

The Impact of Interest Rates on Consumer Spending in the United States: Evidence from 2015–2026

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Abstract. As one of the issues happened in the United States, this paper aims to analyze the effect of interest rates on consumer spending in the United States from 2015 to 2026. The analysis uses FRED economic data that has been analyzed using descriptive and regression methods as well as correlation. It is easy to hypothesize that high-interest rates would generally be negatively related to growth in consumer expenditures because borrowing is more expensive resulting in savings rather than expenditures. However, it is also essential not to assume that there is a simple relationship between interest rates and consumer expenditure because there are many other factors that affect consumer expenditures, including inflation rates, unemployment, and income. Therefore, at times, increased interest rates will potentially have no relationship to increase in consumer expenditures, although there is a positive relationship between consumer expenditures and the timeframe chosen to this point, particularly following the adverse effects of the COVID-19 pandemic.

Keywords: Interest Rates, Consumer Spending, Monetary Policy, Economic Growth, Inflation

1. Introduction

Because of the effects of the abovementioned factors, part of the decrease may be due to higher interest rates, meaning that the cost of loans increases and leads to fewer expenditures by customers. Interest rate can be referred to as a certain percent of borrowing money and earning from depositing money. Therefore, the interest rate can be regarded as the cost of borrowing [1, 2]. Nonetheless, the interest rate does not only depend on the cost of borrowing money but also determines the money flow in the country. When interest rates go up, the cost of borrowing goes up and results in reluctance among people and firms to take out a loan. In this case, people tend to delay expenditure and spend money wisely. On the other hand, low interest rates mean a reduction in the cost of borrowing, which stimulates spending and investment. People feel secure about the state of their finances. Interest rates are tightly connected with the issue of consumer spending that represents the expenditure that people incur buying products and services [3]. Consumer spending, being one of the most significant parts of demand, is of great importance to economic growth since higher spending results in production growth, expansion of business, and employment increase. Alternatively, the fall in consumer spending results in slow economic activity. Thus, there is a negative relationship between interest rates and consumer spending.

2. Economic theory

The change in interest rates can significantly affect the spending behavior of consumers. To understand this, it is vital to analyze the consequences of the increase in interest rates. One of the most considerable impacts of it is that the cost of borrowing will increase, since the borrower has to pay more interest in loans under this situation. Therefore, financing cost of certain purchases will rise accordingly, making people who decide on buying automobiles and houses feel more pressure [4]. Additionally, increase in cost of borrowing resulted in the rise in the financing cost of consumer goods and services, which makes the consumer financing difficult, thereby the willingness of consumers to make a purchase is going to decrease. This proves that high cost of borrowing will eventually lower the demands [5]. Moreover, from the psychological perspective, the change in interest rates might alter consumers' perception of the affordability of goods and services. They tend to consider that they will not be able to purchase stuff as usual since the price increases. Another important change in consumer behavior due to the change in interest rates is that higher interest rates make saving investment more beneficial, as it helps avoid risks. Instead of spending money on purchases or paying for services, putting money in saving account seems to have a larger advantage, as consumers can earn extra interest from saving money. This highlights the reason why most people choose to invest their money [6]. However, it is not reasonable to conclude this effect to every consumer. For instance, some wealthy people might not intentionally save their fortune

3. Data description

Although the theory proposes that interest rates may decrease consumer spending by making it more expensive to borrow money and offering incentives for savings, it is critical to analyze the practical implications of this association.

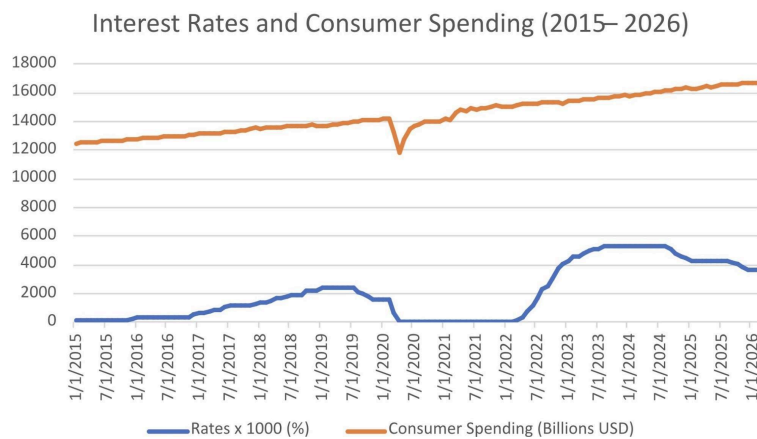


Figure 1. Relationship between interest rates and consumer spending (2015–2026)

Graphical representation for interest rate and consumer expenditure is shown below Figure 1 for the years 2015 to 2026. From the graph, we can see that, for the period under consideration, there is an increasing trend in the values of consumer expenditure. This is because the consumer expenditure starts at just about 12,000 billion dollars in 2015 to 16,500 billion dollars around the year 2026. The graph shows a steep fall in consumer expenditure around 2020 followed by a recovery and steady increase. On the other hand, the interest rate shows a declining trend in the period 2015 to 2021, dropping to almost zero between 2020 to 2021. It increases steeply after 2022 and levels off gently in the period 2025 to 2026. From the graph, we can also notice that, for the same period under

discussion, interest rates do not always rise and fall when compared to consumer expenditure but, in general, there appears to be an inverse relation between the two.

4. Methodology

The research applies the time-series methodology to determine whether there is any link between interest rates and consumer spending from 2015 to 2026. The decision to choose the monthly timeframe has been made due to the availability of relatively larger sample sizes and the opportunity to detect short-term shifts in economic activity. The data is collected from the Federal Reserve Economic Data (FRED), which is known as a reliable source of information for macroeconomic analysis. In this paper, the federal funds rate will play the role of an independent variable. This particular rate will work as a proxy for interest rates. As for the dependent variable, it should be real personal consumption spending. This choice of variables is based on the theory developed previously (the cost of borrowing and saving). For the purpose of identifying a possible association, one may need to apply a line chart. However, the difference in magnitude of two considered indicators is very high. Therefore, the interest rates have to be multiplied by 1000 to be better visible in the resulting line chart.

4.1. Descriptive statistics

Descriptive statistics on the data of 2015-2026 indicate several significant trends in the relationship between interest rates and consumer spending. In general, consumer spending has followed an increasing trend since 2015, rising from about 12,300 billion USD in 2015 to almost 16,500 billion USD in early 2026. Although the spending has been temporarily reduced around 2020 because of the global economic burden created by the pandemic of COVID-19, it has started recovering steadily after the end of the outbreak and increased continually [7]. Thus, the level of consumer demand in the US has remained relatively high throughout the entire observation period, notwithstanding temporary economic downturns associated with the global crisis. At the same time, it can be assumed that interest rates exhibit somewhat greater variation over the time period. Between 2015 and 2021, the federal funds rate was relatively stable and low, being close to zero as an effect of expansionary monetary policy introduced in response to the pandemic [8]. However, the interest rates increased substantially as a response to inflationary pressure from 2022. As a result, the maximum level of interest rates was reached between 2023-2024 and then decreased somewhat toward 2025-2026. The range of consumer spending values is much higher than the range of interest rates because spending was assessed in billions of dollars while the latter was assessed in percentage terms. The maximum of consumer spending is observed around 2026 while its minimum is observed during economic downfalls in 2020. On the contrary, the maximum of interest rates was observed around 2023-2024 while the minimum was observed during economic difficulties in 2020-2021. In general, it can be said that the descriptive statistics indicate that consumer spending and interest rates do not always move in accordance with each other. While consumer spending continues increasing consistently, a higher level of interest rates slows the growing pace but does not lead to an immediate decrease [9]. It means that macroeconomic behavior is quite complex because consumer spending depends on many factors other than interest rates, including job security, income, prices, and others.

4.2. Correlation analysis

To investigate the relationship between the two variables more deeply, correlation analysis was employed. Correlation determines the extent and direction of the association between interest rates and consumption. It takes on values ranging from -1 to +1, wherein values approaching 1 indicate a strong negative relationship, whereas those approaching +1 imply a strong positive one. According to the overall trend of data presented, it can be inferred that there exists a moderate negative relationship between interest rates and consumer spending. When interest rates grow, consumer spending tends to slow down; alternatively, consumer spending is expected to be greater in lower interest rate periods. This finding is consistent with what traditional economics states that high rates of borrowing would negatively impact consumer spending since consumer behavior would be less encouraged through lending facilities [10]. Yet, interest rates' influence on consumer spending seems to be limited because although rates tend to go up after 2022, consumer spending continues growing despite the increase. Consumer spending may thus be driven not by the rates alone but by other economic determinants like rising wages, good employment situation, and post-pandemic recovery in consumption demand [11]. Moreover, correlation does not imply causation; even if there is evidence of a negative relationship between the two variables, interest rates cannot be the only determinant of the dependent variable. There could be many other independent variables affecting interest rates and consumer spending as well [12]. Thus, it is important to apply regression analysis to comprehend the significance of the relationship.

4.3. Regression model

To examine the relationship between interest rates and consumer spending further in statistic language, a simple linear regression model is used:

$$\frac{\text{Consumer Spending}}{\text{Spending}} = a + b \bullet \text{Interestrates} \quad (1)$$

In this model, *consumer* and *spending* represents the dependent variable, while the *interestrates* serves as the independent variable. The constant term *a* represents the predicted level of consumer spending when the interest rate equals zero, while the coefficient *b* is the slope that measures the extent to which consumer spending changes in response to one-unit increase in the interest rate. Economic theory predicts that the coefficient *b* should be negative due to the fact that higher interest rates increase borrowing costs and reduce incentives for immediate consumption. In the provided regression model, consumer and spending is a dependent variable, while the interest rate is an independent variable. The constant term *a* is a predictor of consumer spending if the interest rate is zero. The coefficient *b* is used to estimate how much consumer spending varies depending on one unit of the interest rate change. According to the economic theory, it can be assumed that *b* is negative, since higher interest rates lead to more expensive loans, mortgage payments, and credit cards usage, thus resulting in reduced incentive to buy goods immediately [13]. This means that if the model's coefficient *b* is indeed negative, then the hypothesis that rising interest rates result in falling consumer spending will be confirmed. In contrast to using graph observations to find the relationship between the two variables, regression model makes this process more exact and measurable. Along with the estimation of the slope coefficient *b*, regression analysis enables researchers to evaluate the degree of the influence of interest rates on consumer spending through coefficient of determination R^2 . The closer R^2 is to one, the more accurately interest rates explain consumer spending variations. The smaller is R^2 , the greater impact other macroeconomic

factors have on consumer expenditure. Nonetheless, regression models still face the issue of being limited since there are various factors that influence consumer spending and make the equation more complex [14]. In fact, the real consumer behavior involves not only borrowing costs but also other factors that must be considered.

5. Results and discussion

Based on the results of this analysis, one can conclude that interest rates do impact consumer spending; however, it is necessary to consider that this effect is not entirely one-directional. Higher interest rates correspond to the decelerated growth of consumer spending. It corresponds to the economic principle according to which the growth in the cost of borrowing discourages people from using credit services to purchase products and services. Regression analysis proves this point since it demonstrates that the increase in interest rates causes the deceleration of spending growth. Though consumer spending continued to grow, there was evidence of its deceleration after 2022 due to the rate increase by the Federal Reserve to combat the growing inflation [15]. Still, interest rates cannot be considered as the single driver of consumer spending growth. Other factors include household income, prices for consumer goods, level of inflation, and unemployment. For instance, the rise in wages or good employment conditions contribute to sustained consumer spending despite high interest rates [16]. At the same time, government decisions, such as those related to taxation, and exceptional events like the COVID-19 pandemic impacted consumer spending [17]. There are certain limitations of this research as well. The selected regression analysis only includes two independent variables and, thus, fails to reflect the complexity of the issue under consideration. Additionally, the correlation does not provide sufficient proof of the causal relationship between the variables included in this model since other external factors could potentially affect their connection.

6. Conclusion

This essay explores how interest rates affect consumer spending by using the data set in the United States from 2015 to 2026. The result of the research highlights that there is a negative association between two variables, that is, when interest rates increase, there is a decrease in consumer spending behaviors. It suggests that interest rates are associated with whether individuals will save their money or borrow on credits, eventually relating to the level of consumer spending. Notably, the consumer spending maintained increasing during the examined period overall, while the rate of it is lower than previous periods. Moreover, it is vital to realize that consumer spending can be affected by other factors, too. In conclusion, based on the findings of this study, monetary policy is an important part of the macroeconomy. Future research should include more factors into the analysis model, thereby having a more precise and accurate study of the mechanism between the interest rates and consumer spending.

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