Factors affecting credit growth at People's Credit Funds in Viet Nam: An empirical study in the Southern region of Viet Nam

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Abstract

This study examines the factors affecting credit growth at People's Credit Funds in the Southern region of Viet Nam, addressing an important gap in the literature on cooperative finance in the country. The sample comprises 179 People's Credit Funds across eight provinces over the period 2021- 2024, and the analysis employs panel-data regression using the Feasible Generalized Least Squares technique. The results indicate that credit growth is driven primarily by institution-specific factors rather than by macroeconomic variables. Profitability positively affects credit growth, whereas the non-performing loan ratio, PCF size, PCF age, deposit ratio, capital ratio, and income diversification exert negative sffects. Economic growth and inflation are not statistically significant in the final model. The negative coefficients on the deposit ratio and capital ratio suggest that, in the post-pandemic context, excess liquidity and precautionary capital-holding behavior may constrain lending expansion rather than support it. A further notable finding is the adverse effect of income diversification, which provides empirical support for the mission-drift argument by indicating that greater reliance on non-credit income sources weakens core member-oriented lending. Overall, the study provides an empirical basis for policies aimed at promoting safe, sustainable, and cooperative-consistent credit growth in Vietnam's People's Credit Fund system.

1. Introduction

The People's Credit Fund (PCF) system is a vital and distinctive component of the rural finance context in Viet Nam (National Assembly of Vietnam, 2024). PCFs operate on cooperative principles of voluntarism and self-help and subsistence, and the objective is to raise resources from communities to offer financial services to the community members (McKillop & Wilson, 2015). Although PCFs represent a fractional percentage of total outstanding loans in the entire credit institution (CI) system (about 0.88% at the end of 2024), they are still socially significant. However, they are highly significant in providing micro credit, generating employment, reducing informal lending (loan sharking), alleviating poverty in rural and remote areas, and promoting overall rural development.

Yet because of their characteristics, and the system and environment in Viet Nam, they

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face various challenges in the PCFs that directly impact their ability to attract the credit markets. Part of the PCF system also shows commercialized features, purely operating as business entity, pursuing aggressive growth in scale and extension in territory, which is extremely alien to the mission of member mutual assistance. This "mission drift" manifests structurally through two interconnected phenomena. First, in their lending practices, there is an increasing credit concentration among larger clients. The outstanding loans per client rose to around VND 297 million at end-March 2025, or six times of the maximum lending limit for microfinance clients. Further, 76.3% of the total outstanding loan was retained in 33.1% of the borrowers with outstanding loans more than VND 300 million. Second, and more fundamentally for their revenue structure, this commercialization drives PCFs to increasingly pursue non-interest income sources (income diversification). By diverting limited resources towards non-credit commercial activities to maximize profits, PCFs restrict their core mandate of providing credit to ordinary members. Therefore, income diversification (DIV) serves as a direct quantitative proxy for mission drift in our empirical model. Meanwhile, the majority PCFs are still small and have most of their capital in the private sector; the average equity-to-total assets ratio was only 7.2% as at the end of March 2025, substantially lower than the 9.1% for commercial banks. Negatively, inadequate management and leadership at the upper levels, the member's elder aging, and the lack of digital finance products, threaten to dilute the strength of the whole system (State Bank of Vietnam, 2025).

Given these operational challenges and the post-pandemic context, this study is conducted to answer the explicit research question: What macroeconomic and institutional factors determine the credit growth of PCFs in Southern Viet Nam? This paper makes distinct contributions to the existing literature. First, it provides fresh empirical evidence on credit growth determinants within cooperative financial institutions, highlighting how PCFs structurally differ from commercial banks. Second, it quantitatively investigates the simultaneous effects of macroeconomic shocks and internal institutional factors, particularly demonstrating the risk of 'mission drift' via excessive income diversification. Finally, the findings offer vital insights for policymakers to facilitate safe, sustainable, and cooperative-consistent credit growth.

The remainder of the manuscript is organized as follows. Section 2 presents the theoretical basis and literature review. Section 3 outlines the research methodology, data sources, and empirical model. Section 4 provides the empirical results and discussion. Finally, Section 5 draws the main conclusions and proposes policy implications.

2. Theoretical basis and literature review

2.1. Conceptual and theoretical background

Credit growth, simply speaking, is the growth in the value of loan at a point of time concerning the loans owing to a holder. A larger credit size means that customers are able to take out more funds that can be used for consumption, investment, and business necessity (Lane & McQuade, 2014). The PCF system occupies a vital and unique position in the rural financial system in Viet Nam (National Assembly of Vietnam, 2024). PCFs are a form of credit institution and are organized as cooperatives, that is they are based on voluntarism and are under an overarching principle of mutual assistance the community's resources to their members (McKillop & Wilson, 2015). The main goals of a PCF are to provide the best service to the members and the community, not the enrichment of the shareholders (Power et al., 2012). PCFs hence address two objectives: economic viability and social effectiveness (Power et al., 2012).

Viewed through the lens of cooperative identity theory, PCFs are fundamentally distinct from commercial banks. While commercial banks seek to maximize shareholder value, PCFs operate on mutual assistance, primarily restricting loans to their members. Therefore, evaluating credit growth mechanisms must be linked to whether PCFs maintain their cooperative mission or drift towards commercialization.

2.2. Literature review by groups of determinants

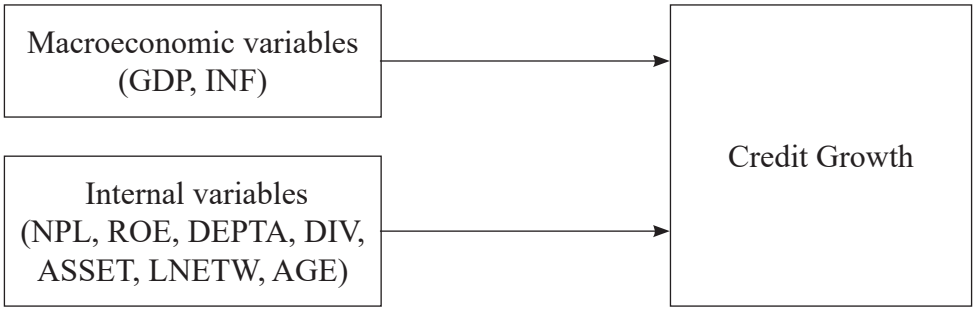
The topic of credit growth within cooperative financial institutions constitutes a specialized field of research that focuses on balancing financial objectives and social mission. International and domestic studies typically center on two main groups of determinants:

Macroeconomic determinants in the post pandemic context: Credit growth is highly sensitive to the macroeconomic environment. Following the severe disruptions caused by the COVID-19 pandemic and subsequent geopolitical tensions, global supply chains and inflation dynamics have fundamentally altered credit demand and supply. Recent empirical studies confirm that economic recovery stimulates capital demand; however, rising inflation and lending rates severely hinder credit supply, especially for small-scale entities like PCFs that possess limited risk-absorption capacity (Nguyen & Tran, 2025; Vuong, 2025).

Internal Institutional Factors: When examining internal factors, the literature presents conflicting empirical evidence. First, regarding size, while an earlier study on PCFs in the Mekong Delta found a positive correlation (Truong & Nguyen, 2015), recent research argues that for cooperative models, an excessive increase in total assets can lead to heavy operational cost burdens and negatively impact credit growth (Luong et al., 2025). Second, regarding profitability, traditional theories posit that high profitability provides internal capital generation to stimulate credit expansion. Conversely, a recent study examining commercial banks in Can Tho City found a significant negative relationship, as highly profitable institutions may prioritize risk aversion over expanding their loan portfolios (Vuong, 2025). Third, regarding capital, research by Hessou and Lai (2017) found a complex relationship where PCFs' loan growth decreased as the net capital ratio increased for the first 60 percentiles, varying depending on the level of capitalization.

2.3. Research gap and empirical expectations

Despite the extensive literature on banking performance, the specific dynamics of credit expansion within the cooperative financial sector remain under-researched. The research gap in the Viet Nam context can be formulated directly and explicitly into four main points: there is limited empirical research on credit growth specifically in Vietnamese PCFs; existing Vietnamese studies focus mainly on commercial banks (e.g., Vuong, 2025; Nguyen & Tran, 2025) or on other outcomes of PCFs such as profitability (Truong, 2016), financial sustainability (Ha & Nguyen, 2021), or access to credit (Phan, 2013) rather than credit growth itself; there is still no clear evidence on the simultaneous effects of macroeconomic and internal institutional factors on PCF credit growth; and the role of income diversification as a possible manifestation of "mission drift" remains underexplored in the Vietnamese cooperative literature.



Note: GDP = Economic Growth; INF = Inflation Rate; NPL = Non-Performing Loan Ratio; ROE = Return on Equity; DEPTA = Deposit Ratio; DIV = Income Diversification; ASSET = PCF Size; AGE = PCF Age; LNETW = Capital Ratio. Source: Authors' construct based on the literature review.

Figure 1. Conceptual Framework

To address these gaps, this study constructs an empirical model that considers macroeconomic and institutional factors simultaneously to explain the credit growth of PCFs in southern Viet Nam during 2021- 2024. The study expects that economic growth (GDP), deposit ratio (DEPTA), return on equity (ROE), and capital ratio (LNETW) will have positive impacts, whereas inflation (INF), non-performing loans (NPL), PCF size (ASSET), operational age (AGE) and income diversification (DIV) will exert negative impacts. These expected relationships form the conceptual framework (Figure 1).

3. Methodology

3.1. Data and sample

This study selects an empirical sample from the Southern Region, comprising 179 People's Credit Funds (PCFs). Over the four-year period 2021-2024, the raw balanced panel yields 716 observations. These PCFs are located across eight provinces and cities in the Southern Region: Ho Chi Minh City, Dong Nai, An Giang, Ca Mau, Can Tho, Vinh Long, Tay Ninh, and Dong Thap. This sample provides a robust empirical basis for analyzing the determinants of credit growth in Southern PCFs. Because the regression model uses one-period lagged explanatory variables for all predictors, the first year for each PCF cannot be used in estimation. As a result, the effective estimation sample is reduced from 716 to 537 observations in Tables 5 and 7.

Based on credit supply-demand theory and prior empirical studies, this study includes variables that capture the specific characteristics of PCFs. The macroeconomic variables comprise economic growth (GDP) and inflation (INF), with inflation proxied by the Consumer Price Index (CPI). These variables represent the demand-side environment, including investment conditions, consumption needs, capital demand, and the broader business climate. GDP is expected to exert a positive effect, whereas inflation is expected to reduce real credit flows. The institution-specific variables comprise the deposit ratio (DEPTA), return on equity (ROE), non-performing loan ratio (NPL), PCF size (ASSET), PCF age (AGE), and capital ratio (LNETW). Together, these variables reflect financial capacity, operating efficiency, risk exposure, and institutional maturity. In addition, the model includes income diversification (DIV), measured as non-interest income over total operating income, to test the mission-drift hypothesis, namely whether a stronger orientation toward non-credit income sources weakens core credit growth for members.

The dataset utilized in this study was provided by State Bank of Viet Nam, abbreviated as SBV, and its supervisory regional branches, specifically SBV Regional Branches No. 2, 13, 14, and 15. Specifically, these regions correspond to the inspection and supervisory units for PCF operations across 8 key Southern provinces and cities, including Ho Chi Minh City, Dong Nai, An Giang, Ca Mau, Can Tho, Vinh Long, Tay Ninh, and Dong Thap.

Importantly, the 2021- 2024 study period encapsulates abnormal macroeconomic shocks, notably the post-COVID-19 recovery and global geopolitical tensions. Consequently, the empirical data reflects specific systemic anomalies: a surge in deposit ratio driven by precautionary savings amidst weak credit demand, and elevated non-performing loans due to borrowers' impaired repayment capacities. Therefore, the sensitivity of credit growth to these specific variables should be interpreted cautiously within this volatile macroeconomic context

3.2. Generalized regression model

To quantify the impact of factors on credit growth at PCFs, this study constructs a panel data regression model based on the theoretical framework of credit supply and demand, as well as previous empirical research on cooperative financial institutions. The proposed generalized regression model is specified as follows:

$$LGR_{i,t} = \beta_0 + \beta_1 GDP_{t-1} + \beta_2 INF_{t-1} + \beta_3 NPL_{i,t-1} + \beta_4 LNETW_{i,t-1} + \beta_5 ASSET_{i,t-1} + \beta_6 DEPTA_{i,t-1} + \beta_7 ROE_{i,t-1} + \beta_8 AGE_{i,t-1} + \beta_9 DIV_{i,t-1} + \mu_i + \varepsilon_{i,t}$$

In this model, i represents each individual PCF and t represents the year.

To mitigate potential endogeneity and re-

verse causality, particularly between GDP and credit growth, the model deliberately employs one-period lagged variables for all predictors, which is a practical strategy given the short panel dataset (T =4).

The variables were selected and justified based on the theoretical synthesis presented in Table 1.

4. Empirical results and discussion

4.1. Descriptive statistics and correlation matrix

Before conducting the regression analysis, descriptive statistics were computed to provide an overview of the data characteristics and distribution. The summary statistics for the dependent and independent variables are detailed in Table 2 The descriptive statistics table presents a balanced panel dataset of 716 observations, reflecting a profound divergence in the loan growth rate (LGR) with a mean of 7.95% and a relatively high standard deviation of 0.202. Within a stable macroeconomic environment characterized by average GDP growth and inflation (INF) rates of 4.62% and 2.87% respectively, institutional characteristics indicate a heavy reliance on deposits, with the deposit ratio (DEPTA) averaging 82.1%, whereas income diversification (DIV) remains highly limited (5.94%). Although the average non-performing loan ratio (NPL) is well-controlled at a safe level of 1.42% and the return on equity (ROE) demonstrates a solid performance of 13.89%, the extremely wide variations in NPL (reaching a maximum of 77.66%) and ROE (ranging from -41.67% to 203.16%) highlight a significant polarization, signaling severe credit risks and operational efficiency disparities among certain individual entities.

The Pearson correlation matrix indicates limited pairwise association among the explanatory variables, with most absolute correlation coefficients below 0.4. The largest coefficient in magnitude is the negative correlation between PCF size (ASSET) and capital ratio (LNETW) at -0.3990, which remains below conventional thresholds for serious multicollinearity. In addition, credit growth (LGR) shows only weak

Table 1. Theoretical Basis, Variables, and Measurement of Factors Influencing PCF Credit Growth

Group	Symbol	Variable Name	Expected Impact	Measurement	Theoretical Rationale
Dependent Variable	$LGR_{i,t}$	Loan Growth Rate		Annual growth rate of total outstanding loans	Measures the expansion of PCF financing for members and the local economy.
Macroeconomic (Demand-side)	GDP_{t-1}	Economic Growth Rate	Positive (+)	Annual real Gross Domestic Product (GDP) growth rate of Viet Nam (national aggregate, data provided by the National Statistics Office (NSO) and the State Bank of Vietnam (SBV)	Economic expansion increases demand for investment and consumption capital, thereby stimulating loan growth (Calza et al., 2001; Guo & Stepanyan, 2011; Ivanović, 2016).
	INF_{t-1}	Inflation Rate	Negative (-)	Annual Consumer Price Index (CPI) CPI inflation rate National average data provided by the NSO	Rising inflation reduces the real value of money and tends to decrease loan demand and supply volume (Guo & Stepanyan, 2011; Ivanović, 2016).

Institutional (Supply-side)	$DEPTA_{i,t-1}$	Deposit ratio	Positive (+)	Deposits to Total Assets ratio	Increased funds enlarge the lending capacity of PCFs (Guo & Stepanyan, 2011; Allen et al., 2014; Luong et al., 2025).
	$ROE_{i,t-1}$	Return on Equity	Positive (+)	Net Income/Total Equity	High profitability enhances internal financing capacity and stimulates credit expansion (Igan et al., 2009; Ivanović, 2016; Luong et al., 2025).
	$NPL_{i,t-1}$	Non-Performing Loan Ratio	Negative (-)	NPL/Total Outstanding Loans	A higher NPL ratio weakens the balance sheet and prompts stricter lending standards (Bawa et al., (2019; Guo & Stepanyan, 2011; Ivanović, 2016).
	$LNETW_{i,t-1}$	Capital Ratio	Positive (+)	Net Worth/Total Assets)	Adequate capitalization supports credit expansion and resilience to risk, although excessive capital may reduce growth among non-complex CUs (Ivanović, 2016).
	$ASSET_{i,t-1}$	PCF Size	Negative (-)	Natural logarithm (ln) of Total Assets +1	Larger institutions may encounter higher operational costs and reduced agility in outreach following expansion (Luong et al., 2025).
	$AGE_{i,t-1}$	Age of PCF	Negative (-)	Number of years since establishment (Years)	Older PCFs may have already matured and tend to reach a local market 'saturation point' where the pool of eligible borrowing members is exhausted, which negatively affects their capacity for further credit expansion (Hessou & Lai, 2017)
	$DIV_{i,t-1}$	Income Diversification	Negative (-)	Non-Interest Income/Total Operating Income	Excessive dependence on non-lending income deviates from the cooperative mission, reducing credit supply focus (Navajas et al., 2000; Copestake, 2007).

Source: Authors' addition

Table 2. Descriptive statistics of research variables

Variable	Observation Count	Mean	Standard Deviation	Minimum Value	Maximum Value
LGR	716	0.0794	0.2021	-0.3780	3.1628
GDP	716	0.0462	0.0218	0.0256	0.0802
INF	716	0.0286	0.0060	0.0184	0.0325
NPL	716	0.0142	0.0551	0	0.7766
LNETW	716	0.0992	0.0920	0.0200	0.9518
ASSET	716	4.8331	0.3624	3.5127	5.8395
DEPTA	716	0.8209	0.1122	0.0004	0.9958
ROE	716	0.1389	0.1077	-0.4167	2.0316
AGE	716	23.7793	5.9948	6	30
DIV	716	0.0594	0.0859	0	0.9969

Source: Results from Stata 17 analysis

bivariate correlations with the explanatory variables, most notably a negative association with the non-performing loan ratio (NPL: -0.1156) and a positive association with return on equity (ROE: 0.0863). These results should be interpreted as preliminary bivariate evidence rather than causal effects. Importantly, the correlation results are consistent with the VIF results in Table 4, which show all VIF values between 1.05 and 1.38. Taken together, Tables 3 and 4 indicate that multicollinearity is unlikely to distort the regression estimates reported in Tables 5 and 7.

The multicollinearity test results reported in Table 4 further confirm the evidence from Table 3. All VIF values range from 1.05 to 1.38, with a mean VIF of 1.19, which is well below conventional cut-off values. Therefore, the model does not suffer from serious multicollinearity, and the estimated coefficients can be interpreted without concern that strong linear dependence among regressors is driving the regression results. Although there is a moderate correlation between INF and GDP (0.5098), their VIF values are 1.38 and 1.35, respectively (well below the threshold of 5), confirming that the model does not suffer from severe multicollinearity.

Table 3. Pearson correlation coefficients results

Variable	LGR	GDP	INF	NPL	LNETW	ASSET	DEPTA	ROE	AGE	DIV
LGR	1.0000									
GDP	-0.0265	1.0000								
INF	-0.0463	0.5098	1.0000							
NPL	-0.1156	0.0004	0.0173	1.0000						
LNETW	-0.0028	-0.0159	0.0095	0.0846	1.0000					
ASSET	-0.0502	0.0716	0.0395	-0.1426	-0.3990	1.0000				
DEPTA	-0.0005	0.0321	0.0228	-0.1725	0.0060	-0.0755	1.0000			
ROE	0.0863	-0.0641	-0.0294	-0.2293	-0.1561	0.1806	0.0019	1.0000		
AGE	-0.0873	0.1148	0.0493	-0.0403	-0.2525	0.1677	0.0150	-0.0276	1.0000	
DIV	-0.0733	-0.0203	0.0144	0.0315	0.0036	0.1055	-0.1098	0.0157	0.1515	1.0000

Source: Results from Stata 17 analysis

Table 4. Variance Inflation Factor (VIF) results

Variable	VIF	1/VIF
GDP	1.38	0.7250
INF	1.35	0.7385
LNETW	1.27	0.7894
ASSET	1.26	0.7925
AGE	1.12	0.8909
NPL	1.11	0.9022
ROE	1.10	0.9061
DEPTA	1.05	0.9480
DIV	1.05	0.9495
Mean VIF	1.19	

Source: Results from stata 17 analysis

4.2. Regression results

The Hausman-Test ($p < 0.05$) indicates that the Fixed Effects Model (FEM) is more appropriate than the Random Effects Model (REM). Additionally, the Breusch-Pagan Lagrange Multiplier (LM) test rejects the Pooled OLS model, confirming the presence of panel effects in the data. Overall, the pooled OLS is significant but R-squared is low. FEM is preferred but needs to be tested for heteroskedasticity and autocorrelation and, if necessary, corrected through FGLS. Table 5 reports the estimation results from the Pooled OLS, Fixed Effects Model (FEM), and Random Effects Model (REM). The Breusch-Pagan LM test rejects the pooled OLS specification, confirming the presence of panel effects, while the Hausman test rejects REM in favor of FEM. Accordingly, FEM is the preferred baseline estimator among the standard panel-data specifications because it better controls for unobserved time-invariant heterogeneity across PCFs.

Table 5. Regression results using Pooled OLS, FEM, and REM

Variable Name	Pooled OLS		FEM		REM	
	Coefficient (β)	P-value	Coefficient (β)	P-value	Coefficient (β)	P-value
GDP	0.1070	0.790	0.0658	0.882	0.0754	0.839
INF	-1.3489	0.355	-1.3283	0.316	-1.2942	0.334
NPL	-0.4180	0.004	-0.7955	0.027	-0.4779	0.004
LNETW	-0.0669	0.465	-0.4781	0.012	-0.1255	0.227
ASSET	-0.0411	0.076	0.3376	0.003	-0.0343	0.211
DEPTA	-0.0539	0.430	-0.0935	0.340	-0.0691	0.342
ROE	0.1259	0.084	-0.1867	0.038	0.0463	0.535
AGE	-0.0026	0.052	-0.0195	0.023	-0.0029	0.063
DIV	-0.1267	0.156	-0.1916	0.157	-0.1467	0.127
_cons	0.4200	0.002	-0.8806	0.076	0.4271	0.006
Prob>F		0.0027		0.001		0.0139
R-squared		0.0349		0.0629		0.0325
No. of observation	537		537		537	
Model Selection Tests						
Hausman	0.0000					
Breusch and Pagan LM test				0.0000		

Source: Results from Stata 17 Analysis

Table 6. Diagnostic test results for model defects

Test	Value	Result
Wooldridge test	Prob > F = 0.0907	Autocorrelation is present (Reject)
Modified Wald test	Prob > chi2 = 0.0000	Heteroskedasticity is present (Reject)

Source: Results from Stata 17 Analysis

However, FEM is not the final estimator used for interpretation because the subsequent diagnostic tests in Table 6 indicate heteroskedasticity and serial correlation. Under these conditions, FEM coefficients remain informative for model selection, but their efficiency and standard errors may be unreliable. For this reason, the study employs FGLS as the final estimator to correct for these error-structure problems and to obtain more efficient inference.

To obtain more efficient estimates, this study applies Feasible Generalized Least Squares (FGLS). The choice of FGLS is supported by the diagnostic tests in Table 6. Specifically, the Modified Wald test rejects the null hypothesis of homoskedasticity (Prob > chi2 = 0.0000), and the Wooldridge test indicates first-order serial correlation at the 10% significance level (Prob > F = 0.0907). Because these defects violate the assumptions underlying conventional FEM inference, FGLS is used to model the non-spherical error structure directly. Consequently, differences between the FEM and FGLS coefficients are not unexpected. In particular, variables such as PCF size (ASSET), which changes sign across estimators, should be interpreted on the basis of the FGLS results because they account for the heteroskedasticity and autocorrelation detected in the panel.

4.3. Discussion

The FGLS results provide several important insights into the determinants of credit growth among People's Credit Funds (PCFs) in Southern Viet Nam during 2021- 2024. Overall, the findings indicate that credit growth in this cooperative segment is shaped more strongly by institution-specific characteristics than by aggregate macroeconomic conditions. This pattern is consistent with the organizational nature of PCFs, which operate within geographically bounded markets, serve a relatively stable member base, and remain highly dependent on internal balance-sheet quality, governance discipline, and mission-consistent operations. The discussion below interprets the findings by distinguishing between macroeconomic and institution-specific factors and by relating the estimated effects to both cooperative finance theory and the post-pandemic operating environment.

Macroeconomic factors

Economic growth (GDP) and inflation (INF) do not exert statistically significant effects on PCF credit growth in the final model. At first glance, this result appears to diverge from conventional procyclical banking arguments, which typically predict stronger credit expansion during periods of higher growth and weaker expansion under inflationary pressure. However, two explanations are particularly relevant here. First, from an econometric perspective, the short time dimension of the panel limits the explanatory power of macroeconomic variables, which vary across years but not across individual PCFs. In contrast, the model is dominated by cross-sectional heterogeneity in institution-specific conditions. Second, from a structural perspective, PCFs operate in narrow local markets and serve a relatively closed member base composed mainly of rural households and small local borrowers. Their credit decisions therefore respond more immediately to internal liquidity conditions, risk tolerance, and institutional strategy than to aggregate macroeconomic fluctuations. Accordingly, the insignificance of GDP and INF should not be interpreted as evidence that macroeconomic conditions are irrelevant in absolute terms; rather, within this sample and specification, internal institutional dynamics are the more proximate drivers of credit growth.

Institution-specific factors

Table 7. FGLS regression results

Variable Name	Estimated Coefficient	P-value
GDP	0.2304	0.124
INF	-0.8458	0.118
NPL	-0.3220***	0.000
LNETW	-0.0839*	0.068
ASSET	-0.0546***	0.000
DEPTA	-0.0482*	0.064
ROE	0.2874***	0.000
AGE	-0.0013**	0.034
DIV	-0.0894**	0.012
_cons	0.3957***	0.000
No. of observation	537	

Source: Results from Stata 17 Analysis

*Note: *, ** and *** correspond to the 10%, 5%, and 1% significance levels, respectively.*

The FGLS regression results identify seven institution-specific factors with statistically significant effects on the credit growth of PCFs in the Southern Region: profitability (ROE), credit risk (NPL), income diversification (DIV), PCF size (ASSET), PCF age (AGE), capital ratio (LNETW), and deposit ratio (DEPTA). By contrast, the macroeconomic variables GDP and INF are not statistically significant in the final model.

Credit risk, measured by the non-performing loan ratio (NPL), emerges as one of the strongest constraints on PCF credit growth. The negative coefficient is economically intuitive and consistent with prior studies: once asset quality deteriorates, PCFs must increase provisioning, absorb losses through internal capital, and tighten screening standards for new loans. In the context of cooperative finance, where capital buffers are relatively limited and lending is closely tied to member trust, a deterioration in loan quality can quickly reduce the institution's capacity to expand credit. The result therefore confirms that prudent credit appraisal, ongoing borrower monitoring, and early debt resolution remain fundamental conditions for sustainable growth.

A particularly noteworthy finding is that both the deposit ratio (DEPTA) and the capital ratio (LNETW) carry negative coefficients, despite the initial expectation of positive effects. Under standard financial intermediation theory, larger funding pools and stronger capitalization should support lending expansion. In the present context, however, these variables appear to reflect caution rather than expansionary capacity. For the deposit ratio, the negative sign suggests that higher deposit mobilization during the post-pandemic period was associated with excess liquidity rather than stronger loan disbursement. PCFs appear to have attracted precautionary savings from members at a time when local credit demand remained weak and the absorptive capacity of the rural economy was limited. As a result, additional deposits did not translate automatically into new lending. The negative coefficient on the capital ratio points in a similar direction. More highly capitalized PCFs seem to have adopted more conservative lending strategies, treating capital primarily as a protective buffer against uncertainty rather than as a base for credit expansion. Taken together, these results indicate that, in an uncertain environment, greater financial resources do not necessarily generate higher credit growth; instead, they may signal liquidity hoarding and risk-averse institutional behavior.

PCF size (ASSET) and PCF age (AGE) also ex-

hibit significant negative effects on credit growth. This finding reflects the structural constraints of the cooperative model rather than a simple inefficiency story. Unlike commercial banks, PCFs operate within tightly defined commune-level markets and cannot expand geographically without institutional and regulatory limits. As a result, larger and older PCFs may reach a local saturation point at which the pool of eligible and creditworthy members becomes increasingly limited. In such settings, further growth in balance-sheet size does not necessarily create new lending opportunities. The result also suggests a shift relative to earlier evidence from the Mekong Delta, where larger funds were associated with stronger growth in a different period and context. For mature PCFs, future expansion is therefore likely to depend less on extensive growth through asset accumulation and more on intensive growth through service improvement, better member targeting, and product innovation within the existing market base.

Income diversification (DIV) is found to reduce credit growth, providing quantitative support for the mission-drift argument developed in the theoretical section. For commercial banks, diversification is often interpreted as a means of stabilizing earnings. For PCFs, however, an increasing reliance on non-interest income may signal a reallocation of managerial attention and institutional resources away from the core cooperative function of member lending. In this sense, the negative coefficient on DIV is not merely a financial result but also an organizational one: when PCFs move too far toward non-credit commercial activities, their capacity to expand mission-consistent credit appears to weaken. This finding strengthens the argument that preserving cooperative identity is not only a normative objective but also an operational condition for sustainable credit development.

By contrast, profitability (ROE) is the only institution-specific factor with a positive and strongly significant coefficient. This result suggests that internally generated earnings remain a critical enabling condition for credit expansion in PCFs. Stronger profitability improves internal capital formation, supports operational resilience, and increases the institution's capacity to absorb lending risk while continuing to serve its members. In cooperative institutions, profitability should not be interpreted purely as a commercial objective; rather, it functions as a financial foundation that sustains both economic viability and social outreach. Taken together, the findings of this study indicate that the main constraints on PCF credit growth are rooted less in the macroeconomic environment than in credit risk management, liquidity deployment, institutional maturity, and adherence to the cooperative mission.

5. Policy implications and conclusion

5.1. Policy and management implications

The research results provide an evidence-based foundation for designing safe credit development strategies for PCF leadership and the State Bank of Vietnam.

5.1.1. For PCFs

First, exercise strict control of non-performing loans and give priority to credit quality. Since NPL is a large negative coefficient, PCFs need to improve appraisal, post-lending monitoring, and resolution of overdue debts, especially for large loans and risky sectors, to protect balance sheets and allow sustainable credit growth.

Second, the quality of performance should be improved and equity capital should be strengthened. As ROE has a positive significant effect, PCFs need to improve efficiency in operations, reduce expenses, and have good credit portfolio quality by focusing on profit retention for mandatory and voluntary reserves instead of distributing excessive dividends in the short-run.

Third, maintain core missions and avoid excessive income diversification. As excessive income diversification reduces credit growth, PCFs should focus limited resources on products that serve their members rather than expanding into non-credit services. This will help maintain the sustainability of the system and ensure the development of PCFs in line with their original cooperative mission.

Fourth, optimize capital utilization and manage excess liquidity. As the deposit ratio (DEPTA)

and capital ratio (LNETW) exhibit negative impacts, PCFs must avoid hoarding capital and aggressively mobilizing deposits without matched lending outlets. They should adopt flexible lending policies and actively deploy idle funds to members rather than keeping them deposited at the Co-op Bank.

Finally, innovate to overcome the local "saturation point". Because larger (ASSET) and older (AGE) PCFs experience a slowdown in credit growth due to market saturation within their restricted geographical boundaries, they should shift their strategy from extensive growth (sheer asset expansion) to intensive growth by upgrading service quality and penetrating deeper into the existing member base.

5.1.2. For the State Bank of Vietnam

First, shift the regulatory focus from macroeconomic interventions to internal institutional dynamics. Because the results show that macroeconomic variables (GDP and inflation) do not have a statistically significant effect on credit growth, PCFs are structurally insulated from national macroeconomic fluctuations. Therefore, rather than relying solely on monetary policy to rein in inflation, targeted regulatory support for internal operations is a prerequisite for sustaining real credit growth in the rural sector.

Secondly, improve inspection and systemic risk surveillance. For those PCFs with high NPLs, excess liquidity hoarding (reflected in negative impacts of DEPTA and LNETW), or showing strong commercialization trends (high DIV), issue early warnings and provide assistance on restructuring or other such measures in response to their problems, so as to stem the spread of risk in the cooperative financial system.

Thirdly, modify the legal regime to focus on the social goals of PCFs and address local market saturation. Because larger and older PCFs quickly hit a local "saturation point", the SBV should define explicit per-borrower lending limits, risk management guidelines and microfinance friendly rules to channel the capital to the target customers and to prevent excess commercialization by shifting towards large commercial borrowers.

5.2. Conclusion

This study provides empirical evidence on the determinants of credit growth among People's Credit Funds in Southern Viet Nam during 2021- 2024. The results show that credit growth is shaped primarily by institution-specific factors rather than by aggregate macroeconomic variables. In the final FGLS model, profitability exerts a positive and statistically significant effect, whereas the non-performing loan ratio, deposit ratio, capital ratio, PCF size, PCF age, and income diversification exert negative effects. A particularly important finding is that income diversification is associated with weaker credit growth, which supports the mission-drift argument and highlights the importance of preserving cooperative identity in the development of PCFs.

These findings imply that the main policy priorities should focus on internal institutional strengthening rather than on macro-level stimulus alone. For PCFs, priority should be given to improving credit risk management, using deposits and capital more effectively, strengthening operational efficiency, and maintaining a clear focus on member-oriented lending. For the State Bank of Viet Nam, the results suggest the need for closer institution-specific supervision, stronger early-warning mechanisms, and a regulatory framework that supports safe credit expansion while limiting excessive commercialization and addressing local market saturation.

This study is subject to several limitations. The sample is restricted to 179 PCFs in the Southern Region, the time horizon is relatively short and reflects the post-pandemic adjustment period, and the model does not include qualitative dimensions such as governance quality, management capacity, or institutional linkages within the cooperative banking system. Future research should therefore extend the analysis to other regions of Viet Nam, employ longer panel data, and incorporate governance, Cooperative Bank linkages, institutional protection mechanisms, and digital transformation to provide a more comprehensive explanation of PCF credit growth. ■

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Appendix: Data structure and variable definitions

The research sample consists of 179 PCFs monitored over a 4year period from 2021 to 2024. The data points were collected through the State Bank of Vietnam (SBV) regional branches.

For ease of reference, Appendix 2 summarizes the variable names and measurement units used in the FGLS model. The theoretical rationale and expected signs have already been presented in Table 1 and are therefore not repeated here in detail.

1. Sample Composition by Province and Year

Province Name	No. of PCFs	Total Observations
Ho Chi Minh City	17	68
Dong Nai	37	148
An Giang	24	96
Ca Mau	7	28
Can Tho	13	52
Vinh Long	17	68
Tay Ninh	40	160
Dong Thap	24	96
8 Provinces	179	716

Source: Authors' compilation based on data from the State Bank of Vietnam

2. Variable definitions and measurement units

Variable	Name	Measurement / Formula	Expected Impact
LGR	Loan Growth Rate	Annual growth rate of total outstanding loans	Dependent
GDP	Economic Growth	Real Gross Domestic Product growth rate	Positive (+)
INF	Inflation Rate	Measured by the Consumer Price Index (CPI)	Negative (-)
DEPTA	Deposit ratio	Ratio of Deposits to Total Assets	Positive (+)
ROE	Profitability	Net Income / Total Equity	Positive (+)
NPL	Credit Risk	Non-Performing Loans / Total Outstanding Loans	Negative (-)
ASSET	PCF Size	Natural logarithm (ln) of Total Assets +1	Negative (-)
AGE	PCF Age	Number of years since establishment	Negative (-)
DIV	Income Diversification	Non-Interest Income / Total Operating Income	Negative (-)
LNETW	Capital Ratio	Net worth/ Total Assets	Positive (+)

Source: Authors' compilation