New Macroeconomic Model Shows TCJA Corporate Tax Cuts were Harmful to the Economy in both Aggregate and Distributional Terms

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Under realistic assumptions about market power, corporate income taxes can correct the misallocation of capital created when powerful firms extract excess profits for shareholders, increase investment and economic performance, and put the brakes on wealth inequality.

For the past 40 years, the conversation about the macroeconomic effects of corporate taxation has been dominated by the simple theory that higher corporate taxes reduce the incentive for shareholders to save and invest in the corporate sector, causing investment to fall. Under this theory, corporate income taxes reduce long-run productivity, which ultimately makes workers and households poorer as well. While corporate taxes are still an important source of progressive revenue and a key backstop to the individual income tax for the wealthy, there is always a tradeoff in this analysis: corporate taxation cannot raise sufficient revenue without sacrificing investment and growth.

A number of policymakers and practitioners used this simplistic framework to justify the suite of corporate tax cuts enacted under President Trump in the 2017 Tax Cuts and Jobs
Act (TCJA). In fact, while selling the bill, the Trump Administration predicted that cutting the corporate tax rate from 35 percent to 21 percent would radically increase investment, productivity, and GDP – so much so that this additional growth would add $4,000 to $9,000 per year to worker wages.\(^1\) While most credible economists considered this specific prediction outlandish even at the time, the leading current arbiters of the macroeconomic and budgetary effects of policy interventions bought into the basic logic: both the Congressional Budget Office (CBO) and the Penn Wharton Budget Model (PWBM)\(^2\) released estimates that predicted a long run positive impact on Gross Domestic Product (GDP) from decreased corporate taxes.\(^3\,4\)

Yet despite a historic reduction in the top corporate tax rate from 35 percent to 21 percent, the TCJA seems to have had, on aggregate, no real impact on corporate investment, and job and wage growth actually slowed after enactment.\(^5\) What investment increases occurred were mostly concentrated in the oil industry, prompted not by reduced tax rates but by increases in the price of oil. The TCJA did deliver outsized shareholder payouts, and an estimated $750 billion 10-year drop in corporate tax revenue\(^6\) – more than 80 percent of which is estimated to flow in the long run to the richest 1 percent of the income distribution.\(^7\)

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2. CBO is the official “scorekeeping” arm of Congress. Not only do their analyses of the budgetary effects of policy changes shape the debate, the numbers they create are the governing figures when Congress is considering legislation under special rules like reconciliation that are tied to the costs and savings created by the legislation being debated. CBO works closely with the Joint Committee on Taxation, which maintains both a macroeconomic model and a tax microsimulation model and has primary responsibility for releasing cost estimates for pending tax legislation, but here we cite CBO publications and refer to the CBO model. The Penn Wharton Budget Model is a third-party modeling operation housed at the University of Pennsylvania Wharton School of Business. These organizations are the most prominent current sources of macroeconomic analysis of policy interventions.
How did models predicting that lowering corporate tax rates would increase investment and GDP growth go so wrong? The answer is simple: You can't make good predictions based on flawed assumptions.

In this brief, we make plain the assumptions and logic underpinning existing macroeconomic models and show how they collapse under more realistic conditions. In particular, we present new findings from the Institute for Macroeconomic and Policy Analysis (IMPA) on how pervasive market power in the economy distorts financial markets and corporate investment decisions, and can reverse conventional predictions on the effects of corporate tax cuts.

Under realistic assumptions, an increase in corporate income tax rates can be both progressive and beneficial for economic growth.

This brief explains and contextualizes IMPA's new analysis of the corporate tax cuts in the TCJA. The brief explains that incorporating realistic assumptions about market power – that is, the fact that firms in the economy are able to exert power over their workers and customers when setting wages and prices – helps improve the aggregate and distributional predictions of corporate tax reforms like the TCJA. Based on this premise, the IMPA model would have outperformed existing models in an analysis of the TCJA proposal, correctly predicting the anemic growth in investment, output, jobs and wages that followed the enactment of TCJA.
Tax Cuts and Jobs Act

The TCJA was a wide-ranging tax bill that included significant changes to both the individual income tax and the corporate income tax codes. For the purposes of this brief, we are focused on the changes to the corporate tax code and the predicted effects of these changes on corporate investment, jobs, and wage growth.

Specifically, this analysis focuses on the slashing of the top statutory corporate income tax rate from 35 percent to 21 percent – the portion of the law that certain economists and policymakers believed would lead to growth in investment, output, and wages. It is worth noting that this change in the statutory tax rate was accompanied by changes to the tax base, particularly with respect to U.S. multinational corporations and their subsidiaries. This complicates the analysis somewhat, but the IMPA model includes relevant institutional details of the tax code.8

The TCJA also included a number of major changes to individual income taxes, which are scheduled to expire and will be the focus of a great deal of attention and debate. These changes are not the focus of this analysis.

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Importantly, the TCJA included a major shift in the taxation of profits held by foreign subsidiaries of U.S. multinationals, from a regime in which all profits were theoretically taxed at the 35% rate, but corporations could defer that tax essentially indefinitely by failing to “repatriate” these earnings to the U.S. parent corporation, to a regime in which all such profits are theoretically exempt from the general corporate profits tax but then are subject to a low minimum tax rate when earned regardless of whether they are repatriated. Because this shift left pre-TCJA unrepatriated profits (worth trillions of dollars) potentially completely untaxed, the TCJA included a transition provision that taxed these old profits immediately at a rate far below the then 35% rate. This generated a large bump in tax revenue in the short-run that actually represented a large tax cut for multinationals, as trillions of dollars of profits faced an immediate low tax in lieu of a deferred, much higher tax spread over future years.
Corporate Taxes According to the Conventional Wisdom

The basic intuition underlying the argument that corporate tax cuts are good for the economy is as follows:


2. When deciding how much to invest, corporations (and other businesses) compare the future profits generated by their investment opportunities with the cost of funding that investment (including the direct cost of borrowing and the opportunity cost of forgone shareholder payouts), and invest as much as they can so long as the additional profits are at least as high as the cost of the investments.

3. Corporate taxes reduce the after-tax stream of profits created by investment – the after-tax “return” to investment – which means that some productive investment that would enhance economic growth is no longer profitable enough to shareholders to justify trading away current payouts.

4. Thus, according to this logic, cutting corporate taxes would increase the after-tax return on these productive investments, and investment would increase closer to the optimal amount. These investments would then increase productivity, growth and wages.

This all makes intuitive sense and occurs to some extent in practice, though the magnitude of the effect is often overstated. But there is another effect of corporate taxation that is completely overlooked by many models, and that points in the opposite direction.

⁹The basic idea is that the economy can increase its long run level of output when businesses can produce more output with the same level of inputs—this is an increase in productivity. In order to achieve these productivity gains, businesses must spend a portion of their profits on investment (for example in physical capital or technology improvement) today to increase productivity tomorrow.
Classical Models Assume Perfect Competition and Ignore Market Power

One of the underappreciated premises of the above explanation is an assumption of perfect competition: all firms create products in a market where there are many sellers of identical products, many buyers with perfect information, and no barriers to firms entering or exiting the market. In this world, firms have no power over the price of goods and services they produce, as they would be immediately out-competed by another firm if they raised their price at all. Perfect competition is also assumed in the market for inputs, including labor, which would function in the same stylized way, with firms holding no power over the wages they pay.

Perfect competition is important in these modeling exercises because it drives the results of any intervention. In the world of perfect competition, firms not facing a tax invest the “right” amount – until the real productivity of investment equals but does not exceed the real cost of investment. If taxes disturb this calculus, they lead to reductions in real productive activity, because the pre-tax world is considered to be optimal.

But there is ample evidence that we do not live in a perfectly competitive world. In reality, corporations have market power in both product and labor markets, and routinely mark up prices or mark down wages in ways that are not reflected in a simple model that assumes perfect competition.

This has significant ramifications for corporate taxation. In a world of market power, it is no longer the case that profits simply represent the return on productive activity. Instead, profits for many firms are artificially inflated by market power rents extracted from consumers and workers in a zero-sum way that adds nothing to productivity or growth, but enriches shareholders and fills corporate coffers.

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The inflated profits extracted by powerful firms are not just unearned income that should be taxed for distributional reasons. The existence of these excess profits is bad for the economy, driving down production through the classic effects of monopoly power.¹² ¹³ Monopoly power reduces innovation,¹⁴ raises prices,¹⁵ and distorts the allocation of resources across firms.¹⁶

Profits persistently inflated by market power rents also lower productive investment across the economy compared to what is optimal, and this changes how we should think about the effect of corporate taxes. The key theoretical insight of the IMPA model for corporate taxation is that market power rents generate excess profits that distort investment decisions by allocating funds toward shareholder payouts, crowding out productive investment.

When firms with market power pay out their inflated profits to shareholders, they drive up the payouts that shareholders expect and require of firms. For firms that are not generating market power rents to the same degree, but instead generate a larger share of their profits from productive, real-world investments, this makes it more expensive to finance real productive investment because they are obligated to devote a larger share of profits to shareholder payouts. The end result is a bloated equity market that soaks up wealth at the expense of growth in the real economy.

If the opportunity cost of capital is driven up by the existence of high-power firms whose profits and payouts are inflated by rents, the introduction of a corporate tax has a corrective effect – it taxes away rents before they can be distributed to shareholders by powerful firms, lowering the return that shareholders expect in the stock market across-the-board, and thus freeing up cash for productive investment for firms trying to finance it. This can actually increase economy-wide investment and productivity because

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In theory, increased corporate income taxes thus push in two opposite directions, decreasing investment by lowering the after-tax return to otherwise worthwhile ventures, but increasing investment by reducing distortions created by market power. The question then is: “Which effect dominates in the real world?”

New, Cutting-Edge Macroeconomic Modeling Allows Fuller Understanding of Real-World Effects of Corporate Taxes

The Institute for Macroeconomic and Policy Analysis, led by Lidia Brun, Ignacio González, and Juan Montecino, has built a new, cutting-edge macroeconomic model that builds on state-of-the-art theoretical and empirical techniques to model the effects of market power rents in product and labor markets, yielding a more realistic account of the origin of corporate profits and, hence, a more accurate description of the drivers of income and wealth inequality.¹⁸ ¹⁹ ²⁰ ²¹ ²²

The IMPA model incorporates substantial heterogeneity across households and firms and incorporates several rich datasets. For example, the model assumes that households differ in their portfolio composition, implying that poorer households are less likely to hold equity and therefore benefit less from the financial returns to market power. Different sources of firm heterogeneity are also relevant for corporate taxation, as taxes are not expected to have the same effect across firms and sectors if they use different capital

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¹⁷ When analyzing the effects of the change in the statutory tax rate faced by corporations, it is also important to understand that under the U.S. corporate tax code the cost of investment is removed from the tax base and in fact subsidized in myriad ways, from the deductibility of interest payments to the more-than-economic depreciation of capital assets over their lifespan. This means that the corporate income tax falls disproportionately on the excess profits of firms with market power rents, as firms that generate additional profits through investments in productive activity are able to deduct the costs of these investments. This makes the IMPA results even less surprising.


intensities, or if they enjoy different degrees of market power, as is observed in the data. This leads to composition effects that cannot be ignored for a realistic depiction of the effects of corporate tax changes. This is in stark contrast with existing policy models, which generally assume a single type of firm that represents the whole production sector.

For more information on the precise data sources used, the buildout and specification of the model, and the theoretical and empirical underpinnings of the model’s calibration, please see Brun, González and Montecino (2023). 23

These changes allow the IMPA model to push beyond the oversimplified assumptions underlying models like the Congressional Budget Office Model and Penn Wharton Budget Model to both better replicate past data and better understand the future effects of policy changes.

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The IMPA Model Would Have Accurately Predicted the Disappointing Outcomes of the TCJA

The pervasive presence of market power in the economy illuminates one fundamental reason why the TCJA spurred shareholder payouts instead of productive investment. By cutting the top statutory corporate income tax rate, the law gave an enormous windfall to the most powerful firms in the economy – especially firms with high levels of “unrepatriated” retained profits which were brought back on the corporate books and immediately paid out under a special, temporary reduced tax rate 24 – and that windfall not only failed to spur investment by recipient firms, it drove up the expected return on equity for all firms, forcing higher payouts and lower investment across the board. Estimates using the IMPA model imply that this funneling of capital to high-power, rent-extracting firms that offer inflated shareholder payouts at the expense of real investment in productivity dominates the traditionally-modeled effects of corporate tax cuts on savings and investment.

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When the IMPA model is used to analyze the TCJA reform, it predicts effects that are more similar to what we observe in the real world data in the wake of corporate tax cuts. In the baseline scenario, the IMPA model predicts that the TCJA negatively affected GDP and investment over the next decade. Despite the decrease in the corporate tax owed by firms, the increase in payouts after the reform reduced the funds used for productive investment. This had a negative impact on aggregate investment, which is estimated to drop 1.13 percent relative to the pre-TCJA policy scenario. The negative impact on investment also leads in the long run to lower GDP (-0.54%) and lower demand for workers, negatively affecting employment and wages, which are estimated to be reduced by 0.09 percent and 0.30 percent, respectively, compared to the pre-TCJA policy scenario. Because of its more sophisticated modeling of market power rents and their effects on firms and investors’ behavior, the IMPA model predicts that investment and GDP will slightly decline as a result of the TCJA corporate tax cuts, in contrast to CBO and PWBM predictions that the TCJA would increase GDP.25

The IMPA model can also predict the distributional effects of corporate tax reforms like the TCJA. The model predicts that these reforms will increase inequality in the long run. The decrease in the corporate tax rate inflates the value of stock market wealth, which now reflects higher future flows of after-tax market power rents. Since stocks are mostly held by rich households, their higher value increases wealth inequality. Higher returns on their portfolio also increase income inequality. At the bottom of the distribution, households are affected by the lack of positive investment growth and the fall in labor income, which further increases income inequality.

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<th>Table 1: Medium-run effects of TCJA</th>
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<td><strong>IMP</strong></td>
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These numbers are weighted to reflect the impact on the overall economy.

While all the models incorporate the classic channel of reduced incentives for investment due to corporate taxes, only the IMPA model takes into account the way that taxing

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market power rents reduces shareholders’ demand for inflated payouts, allowing firms to make real investments. And in fact, based on a realistic distribution of markups and markdowns, the model estimates that raising the corporate tax usually has a net positive effect on investment. In other words, reducing the distortionary impact of market power rents has a larger aggregate effect on investment behavior than the traditional channel.

This is perfectly consistent with what we saw in the wake of the law’s passage – the actual increase in investment realized post-2017 failed to match pre-TCJA forecasts.26 And while investment did increase somewhat in absolute terms post-TCJA, careful analysis suggests that increases in investment post-2017 were driven by factors such as strong aggregate demand and trends related to oil prices and other factors unrelated to TCJA tax incentives.27 The IMPA model also would have correctly predicted the other observed result of TCJA: massive shareholder payouts.28 29 Of course, comparing the performance of different models is not really a definitive exercise. Lots of things change in the world that are not fully captured by any of the models, including the IMPA model, or the differences between them. However, our results indicate that appropriately capturing the origin of corporate profits – market power rents or conventional returns – is crucial to more accurately estimate the macroeconomic effects of corporate taxation.


Partially Restoring Pre-TCJA Corporate Tax Rates to 28 Percent Would Increase Long-Run Output, Decrease Inequality, and Raise Revenue For Important Investments

The forthcoming academic article *Corporate Taxation and Market Power Wealth*, available now on SSRN,\(^3^0\) unpacks the technical advancements underlying the IMPA model, provides documentation of the theoretical and empirical underpinnings, and provides a crucial finding for policymakers.

Enacting the Biden-Harris Administration's proposed corporate tax rate increase – moving the top corporate income tax rate from TCJAs 21 percent to 28 percent – still significantly lower than pre-TCJA law of 35 percent – would not only raise substantial revenue to fund growth-enhancing investments, but would directly increase investment, productivity, and wages through the mechanism discussed above. In the paper, the authors show that increasing the corporate tax rate by 7 percentage points is good for growth and for reducing inequality, regardless of what the resulting revenue is used for.

Whereas a reform of this type would enhance the income and wealth of the majority of the population, it would reduce wealth for the richest through its effects on asset prices and capital income, as equity ownership is concentrated at the top. This can be seen in Figure 1, which reports the estimated percentage change in household wealth at each decile of the wealth distribution following the corporate tax reform described above. Since the IMPA model predicts that raising the corporate tax would boost wages, we observe stronger increases in household wealth at the bottom of the wealth distribution. In contrast, by taxing away the market power rents reflected in share prices, the corporate tax reform is estimated to decrease the wealth of the top decile by about 4 percent. The end result is a reduction in wealth inequality.\(^3^1\)

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\(^3^1\) These estimates are based on the results contained in Brun, Gonzalez, and Montecino (2023), which is calibrated to reflect changes in the corporate sector, abstracting from the rest of the private sector.
Looking Ahead

Throughout 2020, 2021 and 2022, across sectors, COVID-related supply shocks created opportunities for corporations with market power to raise prices at the expense of consumers and post large profits, while neglecting investments in new capacity or increased production to instead increase dividends and share buybacks.

This connection between rent extraction, shareholder windfalls, and underinvestment did not go unnoticed, with groups as diverse as the Biden Administration and International

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Monetary Fund recommending a windfall profits tax.\textsuperscript{38, 39} But as policymakers approach the coming tax debates, it's important to understand that in the presence of market power, simply increasing the corporate income tax can serve as a straightforward way to automatically tax windfall profits both now and into the future.

The IMPA model suggests that not only would this substantially reduce wealth inequality, but it would also reallocate capital from rent-extracting firms and spur on real productive investment, a win-win.

These results have important policy implications. Legacy models, frequently relied on by policymakers, point in the wrong direction. When properly designed, corporate income taxes can be good for the economy, both in aggregate and distributional terms, entirely separate from what the revenue is used for. They correct existing market inefficiencies, moving the economy toward the optimal allocation of capital, not away from it. Frequently, corporate taxation is seen as a difficult choice: should we prioritize reducing inequality and funding government services or the hard realities of economic growth? As is so often the case,\textsuperscript{40} this is a false choice, usually driven by flawed assumptions in policy modeling exercises.

Policymakers should bear this in mind as they debate various tax and fiscal proposals being released for the fiscal year 2024 budget cycle. This is certainly true of President Biden's proposal to partially restore the pre-TCJA top corporate tax rate to 28 percent, but the finding has implications for many areas of tax policy. For example, when corporate taxation is not simply redistributive, but actually regulatory of corporate rent extraction, then it is even more important for both distributive justice and economic performance that these taxes are actually collected. This further bolsters the case for investments in IRS enforcement passed last year in the Inflation Reduction Act, not simply as a matter of fairness and revenue collection, but to enhance economic performance.

This analysis should not be seen as the definitive take on corporate taxes and the economy – it is instead an illustration of how misguided our policy prescriptions can be.


when they are based on economic models that are too divorced from the real economy. In the case of corporate taxation, it is particularly important to understand and properly model the source of the income that is actually taxed, as taxing rents or productive returns have very different implications for the aggregate economy.

Over the coming years, IMPA intends to be a home for up-to-date research and analysis across a number of macroeconomic policy questions, both building truly state-of-the-art macroeconomic modeling capacity and contributing to our understanding of the theoretical and empirical underpinnings of the models policymakers rely on now when making decisions that affect every worker, family, and business in the United States.