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THE LAFFER CURVE AND OPTIMAL TAX RATE: AN ANALYSIS OF THE RELATIONSHIP BETWEEN TAX RATES AND GOVERNMENT REVENUE

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Abstract

Research objectives: This study aims to analyze the nonlinear relationship between tax rates and government revenue based on the Laffer Curve framework and to identify the concept of the optimal tax rate. **Design/Methodology/Approach:** The research employs a theoretical and analytical approach using the Laffer Curve model. Comparative and graphical analysis is applied to evaluate changes in tax revenue at different tax rate levels. **Research findings:** The findings indicate that tax revenue initially increases with rising tax rates, reaches a maximum point (optimal tax rate), and then declines as tax rates continue to rise. Excessive taxation leads to reduced economic activity, tax evasion, and growth of the informal sector. **Theoretical contributions/Originality:** The study contributes to macroeconomic theory by explaining the inverted U-shaped relationship between tax rates and revenue and emphasizing behavioral responses in taxation. **Implications for practitioners/policy:** The results suggest that policymakers should avoid excessively high tax rates and instead aim to determine the optimal tax level that maximizes revenue while maintaining economic incentives. **Limitations/Research implications:** The study is theoretical and does not include empirical econometric testing. Future research can focus on country-specific optimal tax estimation.

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Introduction

Taxation is a central element of fiscal policy and plays a critical role in financing public expenditures and ensuring macroeconomic stability [1]. One of the most debated issues in public finance is the relationship between tax rates and tax revenues. While it may seem intuitive that higher tax rates lead to higher revenues, economic theory suggests that this relationship is more complex. The concept of the Laffer Curve provides a theoretical framework for understanding this relationship. According to this theory, tax revenue does not increase indefinitely with higher tax rates [2], [3]. Instead, there exists an optimal tax rate

at which revenue is maximized. Beyond this point, further increases in tax rates can reduce total revenue. The underlying reason for this phenomenon lies in behavioral responses. High tax rates may discourage work effort, reduce investment, and incentivize tax evasion. As a result, the tax base shrinks, leading to lower overall revenue despite higher rates [4], [5]. The relevance of this concept has increased in the context of modern economies, where governments seek to balance revenue generation with economic growth and social welfare. Determining the optimal tax rate is therefore a key challenge for policymakers. This study aims to analyze the Laffer Curve and its implications for tax policy. By examining the relationship between tax rates and revenue, the research provides insights into how taxation affects economic behavior and fiscal outcomes.

Methodology

This study is based on a theoretical and analytical methodology using the Laffer Curve as the main conceptual framework. First, a graphical analysis is conducted to illustrate the relationship between tax rates and tax revenues. The curve is analyzed across different tax levels (T1–T4) to observe changes in revenue. Second, a comparative static analysis is applied to evaluate how changes in tax rates affect economic behavior and tax revenue. This method allows for the identification of the optimal tax rate (T3), where revenue is maximized. Third, the study incorporates behavioral economic assumptions, including labor supply responses, investment decisions, and tax compliance behavior. These factors are essential for explaining why tax revenue declines at higher tax rates. Additionally, a conceptual modeling approach is used to interpret the inverted U-shaped relationship between tax rates and revenue. The methodology does not rely on empirical data but instead focuses on theoretical reasoning supported by established economic literature.

Results

Analysis of the Laffer Curve

The figure illustrates the theoretical relationship between tax rates and total tax revenue, commonly known as the Laffer Curve. The horizontal axis represents the tax rate (T1–T4), while the vertical axis shows the total tax revenue collected (R1–R2). At lower tax rates (T1), tax revenues are relatively low (R1) because the government collects only a small portion of income or economic activity. As the tax rate increases to T2, tax revenues rise significantly, reaching a higher level (R2). This indicates that moderate increases in tax rates can enhance government revenue without significantly affecting economic incentives [6], [7]. The curve continues to rise and reaches its maximum point at T3, which represents the optimal tax rate. At this point, the government maximizes tax revenue. The economic interpretation of this peak is that the balance between tax rates and economic activity is optimized. However, beyond this optimal point, further increases in tax rates (from T3 to T4) lead to a decline in total tax revenue [8]. Despite higher tax rates, revenue decreases due to negative behavioral responses such as:

reduced labor supply

decreased investment

growth of the informal economy

increased tax evasion

At T4, the tax revenue is lower than at T3, illustrating the inefficiency of excessively high tax rates [9].

Key Empirical Insights

The figure demonstrates several important theoretical conclusions:

The relationship between tax rate and revenue is nonlinear (inverted U-shape)

There exists an optimal tax rate (T3) that maximizes revenue

Increasing tax rates beyond the optimal level reduces revenue

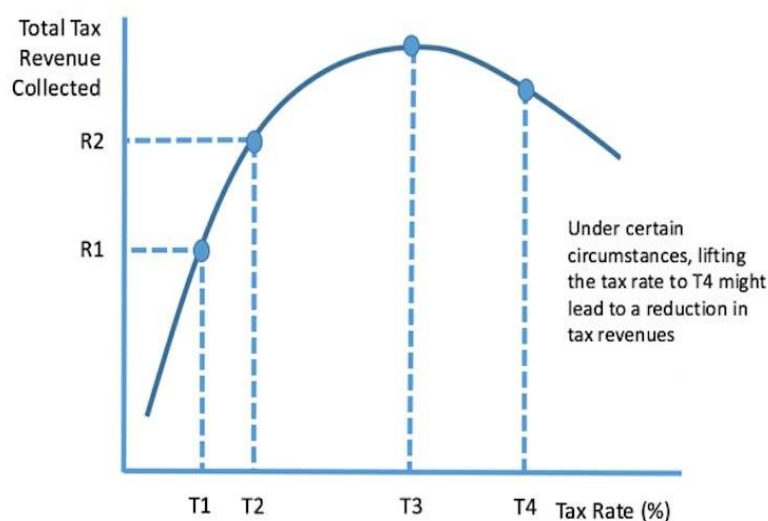
Behavioral responses of taxpayers play a critical role

Economic Interpretation

Kielce: Laboratorium Wiedzy Artur Borcuch

The Laffer Curve highlights that taxation is not only a fiscal tool but also a behavioral mechanism. Excessive taxation discourages economic activity, while moderate taxation promotes compliance and economic growth [10].

Figure 1. Nonlinear Relationship Between Tax Rates and Revenue: Evidence from Laffer Curve Theory¹



Discussion

The results based on the Laffer Curve provide important insights into the relationship between taxation and economic behavior. One of the key findings is that the relationship between tax rates and tax revenue is nonlinear, confirming the inverted U-shaped structure [11]. At lower levels of taxation, increases in tax rates lead to higher revenue without significantly affecting economic incentives. This is because taxpayers are still willing to work, invest, and comply with tax regulations. However, as tax rates approach the optimal level, the positive effect begins to weaken. Beyond this point, further increases in tax rates generate negative behavioral responses. Individuals may reduce labor supply, businesses may cut investments, and some economic activities may shift to the informal sector [12], [13].

This finding is consistent with supply-side economic theory, which emphasizes the importance of incentives in economic decision-making. High tax rates reduce the motivation to produce and earn income, ultimately shrinking the tax base. Another important implication of the study is related to tax compliance. As tax rates increase, the incentive to evade taxes also rises [14]. This reduces the effectiveness of tax policy and undermines government revenue. From a policy perspective, the Laffer Curve suggests that governments should focus not only on tax rates but also on the overall structure of the tax system. Efficient tax administration, transparency, and fairness can improve compliance and increase revenue without raising tax rates. Furthermore, the concept of the optimal tax rate is not fixed and may vary across countries and economic conditions [15]. Factors such as institutional quality, level of development, and taxpayer behavior influence the shape of the Laffer Curve. Overall, the discussion highlights that taxation must be designed carefully to balance revenue generation with economic efficiency and growth.

Conclusion

This study analyzed the relationship between tax rates and government revenue using the Laffer Curve framework. The findings confirm that the relationship is nonlinear and characterized by an optimal tax rate at which revenue is maximized. At low and moderate tax rates, increases in taxation lead to higher revenue. However, beyond the optimal point, further increases in tax rates reduce revenue due to negative behavioral responses such as reduced economic activity and increased tax evasion. The results highlight the importance of considering economic incentives when designing tax policies. Excessively high tax rates can be counterproductive, reducing both economic efficiency and fiscal sustainability. The study also

¹ Author's illustration based on Laffer Curve theory (Laffer, 2004; Mankiw, 2021).

emphasizes that tax policy should not focus solely on increasing rates but should also consider improving tax administration and compliance mechanisms. In conclusion, the Laffer Curve provides a valuable theoretical tool for understanding the limits of taxation and the importance of optimal tax policy.

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