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(AIJBAF)**www.gaexcellence.com/aijbaf**MONETARY DEPTH AND ECONOMIC ACTIVITY AS
DRIVERS OF PRIVATE CREDIT IN UGANDA**David Namanya^{1*}, Geoffrey Nuwagaba², Tusubira Festo Nyende³, Eric Nzibonera⁴¹Department of Account and Finance, Makerere University, Kampala, Uganda namanyandb@gmail.com <https://orcid.org/0000-0003-2004-0424>²Department of Account and Finance, Makerere University, Kampala, Uganda geofreynuwagaba@yahoo.co.uk <https://orcid.org/0000-0002-7044-2715>³Department of Account and Finance, Makerere University, Kampala, Uganda festtn@gmail.com <https://orcid.org/0000-0001-8553-9061>⁴Department of Account and Finance, Makerere University, Kampala, Uganda ernzibonera@gmail.com <https://orcid.org/0009-0005-5509-3210>

*Corresponding Author

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Abstract:

The main objective of this study was to examine the short run relationship between monetary depth, economic activity and annual changes in private sector bank credit in Uganda from 1994 to 2025, with particular emphasis on changes in broad money, real gross domestic product growth, inflation and lagged movements in private sector credit. To achieve this objective, annual data were obtained from the World Development Indicators and analysed using an ordinary least squares regression model with Newey West heteroscedasticity and autocorrelation consistent standard errors, while private sector credit and broad money were measured as annual changes in their respective ratios to gross domestic product. The results indicated that the model explained 81.4 per cent of the variation in annual changes in private sector credit; furthermore, changes in broad money and real gross domestic product growth had positive and statistically significant relationships with private sector credit. Although inflation had a positive relationship and the lagged change in private sector credit had a negative relationship, neither variable was statistically significant. Overall, the findings demonstrate that Uganda's private sector credit dynamics are influenced by both banking system liquidity and prevailing economic activity; however, the less than proportional response of credit to broad money suggests that liquidity alone is insufficient to stimulate lending. The study recommends strengthening credit information systems, movable collateral registration, transparent

loan pricing, financial sector competition and risk-based lending technologies, while recognising that the reported relationships represent short run associations rather than definitive causal effects.

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Keyword:

Credit Supply; Monetary Transmission; and Private Sector Credit



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Introduction

According to Love and Martínez Pería (2015), private-sector credit is the point at which monetary resources become contractual finance for households and firms, and so a banking system can be liquid and well capitalised while still supplying limited credit if borrower information is weak, collateral enforcement is costly, and sovereign securities are attractive or even banks perceive elevated default risk. The determinants of credit growth may extend beyond the amount of deposits to expected economic activity, risk pricing, institutional quality and the balance-sheet constraints of banks and borrowers (Mishkin & Eakins, 2018; Stiglitz & Weiss, 1981). Many studies have attempted to connect access to credit with creditor protection, information infrastructure and firm financing constraints (Beck et al., 2005, 2011; Djankov et al., 2007; Fowowe, 2017; Love & Martínez Pería, 2015), as demonstrated in Uganda's financial reforms aimed at strengthening supervision and payments infrastructure, though the private credit has remained modest relative to GDP and lending rates have remained high.

The recent public debate has focused on treating liquidity, monetary easing and private credit as if they automatically move together. In practice, banks may respond to increased liquidity by purchasing government securities, rebuilding buffers or lending selectively. Amidu (2014), Beck and Cull (2014), and Akinbowale et al., (2025) all posit that the relationship between monetary depth and private credit is an empirical question with direct implications for monetary transmission and private investment. This has been demonstrated by evidence from many African banks showing that bank strength, market structure and regulation influence private borrowers' credit (Amidu, 2014; Beck & Cull, 2014; Akinbowale et al., 2025).

Despite the extant literature, there is limited evidence in Uganda on how annual changes in private-sector bank credit responds in the short run to monetary depth and contemporaneous economic activity within a single parsimonious model. Existing literature generally emphasises the finance growth relationship, financial system depth or cross country determinants, with no

country specific indication on the drivers of annual movements in Uganda's bank credit to GDP ratio. We attempted to address this gap under this study by estimating the joint relationship of broad money changes, real GDP growth, inflation and lagged credit changes and the annual change in private sector bank credit. Kashyap and Stein (2000) posit that credit channel contains both supply and demand effects and the greater broad money can increase the funding available to banks, while stronger real GDP growth raises expected sales, cash flow and demand for working capital. Inflation can raise nominal loan demand but also increase risk premiums, reduce real repayment capacity and prompt monetary tightening. Lagged credit changes may capture adjustment costs and loan-pipeline persistence (Bernanke & Gertler, 1995; Kashyap & Stein, 2000). This is supported by the studies by Disyatat, (2011), Gambacorta and Marques-Ibanez, (2011 and Jiménez et al., (2012) studies that posits that monetary transmission depended on banks' balance sheets, funding conditions and risk perceptions.

The objective of this study was to examine the short-run relationship between monetary depth, economic activity and annual changes in private-sector bank credit in Uganda from 1994 to 2025. Specifically, the study assessed how changes in broad money, real gross domestic product growth, inflation and the lagged change in private-sector credit were associated with annual movements in the private-sector credit-to-gross domestic product ratio.

Literature Review

Credit Supply, Information and Bank Portfolio Choice

According to Stiglitz and Weiss, (1981), credit markets differ from ordinary spot markets because lenders cannot fully observe borrower quality or effort and the raising interest rates can worsen the composition and behaviour of borrowers, causing banks to ration credit even where apparent demand exceeds supply. Most banks tend allocate assets across private loans, government securities, reserves and interbank placements so when government instruments offer attractive risk adjusted returns, the marginal increase in deposits or liquidity may not reach private borrowers and improved borrower information and stronger competition increases the credit response to a given funding base (Sanga & Aziakpono, 2025). These mechanisms mean that broad money should have a positive coefficient, but the magnitude is institutionally contingent as demonstrated in many African studies where human capital, openness, macroeconomic stability and the depth of the financial system was found to produce heterogeneous credit outcomes (Ibrahim & Sare, 2018; Sanga & Aziakpono, 2025).

The Financial Accelerator and Economic Activity

According to Bernanke & Gertler, (1995), the financial-accelerator framework can be used to predict whether stronger economic activity improves borrower net worth and expected cash flow, reducing external finance premiums and enabling additional borrowing. Credit can be reinforced through working capital and investment even in a downturn, weaker balance sheets and even if risk perceptions operate in the opposite direction (Bernanke & Gertler, 1995). The reserch by Abiola et al., (2020) identified evidence that indicate a strong relationship between access to credit and firm economic performance, while cautioning that the effect varied with financial structure and country conditions while other finance studies documented heterogeneity across countries, income levels and sectors (Bist, 2018; Machado et al., 2021;

Nguyen et al., 2022; Ustarz et al., 2021). For Uganda, where a large share of enterprises depends on bank finance and retained earnings, current GDP growth can influence both loan demand and bank willingness to lend and thus a positive coefficient reflects a demand following component of financial development, nonetheless economic expansion creates bankable transactions and improves the expected performance of existing and prospective borrowers.

Inflation and Short-run Credit Dynamics

Bandura & Leshoro, (2022) posit at that Inflation have competing effects where higher nominal prices increase the nominal working-capital requirement of firms, potentially raising credit demand. Similarly, inflation can also reduce real household income, increase uncertainty, raise policy and lending rates and weaken the value of collateral or long-term contracts (Bandura & Leshoro, 2022). We tested the expectations that changes in broad money and real GDP growth have positive associations with changes in private credit; inflation may be positive or negative; and the lagged change in credit may capture persistence or mean reversion.

Annual data from 1994 to 2025 were obtained from the World Development Indicators with the private credit and broad money ratios based on internationally harmonised monetary statistics. We modelled short run dynamics with transformed ratio differencing, $\Delta PSC(t) = PSC(t) - PSC(t - 1)$ and $\Delta BM(t) = BM(t) - BM(t - 1)$. The first differencing was used primarily to remove persistent trends and reduce the risk of unit root driven spurious regression, thereby modelling annual changes rather than levels. This was not adopted as a remedy for heteroscedasticity or autocorrelation but to address heteroscedasticity and autocorrelation consistent standard errors. Our decision to distinguish credit from broad money is consistent with evidence that financial development indicators produced materially different investment and growth results (Aluko & Ibrahim, 2020; Iheonu et al., 2020) and the source series were documented in World Bank (2026). The estimated equation was $\Delta PSC(t) = \alpha + \rho \Delta PSC(t - 1) + \beta \Delta BM(t) + \gamma GDPG(t) + \delta INF(t) + \varepsilon(t)$. Here, $\Delta PSC(t) = PSC(t) - PSC(t - 1)$ was the annual percentage-point change, or first difference, in bank credit to the private sector as a share of GDP, and $\Delta BM(t) = BM(t) - BM(t - 1)$ was the corresponding annual percentage-point change in broad money as a share of GDP. We adopted $GDPG(t)$ to represent real GDP growth and $INF(t)$ indicated consumer price inflation. Ordinary least squares were estimated with Newey West standard errors using one annual lag to address potential heteroscedasticity and short memory autocorrelation (Wooldridge, 2020). The model was tight because the effective sample comprised 30 observations after differencing and lagging, leaving 25 residual degrees of freedom after estimating the intercept and four slope coefficients. Restricting the specification to theoretically motivated variables helped limit overfitting, but it did not eliminate small sample uncertainty (Veal 2005). Given the limited annual sample, the estimates were interpreted as evidence of short run associations rather than definitive causal effects and focused our objective to estimating transparent short run associations that could be replicated and interpreted in light of Uganda's institutional context.

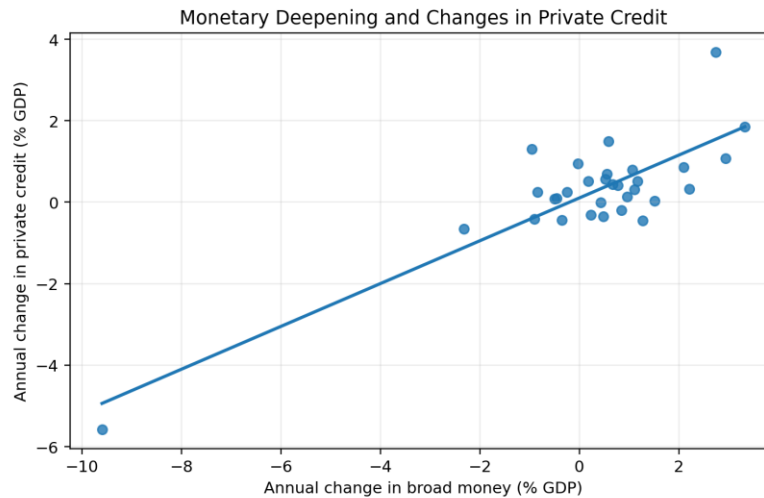


Figure 1. Changes in Broad Money and Private Sector Bank Credit

Source: Author's calculations from World Development Indicators data.

Table 1. HAC Regression Explaining Annual Changes in the Private Credit to GDP Ratio

Variable	Coefficient	HAC std. error	z-statistic	p-value
Constant	-1.2270	0.3345	-3.668	<0.001
Lagged Δ private credit	-0.1269	0.0981	-1.294	0.196
Δ broad money	0.5213	0.0893	5.836	<0.001
Real GDP growth	0.1680	0.0369	4.557	<0.001
Inflation	0.0580	0.0363	1.600	0.109

Note. $N = 30$; $R^2 = 0.814$; adjusted $R^2 = 0.784$; conventional overall $F(4, 25) = 27.35$, $p < 0.001$; Newey–West standard errors with one lag.

The Δ denotes the first difference of a ratio measured as a percentage of GDP while the F-statistic summarises conventional overall fit, and coefficient inference is based on HAC standard errors. The R^2 indicates that the model accounted for 81.4 per cent of the within-sample variation in annual credit changes; the adjusted R^2 was 0.784. Although the conventional overall F test was statistically significant, the high fit was interpreted cautiously because the model was estimated from only 30 observations which is sensitive to common shocks, influential years, structural change or specification choices (Veal 2005).

The change in broad money was the strongest predictor with 1% increase in broad money relative to GDP was associated with a 0.52%-point increase in the private-credit ratio, holding growth and inflation constant which confirmed (by coefficients) that deposit and liquidity conditions mattered for bank lending, which also indicated an incomplete pass through given that the response was materially below one for one. The real GDP growth had a positive coefficient of 0.168, with stronger activity associated with greater private credit, consistent with the financial accelerator and demand following hypotheses. Economic expansion

increased transactions, working capital requirements and expected debt service capacity, while improving banks' assessment of credit risk. Inflation was positive but not significant at the 5% level reflecting nominal financing needs during inflationary periods, but the estimate was insufficiently precise to conclude that inflation independently expands private credit. Finally, the results indicated lagged change in credit with negative and insignificant relationship, suggesting that annual credit movements displayed limited persistence once current liquidity and output conditions were included.

Table 2. Diagnostic Tests

Diagnostic	Statistic	p-value/criterion	Assessment
Durbin–Watson	2.676	Approximately 2	No positive first-order autocorrelation
Ljung Box Q(4)	9.281	0.054	Borderline but not significant at 5%
Jarque Bera	0.755	0.685	Residual normality not rejected
Shapiro Wilk	0.981	0.861	Residual normality not rejected
Breusch Pagan	1.931	0.748	Homoscedasticity not rejected
ARCH-LM(3)	1.514	0.679	No ARCH effect
Maximum VIF	4.13	Below 10	No severe multicollinearity

The diagnostics generally supported the specification. The Ljung–Box p-value was close to the five per cent threshold, which justified the use of HAC standard errors and cautioned against overconfidence in conventional standard errors. Multicollinearity was moderate rather than severe, with the largest VIF associated with inflation and GDP growth.

As shown above, our results indicate Uganda's private credit dynamics combining the supply side of liquidity and demand side economic activity. It indicates that broad money can provide the balance sheet capacity from which loans could be created, as GDP growth generate bankable demand and improved expected repayment. This simultaneous significance of both variables cautions the policy narratives that attribute weak credit solely to monetary tightness or solely to weak demand.

The less proportional pass through from broad money to credit was equally important in our analysis in which we discovered that increased liquidity was necessary but not sufficient because some banks still evaluated expected loss, collateral, borrower documentation, sector risk and alternative asset returns. The result was therefore compatible with credit rationing and portfolio choice theories where additional funding was found to expand lending (Kashyap & Stein, 2000; Stiglitz & Weiss, 1981).

For monetary policy, our findings implied that changes in system liquidity influences private credit especially where credit infrastructure and competition were effective. For bank management, improvements in data driven underwriting, sector knowledge and relationship banking could widen the set of bankable borrowers without abandoning prudential standards. For fiscal policy, heavy domestic borrowing could weaken transmission by increasing the attractiveness of government securities relative to private lending.

Finally, positive GDP growth coefficient indicated procyclicality where many banks expanded lending when activity was already strong, leaving many firms constrained during downturns. It's important to mention that countercyclical guarantee facilities, well designed refinancing mechanisms and improved restructuring practices that reduces the tendency for credit to contract precisely when firms needed liquidity to survive temporary shocks moreover such interventions should preserve appraisal discipline and avoid replacing risk assessment with administrative allocation.

This study's main limitation was the small annual sample adopted due posing constraint on inference; the 30 observations and several explanatory variables, statistical power, degrees of freedom and parameter precision were restricted (Veal 2005). The estimates should therefore be interpreted as short run associations rather than definitive causal effects, and the high R^2 should be treated as evidence that the model is 'not immune to overfitting or influential observations. We thus used aggregate annual data to prevent a clean separation of credit supply and credit demand effects. Omitted factors, including lending rates, domestic government borrowing, asset quality and institutional changes, may influence the reported coefficients. In addition, no formal structural break or influence analysis was undertaken, even though Uganda experienced reforms and macroeconomic shocks during from 1994 to 2025. Newey West standard errors improve inference under heteroscedasticity and short-memory autocorrelation, but they do not correct omitted variable bias, structural instability or model misspecification.

Conclusion

The main objective of this study was to examine the short run relationship between monetary depth, economic activity, and private sector bank credit in Uganda using annual data from 1994 to 2025. The findings revealed that changes in broad money and real gross domestic product growth had positive and statistically significant relationships with annual changes in private sector credit, whereas inflation and the lagged change in private credit were not statistically significant.

Significantly, the results highlighted that improved banking system liquidity was necessary but not sufficient to expand private sector credit because its transmission into lending remained partial and was influenced by borrower risk, collateral requirements, credit information, competition, and banks' portfolio decisions. From a theoretical perspective, the study contributes to the growing body of literature on monetary transmission, credit rationing theory, the financial accelerator, and the demand following hypothesis in emerging economies by demonstrating that both liquidity conditions and economic activity shape short run credit movements. From a practical standpoint, it provides evidence to guide the Bank of Uganda, financial institutions, and other policymakers in strengthening monetary transmission, credit reporting, movable collateral registration, insolvency resolution, transparent loan pricing, competition, and risk-based lending technologies.

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