

# The industrial policy revolution has begun, but another is still needed

Industrial policy and policies to rebalance labor market power are complements, not substitutes

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Three laws passed in 2022—the CHIPs and Science Act, the Infrastructure Investment and Jobs Act (IIJA), and the Inflation Reduction Act (IRA)—are often said to signal that the Biden administration has embraced *industrial policy* as a new economic framework for the United States.

This turn towards industrial policy has been applauded by many on the center left. This applause is merited—the embrace of industrial policy is essential if we are to achieve key national priorities like fighting climate change and building a more robust care economy. The embrace of industrial policy is also a clear rejection of the most doctrinaire versions of the *neoliberal* worldview that guided both parties’ policymaking decisions in recent decades, decisions which led to economic growth that was both anemic and unfair.

But industrial policy *by itself* will not transform the U.S. economy in all the ways that are needed. This will be true no matter how well these policies are implemented. Industrial policy refers to a specific set of policy tools aimed at specific policy targets. It does not include the universe of all things that are “not neoliberalism.” This means that even expansive industrial policy implemented wisely will have quite small effects, for example, on economywide income inequality. To move the dial on inequality, another portfolio of policies is needed that will build workers’ leverage and bargaining power in labor markets.

In this report, we highlight the enormous good that smart, well-implemented industrial policy measures can do—but we also identify what other policy measures are needed to ensure that economic growth is both fast *and* broadly shared.

## SECTIONS

1. Defining industrial policy • 2
2. Why is industrial policy needed? • 3
3. What determines if industrial policy is the right tool to solve a particular market failure? • 4
4. The promise—and the limits—of using industrial policy to solve economic problems • 5
5. But can industrial policy effectively fight inequality if it’s implemented in a progressive way? • 7
6. Industrial policy and efforts to build worker power are not substitutes—but are strong complements • 9
7. Conclusion: We must seize the opportunities recent industrial policy action provides—and also continue the fight for a fairer economy using other tools • 10

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Notes • 11

References • 13

Our key arguments are:

- **The tools of industrial policy are well suited to contribute to solving pressing, large economic challenges** like global climate change or the shortages of affordable, high-quality options in the care economy.
- Industrial policy targets the allocation of resources *between sectors*. This means that **problems that are common across all economic sectors are unlikely to be well-targeted with industrial policy tools**. This is largely true regardless of how wisely (and even opportunistically) industrial policy is implemented.
- **The tools of industrial policy are *not* well suited for a generalized pushback against rising economic inequality**, even if implemented optimally.
  - Smart implementation of industrial policy is needed to avoid private capture of public aid by the well-positioned and prevent increased inequality. But smart implementation is highly unlikely to *improve* economywide inequality trends.
  - The scale of employment in strategic sectors receiving industrial policy support is not large enough to change economywide labor market outcomes in ways that would affect measures of inequality.
- **There are large virtuous complementarities between smart industrial policy and efforts to boost workers' power.**
  - Economically, the living standards of typical workers would improve substantially from both smart industrial policy and efforts to boost workers' power.
  - Politically, using separate policy tools for separate policy targets ensures each policy tool is being used as efficiently as possible and makes further progress on both margins much easier to sustain.

## Defining industrial policy

Discussions around industrial policy often suffer from vagueness, so we offer a crisp definition up front. Industrial policy is the use of a set of specific policy tools—including subsidies, tax incentives, regulations, research and development support, and tariffs—to support particular industries that are strategically important. The goal is to change the *sectoral composition of output* that the economy produces—i.e. incentivize the production of *more* of some goods and services and less of others.

# Why is industrial policy needed?

The obvious question raised by industrial policy advocacy is why some sectors deserve government support to expand. The most common answer is market failures. Two examples of market failures that should be addressed by industrial policy are greenhouse gas (GHG) emissions and the underprovision of care work.

Greenhouse gas emissions (GHG) and their effects on the climate are often called the world's worst market failure. The production of GHG emissions results in unpriced *externalities*—these emissions are overproduced relative to a situation in which their full social cost was accounted for. Externalities are costs from an economic transaction that are borne by parties outside the transaction. So, if I buy electricity from a power utility that uses coal-fired power plants, the utility and I are the direct parties to the transaction. Some of the costs of the transaction fall on me in the form of fees I pay for electricity. But because burning coal to generate electricity results in GHG emissions that do damage to people who are *not* direct parties to the transaction, the costs of the transaction (my electricity bill) are inefficiently low, and so I will consume too much coal-fired electricity.

The obvious solution to unpriced externalities is to price them: Calculate the *social* cost of GHG emissions and add this to the private cost of emissions charged by the coal-fired plant. This type of “carbon tax” would increase the price of fossil-fuel based energy relative to renewable energy, and demand would shift towards renewables.<sup>1</sup> Politically, pricing GHG emissions has been a much harder lift in the U.S. than directly subsidizing renewable energy, but direct subsidies to renewables should provide the same incentives as a carbon tax.<sup>2</sup> The Inflation Reduction Act (IRA) contains numerous direct fiscal subsidies to invest in renewables or energy efficiency, making it a key plank of the new industrial policy in the U.S.

The care sector—both child and elder care—is also often identified as a worthy target of industrial policy support.<sup>3</sup> Again, the argument largely rests on grounds of market failure. In the case of child care, the cost of this care is often frontloaded in the working lives of parents, falling on them when they have lower incomes than they will later in their careers. In a world of perfect capital markets, parents of young children could seamlessly borrow today to meet the costs of child care and pay the loans back when their incomes are higher later in life. But, of course, we do not live in a world with perfect capital markets. A system of public subsidies to parents of young children that is financed by taxes (including on these same parents later in their lives, when they are no longer receiving the subsidies but are earning higher incomes on average) can largely mimic the effects of well-functioning capital markets.<sup>4</sup>

Further, the social benefits of high-quality child care are likely far higher than the strictly private benefits. Children who receive high-quality care in their younger years are more likely to stay in school longer, graduate college, and have higher earnings.<sup>5</sup> They are also less likely to have contact with the criminal justice system or draw on income support and public assistance programs.<sup>6</sup> These “spillover” benefits mean that investments in child care made strictly on the basis of returns that accrue to the parents and children directly

will be inefficiently low.

## What determines if industrial policy is the right tool to solve a particular market failure?

Market failures can be addressed in a variety of ways besides industrial policy. One obvious market failure that has led to huge public efforts in advanced economies is the instability of privately-provided health insurance. Because of a range of well-documented market failures, private markets do not provide affordable access to health insurance (as well as many other kinds of insurance).<sup>7</sup> In most advanced economies, however, the solution to this problem has not been industrial policy tools that aim to shift resources between sectors; instead, it has been public financing or provision of health insurance.

It is also worth noting that some economic problems need to be addressed even if they do not stem strictly from market failures. For example, much of U.S. poverty stems from households having too many members who do not work in paid labor markets. Young children, older people, and those with disabilities that make work nonviable cannot be reasonably expected to earn money through labor markets, yet these groups still need resources to live. Poverty driven by the problem of insufficient workers per household is not a market failure *per se*, and the answer to this problem is not industrial policy that shifts resources across sectors. Instead, it is using welfare state programs to provide incomes, even to nonworkers.

What determines if industrial policy is the right tool to solve a particular market failure? In brief, a market failure merits industrial policy attention if it is mostly about a misallocation of resources across economic sectors.

One admirable advance in recent industrial policy discussions is a more realistic mapping between the *stated* goals of industrial policy efforts and the tools proposed to achieve them. This greater realism does not mean that the *ambition* of industrial policy has been curtailed—addressing the challenge of climate change is very ambitious—but it does mean that the challenges today’s interventions are aimed at are driven by the type of misallocation between sectors that industrial policy’s tools are well-crafted to solve.

Historically, a realistic mapping between the stated goals of industrial policy and the tools wielded has not always been a feature of these debates. For example, in previous decades, calls for industrial policy often implicitly argued that the goal should be to increase the size of the manufacturing sector generally. Yet the policies often put forward were generally far too limited to boost overall manufacturing activity.<sup>8</sup> Because policies were rarely advanced that matched the scale of the stated goal, pessimism about the potential merits of industrial policy developed. Today’s debates are informed by this lesson and have seen a more realistic mapping of policy tools onto specific targets.

Today’s industrial policy targets are pressing and can be addressed by reallocating

resources between economic sectors. Climate change, the care shortage, and the fragility of supply chains are all serious problems worthy of large-scale responses.

## The promise—and the limits—of using industrial policy to solve economic problems

As mentioned above, industrial policy can solve market failures that occur because the allocation of resources across sectors is suboptimal. These problems are often enormous, so industrial policy can do huge good.

Almost by definition, industrial policy has much less reach to solve problems that recur commonly *across all sectors*. These problems are often enormous, and independent policies outside of the industrial policy toolkit must be used as well.<sup>9</sup>

### Where industrial policy can deliver the goods

In this section, we highlight how the tools of industrial policy can help meet climate and care challenges, and we sketch out how success in using industrial policy to address these challenges would likely show up in economic statistics.

#### Addressing the climate crisis

Climate change is the single largest threat to future prosperity in the United States and globally, so the benefits of effective policy to mitigate climate change are enormous. Further, the entire problem driving global climate change is a *misallocation of resources across sectors*: too much production of fossil-fuel energy sources, too little production of renewable energy, and too few investments in efficiency.<sup>10</sup> This misallocation is the result of market failures that industrial policy tools (again, like the subsidies in the Inflation Reduction Act [IRA]) can help correct.

#### Strengthening the care economy

Similarly, there is a clear shortage of care work in the United States relative to the underlying social need. In the case of child care, because parents' incomes are low when they have young children, the pressing social need for high-quality child care does not translate into effective demand for it in markets. Besides low parental resources, there is the additional issue that the full value of effective child care is not captured only by the parents and kids using it—there are spillover benefits to society overall. Constrained parental resources and the wedge between private and social benefits keep resources from flowing into the care sector to allow sufficient capacity to be made available to families that need it.

Recent proposals to build up the care sector in the U.S. economy rest on public subsidies to make the care affordable. This would see resources flow towards the care sector and more output (and employment) centered there.

Industrial policy measures that move resources across sectors can help mitigate climate change and boost work in care sectors; in turn, these interventions would result in higher rates of economic growth and consumption. The magnitude of the impact of these interventions on future growth and improved living standards would be very large.<sup>11</sup> In this sense, industrial policy tools provide powerful levers to make the economy stronger.

## Strengthening supply chains

Another big plank of the current industrial policy push is strengthening supply chains to avoid crises like those that kicked off the inflation of 2021 and 2022. A range of stressors—mostly related to the pandemic but also due to idiosyncratic events like a fire at a key semiconductor factory—led to a collapse in the supply of inputs for many goods in 2021 and early 2022. These input bottlenecks, combined with changing allocation of consumer demand as a result of the pandemic, caused a large spike in inflation.<sup>12</sup>

This episode laid bare the fragility of many modern supply-chains. Private actors who make decisions about the composition of these supply-chains are driven by considerations of their own profits. If it is more profitable for them to spread out input production across many locations, they will do that. Even if they properly assess the risk to their own profits of potential disruption stemming from the long and fragile supply-chains they have created, they likely do not assess (or care about) the wider social costs of supply-chain breakdowns. In a sense, the risks posed by excessively fragile supply chains are an externality—a cost not fully factored in by any market participant.<sup>13</sup>

The CHIPS and Science Act is aimed at shoring up the most obvious input disruption that occurred during the pandemic—the shortage of semiconductor chips. The bill provides subsidies for domestic production with the hope that the 2021–2022 bottlenecks in that sector can be avoided in the future, even in the face of potential geopolitical turmoil. The future effect of these interventions will be a bit harder to assess than efforts in the climate and care spaces. Very few people claim that these efforts should boost average growth; instead, the hope is that disruptions will be reduced and growth will be less variable. This would be an important benefit if borne out, though it would be harder to see clearly in macroeconomic aggregates.

## Where other policies are needed—reining in inequality

The persistent rise in income inequality is one of the largest problems that has plagued the U.S. economy in recent decades. For example, the share of market income claimed by the top 1% of households essentially doubled between 1979 and recent business cycle peaks like that in 2019.<sup>14</sup>

This rise in overall income inequality has been driven largely by developments in the labor market and, more specifically, by the failure of wages for the vast majority of workers to rise in line with growth in economywide productivity.<sup>15</sup> Productivity is the average amount of income generated in an hour of work in the economy. It represents the long-run ceiling on growth in average living standards. If productivity is rising faster than hourly wages for the vast majority of workers, this means that income is showing up in places besides these workers' paychecks. These other places that have seen outsized income growth include the wages and salaries of corporate managers, executives, and other highly paid professionals (like doctors), as well as in higher profits and business income and housing rents.

Reining in—or even reversing—the rise in inequality will hence require boosting the leverage and bargaining power of typical workers in the labor market. This rebalancing of labor market power will require a host of different policies—and most of them have little to do with “industrial policy” per se. Three key policies to rebalance labor market power include: the maintenance of high-pressure labor markets with very low unemployment;<sup>16</sup> the restoration of the effective right to unionize and bargain collectively;<sup>17</sup> and the strengthening of key labor standards, like raising the value of the federal minimum wage.<sup>18</sup>

None of these policies implicate the allocation of resources across sectors. Instead, they aim to boost labor's bargaining power *in every sector*. Because these policies are neutral about the sectoral distribution of resources, they do not fall under the rubric of industrial policy.<sup>19</sup> But these policies—and others that boost the bargaining power of typical workers across many or all sectors—are a necessary condition to begin reversing trends in inequality.

The clearest reason why interventions outside of the industrial policy toolkit are needed to address economywide trends in inequality is that the sectors dubbed worthy of strategic boosting from industrial policy do not employ enough workers to make meaningful changes in aggregate wage trends. Most workers in the U.S. will spend most of their working lives in sectors that are not “strategic” in the sense of receiving industrial policy aid. Yet these workers obviously deserve decent pay and working conditions as well. The restaurant sector, for example, is highly unlikely to successfully lobby for long-run subsidies or other industrial policy aid. Still, the sector employs millions of workers, and policy efforts that increase pay in that sector will do enormous good for human welfare.

Additionally, even workers in strategic sectors that receive industrial policy support will not necessarily see substantially higher wages due to this support. In competitive labor markets, workers in sectors whose output is boosted by industrial policy aid would not receive *any* bump due to this increased demand because workers in nonstrategic sectors could easily replace incumbents, which would keep wages in check. In the less-than-competitive labor markets of the real world, workers in strategic sectors might receive some spillover wage effect of industrial policy aid, but it will still be muted.

## But can industrial policy effectively



# fight inequality if it's implemented in a progressive way?

The limits of traditional industrial policy tools in boosting economywide wages are well-recognized. This recognition often leads to calls to implement industrial policy with complementary policies to make headway on boosting workers' bargaining power. For example, in initial versions of the subsidy for electric vehicles (EVs) that ended up in the IRA, the subsidy was larger for EVs made with unionized labor in the United States. In many provisions in both the IJJA and the CHIPS and Science Act, state governments can allow project labor agreements (PLAs) that set wage standards.

Tying industrial policy aid to mandates to improve job quality makes sense. This linkage between industrial policy and labor standards has a rich and successful history in the United States. Yet even the most ambitious and progressive implementation frameworks for industrial policy will not move the needle that much in terms of reducing inequality economywide.

The reason is again the small number of workers who will have their working conditions tied to receipt of industrial policy aid. For example, early child care workers and home health care workers combined total under 3 million workers in the United States. Say that ambitious industrial policy efforts swelled this number to 3 million and included wage standards that led to annual wage gains of \$10,000 per worker on average. The boost to the wage bill of the bottom 80% of the workforce (the group whose hourly pay has de-linked from aggregate growth) would be roughly 0.5%. In short, these gains would be most welcome for those workers receiving them, but they would not fundamentally change the mammoth rise in inequality that has characterized recent decades.

Further, these complementary policies accompanying industrial policy implementation will often hold otherwise malign wage effects constant. For example, wages for jobs in fossil fuel extraction and staffing fossil fuel burning utilities tend to be relatively high paid. This is overwhelmingly because unions were able to gain a foothold in these sectors in earlier historical periods when business and government were more supportive of (or at least less hostile towards) collective bargaining. But, because of outright hostility toward unions beginning in the late 1970s, fewer and fewer jobs in the U.S. economy are unionized, and more and more workers have been denied the benefits of collective bargaining. This means that as industrial policy efforts aimed at hastening the needed green transition are brought online, it is highly likely that the new jobs supported by industrial policy would—all else equal—be nonunionized and pay substantially less than the jobs that are lost as we shift from fossil fuel to renewable energy. If implementation policies associated with industrial policy support could neutralize this otherwise negative wage effect, it would be a huge policy victory. But further progress would still be needed to boost wage growth going forward.

One illustration of why progressive implementation of industrial policy that kept its distributional effects even neutral should be seen as a win is the sector that has arguably been the recipient of the most extensive industrial policy support throughout U.S. history:

finance. Between deposit insurance, the day-to-day liquidity provisions of the Federal Reserve (like the discount window that provides overnight reserves at the Fed), and the regular occurrences of extraordinary support provided in financial crises, the financial sector is obviously far larger in capitalist economies than it would be without this public support. This public support of the financial sector is warranted—finance provides needed services to the rest of the economy, and these necessary services would not be provided at this scale without public backing. But this public support also justifies the regulatory and supervisory framework surrounding the financial sector. The history of finance in the United States is one of accepting public support (especially during bad times for finance) while constantly trying to escape regulation and supervision that constrains profits during good times. The period from the late 1970s to 2007 saw regulation and supervision atrophy. This resulted in exploding profits and incomes in the financial sector with very little obvious benefit to the rest of the economy and the spectacular crash of 2008 that demanded even more public support for the sector. In short, the industrial policy support the financial sector has received is a case study for how complementary policies (regulation and supervision in this case) are needed to ensure public support for a specific sector is not siphoned off into the incomes of economic players with substantial market power.

Ensuring progressive implementation of industrial policy efforts is crucial. But industrial policy cannot be relied upon to do jobs it is not built for—including the reduction of inequality throughout the economy.

## Industrial policy and efforts to build worker power are not substitutes—but are strong complements

Different policy targets require different policy tools. The tools of industrial policy and the tools of an agenda to build workers' power target different problems in the U.S. economy. Both sets of tools are needed, and they are poor substitutes for each other.

Though they are poor substitutes for each other, industrial policy and efforts to build workers' power are *strong complements*.

At the most general level, to the degree that industrial policy promotes faster growth in average living standards and efforts to build workers' power increase the equitable distribution of this growth, the two sets of policies combine to deliver far better growth for low- and moderate-income families. The shuddering slowdown in income growth for middle-income families that began around 1979 in the U.S. was driven in part by falling average growth rates and in part by a rise in inequality that saw middle-income families fall behind even the slower average growth.<sup>20</sup>

One key complementarity concerns the call for high-pressure labor markets with low unemployment to boost workers' power and the need to move resources across sectors

to achieve industrial policy goals. Put simply, workers (the most important resource) are far more willing to move across sectors during periods of high growth rather than during periods of slow growth.<sup>21</sup> Hence, industrial policy efforts would benefit strongly from a generalized tight labor market.

Politically, there are also potential complementarities. Currently, there is debate about the implementation of the Biden industrial policy packages. Some have argued that there are too many strings attached in the implementation, particularly in the form of labor standards. As we noted before, much of the driving force behind including strong labor standards as part of industrial policy implementation is the generalized erosion of workers' rights and bargaining power across the economy. For example, if workers shifting from fossil fuel extraction and utilities' sectors into renewable energy generation were as likely to find high-paying unionized jobs in the new sector as the old, many of these implementation details would be unnecessary.

Alternatively, think of the (stripped out) higher subsidy for EVs made with union labor that was included in earlier versions of what became the IRA. This subsidy was only necessary because much U.S. auto production has moved to Southern states with so-called "right to work" (RTW) laws that make effective union organizing extremely difficult. Policymakers were concerned that the new jobs associated with the EV production chains would be in RTW states, and workers filling them would not benefit from collective bargaining. If the U.S. had a level playing field for workers looking to organize, regardless of which state a factory was in, adding a special boost to EV subsidies in the initial versions of IRA would not have been necessary.

In short, solving the generalized problem of degraded workers' bargaining power would enable debates about industrial policy to flow much more smoothly. Policymakers could avoid the need to opportunistically solve the generalized problem of degraded workers' bargaining power sector-by-sector in the details of industrial policy legislation and implementation.

## **Conclusion: We must seize the opportunities recent industrial policy action provides—and also continue the fight for a fairer economy using other tools**

In the past year, major headway on key industrial policy challenges has been made, but major headway in rebalancing bargaining power in the labor market for typical workers has not.

The current debate over the implementation decisions made around the industrial policy bills passed in 2023 has been frustrating in a number of ways. But perhaps most

frustrating is that the debate encourages people to think that the poles of ambition surrounding economic policy for coming years center entirely around whether industrial policy should be implemented with strong labor protections. That's a fine debate to have, and we think that industrial policy *should* be implemented with strong labor protections. But regardless of how this debate shakes out, the mammoth problem of degraded worker power that has led to our incredibly unequal economy will remain until we address that issue head on. And addressing that issue is not about industrial policy.

## Notes

1. We are using “carbon tax” here very loosely—there are many other policy schemes besides taxes that could also raise the cost of emitting greenhouse gases (issuing tradeable permits that grant the right to emit GHGs is the most well-known alternative system).
2. Because energy derived from fossil fuels and energy derived from clean sources are substitutes, anything that reduces the relative price of clean energy will see demand shift towards these sources. The relative price of clean energy can be reduced by raising the price of energy derived from fossil fuels by pricing GHG emissions, or by directly subsidizing the clean energy sector.
3. No large legislative win has been achieved (yet) in the care sector space, but I consider it important enough economically and salient enough politically to include in discussions of U.S. industrial policy.
4. A long economic literature identifies the many failures keeping private markets from offering affordable, high-quality long-term care and support services. Cutler 1996 provides a comprehensive overview.
5. See, for example, Lynch and Vaygul 2015.
6. Ibid.
7. The two most well-known failures in private insurance markets are *moral hazard* and *adverse selection*. Moral hazard means that insuring against a bad event disincentivizes efforts to avoid the event (so, people drive more carelessly if their auto is insured). Adverse selection is the phenomenon wherein any increase in the price of insurance will drive away the cheapest to insure and will leave the average person remaining in the insurance pool more expensive to cover. In the extreme, this can lead to a “death spiral” in which it is not viable for the insurance market to exist at all. Cutler and Zeckhauser 1998 is an excellent overview of the adverse selection problem.
8. The most common calls were for a mostly *ad hoc* series of trade protection and countervailing subsidies. But because manufacturing is an enormous and heterogenous sector, and because the final output of any given manufacturing sector is highly likely to use many inputs from other manufacturing sectors, industrial policies that boost output in one manufacturing sector are quite likely to depress output or incomes in others. So, for example, trade protection for the steel sector will certainly work to boost output of steel and is a reasonable response to dysfunctions in the global steel market that harm U.S. producers, but this trade protection is not an industrial policy that will expand the entire footprint of U.S. manufacturing.

Industrial policy that *would* aid the entire manufacturing sector is possible. The most feasible policy—and the one that is most doable economically—would be ending the chronic overvaluation of the U.S. dollar by actively managing its value relative to key trading partners. Other countries

engage in this type of currency management to boost their manufacturing sectors, and it works when it is tried.

9. There is a rough analogy here to the distinction between the “income” and “product” sides of how we measure economic activity in the United States. The most common measures of overall economic activity calculated by statistical agencies around the world are gross domestic product (GDP) and gross domestic income (GDI). GDP and GDI are constructed to be identical to each other absent small measurement error. GDP is measured by looking at where consumers, businesses, and governments buy final goods and services. So, when a household buys an automobile, the government data agencies note the value of the car purchase as a consumption good and credit it towards GDP. GDI is measured by looking at where the income generated by producing and selling the car ends up. So, when autoworkers receive a paycheck for their work producing cars, their paychecks are noted by government data agencies as wage income and credited towards GDI. Because one person’s cost (the purchase of the car) is other peoples’ incomes (wages for autoworkers and car salesmen and profits for car companies), GDP and GDI should match exactly. Some small measurement errors inevitably keep them slightly different. Industrial policy aims to shift GDP between sectors—influencing what is produced and bought. But the distribution of the income generated by this production and purchase of goods and services is not changed directly by this sectoral shuffling of output.
10. This misallocation is driven by the derived demands for energy generated by fossil fuels versus clean energy. For example, lots of gasoline is demanded because consumers demand cars with internal combustion engines (ICEs). But this demand for autos powered by ICEs is itself a function of the relative cheapness of gas relative to other forms of energy that could (until recently in historical time) power automobiles. Further, lots of the consumer preference for cars with ICEs is simply a legacy of technological lock-in. But whatever the reason derived demand for energy from fossil fuels has historically been higher than that for clean energy, it was higher and hence drove the misallocation of resources.
11. The Stern review on climate change, for example, argues that 2–3% of GDP invested in climate change mitigation could avoid 6–11% of GDP in climate related damages—an extraordinarily high rate of return on public investment. Lynch and Vaygul 2015 document benefit to cost ratios from investment in high-quality universal prekindergarten of over 5—again, an extraordinarily high ratio.
12. See Bivens and Banerjee 2023 on how this inflation was started and sustained in recent years.
13. See Acemoglu 2021 for a good overview of these supply-chain dysfunctions.
14. See Bivens and Banerjee 2022 for documentation of the rise in inequality.
15. See Bivens and Mishel 2021 for evidence of how labor market imbalances led to the large increase in inequality over recent decades.
16. See Bivens and Zipperer 2018 for the importance of sustained high-pressure labor markets.
17. See McNicholas et al. 2019 on the role of employer opposition in driving U.S. deunionization. See Rosenfeld, Denice, and Laird 2016 for evidence on how deunionization has reduced wages for nonunion workers as well.
18. See Cooper, Mokhiber, and Zipperer 2021 for the large effect of an increase in the federal minimum wage to \$15.
19. It is of course true that no policy is ever *completely* neutral across sectors. Tight labor markets, for example, may tend to nudge resources out of sectors with lower profit margins and reliance on

cheap labor. Restaurant employment, for example, tends to shrink slightly as a share of overall employment during periods of very low unemployment.

20. See Bivens 2016.

21. See Chodorow-Reich and Wieland 2020.

## References

Acemoglu, Daron. 2021. “[The Supply Chain Mess](#).” *Project Syndicate*, December 2, 2021.

Banerjee, Asha, and Josh Bivens. 2022. [Inequality’s Drag on Aggregate Demand: The Macroeconomic and Fiscal Effects of Rising Income Shares of the Rich](#). Economic Policy Institute, May 2022.

Banerjee, Asha, and Josh Bivens. 2023. [Lessons from the Inflation of 2021-2022?](#). Economic Policy Institute, May 2022.

Bivens, Josh. 2016. [Progressive Redistribution Without Guilt: Using Policy to Shift Economic Power and Make U.S. Incomes Grow Faster and Fairer](#). Economic Policy Institute, June 2016.

Bivens, Josh, and Lawrence Mishel. 2021. [Identifying the Policy Levers Generating Wage Suppression and Wage Inequality](#). Economic Policy Institute, May 2021.

Bivens, Josh, and Ben Zipperer. 2018. [The Importance of Locking in Full Employment for the Long Haul](#). Economic Policy Institute, August 2018.

Cooper, David, Zane Mokhiber, and Ben Zipperer. 2021. [Raising the Federal Minimum Wage to \\$15 by 2025 Would Lift the Pay of 32 Million Workers](#). Economic Policy Institute, March 2021.

Chodorow-Reich, Gabriel, and Johannes Wieland. 2020. “[Secular Labor Reallocation and Business Cycles](#).” *Journal of Political Economy* 128, no. 6: 2245–2287.

Cutler, David. 1996. “[Why Don’t Markets Insure Long-Term Risk?](#)” Harvard University Working Paper.

Cutler, David, and Richard Zeckhauser. 1998. “[Adverse Selection in Health Insurance](#)” in *Frontiers in Health Policy Research, Volume I*, edited by Alan Garber, 1–32. Cambridge, Mass: MIT Press.

Lynch, Robert, and Kavya Vaghul. 2015. [Benefits and Costs of Investing in Early Childhood Education](#). Washington Center for Equitable Growth, December 2015

McNicholas, Celine, Margaret Poydock, Julia Wolfe, Ben Zipperer, Gordon Lafer, and Lola Loustaunau. 2019. [Unlawful: U.S. Employers Are Charged with Violating Federal Law in 41.5% of All Union Election Campaigns](#). Economic Policy Institute, December 2019.

Rosenfeld, Jake, Patrick Denice, and Jennifer Laird. [2016 Union Decline Lowers Wages of Nonunion Workers](#). Economic Policy Institute, August 2016.

Stern, Nicholas. 2006. [The Economics of Climate Change: The Stern Review](#). Independent review from Her Majesty’s Treasury, United Kingdom, October 2006.