THE IMPACT OF CREDIT UNION FINANCIAL INTERMEDIATION ON ECONOMIC GROWTH: A MULTI-COUNTRY ANALYSIS

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ABSTRACT

The paper investigates the relationship between credit union (CU) financial intermediation and economic growth using seventeen-year data (1995-2011) from 12 CU countries. Using the panel Generalized Method of Moments (GMM) estimation technique, the study finds that there is a statistically significant positive relationship between CU financial intermediation and economic growth. On the strength of this evidence, the paper concludes that CU financial intermediation has a positive impact on economic growth and thus recommends a vigorous promotion of CU financial intermediation in the study countries.

JEL: G2, O1

KEYWORDS: Financial Intermediation, Credit Union, Economic Growth

INTRODUCTION

The preponderance of empirical evidence on the finance-growth nexus triangulates around the contention that financial sector provides a fertile ground for the allocation of resources, better monitoring, fewer information asymmetries, and economic growth (Shen and Lee, 2006). Put more succinctly, finance stimulates economic growth. The writings of Schumpeter (1911), Goldsmith (1969), Mckinnon (1973), and Shaw (1973) have contributed significantly to this view. Schumpeter (1911), for example, posits that a well-developed financial system has the potential of catalyzing technological innovation and economic growth through the provision of financial services and resources to those entrepreneurs who have the highest probability of successfully implementing innovative products and processes.

Despite the fact that microfinance is an integral part of the financial systems of most economies, to date, studies on the finance-growth nexus have focused only on stock markets and the banking sector. ADB (2000) defines microfinance as the extension of a broad range of financial services such as loans, deposits, payment services, money transfers, and insurance to poor and low-income households and their microenterprises. It has been hailed as a ‘‘silver bullet’’ approach to development because of its supposed ability to transform the poor and marginalized (Aach, 2008). As part of microfinance institutions, credit unions (CUs) play the role of depository financial institutions, mobilizing savings and making credit available to mostly poor and financially excluded in society. Whether or not this intermediation role of CUs promotes economic growth, to the best knowledge of the authors, is yet to be explored. Consequently, the current study seeks to fill this gap in the literature by empirically addressing one question: Does CU financial intermediation promote economic growth?

The remainder of the paper is sectionalized as follows. Section 2 reviews the relevant literature. Section 3 presents the research methodology employed followed by section 4 which presents the results of the study. Section 5 concludes the paper.

REVIEW OF LITERATURE

It is now established that four causal relationships between financial development and economic growth are conceivable (Apergis et al., 2007). The first hypothesis, called supply-leading response hypothesis, argues that financial development causes economic growth (Schumpeter (1911), the McKinnon (1973) and Shaw (1973). The second hypothesis called demand-following response hypothesis posits that economic growth causes financial development. It argues that the development of the real sector stimulates demand for financial services that are passively met by the introduction of new financial institutions (Odhiambo, 2010). The third hypothesis is mutual impact which argues that there is a bi-directional causal relationship between finance and growth (Demetriades and Hussein, 1996; and Greenwood and Smith, 1997). The fourth hypothesis is no-causal relationship hypothesis which argues that there is no causal relationship between financial development and economic growth (Graff, 1999).

Indubitably, there are some dimensions of the finance-growth nexus that have remained unresolved. One of such dimensions relates to the part of the financial sector that positively impacts growth. Shen and Lee (2006) provide evidence that only stock market development has positive effects on growth and that banking development has an unfavorable, if not negative, effect on growth. In tandem with this finding, Saci et al. (2009) provide evidence, based on a panel of annual data for 30 developing countries, that while the stock market variables in their model are positively and significantly related to growth, their presence in the model results in the standard banking sector variables (credit to the private sector and liquid liabilities) having negative effects on growth. However, Arestis et al. (2001) report that although both banks and stock markets may be able to promote economic growth, yet the effects of the former are more powerful. Demirhan et al. (2011) suggest that the development of stock market and banking sector causes economic growth, the contribution of the banking sector to economic growth has been larger than that of the stock market.

It is obvious from the foregoing that so far the debate as to which part of the financial system impacts growth has centered on banking and stock markets. However, financial systems do not consist of only banking and stock markets. Microfinance institutions have become an integral part of financial systems.

Worldwide, microfinance is regarded as a vehicle for extending financial services to the poor and financially excluded in society (Adusei and Appiah, 2011). It has evolved as a development tool intended to provide credit and financial services to the productive poor who do not have access to formal financial intermediation and are engaged in small and micro enterprises (Kyereboah-Coleman, 2007). Microfinance is capable of improving the well-being of poor women in developing countries (Vonderlack and Schreiner, 2001). There is no doubt that microfinance is an effective tool for development, and one that has been remarkably successful (Bowman, 2006).

Three main modalities have been identified for microfinance delivery. These are the CU Approach, the Non-governmental Organization Approach and the Banking Approach (Montgomery and Weis, 2006). CUs are cooperative, not-for-profit depository institutions that serve a defined field of membership (Frame, et al., 2002). They are mutual organizations owned by their members, who are also their (principal) customers (Davis, 2007). Seibel (1989) identifies four (4) types of credit societies or unions in Africa. Rotating Savings Associations is one type of CU where each member pays a fixed amount of money at regular intervals. Then in rotating order, each member receives the total amount collected at a time. When each member has received the total amount at least once, the cycle terminates and a new cycle begins. Another type of CU involves each member paying a fixed amount at regular intervals. Part of the contribution is allocated to one member at a time in a rotating order whilst part is retained in a general fund which is used for loans, insurance, etc. Another type of CU which is called non-rotating association involves each member paying a fixed or variable amount at regular intervals. The contributions are deposited and paid back to the individual member at the end of a stipulated period. The

non-rotating savings and CUs is another type which involves each member paying a fixed or variable amount at regular intervals. The income of the association from sources such as contributions, fees, penalties is put into a fund, which may be utilized for loans, insurance and social services.

Fairbairn et al. (1997) posit that the self-help ethos, which underpins CUs, make them an ideal vehicle in the fight against financial exclusion. According to Alexander (2000) by providing savings facilities and low-cost loans to people who otherwise might never get them, CUs offer stability. As a result, CUs have received significant support both at central and local government levels in the western world. For example, in Great Britain, at local government level, direct grant assistance is provided to support community-based CUs located in deprived wards, as they have been considered to be best placed to tackle financial exclusion (Ward and Mckillop, 2005). However, the question is, do CUs contribute to economic growth?

RESEARCH METHODOLOGY

Model and Data

CU loans to savings ratio is used as proxy for CU financial intermediation (CFIN). As shown in Table 1, inflation (INFL); capital formation (gross domestic investment) as a share of GDP (CFORM) and credit to private sector as a share of GDP (CPS) are used as control variables. The use of the three control variables is empirically grounded. Inflation in our model measures the macroeconomic stability of the study countries (Shahbaz, 2009; Apergis et al., 2007). Capital formation affects economic growth (Ghosh and Phillips, 1998). Studies such as King and Levine (1993a), King and Levine (1993b) and Levine, et al (2000) have found a positive effect of private domestic credit on per capita GDP growth.

Following Levine et al. (2000), Beck and Levine (2002); Rousseau and Wachtel (2000); Yao (2006); and Saci et al. (2009), the study utilizes panel Generalized Method of Moments (GMM) technique. GMM techniques control for unobserved country-specific effects, first-difference non-stationary variables, overcome the endogeneity of the explanatory variables by using instruments and test for the presence of autocorrelation (Saci et al.2009). Thus, they provide better results. We use the following cross-country growth regression:

$$Y_{it} = \alpha + \beta Xit + \eta_i + \varepsilon_{it} \quad (1)$$

Where y is the logarithm of real per capita GDP, X represents the set of explanatory variables, η is an unobserved country-specific effect, ε is the error term and the subscripts i and t represent country and time period, respectively. The dependent variable in Equation 1 is the real per capita GDP. We use lags of all the variables as instrumental variables. We use the natural logarithm of all variables because according to Sarel (1996), the log transformation eliminates, at least partially, any asymmetry in the data.

Annual panel data from 12 CU countries covering the period of 1995-2011 have been purposively gathered from the World Development Indicators (WDI) (www.worldbank.org) and World Council of Credit Unions (www.woccu.org). The list of the study countries has been attached to the paper as Appendix A. The choice of a country has been based on the availability of data on all the variables defined in Table 1.

ESTIMATION RESULTS

Table 2 is the correlation matrix. It can be observed that the correlations are within acceptable limits (Bryman and Cramer, 1997). The adjusted R2 value of 0.75% reported in Table 3 indicates a strong fit.

Table 1: Definitions of Variables

Variable	Definition
Measure of Economic Growth	
GDP per capita (GDPPC)	GDP per capita is gross domestic product divided by midyear population.
CU Financial Intermediation (CFIN)	Loans to savings ratio
Control Variables	
Inflation(INFL)	The annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals.
Capital Formation (CFORM)	Gross capital formation as a share of GDP
Credit to private sector (CPS)	Credit to private sector as a share of GDP

This table defines the variables that have been used

Access to finance has been one of the priorities on the agenda of policy makers worldwide (Adusei and Appiah, 2012). Research indicates that access to finance promotes more start-ups (Klapper et al. 2006) and enables existing firms to attain a larger equilibrium size by enabling them to take advantage of growth and investment opportunities (Beck et al. 2006). In effect, access to finance and its productive utilization should promote economic growth. CU financial intermediation has been found to have a positive, statistically significant relationship with economic growth, suggesting that countries that promote the operations of CUs are likely to experience economic growth. This is understandable in the sense that the poor and financially excluded who are usually the patrons of CUs have productive ideas but lack funds to prosecute them. Thus, when CU operations become more pervasive and accessible, these productive ideas see materialization which promotes growth. Besides, the lending standards of CUs are usually pro-poor in character which enables the poor and financially excluded in society to access funds at affordable rates for economic activities. Indeed, studies have shown that people patronize microfinance institutions and for that matter CUs for a number of reasons: flexibility and adaptability of their services to the needs and work patterns of the rural and urban poor; lack of access to institutionalized banking because of small deposits and lack of collateral; the desire for confidentiality in financial transactions; and opportunities for individuals to save small amounts which can be accumulated as start up capital (Ofei, 2002; Turner, 1996).

Table 2: Correlation Matrix

	LGDPPC	LCFIN	LCFORM	LINFL	LCPS
LGDPPC	1.000000	0.106946	0.064882	-0.092464	0.451797
LCFIN	0.106946	1.000000	-0.026511	0.089673	0.110508
LCFORM	0.064882	-0.026511	1.000000	0.097574	0.244862
LINFL	-0.092464	0.089673	0.097574	1.000000	-0.203184
LCPS	0.451797	0.110508	0.244862	-0.203184	1.000000
Observations	204	204	204	204	204

This table presents correlations between variables.

Capital formation has also been found to have positive, statistically significant relationship with growth. This is in line with the extant literature that as investment in capital goods increases growth is promoted. On the other hand, inflation has been found to have negative, statistically relationship with growth, suggesting that inflation has a distorting effect on growth in the study countries.

This finding supports the position of the distortionist school of thought on the relationship between inflation and growth. The distortionist school of thought asserts that higher inflation undermines growth by distorting investment patterns and hampering propensities to save and invest (McKinnon; 1973; Johnson, 1967). McKinnon (1973), in particular, has long opined that money balances and capital goods are complementary (rather than substitutable) in developing countries. Thus, with the anticipation of higher inflation, money balances become less attractive to hold which discourages capital formation.

Contrary to studies such as King and Levine (1993a), King and Levine (1993b) and Levine et al. (2000) that have reported a positive effect of private domestic credit on growth, credit to private sector has been found to have a negative, but statistically insignificant relationship with economic growth.

Table 3: Panel GMM Results

Dependent Variable: *LGDPPC*				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	4.584820	1.075287	4.263810	0.0000***
LCFIN	0.744208	0.456437	1.630471	0.1050*
LCFORM	1.192784	0.382901	3.115123	0.0022**
LINFL	-0.444082	0.112233	-3.956783	0.0001***
L CPS	-0.049712	0.108599	-0.457754	0.6478
R^2 =0.79, Adjusted R^2 =0.75, Durbin-Watson stat= 1.87				

*Instrument List: LGDPPC (-1), LCFIN (-1) LCFORM (-1) LINFL (-1) LCPS (-1) * Figures in parentheses are probability values. Note: ***, ** and * represent 1%, 5% and 10% levels of significance*

CONCLUSION

The paper investigates the impact of CU financial intermediation on economic growth using seventeen-year panel data from 12 CU countries. The objective has been to ascertain whether countries that promote CU financial intermediation are likely to experience some economic growth. Using the panel GMM estimation technique which overcomes the shortfalls of the Ordinary Least Squares regression (OLS), the study finds that there is a statistically significant positive relationship between CU financial intermediation and economic growth. In line with the extant literature, the study also finds that more capital formation promotes economic growth in the study countries. Furthermore, our analysis lends credence to the contention that inflation distorts economic growth in the study countries. The study also finds that credit to the private sector distorts growth. However, this is statistically insignificant. On the strength of this evidence adduced above, the paper concludes that CU financial intermediation promotes economic growth and, therefore, recommends intensification of CU financial intermediation in the study countries.

The main weakness of this paper is that it has relied on secondary data. Thus, the validity of its findings and conclusion is limited to the extent to which these data are valid. Another weakness of the paper, which could be an agenda for future research, is its inability to establish the direction of causality between CU financial intermediation and economic growth. Notwithstanding these weaknesses, the paper, without a shred of doubt, contributes to the growth literature by accentuating the significance of CUs to growth.

Appendix A: List of Study Countries

Country	**Region**
1. Kenya	Africa
2. Uganda	Africa
3. Bangladesh	Asia
4. Indonesia	Asia
5. Philippines	Asia
6. Thailand	Asia
7. Bolivia	Latin America
8. Brazil	Latin America
9. Peru	Latin America
10. Honduras	Latin America
11. Guatemala	Latin America
12. Ukraine	Europe

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