



Co-Integration Analysis for Relationship between Institutional Finance and Entrepreneurial Development

KEYWORDS

Co-integration, Institutional Finance, Entrepreneurship, and Development

Dr. Premakumara, G.S.

Sr. Assistant Professor of Economics, University of Mysore, Sir M.V. PG Centre, Tubinakere, Mandya-571402

Mahadevappa, M.M.

Research Scholar, University of Mysore

ABSTRACT

There has been positive relationship between institutional finance and entrepreneurship development. The problem of unemployment and poverty can simultaneously solved by promoting young entrepreneurs by granting institutional finance, which also lead to overall development of the country. Therefore, in the present paper we have tested the long-run relationship between institutional finance and entrepreneurship development in Mysore district of Karnataka. The bank credit has long-run relationship with employment and number of entrepreneurial units. It was also found that bank credit has significant impact on employment and entrepreneurial units. Therefore, there has been stable and long-run relationship between institutional finance and entrepreneurship development. Hence, Institutional finance has to be made available for capable youths for entrepreneurship development.

Introduction

In the present paper an attempt has been made to exhibit the relationship between institutional finance and entrepreneurship development in Mysore district of Karnataka. Investment is a key factor in establishment of an enterprise. In most of situations, educated youth have failed to establish an entrepreneurial activity due lack of investment. The problem of unemployment and poverty can simultaneously solved by promoting young entrepreneurs by granting institutional finance, which also lead to overall development of the country (Muhammadsuhaimee, Roslan, & Nor Azam, 2013). Therefore, in the present paper we have tested the long-run relationship between institutional finance and entrepreneurship development.

Review of Literature:

There has been a positive relationship between entrepreneurial development and economic development (Peter & Peter, 2009). Institutions play predominant role in entrepreneurial development (Georgios, Claudia, & Alexia, 2013), (Siong, Azman-Saini, & Mansor, 2013), (Emanuele, Masi-similiano, Marco, & David, 2013), (Dara, Szyliowicz; Tiffany, Galvin, 2010). Government and public policies significantly intervene in promotion of entrepreneurship and entrepreneurial development (Douglas & Dan, 2013), (Michael, 2011). Returns to entrepreneurial activities depend on the ability of entrepreneurs (Banjo & Doren, 2013). Equally, availability of financial support is important for sustainable entrepreneurial and entrepreneurship development and also for economic development and poverty eradication (Georgios, E. Chor-tareas; Claudia, Girardone; Alexia, Ventouri, 2013), (Muhammadsuhaimee, Roslan, & Nor Azam, 2013). Multiple factors contributes for entrepreneurship development and institutional finance is most important one among them (Gamal & Galt, 2011), (Alex, 2010), (Carmen, 2013), (Mark, Mark, & Jane, 2013), (Ping & E. Burton, 2007). Therefore, institutional finance play immense role in entrepreneurship development.

Methodology:

In the resent past researchers have used the Johansen co-integration models to measure the long-run relationship of co-integrating non-stationary variables. In the present study, we have also used Johansen co-integration models to measure the long-run relationship between institutional finance and entrepreneurship development. District level data have been used the study and Mysore district of Karnataka state considered for analysis. Commercial bank loan has been treated as proxy for institutional finance. Investments, number of

entrepreneurial units and employment have been treated as proxy for entrepreneurship development. The comparable data were collected for the period from 1997-98 to 2010-11. The period has been fixed based on the availability of comparable data. Since the time series has been used in the analysis the necessary checks were taken to test the stationarity of data. The Augmented Dickey-Fuller (ADF) tests were conducted to find the stationarity of data.

ADF test for Stationarity:

The ADF tests were conducted to find the stationarity of data. The tests were conducted for level and difference data with the difference models; without drift and trend, with drift and without trend, and with drift and trend. The test results for level data are presented below.

Table 1: ADF test for Stationarity with Level Data

De-scriptions	Level						
	None		Intercept		Intercept with Trend		
Sl. No.	Variables	t-sta-tistic	Prob	t-sta-tistic	Prob	t-sta-tistic	Prob
1	Bank credit to SSI	1.138	0.920	-2.567	0.125	-3.850	0.056
2	Employment	-0.237	0.579	-1.115	0.672	-1.270	0.843
3	Enterprise Units	-0.737	0.375	-2.471	0.148	-1.478	0.778
4	Investment	0.849	0.880	-0.0231	0.937	-1.595	0.732

Source: DIC, Mysore and Lead Bank, SBM, Mysore.

The ADF (Augmented Dickey-Fuller) test was conducted to find the stationarity for the level data. The test was conducted with three types of models;

- without intercept and trend ($\Delta y_t = y_{t-1} + e_t$)
- with intercept ($\Delta y_t = \alpha + y_{t-1} + e_t$)
- with intercept and trend ($\Delta y_t = \alpha + y_{t-1} + T + e_t$)

It has been found from the ADF test with level data that none of the variables found stationary. Hence, in the following section ADF test was conducted with first and second difference data.

Table 2: ADF test for Stationarity with Difference Data

De-scrip-tions	First Difference						
	None		Intercept		Intercept with Trend		
Sl. No.	Variables	t-sta-tistic	Prob	t-sta-tistic	Prob	t-sta-tistic	Prob
1	Bank credit to SSI	-4.424	0.001	Stationary without intercept and trend			
2	Employment	-3.168	0.004	Stationary without intercept and trend			
3	Entrepreneurial Units	-4.453	0.000	Stationary without intercept and trend			
4	Investment	-2.568	0.015	Stationary without intercept and trend			

Source: DIC, Mysore and Lead Bank, SBM, Mysore.

It has been found from the ADF test that the following variables were found stationary at their first difference;

Data for Bank credit to SSI is $I \sim (1)$, Integrated of the order one.

Data for Employment is $I \sim (1)$, Integrated of the order one.

Data for Enterprise Units is $I \sim (1)$, Integrated of the order one.

Data for Investment is $I \sim (1)$, Integrated of the order one.

Analysis of Long-run Relationship:

An attempt has been made to identify the long-run relationship of bank credit to SSI with employment, investment and number of enterprising units in Mysore district. In the previous analysis it has been found that, the time series data for the variables bank credit to SSI with employment, investment and number of enterprising units were found stationary at their first difference. The Johansen co-integration test can be used for the same order of integration to find the long run relationship of non-stationary variables. Therefore, an attempt has been made to identify the long-run relationship of bank credit with the employment, investment and number of enterprising units.

Relationship of Bank Credit with employment:

The time series non stationary data integrated of order one for both bank credit and employment has been used for the analysis. The Johansen co-integration test was used to find the long-run relationship.

Table 3: Co-integration between Commercial Bank Credit and Employment

Unrestricted Co-integration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigen-value	Statistic	Critical Value	Prob.**
None *	0.670217	15.57152	15.49471	0.0487
At most 1	0.263814	3.368997	3.841466	0.0664
1 Co-integrating Equation(s):		Log likelihood	-181.0079	
Normalized co-integrating coefficients (standard error in parentheses)				
Credit	Employment			
1.000000	0.098340			
	(0.31971)			

Source: DIC, Mysore and Lead Bank, SBM, Mysore.

It has been found from the co-integration test that bank credit and employment have long-run relationship at ten percent level. If bank credit to enterprises has been increased by one time the employment will be increased by 0.098 times. Therefore, there has been stable and long-run relationship between bank credit to SSI and employment.

Relationship of Bank Credit with Investment:

The time series non stationary data integrated of order one for both bank credit and investment has been used for the analysis. The Johansen co-integration test was used to find the long-run relationship.

Table 4: Co-integration between Commercial Bank Credit and Investment

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.617721	11.83204	15.49471	0.1652
At most 1	0.107773	1.254385	3.841466	0.2627
1 Cointegrating Equation(s):		Log likelihood	-180.4718	
Normalized cointegrating coefficients (standard error in parentheses)				
Credit	Investment			
1.000000	-0.174652			
	(0.37790)			

Source: DIC, Mysore and Lead Bank, SBM, Mysore.

It has been found from the co-integration test that bank credit and investment not have long-run relationship at ten percent level. Therefore, the stable and long-run relationship between bank credit to SSI and investment cannot be assumed.

Relationship of Bank Credit with Entrepreneurial Units:

The time series non stationary data integrated of order one for both bank credit and number of entrepreneurial units has been used for the analysis.

Table 5: Co-integration between Credit and Number of Entrepreneurial Units

Unrestricted Co-integration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigen value	Statistic	Critical Value	Prob.**
None *	0.705569	16.93279	15.49471	0.0302
At most 1	0.271403	3.482982	3.841466	0.0620
1 Co-integrating Equation(s):		Log likelihood	-165.0580	
Normalized co-integrating coefficients (standard error in parentheses)				
Credit	Units			
1.000000	4.882853			
	(1.53170)			

Source: DIC, Mysore and Lead Bank, SBM, Mysore.

It has been found from the co-integration test that bank credit and number of entrepreneurial units have long-run re-

relationship at ten percent level. If bank credit to enterprises has been increased by one time the number of units will be increased by 4.883 times. Therefore, there has been stable and long-run relationship between bank credit to SSI and number of entrepreneurial units.

Conclusion:

In the Mysore district of Karnataka, a co-integration analysis has been used to identify the long-run relationship for the major variable, namely, bank credit to SSI and these variables found stationary integrated of the order one. The same level integrated variables namely; employment, entrepreneurial

units and investment have been used for co-integration analysis. The bank credit has long-run relationship with employment and number of entrepreneurial units. It was also found that bank credit has significant impact on employment and entrepreneurial units. Therefore, there has been stable and long-run relationship between institutional finance and entrepreneurship development. Hence, Institutional finance has to be made available for capable youths for entrepreneurship development.

REFERENCE

- Alex, N. (2010). Institutionalizing Social Entrepreneurship in Regulatory Space: Reporting and Disclosure by Community Interest Companies. *Accounting, Organizations and Society* 35, 394-415. | Banjo, R., & Doren, C. (2013). Effects of Formal Institutions on the performance of the Tourism Sector in the Philippines: The Mediating Role of Entrepreneurial Orientation. *Tourism Management* 37, 1-12. | Carmen, S. (2013). Extending Dunning's Investment Development Path: The role of home Country Institutional determinants in explaining outwards Foreign Direct Investment. *International Business Review* 22, 615-637. | Dara, Szyliowicz; Tiffany, Galvin. (2010). Applying Broader Stroker: Extending Institutional Perspectives and Agendas for International Entrepreneurship Research. *International Business Review*, 19, 317-332. | Douglas, C., & Dan, L. (2013). Public Policy, Entrepreneurship, and Venture Capital in the United States. *Journal of Corporate Finance* 23, 345-367. | Emanuele, B., Massimiliano, B., Marco, B., & David, H. (2013). The Role of Institutional Investors in Public-to-Private Transactions. *Journal of Banking & Finance* 37, 4327-4336. | Gamal, I., & Galt, V. (2011). Explaining Ethnic Entrepreneurship: An Evolutionary Economics Approach. *International Business Review* 20, 607-613. | Georgios, E. C., Claudia, G., & Alexia, V. (2013). Financial Freedom and Bank Efficiency: Evidence from the European Union. *Journal of Banking & Finance* 37, 1223-1231. | Georgios, E. Chortareas; Claudia, Girardone; Alexia, Ventouri. (2013). Financial Freedom and Bank Efficiency: Evidence from the European Union. *Journal of Banking & Finance* 37, 1223-1231. | Mark, A. C., Mark, W. D., & Jane, M. w. (2013). The Social Construction, Challenge and Transformation of a Budgetary Regime: The Endogenization of Welfare Regulation by Institutional Entrepreneurs. *Accounting, Organizations and Society*, 38, 333-364. | Michael, T. (2011). Legal Institutions and High-growth Aspiration Entrepreneurship. *Economic Systems* 35, 158-175. | Muhammadsuhaimee, Y., Roslan, A.-H., & Nor Azam, A.-R. (2013). Does Entrepreneurship Bring An Equal Society and Alleviate Poverty? Evidence from Thailand. *Procedia Social and Behavioral Sciences*, 91, 331-340. | Peter, T. L., & Peter, J. B. (2009). Two-tiered Entrepreneurship and Economic Development. *International Review of Law and Economics*, 29, 252-259. | Ping, W., & E. Burton, S. (2007). Launching Professional service Automation: Institutional Entrepreneurship for Information Technology Innovations. *Information and organization* 17, 59-88. | Siong, H. L., Azman-Saini, W., & Mansor, H. I. (2013). Institutional Quality Thresholds and the Finance-Growth nexus. *Journal of Banking & Finance* 37, 5373-5381. |