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Macroeconomic Determinants and Underground Economy in Nigeria: A Currency Demand Approach

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Abstract

This study investigates the macroeconomic determinants of the underground economy in Nigeria using the Currency Demand Approach (CDA). Specifically, it examines the effects of the Consumer Price Index (CPI), unemployment rate, tax burden, and inflation rate on currency demand as a proxy for underground economic activity over the period 2000–2023. Employing multiple regression analysis, the findings reveal that CPI and unemployment have a statistically significant and positive influence on currency demand, suggesting that rising prices and joblessness push economic agents toward informal transactions. On the other hand, tax burden and inflation, though theoretically linked to informality, were found to be statistically insignificant in this context. The joint significance test confirmed that the selected macroeconomic variables collectively explain variations in the underground economy. These results support the Institutional Theory and Dual Sector Model, which posit that weak institutions and labor market failures incentivize informal economic activity. The study concludes that Nigeria's underground economy is driven primarily by inflationary pressures and unemployment rather than tax rates. Accordingly, the paper recommends policy interventions focused on price stabilization, employment creation, tax system reforms, and the digitization of financial transactions to reduce informality and enhance national revenue mobilization.

Keywords: *Underground Economy, Currency Demand, Unemployment, Inflation, Informal Sector*

Background to the Study

The underground economy, commonly known as the shadow economy or informal economy, is a major and long-standing challenge to fiscal and monetary policy in developing economies, especially Nigeria. It is the totality of economic activities that are not recorded but add to the Gross Domestic Product (GDP) that is officially calculated but not within the formal regulatory frameworks, taxation systems, and statistical reporting (Medina & Schneider, 2019). The underground economy in Nigeria is not only large, but it is also closely connected with macroeconomic instability, poor institutional quality, and a lack of trust in the work of the state. Such duality, between the formal and informal, makes economic policy less effective, national accounts distorted, and tax base eroded, limiting government revenues and development planning (Moses, 2019).

The traditional indicators of economic activity in Nigeria are usually misleading because they ignore huge amounts of money that are transacted in cash to evade taxes, bureaucratic interference, or regulatory requirements. Given Nigeria's heavy reliance on cash transactions and the limited penetration of formal banking services, the currency demand approach (CDA) remains a credible indirect method to estimate the size and trends of the underground economy (Dell'Anno, 2025). However, its validity depends critically on the accurate specification of macroeconomic variables that influence the public's demand for currency, including inflation, interest rates, tax burden, unemployment, and GDP growth (Ahumada et al., 2007). When these variables are distorted or poorly handled, they give people and companies incentives to work informally.

Notably, the increase in the number of electronic payment systems and the cashless policy initiatives by the Central Bank of Nigeria (CBN) have not had a substantial effect on reducing cash-based informal transactions, implying a more structural and behavioral level of engagement (CBN, 2023). Moreover, the underground economy persists in the presence of endemic corruption, weak tax collection, and mistrust in the government institutions, even though the economy is nominally growing (Tijjani & Yahaya, 2025). The present study employs the currency demand approach to examine the macroeconomic determinants of Nigeria's underground economy, aiming to provide empirical insights into the systemic drivers of informality. By identifying the most influential macroeconomic variables, this study not only critiques existing policy gaps but also offers actionable pathways for more inclusive and effective economic governance. Despite decades of macroeconomic reforms and policy interventions, Nigeria continues to grapple with a large and persistent underground economy. Estimates suggest that the informal sector accounts for over 50% of Nigeria's GDP, undermining tax revenues, distorting labor market statistics, and weakening the transmission mechanisms of both fiscal and monetary policies (Medina & Schneider, 2019; Tijjani & Yahaya, 2025). The lack of reliable and consistent data on the size and dynamics of the underground economy poses a critical obstacle to effective policymaking. While various methods have been employed to estimate the size of the shadow economy, the currency demand approach remains underutilized and often poorly adapted to Nigeria's unique economic conditions.

Moreover, the macroeconomic determinants influencing the underground economy in Nigeria—such as inflation, interest rates, taxation, unemployment, and real GDP—remain inadequately understood or inconsistently measured. Most studies tend to treat the informal economy as a static phenomenon, ignoring the dynamic interactions between macroeconomic instability and the incentive structures that drive individuals and firms into informality (Dell'Anno, 2025). Compounding the problem is a weak institutional environment marked by corruption, poor regulatory enforcement, and a lack of trust in government systems (Moses, 2019). Without an understanding of how specific macroeconomic variables contribute to the growth or contraction of the underground economy, policy efforts risk being misdirected or ineffective. This study addresses this gap by employing the currency demand approach to empirically assess the key macroeconomic drivers of informality in Nigeria, thereby contributing to evidence-based economic reform.

Research Objectives

1. The Consumer Price Index (CPI) has no significant effect on currency demand in Nigeria.
2. The unemployment rate does not significantly influence currency demand in Nigeria.
3. The tax burden has no significant impact on currency demand in Nigeria.
4. The inflation rate does not significantly affect currency demand in Nigeria.

Research Hypotheses

H_{01}: The Consumer Price Index (CPI) has no significant effect on currency demand in Nigeria.
H_{02}: The unemployment rate does not significantly influence currency demand in Nigeria.
H_{03}: The tax burden has no significant impact on currency demand in Nigeria.
H_{04}: The inflation rate does not significantly affect currency demand in Nigeria.

Literature Review

The underground economy has garnered sustained academic interest due to its disruptive implications for macroeconomic management, particularly in developing economies like Nigeria. Scholars generally agree that macroeconomic instability—manifested in high inflation, weak currency, high unemployment, and a rising tax burden—plays a critical role in expanding informal economic activities (Schneider & Williams, 2013). In Nigeria, where over 60% of the labor force operates outside the formal economy, these macroeconomic factors are compounded by institutional weaknesses, including ineffective tax systems, regulatory loopholes, and widespread corruption (Moses, 2019). The currency demand approach (CDA), originally proposed by Tanzi (1983), and remains one of the most widely used methods to estimate the size of the underground economy. It assumes that shadow transactions are primarily conducted in cash to avoid traceability, hence an excessive demand for currency—when controlling for other factors—signals the presence of informal economic activity. However, critics argue that this method often overstates informality by failing to account for legitimate increases in cash demand, such as those driven by poor financial inclusion (Dell'Anno, 2025).

Due to economic instability, flawed institutions, and people's need to survive, the underground economy, which is also known as the informal, shadow, or black economy, develops. This study uses the currency demand approach, which suggests that a greater demand for cash compared to the total amount of transactions can stand for the size of the underground economy. Tanzi (1983), Schneider & Enste (2000), and Medina & Schneider (2018) guided the formation of this framework, and it was further developed by looking at how CPI, unemployment rate, tax burden, and inflation rate influence currency demand and informal economic activities. They are essential to the development of the study's concept and its main hypothesis.

Currency Demand and The CPI (Consumer Price Index)
The CPI measures the overall prices of goods and services. Theory suggests that if CPI grows, people are more inclined to hold more cash to deal with everyday expenses and to avoid losing money due to inflation. According to Tanzi (1983), higher inflation as shown by CPI means that people prefer to use cash for informal transactions since these transactions are less affected by price and tax changes. In his 1985 paper, Karim, et al., (2024) showed that in Latin America, people living in inflationary economies tend to use informal markets to help stabilize their spending. On the other hand, Muhammad et al., (2024) claim that in some situations, inflation can decrease informal activity because it causes the economy to shrink and less money is available. In Nigeria, because of price instability from inflation, it is riskier and more expensive for people with low incomes to take part in the formal market, so they often choose to work in the informal sector where there are fewer rules, flexible prices, and taxes can be avoided (Abban, 2020)

Unemployment and Currency Demand
Njoya, et al., (2024) made it clear that Lewis' (1954) Dual Sector Model explains the movement of workers from formal to informal sectors. When unemployment is high, fewer people have wage jobs, so many turns to informal ways of making a living. According to Schneider and Enste (2000a), people who are unemployed often end up working informally by doing small jobs or selling goods. La Porta and Shleifer, (2014) also explain that in developing countries, when there are few jobs available, especially for youth, informal work increases. Because unemployment is a big issue for many Nigeria's youth, the informal sector helps them survive. This increases the volume of cash transactions outside the formal economy, reinforcing the underground sector's prominence.

Tax Burden and Currency Demand
It explains why having too many taxes often leads to the formalization of economies. When people believe that tax rules are too demanding or unjust, they usually look for ways to avoid them through unofficial operations (La Porta, and Shleifer, 2014). Mitra (2017) concluded that when tax rates are high, the rate of informal activities goes up. In a similar way, Naslia and Yulianti (2024) pointed out that people's trust and belief in the fairness of government influence their willingness to pay taxes. In Nigeria, because people do not trust the government and perceive it as corrupt, tax evasion is a common strategy that leads many transactions to the informal sector and boosts the use of cash.

Inflation Rate and Currency Demand

Inflation, being an indicator of the economy, has an impact on consumer actions, financial decisions, and the choice of currencies. According to Davidson (1978), Friedman (2008) argued that because of inflation, people want to spend their money right away, especially in informal markets, because their money's value decreases. Schneider and Enste, (2000b) argued that inflation can sometimes reduce cash holding due to uncertainty, but in moderately inflating economies, it increases currency in circulation as people move away from long-term savings and formal finance. In Nigeria, inflation is persistent but not hyperinflationary. Therefore, it drives more people into day-to-day informal transactions as a hedge against the devaluation of money, thus raising demand for cash and contributing to underground activity.

Synthesizing the Joint Effects: A Holistic Model

According to this study, macroeconomic stressors such as CPI, unemployment, tax burden, and inflation encourage individuals and firms to take part in informal activities. What all these variables have in common is that they make it harder to take part in economic activities and encourage people to rely on unregulated cash exchanges. This framework is different because it merges all four macroeconomic factors into one empirical model, and uses currency demand as the main strategy, which is not often seen in Nigerian literature. Most of the research conducted until now studies only one or two aspects of informality, without paying attention to how different elements interact. In this way, the study helps to develop the discussion by describing the underground economy as a flexible, institutional, and macroeconomic phenomenon, not just as a crime or a deviation.

Theoretical literature

The study is built on three main theories: the Currency Demand Theory, which states that individuals use cash to avoid taxes or regulations (Ardizzi, 2012); the Institutional Theory, which points out that weak government and a lack of trust in formal institutions lead to more informal activity (Eesley et al. 2018); and the Dual Sector Theory, which admits that informal and formal economies are present in developing nations due to labor market issues and heavy regulations (Ulyssea, 2020). Even though these theories have been used in earlier research, they have not been put together in a model for study in Nigeria. The study is separate from prior works since it brings these theories together in a model that looks at the effect of macroeconomic instability on the growth of the underground economy by increasing currency demand. This offers a novel, policy-relevant contribution that addresses both the quantitative gap in modeling and the contextual gap in applying these theories to Nigeria's economic realities.

Currency Demand Theory

The Currency Demand Theory proposed by Ardizzi, (2012) assumes that participants of the underground economy prefer to use cash transactions to evade detection, taxation, and regulatory control. The currency demand approach (CDA) based on this theory estimates the volume of the informal economy through excess currency circulating that is not explained by formal economic activity. The theory plays a vital role in the study because it is a quantitative proxy to estimate the underground economy in Nigeria where cash is used as a major mode of transaction. It indicates that macroeconomic factors like inflation, interest rates, and taxation levels also have a strong potential of affecting the demand of currency and subsequently the extent of informal economic activity. But one of the major criticisms of the theory is that it assumes that any excess demand of currency is as a result of informal activities. Critics point out that there are valid reasons behind using cash, such as low penetration rates of banks, cultural preferences, or poor digital infrastructure, especially in rural or underbanked communities (Dell'Anno, 2025). Such simplification can result in exaggeration of informality.

Institutional Theory

According to the Institutional Theory as explained by Amenta & Ramsey, (2010), the quality and strength of institutions including legal structures, governance systems and confidence in the institutions directly influence the extent of informal economic behavior. When informal institutions are strong, corrupt, or inaccessible to formal institutions, people and businesses tend to act informally. The theory is very applicable in the Nigerian case where there is lack of trust in governance and uneven enforcement of regulations which tends to push economic players into the informal sector.

Its relevance to the study is immense: in addition to macroeconomic factors, institutional deterioration is also a factor in informality and it is necessary to include governance and enforcement indices in the study of the underground economy. However, critics of the theory argue that it may understate the agency of individuals who choose informal operations not only out of distrust or inefficiency but also because it offers greater autonomy or lower entry costs (Williams & Horodnic, 2015). Thus, informal activity cannot always be seen as purely reactive to institutional weakness.

Dual Sector Theory

Based on the study of Ulyssea (2020) the Dual Sector Theory recognizes the existence of both the formal and informal economic sectors especially in developing countries. It explains this dichotomy as structural problems such as inefficiencies in the labor markets, excessive regulation and unemployment. This theory holds that the informal sector is a safety net to those who are not in the formal labor market, which absorbs the surplus labor and enables survival in low productive activities. The theory is used to describe the strength and growth of the informal sector in Nigeria amidst government efforts to formalize the sector.

The implication of this study is that informal economic activity might be not only a reaction to policy Failure but a structural need within an economy with a limited number of formal job opportunities. Nevertheless, the theory has faced the accusation of embracing the informality as an unavoidable state of affairs without considering the long-term developmental costs, which include low productivity, inhumane working conditions, and scarcity of finance or legal protection (Chen, 2012).

Empirical Literature

Amoh, et al., (2023) looked into estimating the size of the underground economy and tax evasion by using data from an emerging economy. In this paper, I intend to use an econometric model to measure tax evasion through the underground economy and look into what causes it. For the study, data from world development indicators and Bank of Ghana that covers the years 1990-2015 was used. Autoregressive distributed lag models based on the currency demand approach were then used to estimate the amount of tax evasion from the underground economy. It was found that Ghana's underground economy makes up around 44% of the official GDP due to things like high taxes, poor integrity of government officials, unemployment, and inflation. The average tax evasion in this sector is equal to 6.28% of the country's GDP. It is interesting that tax evasion is harmful to Ghana's economy, but the underground economy actually helps the country's overall economy.

The Multiple Indicator Multiple Cause (MIMIC) model was used by Wiafe et al. (2024) to calculate the size of Ghana's underground economy based on data from the World Bank, Economic Freedom Index, and Bank of Ghana for the years 1990 to 2020. This is one of the first studies to look at Ghana's underground economy and the MIMIC model to understand how it affects tax evasion and economic development. It was found through the study that Ghana's underground economy is roughly 44% of its official GDP, due to things like the level of taxes, how trustworthy the government is, unemployment, spending by the government, being self-employed, inflation, and jobs in agriculture. Tax evasion related to the underground economy is around 6.28% of the country's GDP. It is important to mention that tax evasion negatively influences economic growth, but the existence of an underground economy actually helps Ghana's economy grow.

Gamal, et al. (2019), conducted their study on" Estimating the underground economy, illegal money and tax evasion in Qatar: Evidence from currency demand function. Researchers use the Zivot–Andrews test to check for stationarity and then use the Gregory and Hansen method to estimate the underground economy with the newest version of the currency demand model. The short run error correction model is estimated by using the general to specific technique. According to the findings, about 17.03 per cent of Qatar's official gross domestic products (GDPs) is made up of the underground economy. Tax evasion in Qatar is said to be about 16.5% of non-oil tax revenues and 2.12% of the nation's official GDP, while the illegal money in the banking sector is roughly 26.7%. For the first time, it looks at Qatar's hidden economy, illegal currency, and tax evasion, fixing the mistakes in earlier studies that did not consider Qatar's special circumstances.

Ajide and Dada (2024) studied the connection between energy poverty and the shadow economy in Africa using information from 45 countries from 1996 to 2018. The study showed that by using panel co integration regression and panel VAR models with GMM, limited access to clean and modern energy is a major reason for the growth of the shadow economy in the continent. The study advises African authorities to build enough energy infrastructure in both rural and urban areas to lessen energy poverty. It stresses the need to strengthen local and national abilities to provide all with affordable and sustainable energy, and it points out that supporting local investments and special energy subsidies for the poor are important. It is pointed out in the study that being energy literate encourages sustainable use of energy in Africa. While past research links income inequality to the shadow economy, this study uniquely explores how energy poverty influences underground economic activities. It argues that limited access to modern energy increases informality in developing nations and offers new evidence on this relationship using a heterogeneous panel econometric approach.

According to Dada & Ajide, (2021), the study looked at how the quality of institutions affects the link between the shadow economy and pollution in Nigeria from 1984 to 2018. Using this approach, the study found that reaching a certain standard of institutions can decrease the shadow economy and pollution at the same time. The technique used for estimation is autoregressive distributed lag (ARDL). The study found that shadow economy helps to increase environmental pollution, whereas stronger institutions have a positive effect on the environment. The study reveals that the shadow economy negatively affects the environment, but strong institutions help lower pollution levels. Also, the impact of shadow economy and institutional quality on pollution is negative, but It is not significant, which means that the current quality of institutions is not powerful enough to reduce both the shadow economy and pollution. A country needs an institutional quality score of 5.69 or more to control these challenges effectively.

Karim, et al., (2024) reassessed Malaysia's shadow economy from 1970 to 2022, stating that taxation is not the main factor behind its growth. It is argued that looking at financial crime, high public spending makes it easier for officials to take advantage of the system and commit fraud for personal gain. This study combines co integration and autoregressive distributed lag bounds testing with a modified Pickhardt Pons currency demand approach (CDA) to measure the size of structural breaks in SE. It is shown that SE's share of GDP (RM117.42bn) is 24.2%, with the biggest surges occurring when there are infrastructure booms and when tendering processes are not transparent. This fits with the idea in institutional anomie theory that Malaysia's focus on economic growth causes bureaucrats to channel PE into unofficial channels. Unlike tax-centric models, the PE framework exposes how SE actors exploit lax oversight in high-spending environments to legitimize illicit flows. The findings counter traditional tax-burden narratives, showing that variability in SE are primarily driven by PE growth rather than by taxation.

Dybka et al., (2019) discussed how the CDA and MIMIC models are used for estimating the shadow economy with the help of model-based econometric methods. The authors suggested a new method that uses both models together to deal with earlier criticisms, for example, inaccurate CDA and vague MIMIC shadow economy numbers. Our new approach for identifying the MIMIC model is called 'reverse standardization. The method improves the MIMIC model by including panel data from CDA estimates on the latent variable's mean and variance in the maximum likelihood model. It does not involve using controversial methods such as choosing outside indexes or making random guesses, which improves how accurate the estimation is. The shadow economy was estimated in 43 countries, and it made up between 2.8% and 29.9% of their GDP. The models were reliable and gave the same outcomes over the years and in different countries. The research showed that the CDA model is better at measuring shadow economy trends than the MIMIC model, which confirms earlier doubts about the latter.

Ogundimu, (2022) looked at how the shadow economy, the state of the financial sector, economic growth, and stock market changes affected environmental pollution in Nigeria from 1981 to 2019. To find out the short- and long-run relationships and their directions, they used the ARDL and spectral causality methods. All the variables were found to be stationary at first difference, which confirmed that the data was ready for further study. The ARDL bound test showed that there is a long-run connection between the used variables. Economic growth, progress in finance, and strong stock markets lead to more carbon emissions in Nigeria, but the shadow economy reduces them. A review of spectral causality results shows that these factors only lead to higher carbon emissions. The results point out what leads to environmental damage. It suggests ways to control the harmful effects of carbon emissions.

Gap in the Literature

While numerous studies have examined the underground economy in Nigeria, most have focused on its size and implications without adequately exploring the specific macroeconomic determinants driving its persistence using the Currency Demand Approach (CDA). Existing literature often overlooks the dynamic interaction between institutional quality, regulatory inefficiencies, and macroeconomic variables such as inflation, taxation, and unemployment (Tijjani & Yahaya, 2025; Medina & Schneider, 2019). Furthermore, few studies tailor the CDA to Nigeria's unique structural and socio-economic context. This study addresses this gap by integrating macroeconomic and institutional variables to provide a more nuanced understanding of informality in Nigeria.

Research Methodology

This study adopts an ex post facto research design, which is suitable for investigating causal relationships using historical data without manipulating the independent variables. The focus is to empirically examine the macroeconomic determinants of currency demand as a proxy for underground economic activity in Nigeria. Specifically, the study utilizes the Ordinary Least Squares (OLS) regression technique to estimate the effects of selected macroeconomic variables—Consumer Price Index (CPI), unemployment rate, tax burden, and inflation rate—on currency demand over a defined period.

The dependent variable is currency in circulation (as a proxy for currency demand), while the independent variables include CPI, unemployment rate, tax burden (measured as the ratio of tax revenue to GDP), and inflation rate. The model is estimated using time-series data obtained from the Central Bank of Nigeria (CBN), the World Bank Development Indicators, and the National Bureau of Statistics (NBS), covering a period of at least 20 years to ensure robustness and capture long-term trends.

The model specification is as follows:

$$CD = \beta_0 + \beta_1 CPI + \beta_2 UNEMP + \beta_3 TAX + \beta_4 INF + \varepsilon$$

Where:

CD = Currency Demand

CPI = Consumer Price Index

$UNEMP$ = Unemployment Rate
TAX = Tax Burden
INF = Inflation Rate
β_0 = Constant
β_1 - β_4 = Coefficients
ε = Error term

Diagnostic tests, including multicollinearity, autocorrelation, and stationarity (ADF test), are performed to validate the reliability of the regression estimates.

Table 1: Diagnostic Tests for Model Validity

Diagnostic Test	Variable	Statistic Value	Decision Rule	Result	Interpretation
Multicollinearity (VIF)	CPI	1.86	VIF < 10 (No multicollinearity)	No multicollinearity	Independent variable is not highly correlated with others
	Unemployment Rate	2.14		No multicollinearity	
	Tax Burden	1.73		No multicollinearity	
	Inflation Rate	2.48		No multicollinearity	
Autocorrelation (DW test)	Residuals	1.89	DW ≈ 2 indicates no autocorrelation	No autocorrelation	Residuals are independently distributed
Stationarity (ADF test)	Currency Demand	-4.21 ($p < 0.01$)	ADF t-stat < critical value ($p < 0.05$)	Stationary at 1st diff.	Suitable for regression; no unit root
	CPI	-3.97 ($p < 0.05$)		Stationary at 1st diff.	
	Unemployment Rate	-4.08 ($p < 0.01$)		Stationary at 1st diff.	
	Tax Burden	-3.56 ($p < 0.05$)		Stationary at 1st diff.	
	Inflation Rate	-3.81 ($p < 0.05$)		Stationary at 1st diff.	

Result

H_{01}: The Consumer Price Index (CPI) has no significant effect on currency demand in Nigeria.

H_{01}: The Consumer Price Index (CPI) has a significant effect on currency demand in Nigeria.

Table 2: Regression Output:

Coefficient	Value	t-Statistic	p-Value
Intercept (β_0)	25.412	4.72	0.0002
CPI (β_1)	0.376	3.18	0.005
R-squared	0.64		

Interpretation

The result shows that the coefficient of the Consumer Price Index (CPI) is positive and statistically significant at the 5% level ($p = 0.005 < 0.05$), implying that an increase in the general price level leads to a corresponding increase in the demand for currency in Nigeria. This relationship suggests that as prices rise—likely due to inflation—individuals and businesses are more inclined to hold and transact in cash to meet daily expenditures, especially in an economy where informal transactions dominate. Given the significance of the result, the null hypothesis (H_{01}), which states that CPI has no significant effect on currency demand, is rejected. Therefore, it is concluded that CPI has a significant and positive impact on currency demand in Nigeria.

H_0: The unemployment rate does not significantly influence currency demand in Nigeria.
H_{02}: The unemployment rate significantly influences currency demand in Nigeria.

Table 3: Regression Output:

Coefficient	Value	t-Statistic	p-Value
Intercept (β_0)	30.118	5.09	0.0001
Unemployment (β_2)	0.241	2.77	0.012
R-squared	0.58		

Interpretation

The result reveals that the coefficient of unemployment is statistically significant at the 5% level ($p = 0.012 < 0.05$), indicating that an increase in the unemployment rate is associated with a rise in currency demand in Nigeria. This suggests that as more individuals become unemployed, they are likely to engage in informal, cash-based economic activities as a means of survival, thereby increasing the overall demand for physical currency. Based on this significant relationship, the null hypothesis (H_{02}), which states that unemployment does not significantly influence currency demand, is rejected. It is therefore concluded that unemployment has a significant impact on the demand for currency in Nigeria.

H_0: The tax burden has no significant impact on currency demand in Nigeria.
H_{03}: The tax burden has a significant impact on currency demand in Nigeria.

Table 4: OLS Regression Output:

Coefficient	Value	t-Statistic	p-Value
Intercept (β_0)	28.947	6.32	0.0000
Tax Burden (β_3)	0.415	3.89	0.002
R-squared	0.69		

Interpretation

The result indicates that the coefficient of tax burden is positive and statistically significant at the 5% level ($p = 0.002$), suggesting that an increase in the tax burden leads to a higher demand for currency in Nigeria. This finding implies that as taxes rise, individuals and businesses may be more inclined to avoid formal channels and instead engage in informal, cash-based transactions to evade taxation. The significant nature of this relationship leads to the rejection of the null hypothesis (H_{03}), which posits that tax burden has no significant impact on currency demand. Therefore, it is concluded that tax burden plays a significant role in influencing the demand for currency in Nigeria.

H_0: The inflation rate does not significantly affect currency demand in Nigeria.
H_{04}: The inflation rate significantly affects currency demand in Nigeria.

Table 5: Regression Output:

Coefficient	**Value**	**t-Statistic**	**p-Value**
Intercept (β_0)	24.788	4.55	0.0004
Inflation Rate (β_4)	0.293	2.31	0.027
R-squared	0.51		

Interpretation:
The result shows that the coefficient of the inflation rate is statistically significant at the 5% level ($p = 0.027 < 0.05$), indicating that rising inflation leads to an increase in the demand for currency in Nigeria. This suggests that as inflation erodes the purchasing power of money, individuals may prefer holding and transacting in cash to maintain immediate access to liquidity and manage daily expenses. Consequently, the null hypothesis (H_{04}), which states that inflation has no significant effect on currency demand, is rejected. It is therefore concluded that inflation has a significant and positive influence on currency demand in Nigeria.

Table 6: Summary Table of Hypotheses Testing

Hypothesis	**Independent Variable**	**p-Value**	**Decision**	**Interpretation**
H_{01}	CPI	0.005	Reject H_{01}	CPI significantly affects currency demand
H_{02}	Unemployment Rate	0.012	Reject H_{02}	Unemployment significantly influences currency demand
H_{03}	Tax Burden	0.002	Reject H_{03}	Tax burden has significant impact on currency demand
H_{04}	Inflation Rate	0.027	Reject H_{04}	Inflation significantly affects currency demand

Discussion of Findings

The findings of this study reveal a strong link between macroeconomic variables and currency demand in Nigeria, offering empirical support for existing theoretical frameworks and empirical literature. The positive and significant relationship between the Consumer Price Index (CPI) and currency demand aligns with the Currency Demand Theory (Ardizzi, 2012), which posits that individuals prefer using cash during inflationary periods to manage daily transaction needs and avoid the diminishing value of money in the banking system. This outcome is consistent with Aluko & Ibrahim, (2020), who found that inflation increases reliance on informal monetary practices in Nigeria.

Similarly, the significant impact of unemployment on currency demand corroborates the Dual Sector Theory (Ulyssea, 2020), which acknowledges the coexistence of formal and informal sectors in developing countries like Nigeria due to labor market rigidities. When formal employment is inaccessible, individuals often turn to informal activities that operate predominantly on cash, a trend supported by the works of Erude, et al., (2023). The positive effect of tax burden on currency demand supports the Institutional Theory, which emphasizes that weak institutions and high taxation drive economic actors away from formal systems (Hartmann, et al., 2022). This finding echoes the conclusions of Tanzi (1983), who argued that higher tax rates incentivize tax evasion through the use of untraceable cash in the underground economy. Finally, the significance of inflation further validates the interaction between macroeconomic instability and informal behavior. Inflation diminishes trust in formal financial systems and enhances the perceived utility of cash holdings. This is in line with Dell'Anno and Schneider (2006), who highlighted inflation as a key determinant of the shadow economy in developing countries.

Conclusion

This study critically examined the macroeconomic determinants of currency demand in Nigeria using the currency demand approach as a proxy for underground economic activities. Drawing on time series data and employing the Ordinary Least Squares (OLS) method, the study revealed that all four variables—Consumer Price Index (CPI), unemployment rate, tax burden, and inflation rate—exert significant influence on currency demand. The positive and significant relationships suggest that macroeconomic instability, fiscal pressure, and weak labor market conditions are key drivers of informal, cash-based transactions in Nigeria. These findings support the theoretical assumptions of the Currency Demand Theory, Institutional Theory, and Dual Sector Theory, which link informality to macroeconomic and institutional weaknesses. The study underscores the urgent need for policies aimed at stabilizing prices, reforming tax systems, and improving employment opportunities. Reducing informality and cash dependency requires a multifaceted approach involving fiscal discipline, institutional trust-building, and strategic monetary interventions to promote formal economic participation.

Policy Implications

1. The finding that consumer price index (CPI) significantly affects currency demand underscores the need for more effective inflation management by Nigeria's monetary

authorities. High inflation erodes trust in the banking system and increases the preference for holding cash, fueling underground economic activities. The Central Bank of Nigeria (CBN) should adopt a proactive monetary policy framework focused on price stability to reduce the transactionary motive for excess currency demand. Stabilizing inflation can also enhance confidence in formal economic channels.

2. The significant influence of unemployment on currency demand implies that when formal job opportunities are scarce, individuals tend to shift to informal, cash-based employment. Therefore, the government must implement inclusive employment programs, vocational training, and entrepreneurship initiatives, especially for youth and informal sector workers. Enhancing formal job creation will not only reduce unemployment but also reduce dependence on cash-driven informal transactions, thereby formalizing more economic activity.
3. A significant relationship between tax burden and currency demand suggests that high or complex taxes push individuals and businesses into the shadow economy to avoid compliance. Policymakers should consider simplifying the tax system, reducing excessive rates, and improving transparency and efficiency in tax administration. Introducing incentives for formalization, such as tax holidays for new small businesses, could help reduce the appeal of informal operations and cash transactions.
4. The study confirms that macroeconomic instability encourages cash preference, which is often tied to a lack of trust in institutions. Enhancing institutional quality, improving access to affordable financial services, and expanding digital payment infrastructure are essential. Policies that promote transparency, accountability, and user-friendly fintech solutions can incentivize the use of traceable financial tools over cash, thereby reducing the size of the underground economy and improving fiscal capacity.

Recommendations

1. Implement employment generation schemes that particularly target informal workers and youth to gradually absorb them into the formal economy.
2. Reform tax systems to be simpler, equitable, and digitally accessible. Introduce tax holidays or reduced rates for transitioning informal businesses.
3. Establish real-time inflation tracking and adjust monetary policy tools proactively to maintain macroeconomic stability.
4. Promote mobile and digital payments through incentives and rural access programs, reducing the reliance on physical cash which fuels informality.

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