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# How Mortgage Rates Affect Personal Savings Rates in the U.S.

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## Abstract:

Currently in the United States, we are experiencing a significant increase in mortgage interest rates. While there are various factors that influence mortgage rates, the high mortgage rates have an effect on the economy. Specifically, how mortgage rates affect one's ability to save money. In this study, I assed how mortgage rates affect the personal savings, while accounting for the NASDAQ 100 and the participation of women in the labor force. The results of the regression suggest that when mortgage rates increase, savings rates will also increase.


## Introduction:

The research topic being discussed in this study is the relationship between mortgage interest rates and personal savings rates. In the regression model, personal savings rates is the dependent variable, while 30-Year Mortgage Rates, NASDAQ 100, and Participation of Women in the Labor Force are the explanatory variables. Summary statistics can be found in Table 1.

**Table 1**

| Variable | Personal Savings Rate | 30-year Mortgage Rates | NASDAQ 100 | Participation of Women in the Labor Force |
|---|---|---|---|---|
| Number of Observations | 759 | 2667 | 9164 | 892 |
| Mean | 8.92 | 7.78 | 2711.04 | 49.92 |
| Standard Deviation | 3.21 | 3.29 | 3280.70 | 9.37 |
| Minimum | 2.10 | 2.65 | 128.43 | 32.00 |
| .25 | 6.60 | 5.07 | 413.82 | 40.30 |
| Median | 8.70 | 7.44 | 1605.63 | 54.20 |
| .75 | 11.20 | 9.58 | 3480.24 | 57.95 |
| Maximum | 33.80 | 18.63 | 16573.34 | 60.30 |

## Methodology and Model:

The method used for estimating this regression is Ordinary Least Squares (OLS). Ordinary Least Squares has four assumption. These assumptions are the assumption of linearity, the assumption of constant variance, the assumption of normality, and the assumption of independence. Each of these four assumptions were tested using their respective test to ensure all four assumptions are not violated.

The data being used was collected from the Federal Reserve Economic Database (FRED). The data consists of observations made by the FRED from 1984-2022.

## Regression Model:

$PSAVERT_i = \beta_0 + \beta_1 MORTGAGE30US_i + \beta_2 NASDAQ100_i + \beta_3 WOMEN_i + e_i$

## Selected Results:

First and foremost, it is important to note that all variables, as well as the constant, are all statistically significant at the 10% level. In other words, this means that there is a statistical relationship between the dependent variable and each explanatory variable. The R-Squared value, also known as the coefficient of determination, is also worth noting. The regression output provides of value of 0.629. This means that 62.9% of personal savings rates can be explained by the explanatory variables used in this regression.

To answer the question of how savings rates are affected by mortgage rates, we need to look at the output for the MORTGAGE30US variable in column 3. Since it is a positive coefficient, this means that there is a positive relationship. In other words, our regression shows that when mortgage rates increase by one point, then personal savings rates will increase by 0.241 points, when controlling for the other explanatory variables used in the regression.

**Table 2**

| VARIABLES | (1) PSAVERT | (2) PSAVERT | (3) PSAVERT |
|---|---|---|---|
| MORTGAGE30US | 0.338*** | 0.445*** | 0.241* |
| | (0.100) | (0.157) | (0.121) |
| NASDAQ100 | | 0.000523*** | 0.000221** |
| | | (0.000109) | (9.27e-05) |
| LNS11300002 | | | -1.105*** |
| | | | (0.167) |
| Constant | 5.540*** | 2.536** | 69.00*** |
| | (0.830) | (1.251) | (10.11) |
| Observations | 81 | 55 | 55 |
| R-squared | 0.126 | 0.313 | 0.629 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

## Conclusion:

In conclusion, there is a positive relationship between personal savings rates and mortgage rates. As mortgage rates increase, personal savings rates will also increase. This is likely because when mortgage rates, along with other loan interest rates rise, banks and other financial institutions typically raise the yield on deposit accounts. This gives consumers more incentive to save their money. Along with higher yields, it is also good practice for consumers to have three months of expenses saved at all times. Therefore, when their monthly expenses rise because of their mortgage payments, then consumers will need to have more money saved. Nevertheless, as mortgage rates rise, there is statistically significant information for us to believe that personal savings rates will also increase.