance structure that systematically favors the interests of capital at the expense of workers, and amplifies and reinforces the exclusion of marginalized communities. By removing checks on the power of dominant groups, neoliberal policy turns the market into yet another institutional vector perpetuating racial and other forms of discrimination. A policy with no accountability mechanisms, then, is not a neutral policy but rather a policy favoring the already powerful and reinforcing the power infrastructure that protects the interests of capital holders. Any progressive marketcrafting policy program—regardless of its explicit, immediate goals—should include accountability mechanisms to ensure that the implementation of the policy promotes progressive principles of economic inclusion and equal opportunity.

In general, progressive policy must be attentive to three kinds of dangers: unjust appropriation of the benefits of the policy by private actors, such as through corporate value extraction strategies; capture of the policy process by private actors; and the exclusion of impacted communities from the full benefits of the policy and/or from decision-making processes about the delivery and distribution of those benefits. The task of designing appropriate accountability mechanisms to address these dangers may differ depending on the underlying policy. For example, for large public investment programs, an executive branch department may have primary implementation responsibility and the key concern may be unjust appropriation of policy benefits by private recipients of public funds. Appropriate accountability mechanisms would seek to insulate the department from pressures from narrow, vested interests. In contrast, for market governance policies, the key implementing institution may be an independent regulatory agency and the policy may require an expanded purview for the agency. An accountability mechanism may be required to defend against challenges to that expanded purview.

The CHIPS Act and Inflation Reduction Act offer examples of the challenges involved in designing effective accountability mechanisms. In response to concerns that CHIPS Act funds could simply be used by chip manufacturers to enrich their shareholders (Office of US Senator Bernie Sanders 2022), lawmakers included a provision prohibiting recipients from using the funds for stock buybacks or dividends.[23] Turning this prohibition into an enforceable rule, however, was not straightforward: Given that money is fungible, it is not possible to trace the funds a company uses for stock buybacks or dividends to a specific

[23] CHIPS and Science Act of 2022, P.L. 117-167, Division A, §102(g)(1)(A)-(B).

source. Ultimately, after seeking stakeholder input, the National Institute of Standards and Technology (NIST) decided to incorporate the prohibition into the grant application process[24]—asking applicants to provide information on their current and near-future (next five years) plans for stock buybacks and dividends, and conditioning grant approval in part on these responses and the applicants' commitments to adhere to the plans.

The CHIPS Act's buyback prohibition is a relatively simple and straightforward case. But accountability mechanisms can be much more open-ended and complex, as in the case of the Inflation Reduction Act's mandates surrounding equity and economic, social, and environmental justice. These mandates are woven throughout the legislation. For example, $15 billion of the $27 billion allocated by the Act to fund greenhouse gas reduction efforts is specifically targeted to "low-income and disadvantaged communities,"[25] and a wide range of tax credits and other incentives require that recipients pay "prevailing wage" rates to workers involved in the associated projects and also participate in apprenticeship programs (US Department of Labor 2022). The Act also explicitly creates and funds an oversight mechanism, appropriating $25 million each for the Government Accountability Office (GAO) and the Office of Management and Budget (OMB) to support their monitoring of the extent to which the disbursement and use of the Act's funds are fulfilling the mandates' requirements.[26] GAO and OMB's oversight task will be quite challenging, as it requires them to determine the proper metrics to track in order to assess whether the Act's implementation is fulfilling the mandates, and also to develop the benchmarks for success. Doing so will require coordinating with all of the agencies engaged in enforcing the mandates.

In addition to the kinds of threats to the equitable distribution of policy benefits already mentioned, progressive policymakers also need to build accountability mechanisms to protect against so-called policy capture, which occurs when the policy implementation process is co-opted to serve the interests of private actors rather than the public good. In general, policy capture occurs when private actors skew rules and institutions to favor a specific group. For example, private actors might take over an advisory body overseeing fund disbursement so that it includes only individuals from the executive and investor class.

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[24] For the CHIPS Program Office's (CPO) general approach to accountability in the implementation of the CHIPS Act, see National Institute of Standards and Technology 2022b. The CPO's public request for information (RFI) to guide its design of the mechanisms for disbursing funds (including accountability provisions) can be found at National Institute of Standards and Technology 2022a.

[25] Inflation Reduction Act of 2022, P.L. 117-169, §60103, at 136 Stat. 2,065.

[26] The GAO is tasked with oversight of the extent to which "the economic, social, and environmental impacts" of the distribution and use of IRA funds "are equitable," and its funding is available through September 30, 2031. OMB is tasked with tracking the "labor, equity, and environmental standards and performance" of the implementation of the IRA, and its funding is available through September 30, 2026. See Inflation Reduction Act of 2022, P.L. 117-169, §70004-70005, at 136 Stat. 2,087.

Similarly, public actors might fill top-level positions at a regulatory body with lobbyists from the regulated industry. While this can occur as a result of simple corruption, it is often the case that the reasons for the capture are not so clear-cut and, therefore, are harder to guard against. For example, the capture can occur as a result of an imbalance of resources—wealthy and powerful industries are often able to bring more resources to bear in writing regulations and legislation than the public agencies explicitly in charge of the policy implementation. And there is also the possibility of so-called ideological capture, where policymakers themselves come to adopt perspectives that favor groups they are meant to oversee.[27]

One important means of mitigating the effects of capture is to cultivate broad stakeholder participation in oversight and monitoring functions. OMB and GAO's oversight of the IRA's equity and justice provisions is a good example. Because the legislation gives OMB and GAO such broad latitude in developing the metrics and standards, capture of the process by a powerful stakeholder group—such as electric vehicle manufacturers—could significantly erode the effectiveness of the mandates by setting the bar for success too low. In recognition of this, progressive groups are now advocating forcefully for meaningful representation of all interested parties—especially disadvantaged and normally marginalized groups—in OMB and GAO's development of these metrics and standards.[28] [29]

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[27] Another form of ideological capture is what James Kwak (2013) has called "cultural capture," where regulators come to adopt the perspective of the regulated because of social or cultural affinities with the latter—for example, when regulators and the regulated come from the same social groups, when they live in the same communities and come to be connected through relationship networks, and/or when the regulated have higher social status and regulators wish to emulate or be associated with them. For a recent empirical exploration of cultural capture of trade policy by tech industry interests, see Li 2023.

[28] These concerns are outlined in a February 15, 2023 letter from a broad consortium of progressive groups to the directors of OMB and GAO, the Senior Advisor to the President for Clean Energy Innovation and Implementation, and the White House National Climate Advisor.

[29] The threat that policy capture and the entrenched power of capital pose to progressive policymaking is well-understood by progressive commentators. The past several years have seen an outpouring of trenchant analysis of the issue and creative proposals for the design of mechanisms to counter the threat. In a 2015 Roosevelt Institute report, *Rewriting the Rules of the American Economy*, Joseph Stiglitz, Nell Abernathy, Adam Hersh, Susan Holmberg, and Mike Konczal identify fulcrum points in the political and economic power structures that reinforce the dominance of capital and provide concrete proposals for counteracting these distortions. In his 2017 work *Democracy Against Domination*, K. Sabeel Rahman argues that the problems of inequality and distributive injustice are, at root, problems of power and domination, and that policy implementation must incorporate avenues for more democratic participation as a countervailing force against entrenched interests. In several works, Lenore Palladino has identified elements of corporate, securities, and tax law that channel power and resources to capital interests, and she argues for the need to erect "guardrails" in policy programs to counteract these tendencies (Palladino 2019; Palladino 2021; Palladino and Estevez 2022). Mariana Mazzucato has argued for the need to allow the government to retain equity and property interests in private-sector activity it funds, in order to prevent policies from perpetuating the pattern of privatization of gains and socialization of losses (Mazzucato 2015; Mazzucato et al. 2021). This and other similar work provides a

Finally, in developing marketcrafting policy, policymakers must be aware of potential tension between accountability mechanisms and other objectives of progressive policy programs. Accountability mechanisms are essential to ensure adherence to broader progressive principles and create a broad coalition of support, but they can also introduce frictions into the production and delivery of goods and services the policy program aims to promote. The costs of such frictions may be acceptable in some cases, but it is important to recognize the potential trade-off, especially in cases where costs are high or benefits of accountability mechanisms are less clear. For instance, as we will discuss below, poorly designed community engagement processes have become significant impediments to addressing the housing shortage.

While it is important to consider any potential negative effects of accountability mechanisms, it is equally important to resist the idea that negative responses to the mechanisms from private actors indicate that the mechanisms are bad policy. Judgment of their merits should be based on a more holistic assessment that takes into account not only direct benefits and costs but also the economic and social context. To the extent that accountability mechanisms are seeking to address systemic problems and would be more effective and/or contribute fewer frictions if they were combined with systemic efforts, this is an additional reason for progressives to pursue systemic reforms promoting economic and social justice alongside policy-specific accountability mechanisms. But even where systemic reforms are not being pursued, accountability mechanisms remain an indispensable part of any progressive marketcrafting agenda and must simply be designed with due attention to potential tensions with other objectives of the policy program.

IV. PROGRESSIVE MARKETCRAFTING AHEAD

In the following two sections, we outline how a marketcrafting agenda might improve housing and energy markets. Each poses unique challenges: A chronic lack of supply in housing has created historically high costs and fueled a homelessness crisis in many of America's cities; energy markets suffer from volatile and often high prices with insufficient resources invested in research and development for cleaner technologies. None of these problems has easy solutions, but legislators can use the tools of public policy to design the markets to work better. We lay out brief summaries of how a marketcrafting approach might apply in these sectors.

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valuable resource to aid progressive policymakers in the essential task of designing effective accountability mechanisms.

1. A Program to Reduce the Cost of Housing

The US has a severe and highly consequential housing problem. Shelter expenditures have risen rapidly in the post-COVID economy, creating a new urgency to address the housing shortage and demonstrating the difficulty of the challenge.

Fundamentally, the problem is undersupply: We do not have enough housing in the right places for the right people to meet demand. According to Freddie Mac, the US had a housing shortage of 3.8 million units in 2020—an increase of 52 percent over the 2018 shortage of 2.5 million (Freddie Mac 2021).[30] Current vacancy rates hit their lowest level in four decades in the second quarter of 2022, with rental vacancies at 5.6 percent and homeowner vacancies at 0.8 percent.[31] And while idiosyncratic demand factors are certainly contributing to the severity of this market mismatch (as we discuss below), the root of the problem lies in long-standing dysfunction in the construction of new housing.

The pre-pandemic housing market bore the scars of years of underinvestment in the wake of the Great Financial Crisis. New housing starts plummeted to the lowest level ever recorded in 2009 and did not begin to recover until 2011. Eventually, general economic recovery and extremely low interest rates spurred new construction, but at levels that were still grossly inadequate relative to housing needs. Even by 2019, new housing starts as a percentage of population were still near the lowest levels ever recorded prior to the financial crisis.[32]

Regulations at the state and local level have made it more difficult to build, raising costs and increasing the time it takes for projects to be completed. Organized constituencies opposed to development weaponize land-use restrictions, zoning regulations, and environmental protection provisions to prevent new development or restrict its size or scope. Restrictive land-use regulations in particular make buildable land scarce; from 2015 to 2020, the supply of new lots declined by almost 40 percent nationwide, increasing the price of new lots as well as the contribution of land costs to home prices (Friedman 2020). In 2012, land costs constituted around 45 percent of the total price of the median-priced home nationwide, and by 2020, that figure had increased to around 55 percent. In some metro areas the problem is

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[30] The authors of this piece arrived at the housing shortage figure by comparing an estimate of the desired level of household formation to actual housing stock. See Freddie Mac 2018b for an explanation of the estimation method for desired household formation.
[31] Source: US Census Bureau Quarterly Residential Vacancies and Homeownership, First Quarter 2023. https://www.census.gov/housing/hvs/files/currenthvspress.pdf. The rental vacancy rate rebounded slightly to 5.8 percent by the end of 2022, but homeowner vacancies remained at 0.8 percent.
[32] Source: US Census Bureau, New Residential Construction and National Population Estimates. https://fred.stlouisfed.org/graph/?g=YXyI.

particularly acute: In 2020, land costs made up 70 percent of the median house price in Seattle and 75 percent in San Francisco (Parrott and Zandi 2021, 4).

Restrictive land-use policy is exacerbated by zoning regulations that prevent efficient use of available land. Over a century of exclusionary policy—motivated in part by racial animus—has resulted in single-family-only zoning on much of the buildable land in US cities and suburbs (Von Hoffman 2021). In some areas, there has been a near total ban on residential density. In 2018, 70 percent of Minneapolis, 75 percent of Los Angeles, 77 percent of Portland, 81 percent of Seattle, and 84 percent of Charlotte were zoned as single-family-only (Badger and Bui 2019).[33] Since the mid-1970s, single-family construction has generally constituted at least two-thirds of new housing permits and starts.[34] The incentives political leaders have built into public policy to encourage single-family zoning means developers are blocked from creating denser housing. Without more efficient use of expensive land, the political and economic outcome is soaring housing costs.

Environmental restrictions can also be weaponized to delay or block development programs. For instance, antidevelopment forces in California often use the state's 1970 California Environmental Quality Act (CEQA) to block development, including the construction of affordable housing, homeless shelters, and housing for students (Los Angeles Times Editorial Board 2023; Fullerton and Muehlegger 2017; Buhl 2019). Noise from rowdy college students is not an environmental harm, as opponents of development at UC Berkeley claimed in one particularly egregious case, but under CEQA it was deemed sufficient grounds for courts to stop the development from going forward (Watanabe 2023). There are, of course, legitimate environmental concerns with any development, but sorting through competing claims needs to be done in a consistently timely and efficient manner that appropriately takes into account the chronic housing shortage in America.

The net effect of these land and housing governance models has been a slow but consistent erosion of overall supply. Housing starts as a share of the population have been on a downward trajectory since the late 1970s, and the erosion has been most acute at the lower-priced end of the market. New construction of entry-level homes (i.e., those smaller than 1,800 square feet) has declined sharply since the late 1970s, from an average of 418,000 units per year and around 30 to 35 percent of total new home construction, to an average of 55,000 units per year and less than 10 percent of new home construction during the 2010s (Freddie Mac 2021). Public housing supply has also eroded—falling by more than 200,000

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[33] California, Oregon, and Minneapolis have recently passed laws to ease single-family zoning restrictions. See below for further discussion.

[34] Source: US Census Bureau, New Residential Construction. https://fred.stlouisfed.org/graph/?g=YXGO.

units since the 1990s as a result of physical deterioration and insufficient funding for maintenance and replacement (Bernstein et al. 2021).

Well before the COVID pandemic, scarcity of entry-level housing led to significant delays in household formation by millennials who were reaching their prime household formation years (Freddie Mac 2018a). Scarcity and high prices in superstar cities caused significant out-migration, both to nearby exurbs and suburbs and to other smaller metro areas (Freddie Mac 2022a). Before the pandemic, these delay and substitution tactics helped to blunt the price effects of the supply dysfunction and prevented housing from contributing significantly to general inflation.[35] But this muting of the inflationary effect came at the price of significant economic distortion, and such distortions can have significant costs. In a much-cited paper, Chang-Tai Hsieh and Enrico Moretti estimated that spatial misallocation of labor as a result of distorted housing markets decreased aggregate US GDP growth by 36 percent between 1964 and 2009 (Hsieh and Moretti 2019).[36]

The COVID-related shocks of the past two years have served as a stress test, revealing the depth and severity of the chronic problems in the housing supply environment. The suite of pandemic relief programs—particularly stimulus payments and eviction and foreclosure forbearance—buoyed demand for housing. Many workers adapted to new work-from-home opportunities by investing in housing, and many Americans reported shifts in their own commitment to investing in the improvement of their private space (Politano 2022; Thompson 2022; Freddie Mac 2022b; Joint Center for Housing Studies 2022a). A recent paper by John Mondragon of the San Francisco Fed and Johannes Wieland of UC San Diego found that over half of the 23.8 percent increase in house prices from December 2019 to November 2021 is accounted for by the shift to remote work alone (Mondragon and Wieland 2022). These idiosyncratic factors combined with preexisting housing demand to send housing prices soaring. Meanwhile, disruptions to supply chains of key materials and construction labor shortages exacerbated the rigidity of housing supply. Supply constraints meant new housing could not be built fast enough, and existing housing could not be improved fast enough to keep up with demand (Tran 2021; Yurkevich 2021).

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[35] The price effects were only blunted for those who were able to successfully avoid or substitute away from unaffordable housing. Those who were not able to do so were simply forced to pay the higher prices. In 2019, 46 percent of those who rented their primary residence spent over 30 percent of their income on rent and utilities, with 24 percent spending over 50 percent. Not surprisingly, the vast majority of these renters were those with very low incomes. 86 percent of the households spending over 50 percent on rent and utilities had incomes of $30,000 or less (Joint Center for Housing Studies 2022b, 3–4).

[36] Other studies have calculated the effects of restrictive land-use policy on current GDP levels. A Federal Reserve Board research paper found that current land-use regulations decrease GDP by 1.4 percent relative to an optimal policy (Bunten 2017). A paper by Edward Glaeser and Joseph Gyourko (2018) found that restrictive land-use policies reduce GDP by at least 2 percent.

Chronic underinvestment has made unaffordability and housing insecurity endemic and has left the housing market susceptible to inflationary spikes. And this chronic underinvestment is rooted in obstacles that are difficult to overcome—primarily, the web of density-averse state and local regulation, the low profitability of affordable housing construction, and the political commitment to rely almost entirely on private construction for housing supply.

This complex set of challenges requires a comprehensive policy response that takes into account the various causes of our housing problem, and that does so at a scale sufficient to generate substantial and persistent improvement. The marketcrafting framework we outlined above can provide guidance in designing such a program for affordable housing.

The Mission: 4 Million New Housing Units by 2030

A mission should be a concrete distillation of what Mariana Mazzucato (2018) refers to as a "grand challenge," which in this case would be the provision of affordable housing to all Americans. The Biden administration's comprehensive Housing Supply Action Plan, announced in May 2022, provides a useful starting point to guide the use of tools available to federal policymakers (The White House 2022d). It suffers, however, from a mission that is too broad: to "ease the burden of housing costs." It does have some specificity—aiming to "close America's housing supply shortfall in 5 years, starting with the creation and preservation of hundreds of thousands of affordable housing units in the next three years"—but an even sharper mission would significantly help in building political support. California Governor Gavin Newsom, for instance, has a goal of creating 2.5 million new homes by 2030, of which 1 million need to be affordable (California Office of the Governor 2022b). The mission for the country as a whole should be on the same ambitious scale: to create 4 million new housing units by 2030 in the places where Americans most need them.

Implementation, Coordination, and Maintenance

Because housing supply in the US is almost entirely a matter of private construction, achieving the mission of creating 4 million new housing units by 2030 will mean overcoming the inadequacy of supply in private markets.

The federal government has significant power through direct action and in partnership with state and local governments to craft housing markets to encourage development. A marketcrafting housing agenda should begin with a commitment to work with state and local governments to reduce regulatory frictions. The Biden plan's approach has been to incentivize reform by giving preferential treatment in competitive grant-making processes to jurisdictions that have implemented policies supporting housing construction and greater housing density.[37] For example, the Department of Transportation announced in October 2022 that it had approved $44 million in grants to Rochester, MN and three communities in western Colorado to support transportation infrastructure improvements that will support the development of new high-density housing (The White House 2022g). These kinds of incentives currently apply to several billion dollars of grant pools administered by the Department of Transportation and the Department of Commerce's Economic Development Administration, and the Biden administration has proposed similar plans for grant pools controlled by the Department of Housing and Urban Development.

So far, the Biden administration's approach has been "carrots-only"—that is, it primarily aims to increase housing supply through incentives—but achieving the mission of creating 4 million housing units will require more aggressive action. The federal government will need to condition some portion of the roughly $100 billion in annual transportation and housing-related federal aid to states on regulatory reform (Parrott and Zandi 2021, 4-5). Although such conditionality has been part of some recent proposals—such as the Booker-Clyburn Housing, Opportunity, Mobility, and Equity (HOME) Act (Office of Cory Booker 2019)—it has so far not been put into practice given concerns in Congress about appropriate use of federal authority. If federal policymakers are serious about resolving the housing crisis, they will need to use more aggressive tools like these to streamline development.

Easing regulatory frictions clears obstacles to housing supply elasticity, but this is just a first step. Addressing the problem of chronic underinvestment requires directly facilitating production. Crafting more affordable housing markets will mean providing direct public financing to encourage development and ensuring that existing financing provided by private actors is done as aggressively as possible.

The Biden plan attempts to facilitate production mainly through two channels: funding support and supply chain improvements. With respect to funding, most of the actions taken by the administration to date consist of expanding federal financing support of home construction to new housing types and bolstering the support of existing programs. For example, in the Biden plan, the federal agencies under the Federal Housing Finance Agency would begin to support construction financing for new classes of housing, including

[37] The Department of Transportation recently released three funding applications for competitive grant programs totaling almost $6 billion "that reward jurisdictions that have put in place land-use policies to promote density and rural main street revitalization with higher scores in the grant process." And the Economic Development Administration will add language over the coming year to its investment priorities "to encourage economic development projects that enhance density in the vicinity of the development" (The White House 2022d).

manufactured homes and accessory dwelling units (ADUs). The plan also includes the implementation of a new rule that would make it easier for developers to use the Low Income Housing Tax Credit (LIHTC), a program that supports the production of about 100,000 units of affordable housing per year (P. Williams 2022).

These new initiatives have the potential to be helpful, but they also introduce additional administrative complexity into the already complex environment of federal aid. This is not an insignificant challenge. A 2021 study by the University of California Berkeley's Terner Center for Housing Innovation found that the complex and fragmented nature of federal supply-side subsidies drives up costs and makes the policies less effective (Terner Center for Housing Innovation 2021). In recognition of this, the Biden administration has pledged to "harmonize federal requirements across programs as much as possible" and to convene a meeting between the White House, HUD, Treasury, USDA, and state housing agencies "to discuss best practices on the alignment of applications, reviews, and funding" (The White House 2022d).

Accomplishing the mission of creating 4 million new housing units by 2030 will require even more aggressive policy. Through executive action, the president should empower a coordinating task force—with representation from all relevant stakeholders, including marginalized groups—to review laws, rules, and regulations at the federal level to simplify and streamline requirements wherever appropriate. The task force will undoubtedly need to recommend legal changes, which will require congressional action.

More active management of housing supply chains and production processes will also help in meeting the 4 million unit goal. The Biden plan includes measures (included in the Infrastructure Investment and Jobs Act) to shore up domestic lumber supply through improved forest management, as well as tariff reductions on Canadian lumber to facilitate supply from imports. The plan also includes a proposal for significant investments in construction workforce development, but the bill including this provision stalled in the Senate. The plan's innovation initiatives include support for new forms of modular and prefabrication techniques that would enable faster and more cost-effective home construction.

The Biden plan provides a promising foundation, but significant obstacles to the policy program's success remain. Throughout the implementation of its policies, the administration will need to pay special attention to two fundamental challenges in particular: the unavoidably local nature of housing and the ideological concern of some policymakers that such policies are too "interventionist."

The explicit adoption of a marketcrafting framework is helpful in addressing both of these challenges. Regarding the challenge of "interventionism," the marketcrafting perspective emphasizes that markets are not separate entities independent of the state but rather are themselves creations of public policy. This is particularly true of housing markets, which are crafted through myriad local, state, and federal policy decisions, including those regarding zoning and land use, public infrastructure design and development, and housing finance programs, among others. It is precisely because of the prominence of the government in housing that it offers a unique opportunity to illustrate how a progressive marketcrafting approach might deliver better ends.

The use of a marketcrafting frame by federal policymakers can also help give state and local leaders a conceptual framework and language to explain their own actions. As more progressive state leaders begin to recognize and own their power in shaping housing markets, they can begin to implement policies that can help. In California, Governor Newsom's clear goal has helped the legislature take bold and aggressive action on housing. A 2021 law eliminated single-family zoning statewide, and a pair of 2022 laws cleared the way for residential development of commercially zoned land (California Office of the Governor 2021; 2022a). Given the contentiousness of housing policy in California, these laws represent significant victories that provide the potential for real progress in addressing California's housing shortage. It is important that that potential be realized—not only for the welfare of the people of California but also to provide an example for other jurisdictions of a possible way forward.

The federal government can play an important role in helping state and local leaders recognize their power to craft housing markets to boost supply. The Biden plan currently includes a commitment to bring together representatives from state housing agencies with representatives from the White House, HUD, Treasury, and USDA to discuss best practices with respect to aid administration processes. The administration should go further and establish a regular conference of state and municipal housing administrators and relevant federal agency and department representatives, as well as a website to facilitate exchange of research, ideas, and experience among the jurisdictions.[38] Although each jurisdiction has its own particular circumstances, there will also be substantial commonality in the challenges each faces in boosting housing supply. A regular conference and a website could be very helpful in accelerating the development and adoption of best practices.

[38] The administration's efforts on these fronts could build on existing work by participants in the Housing Crisis Research Collaborative, including a recent joint study by UC Berkeley's Terner Center for Housing Innovation and the Urban Institute that has taken the first steps in establishing a nationwide database of state-level pro-housing policies (Manji et al. 2023).

Finally, policymakers should rededicate themselves to imagining how publicly funded, constructed, or managed housing might work. Currently, public housing makes up less than 1 percent of the total housing stock and the number of units is actually shrinking over time due to underfunding of maintenance and replacement (Joint Center for Housing Studies 2022a, 40-41). We have, by now, ample evidence that housing stock supplied by the private sector alone cannot be relied upon to be sufficient either in volume or elasticity, particularly in the provision of affordable housing. In light of this, it is difficult to envision a reliably inflation-resistant housing sector without some amount of enhancement of the public component of the housing stock. The past few years have seen a surge of new thinking on public and social housing by progressive researchers. For example, the Center on Budget and Policy Priorities and the Urban Institute's joint project on the Future of Public Housing undertook a multi-year research initiative beginning in 2019, which included engagement with multiple stakeholder groups involved in affordable housing. Their 2021 report outlines nine recommendations to preserve and improve the existing public housing stock and ensure that it serves the communities that need it most (Fischer et al. 2021). And the People's Policy Project and the Urban Democracy Lab at NYU's Gallatin School have offered plans for social housing alternatives (Gowan and Cooper 2018; Baiocchi and Carlson 2020). Progressive policymakers should use this and other related research to formulate a progressive position on how public and social housing can be part of a larger progressive marketcrafting program to address the housing crisis.

Accountability

The housing shortage is two problems in one—a shortage of housing in general, and a shortage of affordable (i.e., below-market-rate) housing. The shortage of affordable housing is acute, and ideally we would target it by instituting policies to expand construction of below-market-rate housing. But affordable housing policies are costly and complicated in the current environment, as they are bedeviled by two problems at once: the general problem of the impediments to developing *any* new housing in many areas, and the specific problem facing the federal government of designing, funding, and implementing a system that provides sufficient incentives without introducing so much additional administrative burden and complexity that the program becomes ineffective.

In light of these difficulties, some housing advocates have argued that it would be best for the government to focus its efforts mostly on just promoting *any* construction, while removing as many of the existing impediments to construction as possible, including those that might arise from accountability mechanisms (e.g., requirements for below-market-rate development). To the extent that increasing the total supply of housing reduces housing prices *generally*, this approach would result in some alleviation of both the general housing shortage and the affordable housing shortage. But progressives are right to be concerned about a strategy that depends upon generalized gains finding their way to marginalized communities—especially in the case of housing markets, which historically have been the site of egregious discrimination against such communities.

Instituting a proper set of accountability mechanisms for the housing mission, then, requires careful attention to the trade-offs associated with any given mechanism. This applies both to the consideration of new mechanisms and to the reassessment of existing mechanisms. Among existing mechanisms, environmental standards and public participation requirements in housing development approval processes, in particular, are in need of reform. Due consideration of environmental impacts and the need for all communities to have a voice in policies that affect them are unquestionably important and worthy commitments. But the mechanisms designed to protect them in housing policy processes have been weaponized in ways that can make necessary housing development nearly impossible while also ceasing to truly serve the interests of environmental and social justice.

The California Environmental Quality Act (CEQA), which we touched on above, has been a significant impediment to housing development in California, and is often deployed for narrow NIMBY purposes rather than authentic environmental quality concerns. Groups across the political spectrum, including left-leaning housing policy organizations such as the San Francisco Bay Area Planning and Urban Research Association (SPUR) and California YIMBY, have expressed frustration with CEQA's negative effects on homebuilding in California (Tobias 2021; California YIMBY 2023; Lane, Frank, and Elmendorf 2023). Governor Newsom has declared the CEQA process "broken," and has vowed to work with the state legislature to change the law as necessary to allow the state to better address its housing crisis (California Office of the Governor 2023).

Public participation requirements in housing development approval processes have also been weaponized by homeowners and neighborhood groups to prevent housing development. Many states—including California, New York, and Massachusetts—require public input into all applications for zoning adjustments, meaning that existing residents effectively hold veto power over any attempt to increase housing density (Lemar 2021, 1091). In addition, because existing residents of a community will generally benefit from restrictions on density in their neighborhoods, downzoning is more likely to receive approval than upzoning—especially as the benefits of upzoning are more nebulous and widely diffused, making it difficult to assemble an effective counter-coalition (Hills and Schleicher 2011).

Addressing these impediments to housing development will require state and local lawmakers to reform their planning and zoning processes. For example, to address the issue of easily exploited veto power in development reviews, Anika Singh Lemar of Yale Law School has proposed moving the public input channel primarily into the planning and zoning process, and limiting its role in the review of individual developments. This will work best, she argues, if planning and zoning commissions are given clear guidelines about the municipality's overall objectives and the way in which different kinds of evidence should be considered in coming to decisions. If public input is appropriately and justly considered at the planning and zoning stage, it will not be as necessary—or relevant—to consider it in each individual case (see Lemar 2021, section IV).

To overcome the bias against upzoning and toward downzoning, Roderick Hills of NYU Law School and David Schleicher of Yale Law School have proposed the idea of a "zoning budget" that would commit jurisdictions to offset downzoning with a commensurate or greater amount of upzoning. In their plan, a citywide planning commission would set a housing target for the city as a whole, and, until the target is met, require that any request for downzoning be bundled with upzoning plans (in any community in the city) sufficient to exceed the housing loss represented by the downzonings, with the required ratio of upzoning to downzoning set by the planning commission. Once the housing target is met, the ratio would revert to 1. Crucially, the legislative bodies tasked with reviewing and voting on zoning and land use would be required to issue an up or down vote on the entire package. As a result, Hills and Schleicher argue, the procedure would force those who wish to obstruct increasing density in their own communities to become partners in the project of increasing overall density in the wider community (Hills and Schleicher 2011, section III.A.2). Of course, there is a danger that such a procedure, if not properly designed, could reinforce and amplify power imbalances—for example through the disproportionate targeting of marginalized communities for upzoning offsets to the downzoning plans of more affluent communities. For any municipality considering such a plan, then, it would be important to ensure that all communities have equal bargaining power to advocate for agreements that are in the interests of their residents.

Enacting procedural changes such as these will, in many cases, require overcoming entrenched opposition by groups who benefit from the status quo. The federal government should actively promote reform efforts and offer support to states and municipalities that undertake them. Prospectively, the government should develop guidance on best practices for zoning and land-use reform processes to aid states in avoiding adopting policies that unduly restrict increasing housing density.

In general, policymakers should proceed cautiously in considering attaching accountability mechanisms to housing development-related policies. It may be possible to introduce them in a manner that does not create universal veto points, as CEQA and the public participation mandates discussed above do. In 2022, California passed two groundbreaking housing reform bills that attempted to balance the urgent need for new housing with economic and social justice concerns (California Office of the Governor 2022a; Association of Bay Area Governments 2023). The bills allowed developers to apply to build residential units on commercially zoned land, with various conditions attached. One of the bills (Assembly Bill 2011) waives the requirement of CEQA review but requires that the development include some amount of below-market-rate housing, and also requires that workers be paid at prevailing wage rates. The other bill (Senate Bill 6) does not waive CEQA review and requires that union labor be used, but does not require any below-market-rate units. Whether or not these bills have struck the correct balance remains to be seen.[39] But their design demonstrates careful consideration of the relevant trade-offs and, as such, they are helpful as a potential model for future policy programs.

One notable area where additional accountability mechanisms may be desirable is that of addressing racial inequities in access to government-created housing market resources. Given the history of discriminatory policies and practices in housing that have unjustly burdened many minority communities—particularly the African American community—it is important for the government to take steps to ensure that historically marginalized and under-resourced groups and jurisdictions are able to take full advantage of any federal housing programs. Two recent actions by the Biden administration offer examples of helpful mechanisms. The Inter-Agency Task Force on Property Appraisal and Valuation Equity (PAVE) is an initiative, co-chaired by the Secretary of Housing and Urban Development, tasked with addressing historic and ongoing discrimination in property appraisals. The PAVE Action Plan directs the relevant agencies to institute reforms in the manner in which home appraisals are conducted and to include antidiscrimination quality control standards in federal mortgage valuation models (The White House 2022c). The Department of Transportation's recently announced Thriving Communities program provides administrative and financial support to under-resourced communities to help them navigate the maze of federal programs supporting housing and housing-related investments (e.g., transportation infrastructure). Both of these programs help to ensure that the benefits of federal housing programs are distributed equitably without presenting any additional impediments or frictions to the housing production process.

[39] The progressive California housing policy groups SPUR and California YIMBY expressed strong support for Assembly Bill 2011, as did UC Berkeley's Terner Center for Housing Innovation. See Lane 2022; California YIMBY 2022; Wiley 2022.

2. A Program to Improve the Sustainability and Stability of Energy Markets

In order to build a sustainable future, the US must transform its energy production landscape. The scale of our challenge cannot be overstated. The world is already past the point where all negative effects of greenhouse gas emissions can be avoided. Just to remain in a non-catastrophic range, we need to achieve net-zero greenhouse gas emissions by 2050. Such a huge and rapid transformation will require not only an enormous commitment of resources but also coordination of effort within and across sectors and a sustained commitment to these goals.

How should we approach this challenge? One option would be to put our faith in the power of markets and the profit motive, trusting that private actors so-motivated are our best hope for an innovative and effective solution to the problem. Even "free-market" advocates, however, recognize that energy markets are rife with externalities—most notably, negative externalities of fossil fuel production and positive externalities from renewable energy production—that lead private actors to arrive at socially inefficient outcomes. This alone suggests a clear role for the state as a corrector of market failure.

But there is a broader and more important reason why the state must be actively involved in the green energy transition: The objective is a social imperative completely independent of the question of the profitability of any of its component projects. Achieving the objective will require coordination around clearly defined goals, and a sustained commitment of resources—even if those goals and the commitment of resources to them are not profitable at the scale and over the time frames that may be required by private investors. A minimal, market-correcting role for the state—for example, through subsidy or taxation of externality-producing behaviors—*on its own* is likely to be insufficient because it leaves open the possibility that private actors may simply decline to undertake the required actions at the necessary scale.

The green energy transition is a medium-to-long term project. In the short term, as we make the transition, we will need to continue to operate with the existing fossil fuel energy infrastructure. And although encouraging significant investment in new fossil fuel infrastructure would be at odds with the requirements of the green energy transition, it is nevertheless important to manage the legacy system responsibly and efficiently while we remain dependent on it. In particular, we need to ensure that the system can meet the nation's energy needs at stable cost. This will require maintaining sufficient capacity in legacy energy infrastructure to respond nimbly to changing circumstances alongside a major marketcrafting program to build out the new renewable infrastructure.

Mission: Achieve Net-Zero Greenhouse Gas Emissions by 2050

Our overriding mission is to achieve net-zero emissions by 2050, consistent with the Paris Agreement's effort to keep the increase in global average temperature level below 2 degrees Celsius. This is a foundational goal, and public policy should tilt to the most aggressive implementation of programs to ensure that we do not fall short and exceed the 2-degree threshold. To achieve this mission, the price of non-renewable energy must rise relative to other energy sources. But we should craft public policy to ensure it does so in a controlled fashion, providing an orderly transition and minimizing disruptions for most Americans.

Implementation, Coordination, and Maintenance

The enormous challenge of the green energy transition will require state action to craft energy markets. Specifically, the state must prioritize at least three key public policy changes.

First, the government will need to provide significant direct funding and financing support for the advancement of green energy technology and the construction of physical infrastructure. The Inflation Reduction Act, CHIPS and Science Act, and Infrastructure Investment and Jobs Act have all made significant strides on this front. A study by the Rocky Mountain Institute, an independent climate research center, estimates that these three programs together will contribute around $78 billion per year in green energy-related funding over the next five years (Carey and Shepard 2022). This is a good start, but more public investment will likely be needed.

Second, the government should proactively coordinate the buildout of new energy infrastructure so that it results in robust and resilient supply chains and an efficient energy system. Individual firms have only limited visibility into the myriad interconnections between themselves, their upstream suppliers, and the rest of the global supply complex. A green energy infrastructure built entirely through the private investment decisions of individual firms will be vulnerable to unexpected breakdowns and bottlenecks. The government can help to avoid this outcome by taking an active role in the planning, coordination, and execution of the infrastructure buildout.

The Department of Energy's recently announced "Building a Better Grid Initiative"—a comprehensive plan for upgrading and transforming the nation's electricity grid—provides a good example of a marketcrafting approach to this challenge (US Department of Energy 2022a). The initiative involves DOE participating in shaping the market in a number of ways. DOE will not only be providing grants and loans to lower the cost of infrastructure crucial to transforming the grid but it is also authorized to serve as a market-maker in electricity, a codeveloper of projects alongside private actors, and even an outright owner of projects. In addition, DOE will play a crucial role in coordinating the planning and execution of the grid buildout, including helping to streamline the permitting and approval processes. In addition to these roles, the federal government can also play an important role in generating and publishing data on the state of the relevant global supply chains, and tailoring public funding and financing processes to incentivize firms to take supply chain considerations into account in their investment planning (see Williams and Khan 2021).

Third, in order to promote adequate levels of ongoing private investment in green energy capacity, it will be important for the government to help maintain stable and moderate prices for certain crucial inputs into green energy production and storage processes. Current green energy technology is heavily dependent upon minerals like lithium, cobalt, nickel, and copper. Price shocks in these minerals will translate into shocks in green energy prices. The more that green energy technology becomes integrated into US energy infrastructure, then, the more vulnerable the economy will be to volatility in the prices of these minerals. This is all the more concerning, as currently the vast majority of the mining and processing of these minerals occurs outside the US (Leruth et al. 2022).

The Inflation Reduction Act provides significant incentives for the rapid development of additional US capacity on these fronts, but we cannot depend solely on the private sector responding adequately to these augmentations of the profit incentive. The government will need to play an ongoing coordination and funding role to ensure the development of sufficiently resilient and shock-resistant supply chains for these critical minerals (Bazilian and Brew 2022).[40] To the extent that the government is able to amass a sufficiently large stockpile of any of these minerals, their prices could be moderated through active reserve management policies.[41]

[40] The Infrastructure Investment and Jobs Act (IIJA), for example, includes $3 billion in funding to invest in battery minerals. The Department of Energy has also announced a $140 million demonstration project to recover critical minerals from coal ash and mine waste (The White House 2022b).

[41] Renewable resources will increasingly play a central role in meeting the economy's energy needs, and green energy generally cannot be imported. Even in such a straightforward case, however, building domestic infrastructure need not imply a complete exclusion of foreign sourcing. The extent to which the network of supply chains supporting the domestic infrastructure may be permitted to include foreign suppliers is an open question that should be decided in accordance with the fundamental aims of the overall policy. Treasury Secretary Janet Yellen has advocated for "friend-shoring," a diplomatic effort to spread production responsibility across countries with which the US has deep relationships of trust (Condon et al. 2022). For example, it is likely that, in the short-to-medium term, the manufacture of green energy storage capacity will require the use of at least some key minerals sourced from outside the US. Some amount of onshoring of this capacity may be desirable for the purposes of supply chain security, but any such gains must be weighed against the costs of subsidizing the capacity building and the distribution of those costs. The general point is that onshoring or

Achieving these goals will require extensive new mining activity in the US, and this presents an additional challenge. Mining processes damage the environment in several ways—through the excavation activities themselves, greenhouse gas emissions, the damage done by machinery operating in fragile environments, and the pollution resulting from byproducts of the processing of ores—and the damage can be significant and long-lasting. It is vitally important for the government to play an active role in the siting and planning of new mining activity to ensure that it is done in a just and responsible manner and that communities are adequately protected (see Healy and Baker 2021; Sonter et al. 2020).

Supporting the green energy transition is the overriding and critical mission for the energy sector, but the transition will take time. In the short term, the economy will still be reliant to some extent on fossil fuels, and it is vitally important that we manage this transitional period responsibly. In particular, we need to ensure that energy needs can be met without disruptive inflationary spikes in energy costs.

The marketcrafting solution is to create a stable price band through reserve management: The state maintains a stockpile of the commodity, making purchases when the market price is approaching some floor value and offering units for sale when the price is approaching some ceiling value. As long as the state can bring sufficient volume to bear, it will be able to keep prices within the desired range.[42] This is a tried and tested technique—a version of the grain price management technique employed in China for millennia (Weber 2021, 21-37), as well as the basic model of the Fed's management of the Federal Funds Rate through open market operations (in the now-outdated scarce reserves regime) (Hockett 2022b, 6-7, 19).[43]

In late July 2022, the White House took a step toward enacting this kind of policy in oil markets, announcing that the Department of Energy would propose rulemaking to give it authority to engage in "fixed-price forward purchases of crude oil to replenish the SPR

reshoring productive capacity should not be viewed as an end in itself but rather as a potential means of increasing the economy's inflation-resilience and welfare-generating power.

[42] Recent work by Employ America (Williams, Datta, and Amarnath 2022), Robert Hockett (2022a; 2022b), and Isabella Weber (2021) makes the case for a stabilization policy with respect to economically important commodities and provides a blueprint for carrying it out.

[43] As noted above, the basic reserve-based price-management model can *in principle* be applied to any commodity that the state is able to stockpile in sufficient quantity. Hockett (2022a; 2022b) makes the case for expanding the Fed's liquidity reserve management function to include the maintenance and management of reserves and price stability for a basket of commodities with what he and Saule Omarova have called "systemically important prices" (Hockett and Omarova 2016). Weber (2021) also invokes reserve management strategies as a general tool that may be used for the control of important prices.

[Strategic Petroleum Reserve] and encourage short-term production" (The White House 2022e; US Department of Energy 2022b, esp §626.7, p. 47,658).[44]

Crafting less volatile energy markets will also mean reining in rampant financial speculation. As Hockett (2022b, 14) and Russell (2022, chs. 2, 3) point out, financial speculation significantly amplifies commodity price volatility, at times completely swamping movements from "fundamentals." This rogue volatility will make the successful implementation of reserve-based commodity price moderation strategies more difficult, and it will be important to devise means of addressing it.

As a first step, the Commodity Futures Trading Commission (CFTC) might attempt to find a means of differentiating between pure financial speculation and physical hedging by producers actually engaged in commodity production or usage. The CFTC could then institute limits on positions taken by speculators. A proposal given in congressional testimony by Michael Masters, a hedge fund manager active in commodities trading, suggested that the CFTC set such limit positions in consultation with a panel of physical commodity producers and users. To prevent significant aggregate speculation through a collection of relatively small individual positions, the proposal also suggested prohibiting investment funds that replicate commodity indexes—e.g., commodity index mutual funds and exchange-traded funds (ETFs) (Masters 2008, 13-5).[45]

Accountability

Because of the significant investment required by the state in the green energy transition, it is important that policies include strong accountability mechanisms to ensure that the benefits flowing from public funds are equitably distributed. Policymakers should ensure both that investment funds are not expropriated by private capital through extractive or exploitative corporate strategies, and that clean energy investments are used to benefit all communities, including under-resourced and marginalized ones.

The Inflation Reduction Act includes accountability mechanisms on both these fronts. With respect to extractive corporate strategies, the IRA institutes a 1 percent tax on share buybacks. Unlike the share buyback provisions in the Coronavirus Aid, Relief, and Economic Security (CARES) and CHIPS Acts, the measure in the IRA is not targeted specifically at recipients of federal funding but rather is universal. In that sense, it can be seen as an accountability mechanism pitched at the systemic level rather than a policy-specific one. This is an

[44] The final rule was announced in October 2022.

[45] The CFTC may not have the capacity and tools to tackle the problem of commodity derivatives speculation on its own. It would be helpful for the SEC to pursue additional controls on speculative activity of entities under its jurisdiction.

advantage of the IRA approach, as extractive corporate strategies are themselves a systemic problem. The IRA also includes mechanisms to prevent the extraction of benefits by capital through low-road labor tactics. Specifically, it conditions an array of tax credits on recipients paying prevailing wages and participating in apprenticeship programs. These represent additional costs to the recipients, and so may have the effect of discouraging participation. It will be important for the government to monitor how this trade-off ultimately affects the overall success of the policy program, and to be open to reassessing and adjusting the accountability mechanisms if necessary. Oversight of the IRA's implementation by OMB and GAO (discussed above) should include measures to support this process.

The accountability mechanisms in the IRA dealing with economic and social justice comprise a complex of mandates and the overall oversight and evaluation function sited in OMB and GAO. The IRA contains language dedicating some funding specifically to "low-income and disadvantaged communities," but more generally, the disbursement of funds will be guided by the White House's overarching "Justice40" initiative, which commits the federal government to ensuring that "40 percent of the overall benefits of certain Federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution."[46] If properly designed, OMB and GAO's oversight can provide valuable insight into the implementation of accountability programs like Justice40 and contribute to a broader conversation about best practices for the design and implementation of such programs.

Accountability mechanisms will also be vitally important in navigating the transition period during which the economy will still be reliant on fossil fuels. The government will need to balance the need for reliable, moderately priced energy with the need to ultimately sunset fossil fuel production. This will be especially challenging given the economic and political power of the fossil fuel industry. As discussed above, it will be important for the government to help provide stable prices for fossil fuels during the transition. Its primary mechanism for doing so—active reserve management through spot and futures markets—will also act as an accountability mechanism in that it reduces the ability of actors in private capital markets to benefit from price volatility at the expense of consumers. But the government must also be prepared to act to prevent undue price increases for fossil fuel products such as gasoline, natural gas, and home heating oil. For this purpose, it would be helpful to have a standing body monitoring and publishing data on pricing behavior in the fossil fuel sector, whose

[46] For a general overview of Justice40, see The White House 2022h. Office of Management and Budget (2021) contains detailed implementation guidance for agency and department heads.

work the government could use to identify unjustified price increases and consider remedial action.[47]

More generally, it would be advisable for the government to establish a high-level, multi-stakeholder task force to guide decisions about the direction of the green energy transition and, in particular, the trajectory of the fossil fuel industry. The sunsetting of fossil fuels is an absolute necessity, but it will also be a complex process that will impose significant costs on communities that currently depend on the fossil fuel industry. Managing the transition in a way that is both just and successful will require hard decisions, and it is important that the voices of all affected groups are able to inform those decisions, especially the voices of under-resourced and marginalized people.

There is a large and growing body of work on the just transition away from fossil fuels that a newly formed committee could draw from. One model favored by several studies advocates a two-tiered approach, with Congress creating an independent corporation to oversee a dedicated fund and make disbursements to state and/or local organizations for various purposes associated with the just transition (see, e.g., Haggerty and Gentile 2022; Look et al. 2022; National Academy of Sciences, Engineering, and Medicine 2021). The priorities and direction of the corporation would be set by its board of directors, and so it would be important for Congress to set clear guidelines in the corporate charter regarding the composition of the board, to ensure that all relevant stakeholders are appropriately represented. In addition to research, the committee could also benefit from just transition policy action already taken at the state level. For example, Colorado has established a state Office of Just Transition whose work is directed by a Just Transition Advisory Committee (JTAC) that includes representatives "from coal communities, labor unions, and utilities as well as issue experts and members of the Colorado General Assembly and the Governor's Cabinet." The JTAC worked in consultation with local communities to formulate Colorado's Just Transition Action Plan.[48]

Concerns about the costs to fossil fuel-dependent communities of the sunsetting of fossil fuels is a major source of potential political headwinds to the green energy transition. It is vitally important for the federal government to move quickly to formulate a plan to address

[47] A bill introduced last year by Rep. Jamaal Bowman (D-NY) (Emergency Price Stabilization Act of 2022) proposed creating such a body—the Sub-Task Force on Emergency Price Stabilization—to be housed within the White House Supply Chains Disruption Task Force as part of a broader price control apparatus. Regardless of the fate of the larger bill, a standing body along the lines of the Sub-Task Force is worthy of further consideration.
[48] See the Colorado Office of Just Transition website, the page on the Just Transition Advisory Committee, and the Just Transition Action Plan. New Mexico's Energy Transition Act of 2019 is another example of significant state-level action on the just transition. See New Mexico Office of the Governor 2019.

these concerns. A cabinet-level task force charged with producing such a plan would be appropriate given the importance and urgency of the issue.

V. CONCLUSION

For decades, it has felt to many on the left that we were saddled with a long list of intractable problems. Stubbornly stagnant wages, deindustrialization, and skyrocketing costs of housing, health care, and education topped the list. Policymakers had come to believe that many of these things were the inevitable result of a globalized, technology-enabled, "free-market" economy. Many believed that the best public policy could do was correct "market failures," creating a safety net for the Americans most negatively impacted. The effect of this orientation has been the illusion of a disempowered state left to organize for redistributive policies.

Safety-net economics is now fading, and a new policy approach of marketcrafting is emerging. This shift reaffirms the autonomy and power of policymakers to shape markets toward public ends. It is a move from an ideology that fosters resignation to one of autonomy and direction. It is also a recognition of the power and promise of markets to more equitably deliver prosperity if appropriately structured.

Progressive marketcrafting is an ongoing process of agenda-setting, implementation, coordination, and accountability that requires expertise development and talent retention inside the institutions of government. This work will require policymakers to adopt a new way of thinking about political economy, embracing their power to make markets produce more prosperous and fair outcomes.

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