August 2022

# The Negative Economic Effects of the Inflation Reduction Act of 2022

Casey B. Mulligan

COMMITTEE
TO UNLEASH PROSPERITY

## Executive Summary

The Inflation Reduction Act contains multiple negative incentives on work and investment that will have substantial negative effects on the U.S. economy. These negative effects include 1) the reduced incentives for businesses to invest because of the corporate tax increase and the increased tax rate on certain investments (carried interest); 2) the negative effects on work due to the expansions in health care subsidies under the Affordable Care Act - subsidies not tied to working; 3) the negative impact on new drug development due to new federal price controls on the pharmaceutical industry.

The impact of these policies over the next ten years are as follows:

- Employment will be reduced by 900,000
- Annual GDP will be reduced by 1.2%
- Average Household income will fall by roughly $1,200
- The rate of inflation and the federal budget deficit are both likely to rise, not fall

## Introduction

Democrats in Congress are expected to vote in a matter of days on the more than one half trillion dollar Inflation Reduction Act, which would raise taxes and impose price controls in Medicare. Most of the funds – more than $400 billion over ten years – would be spent on clean energy programs and expanding the Affordable Care Act. The legislation would raise tax rates on investment and work while reducing the productivity of capital and labor. As such, it would contribute to slow or negative economic growth over the next few years. Although advertised as the "Inflation Reduction Act," the IRA legislation would add to inflation by reducing the aggregate supply of goods and services, which would further negatively affect employment and growth effects.

This study addresses the impact of these changes on the national economy – work, investment, output and growth. This study finds that the IRA legislation would reduce production, incomes, and employment per capita primarily by increasing taxation of both labor and business capital. Full-time equivalent employment will be almost one million workers less in the long run (five years or so). The employment effect is largely due to the IRA's expansion of health insurance credits, which raises the average marginal tax rates on labor income by 0.5 percentage points.

The IRA would also increase taxes on corporations by an average of two percentage points. These taxes will reduce long-run wages, GDP per worker, and business capital per worker in the long run.

By decreasing both the number of workers per capita and GDP per worker, respectively, the ACA and corporate-tax elements of the IRA reinforce to significantly reduce GDP per capita and average household incomes. Green energy provisions also reduce real wages and real GDP by shifting resources from high-productivity uses such as fossil-fuel extraction and drug development toward low-productivity green energy segments. This study estimates that, as a result of the IRA, real GDP per capita would be 1 to 2 percent less. In the long run, annual incomes would be reduced by about $1,300 per household, of which more than $1,200 would be reduced income from work. The table below highlights some of the results.

**Table 1. Impact of the "Inflation Reduction Act"**

| Economic outcome | Estimate |
| --- | --- |
| Jobs | -900,000 |
| Real GDP % | -1.2% |
| Employee compensation per household per year | -$1,249 |
| National income per household per year | -$1,338 |

**Adverse Incentives to Work and Invest Under the IRA**

Health insurance tax credits and changes to corporate taxes in the IRA will reduce incentives to work and invest. Both of these are part of my estimates of the IRA's effects.

The 2010 Affordable Care Act (ACA) created what is now the most important credit against the personal income tax: credits for premiums paid for individual health insurance plans sold on the ACA "exchanges." The rules determining eligibility and amounts for the credits create two distinct implicit taxes: one on full-time work and the other on income.[1] The more significant, but often forgotten, is an implicit tax on full-time work created by the ACA rule prohibiting the large majority of full-time workers from receiving credits because of their employment status (regardless of how much or little that job pays). These workers become eligible for the credits if (and because) they cease employment, or switch to part-time employment. The IRA would increase the amount of the credit and to expand eligibility for the credit.

The second implicit tax, which is on income, applies to the comparatively few workers who purchase health insurance on the ACA exchanges: their credit is phased out with their income. The IRA includes various changes in the implicit tax on income, although in both directions with little net effect.

Take Mike Smith, who in 2010 was working long hours in California as a district manager for a national auto parts retailer. Despite wanting to help care for his grandchild and elderly in-laws, Mr. Smith kept the manager job into his 60s because he and his wife wanted the health insurance that came with it. According to National Public Radio, they both retired in 2014 because the ACA gave them heavily subsidized health insurance, for which they would have been ineligible if Mr. Smith had remained in his district manager job.[2] Why spend their own money on health insurance when taxpayers would now pay most for them? In other instances, workers at many schools, restaurants and municipal offices were had their hours cut so that the new law does not recognize them as full-time workers.

This disincentive is analogous to unemployment insurance. Even millionaires can receive unemployment benefits, as long as they stay out of work. With both unemployment insurance and ACA premium credits, employers also have an incentive to terminate positions, or fail to invest in retaining them, because the government stands by to support the worker after the job ends. The ACA disincentive is greater, however, because it not only includes workers laid off from their jobs and looking for a new one, but also persons who quit, retire, or have never worked before. Unlike unemployment programs in many states, ACA premium assistance is paid without demonstrating any job search effort, accepting viable job offers, or passing a drug test.

The IRA would increase these work disincentives. Both of the IRA's changes to the ACA increase the implicit tax on full-time employment by increasing the amount and value of the credit foregone while engaged in full-time work and by increasing the number of full-time workers who would be eligible for the credit by changing their employment status. Altogether, I estimate that IRA's changes to the ACA would add 0.5 percentage points to the person-weighted average marginal tax

rate on work. Note that these averages already include zeros for people whose marginal rates are unaffected by the IRA.

Business income also faces higher taxes under the ACA. As of 2018 the corporate rate is 21 percent of income after various deductions, especially the "depreciation" deductions that recognize a business' cost of acquiring its real capital. The IRA would create an alternative minimum tax (AMT) of 15 percent on a larger portion of the corporation's revenue that ignores many of the ordinary deductions. This would increase the cost of capital for the businesses subject to the new AMT. Because the IRA is expected to increase corporate-tax revenues by about 10 percent (before accounting for effects on investment and GDP), I model this change as a 2.6 percentage point increase in the average marginal tax rate on corporate income and 1.8 percentage point increase in the average marginal tax rate on business income.[3]

The IRA will also change the taxation of "carried interest" and increase the number of personnel at the IRS going after businesses for tax compliance. I estimate that these two combined will add another 0.2 percentage points to the average marginal tax rate on business income. Altogether, IRA increases the average marginal tax rates on business income to 26.4 percent from a baseline of 24.4 percent. The ACA and business-tax estimates are summarized in the first and third columns of Table 2. The second and fourth columns are discussed later in this report.

**Table 2. Tax and productivity parameters**
By major policy category

| Policy category | Labor-income tax rate Additive | Multiplicative | Capital-income tax rate | TFP |
|---|---|---|---|---|
| **Baseline** | **48.0%** | **0** | **24.4%** | **1** |
| Corporate AMT | | | 1.77% | |
| Carried interest | | | 0.08% | |
| Expand IRS | | 0.19% | 0.17% | |
| Rx price controls | | 0.22% | | |
| Repeal rebate rule | | 0.07% | | |
| ACA | 0.5% | | | 0.04% |
| Fossil-fuel taxes | | 0.05% | | |
| Green Energy programs | | | | -0.12% |
| **With IRA** | **48.8%** | **NA** | **26.4%** | **0.999** |

**Universal Health Coverage Comes with Disincentives**

As an empirical matter, significantly higher tax rates on labor income have been a consequence of expanding health insurance coverage to those who will not or cannot purchase on their own. Western European countries were rather explicit about their labor disincentives by financing their public health insurance programs with a medical-benefits payroll tax at about a 7 percent rate.[4] As the U.S. has expanded coverage, its disincentives have been hidden as "implicit" taxes but without escaping the Western European arithmetic. Indeed, unless the U.S. also spends less per person on subsidized plans, more than 7 percentage points would be necessary for universal coverage here. The Council of Economic Advisers found that, with the 2010 Affordable Care Act as part of the baseline, implementing "Medicare for All" in the U.S. would add 14 percentage points to the average marginal tax rate on labor income.[5]

Because an important purpose of President Biden's healthcare agenda is to further expand health insurance coverage,[6] it should be no surprise that it would add a couple of percentage points to the average marginal tax rate on labor income. By that metric, the IRA's health insurance changes are just one twenty-sixth of the way toward "Medicare for All."

**Unintended Consequences of Drug Price Regulation**

Proponents of the IRA maintain that the drug price controls in the bill will reduce Medicare spending by $20 billion annually.[7] Yet, these price controls may discourage medical innovation by reducing the profitability of economically successful drugs, which are targeted by the IRA's controls. If so, the price regulations might have little effect on measured real GDP, which does not include the significant "consumer surplus" from new goods. Alternatively, the Medicare price ceilings may result in higher drug prices outside of Medicare because those "non-federal average prices" are the IRA's basis for determining allowable Medicare charges. This alternative is akin to an excise tax on non-federal drug sales with the revenue earmarked for Medicare. Because excise taxes reduce real after-tax wages, my Table 2 treats the IRA's drug price regulation as a labor tax increase with static revenue of $20 billion annually.[8]

**Effects of Taxes and Productivity on Economic Activity**

I use the economic framework of Fitzgerald, Hassett, Kallen, and Mulligan (2020) to estimate effects of the IRA on aggregate economic activity.[9] Simply put, taxing labor and capital reduces the amounts of labor and capital in the economy and thereby reduce production and incomes. Not only do the owners of labor and capital get a smaller slice of the economic pie, but also the pie

gets smaller.  The purpose of this section is to estimate the magnitude of these effects based on the magnitude of the additional disincentives created by the IRA.

The economic framework begins with each policy category separately, assessing their individual contributions to labor taxation, capital taxation, and total factor productivity.  For the IRA, those contributions are the entries in Table 2 with the policy categories: corporate AMT, changing the taxation of carried interest, expanding the IRS, drug price controls, repeal of the rebate rule, ACA expansions, fossil-fuel taxes, and green-energy programs. The tax and productivity contributions are combined across policy categories to obtain the IRA's overall contribution to labor taxation, capital taxation, and productivity, which is the difference between Table 2's "with IRA" and "Baseline" rows.  Following Fitzgerald, Hassett, Kallen, and Mulligan (2020), economic effects are estimated by simulating the steady state of the neoclassical growth model taking Table 2's three summary policy parameters as inputs.

*The Capital Stock and Wages are Reduced by the Taxation of Capital Income*

Any empirically-grounded estimate of the effects of taxes (or business regulation) must confront the fact that national average after-tax returns on real capital have been fairly constant over long periods of time and across a broad cross section of countries despite large differences in rates of capital taxation.[10]  This is strong evidence that, in the long run, the owners of capital have close substitutes to investment in the businesses of a specific country.  Faced with a high tax rate on their capital income, eventually they reduce investment in the jurisdiction until pre-tax profits are high enough to compensate for the high tax rate.  In effect, workers and consumers eventually pay for capital-income taxes rather than the capital owners who are legally liable for the tax.

Following much of the literature on capital-income taxation, Fitzgerald, Hassett, Kallen, and Mulligan (2020) forecast effects of capital taxes using a version of the neoclassical growth model with a constant rate of time preference.[11]  Capital-income taxation reduces after-tax capital returns in the short run, but not in the long run.[12]  Instead, the long-run burden of the tax falls on labor as the tax reduces business investment and thereby productive opportunities for employment.  That is, capital-income taxation reduces wages in the long run, even more than the amount of the revenue obtained from the tax.[13]

Interestingly, the magnitude of the long-run wage effect of capital taxation can be calculated with just a small bit of arithmetic, even though the neoclassical growth model can be quite complicated for other purposes.  Specifically, the percentage wage decrease is about half of the percentage increase in the (gross) user cost of capital required to keep constant the after-tax return.[14]  Because the IRA reduces capital owner's after-tax share by about 3 percent, and the net after-tax return is about 40 percent of the gross after-tax return, the capital taxation in the IRA alone will reduce real wages about 0.5 percent.[15]  The more precise estimates from the neoclassical growth model are shown in Table 3's second row.

**Table 3.  Macroeconomic effects of the "Inflation Reduction Act"**

| | | Percentage impact on: | |
|---|---|---|---|
| Policy category | Real GDP | Real employee compensation | Full-time equivalent employment |
| ACA expansion only | -0.4% | -0.4% | -0.4% |
| [Expanding eligibility and reducing premium caps] | | | |
| Higher tax rates on business income | -0.5% | -0.5% | -0.1% |
| [Especially Corporate AMT, | | | |
| but also carried interest and IRS expansion] | | | |
| Green energy credits, grants, etc. | -0.2% | -0.2% | 0 |
| **Full Inflation Reduction Act** | **-1.2%** | **-1.2%** | **-0.6%** |

The full act includes drug price controls, more effects of the IRS expansion, and interactions among these policies.

*Implicit Taxes on Work Reduce Employment, and Further Reduce the Capital Stock*

The labor-income taxes in the IRA, which primarily derive from its modification of the ACA, reduce the after-tax share of labor income by about 1.5 percent.[16]  The magnitude of the labor-tax effect on full-time equivalent employment depends primarily on the wage elasticity of labor supply.  I therefore forecast that the IRA would reduce full-time equivalent labor per capita by about 0.6 percent, with further details shown in the appendix.

Capital investment responds to labor supply as well as the capital tax rates noted above.  There is no point for a business to build office or factory space for people who will not be working. Therefore labor-tax parts of the IRA reduce the long-run capital stock by another 0.5 percent, for a total of 2.2 percent.  Because real national income is essentially the difference between real GDP and aggregate capital depreciation, it falls by a lesser percentage (0.9 percent) than real GDP does (1.2 percent).  Table 1 converts these percentages into per-household dollar amounts by using the 2019 levels of these variables and dividing by 123 million households.

*Economic Feedback on Federal Tax Receipts*

The widely discussed revenue effects of the IRA ignore the fact that revenues from payroll, personal income, business income, excise and other taxes vary with the size of the economy.  I estimate that, with 0.9 percent less national income, there would be about $200 billion less revenue over ten years even at the baseline tax rates.  Presumably federal government spending would also

be greater as the slower economy increases participation in safety net programs (both the baseline programs and the ones created and expanded by the IRA).  These are two reasons why the IRA will likely to significantly increase the federal deficit.

## Conclusions

The new taxes in the IRA will affect Americans across the income scale while it discourages work and investment.

Although the legal obligation for the biggest IRA tax may fall on "corporations," it will negatively affect the incomes of all workers across the income scale. The reduction in jobs and output will negatively affect incomes of middle- and lower-income workers as well. National income per household would be about $1,300 less.

The IRA does not "reward" work, but is likely to retard it. The tax credits for health insurance disincentivize work, as we saw with the original Affordable Care Act (ObamaCare).

The IRA will slow the economy—perhaps substantially. The tax components of the IRA increase average marginal tax rates on both labor and capital income. I estimate the long-run result to be about 0.6 percent less full-time equivalent employment (almost one million employees), 2 percent less business capital, and about one percent less real GDP and national income.

**Appendix**

I estimate the long-run economic impact of policy changes by comparing two steady states of (an extended version of) the neoclassical growth model: one with the IRA and the other with the baseline policies. For the purposes of steady-state analysis, this extended neoclassical growth model is a system of one algebraic equation and two differential equations. To simply the presentation, this Appendix holds constant total factor productivity, which is a close approximation to the full Fitzgerald-Hassett-Kallen-Mulligan model used in the main text of this report because Table 2 shows total factor productivity approximately constant.

One of the differential equations by itself yields quantitative conclusions for the effect of capital-income taxation on wages and output per worker. That differential equation equates the marginal rate of substitution in preferences over time (IMRS) to the marginal product of capital net of depreciation and taxes:

$$IMRS = (1 - \tau_k) \left( \frac{\partial}{\partial k} F(k,n) - \delta \right)$$

where $\tau_k$ denotes the marginal tax rate on (net) capital income, $k$ denotes capital, $n$ denotes labor, and $\delta$ denotes the constant rate of capital depreciation. $F$ denotes GDP, which is produced as a homogeneous function of capital and labor. In the steady state, the *IMRS* is merely the constant rate of time preference, which means that any reduction in the after-tax share $(1-\tau_k)$ must increase the net marginal product of capital in the equal and opposite proportion. This means less capital per worker and lower wage rates. Marginal increases in the after-tax share, increase the marginal product of labor according to:

$$d \ln \left[ \frac{\partial}{\partial n} F(k,n) \right] = \frac{1-\alpha}{\alpha} s \, d \ln(1 - \tau_k)$$

where $\alpha$ is the elasticity of production with respect to labor (often taken as labor's share of GDP) and $s$ is the share of the cost of capital in the user cost of capital. Given that the IRA reduces the after-tax share of capital income about 3 percent and pre-tax wages change in proportion to the marginal product of labor, the capital-tax elements of the IRA reduce long-run wages by these percentages times the coefficient shown above, which I assume to be about one-sixth.[17] This is why I predict that the tax components of the IRA would reduce pre-tax wages by about 0.5 percent.

The effect of either type of tax on GDP per FTE workers is proportional to its effect on the marginal product of labor, with factor of proportionality equal to the elasticity of substitution in production. This is why I predict that GDP per FTE worker and capital per FTE worker fall in greater percentages than the number of FTEs does. The effect on the level of GDP is the sum of the effect on GDP per FTE worker and the effect on FTEs.

Predicting quantitative effects on long-run FTEs with the neoclassical growth model requires the two additional equations of the model as well as quantitative assumptions about those equations.

Those equations are the evolution equation for the capital stock and the labor-market equilibrium equation:

$$\dot{k} = F(k,n) - \delta k - c$$

$$(1 - \tau_L)\frac{\partial}{\partial n}F(k,n) = MRS(c,n)$$

where $c$ and $\dot{k}$ denote consumption and the increase in the capital stock, respectively. $\tau_L$ denotes the marginal tax rate on labor income. *MRS* denotes with willingness of households to supply labor to the market, which reflects both a normal income effect through consumption and a substitution effect.

From these equations it follows that higher marginal tax rates on labor reduce the amounts of labor and capital in the long run. The size of these effects is estimated by additionally assuming constant elasticities for the production and *MRS* functions. The elasticity of production to labor ("labor's share") is assumed to be $\alpha = 0.7$. The elasticity of the *MRS* with respect to consumption is assumed to be one, which means an exact cancelation of the income and substitution effects on labor supply from changes in total factor productivity. The Frisch wage elasticity of labor supply is assumed to be $\eta = 0.5$. Up to a scale factor that is common to the IRA and the baseline, the formula for steady state capital is therefore:

$$k_{ss} = \left(\delta + \frac{\rho}{1 - \tau_k}\right)^{-\frac{1}{1+\eta}\frac{1+(1-\alpha)\eta}{\alpha}}\left(\alpha\delta + \frac{\rho}{1 - \tau_k}\right)^{-\frac{\eta}{1+\eta}}(1 - \tau_L)^{\frac{\eta}{1+\eta}}$$

where $\rho$ is the required long-run after-tax rate of return (2.95 percent per year) and the depreciation rate $\delta$ is estimated to be 7.25 percent per year. The percentage impact of the IRA on the capital stock is obtained by evaluating this formula with the IRA tax rates and the baseline tax rates.

Because the first of the neoclassical growth model's three equations provides quantitative estimates of the effect of taxes on the capital-labor ratio, the results for the capital stock immediately translate into results for the amount of labor.

# Notes

[1] Mulligan, Casey B. *Side Effects and Complications: The Economic Consequences of Health-care Reform*. Chicago: University of Chicago Press, 2015.

[2] National Public Radio et al. "Obamacare Enrollees Emboldened to Leave Jobs, Start Businesses." Health News Florida. April 30, 2014. https://health.wusf.usf.edu/post/obamacare-enrollees-emboldened-leave-jobs-start-businesses

[3] This 2.6 percentage points can be understood as an average of zero for corporations not paying AMT and greater than zero for corporations that do pay it. The 1.8 percentage points dilutes the 2.6 percent by also including zeros for noncorporate businesses, which are also unaffected by the new corporate AMT.

[4] Mulligan (2015).

[5] Council of Economic Advisers. *Economic Report of the President*. 2019, p. 423. Note that Medicare for All is not only designed to provide universal coverage, but also to eliminate copayments and private health insurance, which remain in European countries.

[6] https://joebiden.com/healthcare/#

[7] https://www.crfb.org/blogs/whats-inflation-reduction-act

[8] Fossil-fuel taxes are treated as labor taxes for the same reason. I associate another bit of labor taxation with the IRA's repeal of the "rebate rule," which arguably would not obtain any of the Medicare savings because courts will strike that rule down even in the baseline. Table 2's corresponding amount of taxation is taken as half of the rebate rule savings under the theory that the rule has a 50 percent change of being repealed in the baseline too.

[9] Fitzgerald, Timothy, Kevin Hassett, Cody Kallen, and Casey B. Mulligan. "An Analysis of Vice President Biden's Economic Agenda: The Long Run Impacts of Its Regulation, Taxes, and Spending." Hoover Institution, October 2020.

[10] For example, my calculations of after-tax capital-rental rates for the twentieth-century U.S. find rates of about 8 percent per year at the beginning of the century – when corporate and personal income taxes were unconstitutional – and also about 8 percent at the end of the century (Mulligan, Casey B. "Capital, Interest and Aggregate Intertemporal Substitution," NBER working paper no. 9373, December 2002). For cross-country patterns, see Caselli and Feyer, "The Marginal Product of Capital," *Quarterly Journal of Economics*, May 2007.

[11] A recent and similar application of the neoclassical growth model is Barro and Furman, "The Macroeconomic Effects of the 2017 Tax Reform," *Brookings Papers on Economic Activity*, Spring 2018. Jaffe, Minton, Mulligan, and Murphy, *Chicago Price Theory*, Princeton, NJ: Princeton University Press, 2019 has a recent textbook presentation, including extensions of tax-incidence results that include multiple sectors and imperfect competition. See also the appendix of this paper.

[12] If the rate of time preference were increasing in wealth, then capital income taxation would *increase* the after-tax return in the long run (Jaffe, Minton, Mulligan, and Murphy, 2019).

[13] As with many instances of capital-income taxation, the IRA's taxes are not uniform across industries, types of capital, or forms of business organization. In these instances, more of the wage reduction may derive from the (in)efficiency with which capital is deployed rather than reductions in the total amount of investment. For simplicity I limit the effects to the latter. For a well-known analysis of the former, see Ballard, Shoven, and Whalley, "General Equilibrium Computations of the Marginal Welfare Costs of Taxes in the United States." *American Economic Review*, March 1985.

[14] The wage elasticity (cited as ½ in the text) depends only on labor's share of GDP and would be larger if labor's share were smaller. In particular, the elasticity of long-run wages to capital taxation is independent of the elasticity of substitution in production or the wage elasticity of labor supply (Jaffe, Minton, Mulligan and Murphy, 2019, p. 184).

[15] The arithmetic is $0.005 = 0.027*(1/2)*0.40$.

[16] As shown in Table 2, the 1.5 reduction in the after-tax share corresponds to a 0.5 percentage-point increase in the marginal tax rate from ACA expansion plus another 0.3 percentage points from other sections of the IRA. The IRA's ACA expansion has two parts, one of which is exactly as modeled by Fitzgerald, Hassett, Kallen and Mulligan. The other part is the increase in premium credits for families under 400 perecent of the poverty line, which I take as a proportional increase their full-time employment tax rate (Mulligan 2015) with the proportion estimated from Brian Blase "Expanded ACA Subsidies: Exacerbating Health Inflation and Income Inequality", Galen Institute, June 2021.

[17] Furthermore, labor-income taxes have no effect on the long-run marginal product of labor in the neoclassical growth model.