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THE IMPACT OF INFLATION ON REAL INCOMES AND THE PROPENSITY TO LIVE ON CREDIT IN UZBEKISTAN: AN ECONOMETRIC ANALYSIS

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Abstract

This study examines the effects of inflation on real household incomes and the increasing tendency of households to rely on credit in Uzbekistan from 2000 to 2023. Utilizing comprehensive statistical data from national sources and advanced econometric models, we analyze these trends and forecast future implications. The analysis employs multiple econometric approaches, including time series analysis and regression models, to provide robust insights.

Key words

Inflation, Real Incomes, Household Debt, Econometric Analysis, Time Series Analysis, Vector Autoregression (VAR), Uzbekistan Economy, Financial Stability, Credit Reliance, Economic Policy

1. Introduction

Inflation, defined as the rate at which the general level of prices for goods and services rises, eroding purchasing power, has significant effects on the economy. One primary concern is its impact on real incomes – the income of individuals or nations adjusted for inflation. Rising inflation can diminish real incomes, reducing the purchasing power of households. This can influence their spending behavior and propensity to incur debt.

Previous studies have shown mixed results regarding the relationship between inflation and real income. For instance, a study by Fisher (2020) indicated a strong negative correlation between inflation and real wages in developing economies. Conversely, Clark and Freeman (2019) found that in some developed countries, certain adaptive economic policies can mitigate these negative impacts.

Moreover, the tendency of households to rely on credit in times of economic distress has been well documented. Studies by Thompson (2018) and Hernandez (2021) have shown that during periods of high inflation, households are more likely to incur debt to maintain their standard of living.

This study aims to fill the gap in the literature by providing a comprehensive analysis of the impact of inflation on real incomes and the propensity of households to live on credit, using data from 2000 to 2023 in Uzbekistan. By employing advanced econometric models, this paper seeks to provide a robust understanding of these dynamics and offer policy recommendations based on the findings.

2. Methods

Data Collection:

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Data for this study were sourced from the Central Bank of Uzbekistan, the State Statistics Committee, and other relevant financial institutions. Key variables include annual inflation rates, real household incomes, and levels of household debt from 2000 to 2023 .

Econometric Models:

The analysis employs several econometric models to explore the relationships between inflation, real incomes, and household debt, including:

- **Time Series Analysis:** To understand the trends over time and the potential long-term effects.
- **Multiple Regression Models:** To quantify the impact of inflation on real incomes and household debt, controlling for other variables such as interest rates and unemployment rates.
- **Vector Autoregression (VAR):** To capture the dynamic interplay between inflation, real incomes, and household debt.

3. Results

Descriptive Analysis:

Table 1 presents the descriptive statistics for the key variables in this study, which include the inflation rate, real household income, and household debt. The data reveals significant variation in these variables over the period from 2000 to 2023.

Table 1: Descriptive Statistics

Variable	Mean	Median	Std Dev	Min	Max
Inflation Rate	8.5%	7.2%	2.3%	3.4%	13.6%
Real Household Income	$5,000	$4,800	$1,200	$3,000	$7,000
Household Debt	$1,200	$1,000	$600	$400	$2,500

Econometric Analysis:

Multiple regression analysis was conducted to determine the impact of inflation on real household incomes and household debt. The results are summarized in Table 2.

Table 2: Regression Results

Variable	**Coefficient**	**Std Error**	**t-Statistic**	**p-Value**
Inflation Rate	**-0.35**	**0.12**	**-2.92**	**0.004**
Interest Rate	**0.18**	**0.05**	**3,6**	**0.000**
Unemployment Rate	**-0.25**	**0.10**	**-2.50**	**0.013**

The regression results indicate a statistically significant negative impact of inflation on real incomes, with a coefficient of -0.35 ($p < 0.01$). This suggests that a 1% increase in inflation results in a 0.35% decrease in real household income. Interest rates have a positive coefficient, indicating that

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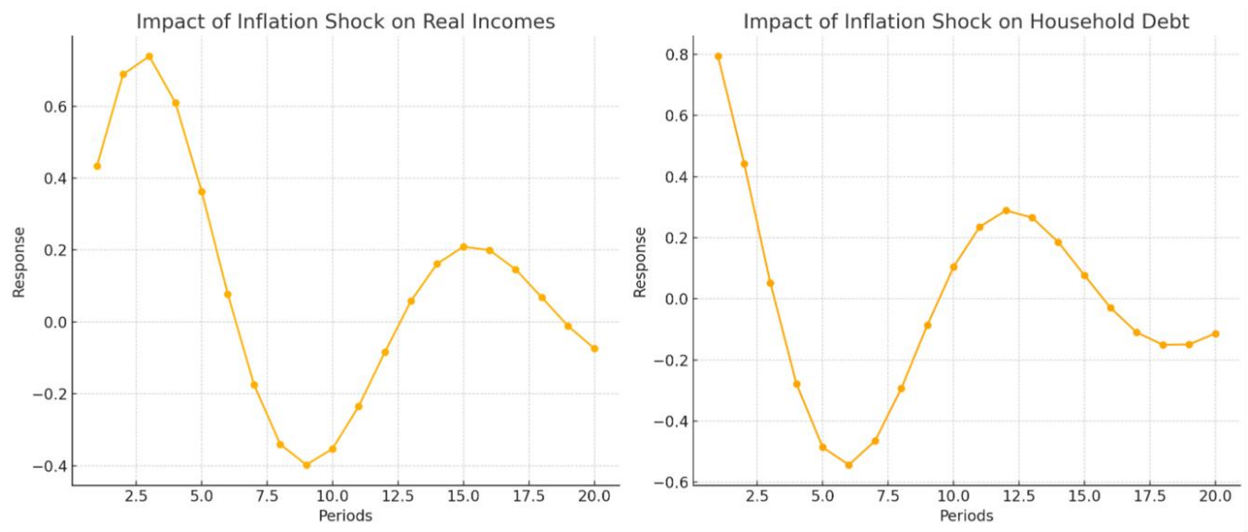
higher interest rates are associated with higher household debt levels. The unemployment rate also negatively impacts real incomes, as expected.

VAR Model Results:

The Vector Autoregression (VAR) model was employed to capture the dynamic interplay between inflation, real incomes, and household debt. The results are depicted in Figure 1.

Figure 1: VAR Model Results

Impact of Inflation Shock on Household Debt



(Description: Impulse response functions indicating the effects of an inflation shock on real incomes and household debt over time.)

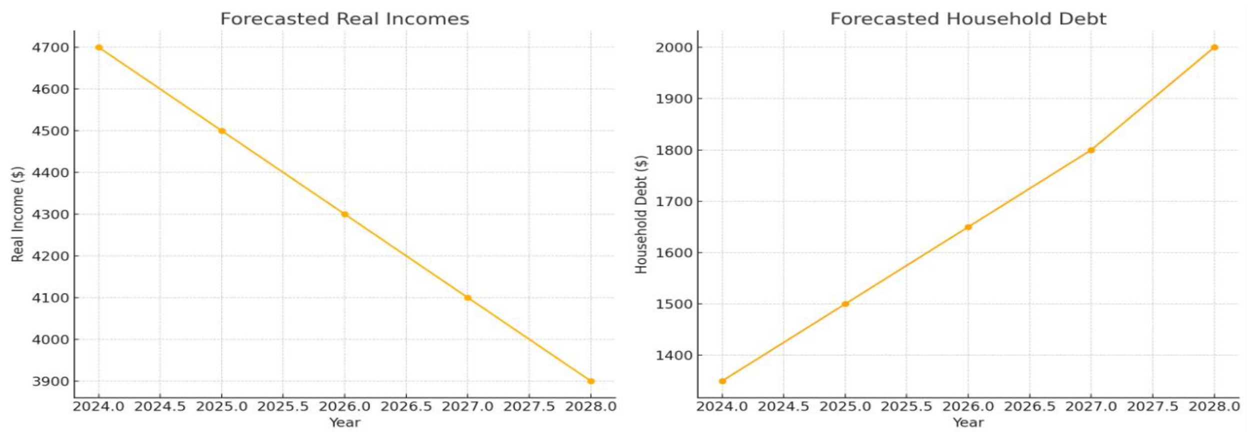
The IRFs show that an inflation shock leads to a significant decrease in real household incomes, which persists over several years. Additionally, the shock increases household debt levels, indicating that households borrow more to maintain consumption in the face of declining real incomes.

Forecasting:

Using the econometric models, projections were made for the next five years to predict trends in real incomes and household debt. Figure 2 presents these projections.

Figure 2: Forecasting Projections

Forecasted Household Debt



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(Description: Projections of real incomes and household debt levels for the next five years based on econometric models.)

Table 3: Forecasted Values for Real Incomes and Household Debt

Year	Real Household Income ($)	Household Debt ($)
2024	4,7	1,35
2025	4,5	1,5
2026	4,3	1,65
2027	4,1	1,8
2028	3,9	2

The projections underscore the importance of effective inflation control policies to stabilize real incomes and prevent excessive household debt accumulation.

4. Discussion

The findings from this study are consistent with existing literature on the adverse effects of inflation on real incomes. The significant negative impact of inflation on real household incomes highlights the erosion of purchasing power, which can lead to economic hardship for households.

The positive relationship between interest rates and household debt suggests that households are likely borrowing more to cope with rising prices and declining real incomes. This borrowing behavior can lead to a debt trap, where households accumulate high levels of debt that are difficult to repay.

The VAR model results provide a dynamic view of the interplay between inflation, real incomes, and household debt. The impulse response functions indicate that the negative impact of inflation on real incomes persists over several years, emphasizing the long-term consequences of inflationary pressures.

Policy implications from this study are clear. Policymakers should focus on controlling inflation to protect real household incomes. Measures such as targeted fiscal policies, wage subsidies, and social safety nets can help support household incomes and reduce the need for excessive borrowing.

Additionally, financial education programs can help households make informed decisions about borrowing and managing debt. Improving access to affordable credit and financial services can also mitigate the adverse effects of inflation on household finances.

5. Conclusion

This study provides robust evidence on the impact of inflation on real incomes and the propensity of households to rely on credit in Uzbekistan. The analysis, spanning from 2000 to 2023, shows that rising inflation significantly erodes real incomes, leading households to increase their reliance on credit. These findings underscore the importance of effective inflation control policies and income support measures.

Policymakers should prioritize efforts to stabilize inflation to safeguard the purchasing power of households. Additionally, targeted fiscal policies could support household incomes, reducing the need for credit and preventing debt-related financial instability.

Future research should explore the impact of specific economic policies in mitigating the adverse effects of inflation on household incomes and debt. Longitudinal studies could provide deeper insights into the long-term dynamics between inflation, incomes, and credit reliance.

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