Inflation Reduction Act:
Floor Wax or Dessert Topping?
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Those old enough to have seen *Saturday Night Live* in the 1970s may recall a skit in which a couple argued over whether a new product, Shimmer, was a floor wax or a dessert topping. The dispute was resolved when it was revealed that Shimmer was both; it gave a great shine and tasted delicious. I was reminded of this when thinking about the Inflation Reduction Act of 2022 (IRA). Billed as reducing inflation by increasing corporate taxes and tax enforcement and by holding down prices of medicinal drugs, the IRA is industrial policy on a large scale. Unlike Shimmer, however, I do not think the IRA will do both: hold down inflation and transform America. Rather, I think the IRA is primarily about industrial policy and while I have doubts about the focus on the electrification of everything, I think the IRA will create attractive opportunities for workers without college degrees – one of the motivations for this website.

Summary of the IRA

The IRA combines three disparate elements. Several provisions relate to health care. Most notably, the IRA lowers Medicare expenditures on drugs by requiring drug companies to "negotiate" lower prices for selected drugs and to pay rebates to Medicare on drugs with price increases greater than inflation. The IRA also caps individual Medicare beneficiaries' out-of-pocket costs for drugs and extends existing practice regarding certain subsidies under the Affordable Care Act and rebates given by drug manufacturers to pharmacy benefits managers.[1] The Congressional Budget Office (CBO) estimated that these changes will reduce the federal deficit over the period 2022 through 2031 by almost $170 billion, primarily because of savings on Medicare's drug expenditures.[2]

The second component of the IRA raises business taxes and increases funding for the Internal Revenue Service (IRS). The IRA establishes a corporate alternative minimum tax and imposes an excise tax on stock buybacks. It also limits some noncorporate business losses. Additionally, funding for the IRS is substantially increased. Much of the increase in IRS funding is for enforcement and the CBO expects that tax collections for 2022-2031 will be $180 billion higher than without the IRS funds. However, the guidelines for how the CBO estimates the budgetary effects of legislation do not allow the projected increase in tax revenues from enforcement to be counted. Without these revenues, the legislated tax

[1] Although these provisions continue existing practice, the subsidies were set to expire and a recent rule restricted the rebates. Accordingly, maintaining the status quo changed the Congressional Budget Office's projections of federal spending, raising spending in the case of the subsidies and lowering spending in the case of rebates.

[2] Congressional Budget Office. 2022. Congressional Budget Office Cost Estimate: Estimated Budgetary Effects of Public Law 117-169, to Provide for Reconciliation Pursuant to Title II of S. Con.Res.14. September 7, 2022. www.cbo.gov/system/files/2022-09/PL117-169_9-7-22.pdf

increases minus the IRS funding reduce the deficit by about $270 billion over the ten years 2022-2031.

The third big piece of the IRA focuses on energy.[3] The IRA funds a host of programs intended to encourage the use and production of energy from sources that do not emit carbon and to foster greater energy efficiency overall. Many of these programs take the form of tax credits. There are credits to invest in renewable energy facilities, to produce clean fuels, to sequester carbon, to buy electric vehicles, to manufacture batteries, to use energy more efficiently. There are also a variety of grant programs, usually administered at the departmental level. The CBO estimates that spending on energy and related programs will total close to $170 billion from 2022 to 2031, while revenues are reduced roughly $220 billion, together increasing the deficit by over $380 billion.[4]

Thus, the CBO estimates that the reductions in the deficit from health care related changes (largely savings on Medicare expenditures) and tax increases will exceed the increases arising from energy initiatives by roughly $60 billion. However, the IRA could have a much bigger impact on the economy than this modest deficit reduction suggests.

Generous Tax Credits

A growing number of analysts think that the energy-related provisions of the IRA and particularly the tax credits will be a much more powerful spur to investment than the CBO projected. More tax credits mean less revenue and a larger deficit. More tax credits also mean that more investment is taking place and, presumably, greater reductions in carbon emissions.

The reason for the higher estimates is the recognition that, first, the credits are very generous and, second, the volume of eligible investment is not capped.[5] Analysts expect the response to the incentives to be strong, and any project or expenditure that meets specified criteria will be able to claim the credit.

Consider, for example, the incentives for a developer of wind farms. First, the developer can decide whether to claim a Production Tax Credit (payment per megawatt hour produced) or an Investment Tax Credit (fraction of investment costs) depending upon which is more advantageous. The basic production and investment tax credits (PTC and ITC) are not impressive: the ITC for a wind project is 6 percent. But if certain labor

[3] There are also some smaller programs related to environmental issues other than energy that I am including in this grouping.

[4] In the CBO's analysis, most of the tax credits appear as reductions in revenues, but some (for carbon sequestration, nuclear power, hydrogen and manufacturing) both increase spending and reduce revenues.

[5] A thorough summary of the main provisions, as well as an analysis of macro effects, can be found in Bistline, John, Neil Mehrotra and Catherine Wolfram. 2023. "Economic Implications of the Climate Provisions of the Inflation Reduction Act," *Brookings Papers on Economic Activity,"* BPEA Conference Drafts, March 30-31, 2023. https://www.brookings.edu/wp-content/uploads/2023/03/BPEA_Spring2023_Bistline-et-al_unembargoedUpdated.pdf.

requirements are met – notably paying prevailing wages and using qualified apprentices for a specified fraction of the labor – the credit increases 5-fold to 30 percent. Locating in certain geographies, such as areas disadvantaged by cutbacks in fossil fuel production, and meeting domestic content requirements can bring significant added credits. Credits can be transferred to other parties or in the case of non-profit investors, paid directly; so smaller investors or investors that do not have profits can participate.

For individual taxpayers making personal investments in home solar panels or wind turbines or battery storage, the tax credits are 30 percent of costs. For more energy efficient appliances or renovations, the credits are 30 percent, up to a yearly limit. For example, the credit for new windows is limited to $600 per year; for a heat pump the credit is up to $2,000. For new electric vehicles, the credit is $7,500; but the vehicle must meet domestic content and price criteria and the taxpayer's income cannot exceed a specified level. Used electric vehicles are eligible for tax credits of $4,000.

These incentives seem sufficiently generous and clear-cut to encourage substantial investment. Unlike funds awarded through grants, investors will know in advance whether they are eligible and can expect that if they make the investments, they will receive the credits. In contrast, sponsors of projects seeking grant funds often must incur sizable expenses putting together proposals with no assurance that their projects will be the ones that ultimately receive funding. Additionally, much grant money goes to administrative overhead in the form of developing project criteria, solicitating proposals, seeking community input, and eventually evaluating and then monitoring projects.

A downside to tax credits is that every developer that was contemplating a potentially eligible investment before the IRA will take steps to make sure that the project does qualify for the credits. Thus, credits will go to projects that would have been done anyway.

Inflation Concerns

In my comments "An Ominous Inflation Outlook" (October 7, 2021) on this website, I expressed concern about long term inflationary pressures arising from the combination of fiscal stimulus, government intervention in the economy and efforts to arrest climate change.[6] These concerns are in no way alleviated by the IRA. Even if electricity prices are lower than they would be in the absence of the IRA, as some economists have estimated,[7] I think we should expect more costly and less reliable energy supplies going forward. We are replacing much of a functioning fossil fuel-based energy system that was developed over more than a century, with intermittent wind- and solar-generated electricity and yet-to-be developed technological breakthroughs in batteries and other types of electricity storage.

The challenge of transmitting electricity from areas with abundant wind and solar power to areas without has not been adequately addressed. Nor has developing a network of charging stations for electric vehicles. Yes, there is funding for both in the Infrastructure

[6] As well as demographic change and central bank policy.
[7] See Bistline et al (2023) referenced in footnote 5.

and Jobs Act (2021). But even before the IRA, the need for these critical links was growing faster than the capacity to deliver.

I do think the tax credits in the IRA, coupled with pressures to curb carbon emissions from all levels of government, will be effective in encouraging investment in renewable sources of electricity and in the manufacture of products, such as solar panels and transmission towers, required by those power sources as well as batteries and other products needed by electric vehicles and other electricity-using transportation or production systems. This will provide a long-lived boost to the construction industry and also to manufacturing.

Not only will demand for construction and manufacturing workers be elevated, but the labor practices encouraged by the IRA are likely to raise costs. To qualify for the higher tax credits, projects must pay prevailing wages and provide jobs for qualified apprentices in registered apprenticeship programs. While large utilities and manufacturers probably meet these requirements already, smaller developers and plant operators and their contractors and subs may not and will have to raise wages and benefits to participate. Moreover, other employers in the same areas will likely respond to the competition by raising their own wages, increasing labor costs more broadly. Domestic content requirements will also raise costs if lower cost imports are replaced by higher cost domestic suppliers.

The move to electrification by renewable sources will increase the demand for minerals.[8] Electric vehicles are much heavier than internal combustion vehicles and require much more in the way of minerals, such as aluminum, copper, nickel and rare earths. In most cases, the United States is heavily dependent on imports to meet current needs. For rare earths, the import share is about 95 percent, with China the leading supplier. Critical components of wind and solar facilities also require minerals currently imported from other countries. With much of the developed world, as well as China, joining the United States in pursuit of electrification through renewables, demand for these minerals will increase much faster than supply. The United States has large resources of some of these crucial minerals, but opposition to the environmental effects of mining is likely to delay development. Sharply higher and volatile prices seem inevitable.

Looking ahead, I think we can expect an extended period, perhaps decades, of higher cost pressures arising from efforts to electrify all energy use and to power all electricity with renewables. How these costs show up in our statistics, and especially our inflation numbers, will depend heavily on the decisions of the statistical agencies. Is the higher initial cost of an electric vehicle offset by estimated quality improvements? In measuring the price of electricity is any account taken of declines in the reliability of service? Regardless of how - or if – increased costs are measured, I think they will be evident in our daily lives.

Industrial Policy

[8] IEA (International Energy Agency). 2021. *The Role of Critical Minerals in Clean Energy Transitions.* World Energy Outlook Report. May 2021. https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions

I expect the IRA to stimulate considerable construction and manufacturing activity. The jobs created would probably be viewed as "good" jobs even without the IRA's labor requirements; but with these requirements, wages will certainly compare well with most relevant alternatives. The jobs should appeal to workers who are attracted to outdoor and physical work and to making things. Most jobs will probably not require college degrees but are likely to require specialized skills. These skills may be in short supply. Given the prolonged decline in U.S. manufacturing, many skilled workers have left the labor force without passing their knowledge on to today's job-seekers. Employers that have not used apprentices in the past may find the programs promoted by the IRA helpful in finding appropriate workers.

While the IRA addresses one of the concerns that prompted this website, does it help with security and U.S. technological leadership? On the security side, the answer seems no. Regarding technological leadership, I simply do not know.

With respect to security, the rhetoric is positive, but the reality is that the electrification of most energy use and the reliance on renewables for electricity will make our electrical system less reliable and will increase U.S. dependence on imported minerals and other materials that come from countries that are not our friends. They may not be enemies, but they have different values and they will not be easily pushed around. China, in particular, is the source of key components of solar and wind systems and of rare earths needed for electric vehicles and wind turbines. China is also the dominant supplier of graphite, which is used in electric batteries. Global supplies of cobalt, also important for batteries, come primarily from the Democratic Republic of the Congo.

But, you say, the IRA encourages U.S. production of all these things and much of the world's fossil fuel supply comes from countries that are not our friends. Both points are valid. However, developing these production capabilities in the United States or its close allies will take time. In particular, locating alternative mineral sources and securing the necessary permits for mining will be a long and contentious process. And while the United States has been dependent on unfriendly countries for fossil fuels, we have years of experience dealing with them and our own position has grown stronger as we have unlocked the potential of shale gas.

It should also be noted that the IRA and the entire focus on electrification powered by renewables diverts attention from other problems. Preventing future pandemics and maintaining defense capabilities come to mind. While these needs may be less critical in the long span of time, they may be more immediate and more within our power to address at present. A great deal of entrepreneurial, technical and financial talent, as well as public and private money will be directed towards building solar and wind farms, developing lithium and copper mines, promoting the sale of electric vehicles, and solving the problems created by intermittent power supplies and limited storage capacity. Other needed or promising investments will necessarily be sacrificed.

Will this advance U.S. technological leadership? Based on New England's historical experience, I am a strong believer in learning by doing and in the importance of agglomeration economies in developing innovations and in the self-sustaining tendencies of industrial clusters. The IRA will boost manufacturing activity but whether it will generate the interactions that have been so productive in the past remains to be seen. Announcements of planned battery plants show a concentration running north-south from Michigan to Georgia and overlapping the location pattern of existing motor vehicle assembly plants.[9] Will this increased concentration of manufacturing plants foster a concentration of manufacturing know-how, experimentation and innovation that extends beyond industry boundaries?

While I have concerns about the overall goal of an all-electric world powered by renewables, having a clear objective seems more likely to lead to technological breakthroughs than a generalized attempt to be the technological leader in the industries of tomorrow. The latter is too vulnerable to shifting priorities, rent seeking and a lack of accountability for results. In contrast, just as defense spending in years past led to many advances in civilian technologies, we can hope that the efforts to decarbonize the economy will not only succeed in their primary mission but also yield fruit in other areas.

Conclusion

The Inflation Reduction Act is likely to have a significant impact on the U.S. economy. I am doubtful that it will reduce inflation. However, as industrial policy, it is likely to increase construction and manufacturing activity over a lengthy period, creating high quality jobs for workers lacking college degrees. The need for such jobs is one of the reasons for this website. Whether it will also contribute to the nation's security or technological leadership is more questionable.

[9] Office of Energy Efficiency and Renewable Energy. 2023. "FOTW #1271, January 2, 2023: Electric Vehicle Battery Manufacturing Capacity in North America in 2030 is Projected to be Nearly 20 Times Greater than in 2021." https://www.energy.gov/eere/vehicles/articles/fotw-1271-january-2-2023-electric-vehicle-battery-manufacturing-capacity