# Tax Cuts Impact on the Economy from the Perspective of Debt and Exchange Rate

Ruijie Ma

College of Art and Science, Brandeis University, Waltham, United States

Ruijiema@brandeis.edu

**Abstract.** In September of 2022, the newly inaugurated British Prime Minister, Liz Truss, introduced an ambitious policy involving significant tax cuts to stimulate the economy swamped by the COVID-19 pandemic. Regrettably, her ambitious plan eventually led to financial insolvency and catastrophically impacted on the UK's economic growth. Through the rigorous examination and analysis of data, this article primarily attributes her failure to the absence of consumer confidence and the outflow of capital, which were consequences of the substantial currency devaluation caused by the surging government debt. Then, the article draws comparisons between the UK's tax cut and successful case studies from the United States and China, which effectively managed the side effects of expansive tax cuts or similar policies that led to substantial increases in government debt. The findings argue that tax reduction policies cannot yield favorable outcomes unless they are the US with global currency status or in nations like China which can largely eliminate the currency devaluation by a governmental control on exchange rates.

**Keywords:** Tax cut, Currency devaluation, Liz Truss’s tax cut.

## 1. Introduction

### 1.1. Research Background and Significance

In September 2022, the former Prime Minister of United King, Liz Truss, dropped a blockbuster as soon as she took office, the most extensive tax-cutting policy since 1972. This proposal was aimed at revitalizing the UK economy swamped by the COVID-19 pandemic and inflation triggered by the energy crisis that stemmed from the Russo-Ukrainian War. Unfortunately, both Liz Truss and her plan completely failed to meet the expectations, resulting in a rapid depreciation of the pound and an abrupt surge in inflation. These catastrophic outcomes eventually culminated in the collapse of her policy and the downfall of her government within a span of just over forty days. Given the comprehensive scope of Liz Truss's tax cuts and the extensive response generated from the Britain as a significant economic power, a clearer illustration of the simulative effect from large-scale tax reductions in economic downturns can be retrieved by the case analysis and comparison with the successful examples. This study also offers valuable insights for other nations when implementing the expansive tax cut polices.

### 1.2. Literature Review

Due to the diversity of tax categories, many articles tend to narrow their studies on one specific type of tax or influence. Regarding corporate taxes, James R. Hines JR argued that their presence could exacerbate the wealth gap. Because it encouraged the riskier, noncorporated business, lower income group and individuals were at a disadvantage and less able to mitigate the risks, reducing their involvement and returns [1]. While this article to some extent overlooks the influence of government taxes as transfer payments on equity, it extensively demonstrates, utilizing models and case studies, that corporate taxes—often viewed as a "tax on the wealthy"—can generate the widened gap between affluent and poor groups. In terms of the individual tax, the findings from Christine Dobridge and Joanne Hsu indicated that the personal income tax cut played a role in diminishing the average loan amount per individual and in curbing the number of delinquent accounts [2]. Their research mainly centered on the case study of Tax Cuts and Jobs Act of 2017 (TCJA). In this context, they evaluated the change of individual behaviors in response to the income tax reduction, and to control the economic variables, they utilized GDP growth data on the state-level but limited unemployment rate, employment growth, wage growth, and the average wage level within the county. Their meticulous analysis demonstrated that an income tax cut could alleviate the household burdens by reducing average loan amounts. However, this effect was relatively modest, and interestingly, in certain cases, households stimulated by the rise in disposable income increased their loan levels. Renjie Zhao and Ziying Fan concluded from their research on China’s value-added tax cuts in 2008-2011 that value-added tax reductions compelled governments to explore alternative non-tax revenue income, which amplified the non-tax burdens of enterprises (particularly small and medium-sized ones), undermining the stimulus effect [3]. From the study of Qinwang Guo, the added tax cut demonstrates similar effect on change government income structure, increasing dependence on land finance, for example [4]. Obviously, the growing local government's fiscal deficit will crowd out the revenue for enterprises.

### 1.3. Research Content and Framework

This article will divide into five section: First, the introduction of the background and literature review; Second, the analysis of the UK tax cut including the breakdown of the policy items and case study with data; Third, the comparative studies that employs examples from the US that successfully promoted economy with similar tax cut and China that deal the effect on currency value from high government debt; Forth, the shortage of research; Finally is the conclusion

## 2. UK’s Case Analysis

### 2.1. Breakdown

After analyzing the components of Truss's plan, it was obvious that while her policy aimed to encompass individuals from all classes (canceling the 1.25% increase in National Insurance contributions as a type of income tax), the plan was significantly preferred to the highest income group. The evidence was demonstrated by several key measures within her plan: a substantial reduction of incorporate tax rates (from 25% to 19%), the elimination of the 45% tax applied to incomes exceeding £150,000, (adjusting top tax rate to 40%), and the removal of a cap on bank bonuses [5]. Notably, these measures would widen the wealth gap, but its contribution to grow economy was still under question.

### 2.2. Analysis

The basic model underpinning the notion that tax cuts can stimulate economic growth and tax revenue is often represented by the Laffer curve. This curve illustrates a concept: there exists a point on the curve that maximizes tax revenue, and any point beyond this optimum level would lead to a decline in tax revenue due to the less incentive to produce [6]. However, this model has faced a longstanding criticism for it oversimplifies the connection between tax rates and productivity. Numerous factors and incentives as capital availability, labor supply, agglomeration can influence a firm's decisions on production. When accounting for increases in tax rates, a plausible deduction is that firms may reduce their capital due to reduced revenues available for investment. Nevertheless, the outcomes of different utilization of tax revenue can vary significantly. In the example of the incorporate tax which normally places more burden on the wealthy individuals who usually hold more stocks dividends, when taxes are employed primarily as a means of income redistribution, the beneficiaries might be limited to workers. However, if corporate taxes are channeled into funding the infrastructure or public input, the advantages generated can both notably benefit workers and counterbalance the incorporate economic costs caused by the corporate income tax [7]. Conversely, a tax cut policy might stimulate investment from private capital at the cost of deteriorated infrastructure. Public finance argues a premise: government should intervene in goods and services market when economic agents from the private market are either incapable or unwilling to address the task (usually because this type of investment is not profitable) [8]. The reduced government budget leads to the less maintenance of infrastructure as roads, electricity line, or pollution treatment facilities, increasing the transportation cost of economic activities both in private and public sectors. Therefore, promoting the investment in private sector through tax cutting might not achieve the expected goal and cannot generate additional tax revenue to fill the government debt.

The mounting government debt and the tax cut policy itself can cause a catastrophic devaluation of the currency. In the United Kingdom, following the announcement of the tax cut by Truss's Chancellor Kwasi Kwarteng, the dollar-to-pound exchange rate plummeted to 1.07, marking the lowest point observed in the past two decades. This phenomenon can be explained into two ways:

First, while reducing taxes did rise the disposable income for individuals, it only slightly stimulated production. The services sector including finance, retail, and entertainment, contributes a substantial 80% to the UK's economic activity, and the manufacturing and construction sector only constitute about 16% [9]. The limited industrial capacity of Britain dictates that its production could not substantially grow in the short term even with the fiscal stimulus, resulting in an almost vertical Aggregate Supply (AS) curve. Therefore, in the short tun, the outcome was an increase in disposable income for individuals (increasing consumption which shifts Aggregate Demand curve upwards), but with an same amount of goods in the market, eventually driving a surging inflation, decreasing purchasing power, and the subsequent depreciating currency. Second, Truss wanted to finance her plan only through borrowing, so the UK government was forced to increase bonds interest rate to sell more bonds for dealing the highly increased government debt. As a result, according to the Uncovered Interest Rate Parity (UIP) theory, the difference in interest rates between two countries will equal the relative change in currency foreign exchange rates over the same period [10]. When the UK government increases the bond rate, it signifies more pounds flowed into the future money market, where the subsequent devaluation offsets the additional revenue. Foreign capital might be attracted by the pound market for short-term interest gains, but withdraw their investment later with the anticipation of pound devaluation in the long run. Nonetheless, compound with the first point, the foreign capital then had an expectation of pound depreciation both in the short term and long term, whereby they prefer to sell their pounds and assets in the UK whose value was counted by pounds. Thereby, the net effect of Truss’s tax cut policies even stymied economic growth when an extensive withdrawal of foreign capital happened.

## 3. Comparative Studies

### 3.1. United States in Reagan’s Period

Truss’s failure in the UK can be attributed to the skyrocketing government debt that crash the currency value as well as the confidence of consumers and investors. However, Reagan who to some extent inspired Truss’s approach, conducted similarly policies in the 1980s as the 1986 Tax Reform Act (TRA) to solve the stagnation and achieve completely different result. From 1980 to 1985, the inflation rate decreased from 13.55% to 3.55% and dollar value increased (dollar-to-pound exchange rate, for instance, dropped from 2.38 to 1.08) [11, 12]. The distinctive status of the dollar as a global reserve currency played an important role. Despite the anticipation of long-term depreciation in line with the UIP, investors had enduring confidence to dollar given its worldwide utility and US’ approaching to the victory of Cold War. The dollar's global acceptance and reserve status create additional credit, so when the US government rose the interest rate of bonds, investors were more willing to purchase. Even so, Reagan's policies have not been immune to criticism particularly in light of the growing wealth gap after the implementation of the TRA. One critical factor was explained by the fact that the tax cut was announce in compound with the decreasing government intervention and relax relation, which allowed enterprises to transfer burden to workers and extract extra profits through layoffs and reducing benefits. Although the opponent viewpoint preferred to attribute the cause to the globalization starting in 1970s, the enlarging wealth inequality was an indisputable. The Gini coefficient exhibited a steady increase from 37.2 in 1987 to 40.4 in 1993 [13]. The additional economic growth did not, at least not equally benefit the low income groups.

### 3.2. China

As concluded before, the root cause of tax failure is generated by the currency devaluation, and an effective solution is to have direct control of exchange rate. Despite the different origin of China's government debt when compared to the tax cuts in the UK and US context, primarily arising from substantial public sector investments as infrastructure construction and maintenance, the indisputable fact is that China's aggregate debt has undergone a significant upsurge over the last decade. The national debt-to-GDP ratio escalated from 37.04% to 82.43% [14]. Interestingly, the Chinese Renminbi-to-US dollar exchange rate change was inconsistent with the trend, displaying substantial fluctuations [15]. This accomplishment can be attributed to China government's ability in managing its exchange rate. In the Robert Mundell's "impossible trinity" principle, which asserts that among free capital movement, a fixed exchange rate, and independent monetary policy, only two can be achieved at a time, China has carefully prioritized the latter two components. This approach enables the country to exert a considerable degree of control over its exchange rate and restrict capital outflows in response to the deteriorated environment as heightened debt or increases in US interest rates. However, it's worth noting that given the capital’s inclination toward the unrestricted financial market, relinquishing free capital movement was an unfeasible option for the UK, whose economy has heavily relied on financial and service s vectors. In fact, the freedom of capital movement would be an inevitable trend as its domestic capital market economy becomes more tightly connected with the global market. Currently, China is more like to be situated within the triangle, oscillating between capital mobility and a fixed exchange rate [16].

## 4. Conclusion

The repercussions of Tesla's ill-fated tax cut policy have served as a catalyst for this study on the economic ramifications of extensive tax reductions. This article undertakes an analysis of Tesla's tax cut failure in the UK by scrutinizing research data and drawing comparisons with successful instances in order to arrive at a conclusion: large-scale tax cuts can indeed serve as a means to stimulate economic growth, but they bring about significant financial burdens and latent perils, potentially leading to counterproductive outcomes. Success in this approach hinges on the global currency status of the national currency or favorable government intervention in exchange rates, countering the currency devaluation risk associated with high government debt. Nevertheless, even with these strategies, fixed exchange rate sustainability remains a concern, along with the potential for exacerbating wealth disparity. The article aims to elucidate the impact of tax cuts from the vantage point of liabilities and exchange rates, with the aspiration of offering case studies and insights for other governments contemplating tax cut policies. However, it's worth noting that the article's conclusions would benefit from quantification and further exploration of other tax types to substantiate its claims.

While this article extensively undertakes the data analysis and comparative case studies to examine the repercussions of tax cuts, its findings lack the supporting from quantitative research to vividly illustrate the correlation between taxation and exchange rates. Besides, the paper's focus is narrowed down to three pivotal tax categories—income tax, corporate tax, and value-added tax—omitting the assessment of other tax rates' influence on the market and economic growth. Consequently, the conclusions drawn within this paper may not provide a comprehensive overview due to the limited scope of analysis and require the further supplements

## References

[1] James R. Hines JR. Corporate Taxation and the Distribution of Income. Cato Institute, 2021: 1-2

[2] Christine Dobridge and Joanne Hsu. Tax Cuts and Household Finance. Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association, 2019, 112: 1-23

[3] Renjie Zhao and Ziying Fan. Tax-Fee Substitution: VAT Tax Reduction, Non-tax Revenue Management and Corporate Investment. Journal of Financial Research, 2021, 487: 71-90

[4] Qinwang Guo. The Potential Fiscal Impact and Risk Mitigation of Tax Cuts and Fee Reductions. Management World 2019, 6: 1-10.

[5] CNBC. UK Government Dishes out Extensive Tax Cuts as Country Braces for Recession https://www.cnbc.com/2022/09/23/uk-government-dishes-out-tax-cuts-as-country-braces-for-recession.html, last accessed 2023/9/1.

[6] Philip Mirowski. What's Wrong with the Laffer Curve? Journal of Economic Issues, 1982, 16 (3): 815-828.

[7] Simon Naitram and Matthew Weinzierl. The Corporate Income Tax is Inherently Benet-Based. Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association, 2020, 113: 1-23.

[8] David Aschauer. Is Public Expenditure Productive? FRS Chicago, 1989, 88 (7): 1-27.

[9] Investopedia. The Economy of the United Kingdom https://www.investopedia.com/articles/investing/042915/how-uk-makes-money.asp#:~:text=The%20services%20sector%E2%80%94which%20comprises,construction%20account%20for%20about%2016%25, last accessed 2023/9/1.

[10] Investopedia. Uncovered Interest Rate Parity (UIRP) https://corporatefinanceinstitute.com/resources/capital-markets/uncovered-interest-rate-parity-uirp/last accessed 2023/9/1.

[11] Macrotrend. U.S. Inflation Rate 1960-2023 https://www.macrotrends.net/countries/USA/united-states/inflation-rate-cpi last accessed, 2023/9/1.

[12] FRED. U.S. Dollars to U.K. Pound Sterling Spot Exchange Rate https://fred.stlouisfed.org/series/DEXUSUK, last accessed 2023/9/1.

[13] THE WORD BANK. Gini index - United States https://data.worldbank.org/indicator/SI.POV.GINI?locations=US last accessed 2023/9/1.

[14] Statista National debt in relation to gross domestic product (GDP) in China from 2012 to 2022 with forecasts until 2028 https://www.statista.com/statistics/270329/national-debt-of-china-in-relation-to-gross-domestic-product-gdp/ last accessed 2023/9/1.

[15] FRED Chinese Yuan Renminbi to U.S. Dollar Spot Exchange Rate https://fred.stlouisfed.org/series/DEXCHUS last accessed 2023/9/1.

[16] Lu-Yao Wang and Helen Zhang. Mundellian Trilemma and China's Policy Choice. Journal of Business Innovation, 2020, 2 (4): 62-67.