Social Capital and Financial Development: New Evidences from Iran (1983-2012)

Mahmood Yahyazadehfar[*]
Amir Mansour Tehranchian[**]
Mahyar Hami[***]

Abstract

The aim of this paper is to examine the causal relationship between social capital and financial development in Iran emphasizing long-run relations during 1983-2012. To do so, we used the number of annual judicial cases in public courts per thousand individuals as an inverse indicator of social capital and the ratio of bank claims on the private sector to nominal GDP to measure financial development. Then we applied Vector Error Correction Model to estimate the proposed model. The results show that the inverse indicator of social capital has a negatively significant impact on financial development and there is a one-way causal relationship from social capital to financial development in Iran during the observation period.
Keywords: Social Capital, Financial Development, Co-integration, Vector Error Correction Model (VECM), Iran`s Economy.

1- Introduction

Nowadays, the economic development process requires a broad participation of individuals and institutions as well as efficient economic and financial system. Meanwhile, social institutions play an important role in educating and empowering individuals in this process. Thus the identification of social capital as an effective factor in economic activities can promote economic cooperation and consequently economic development.

---

[*] Professor of Finance at University of Mazandaran, Babolsar, Iran; (Corresponding Author).
[**] Assistant Professor of Economics at University of Mazandaran, Babolsar, Iran.
[***] M.A in Master of Business Administration – Mazandaran University of Science & Technology, Babol, Iran.

Social capital is one of the most important types of nonphysical capital which has been of an interest area to many researchers in recent decades. Social capital is a sociological concept which refers to communication within and between groups in business, economics, social sciences and public health. Although there are various definitions for this concept, but social capital is often seen as a cure for all problems of the modern society (Portes, 1998). Social capital has been generally known as the norms and networks that enable people to act collectively (Woolcock and Narayan, 2000). Fukuyama (2001) introduces social capital as a set of norms in the social system which promotes cooperation between community members and reduces transaction costs and Yamagishi (1986) considers trust as the key of cooperation and collaboration among individuals. Lots of researches emphasized on the positive effects of social capital on creating human capital (Coleman, 1988), economic growth (Temple and Johnson, 1998), health promotion (Hawe and Shiell, 2000), economic development (Lyon, 2000), promoting innovative activities (Kaasa, 2009), income distribution (Robison et al, 2011), preventing from tax evasion (Thoni et al, 2012) etc. On the other hand, financial development is known as a determinant factor in explaining differences in economic growth rates in different countries. Financial development is a multidimensional concept which refers to development of the bank and non-bank sector, monetary policies, banking regulation and supervision (Dadgar and Nazari, 2009). It is generally defined as the improvement in quantity, quality and efficiency of financial intermediary services (Choong and Chan, 2011). Bagehot (1873) mentioned that financial system has played the key role in the beginning of industrialization in England and Schumpeter (1961) stated that innovation in technology is the main driving force of long-run growth and supporting the financial system is the main reason of innovative activities. Facilitating the trading, allocating resources, mobilizing savings and facilitating the exchange of goods and services are often known as basic functions of any financial system (Levine, 1997).

Social capital effects the growth by increasing the efficiency of the financial sector in transforming individual or household savings into productive investments by firms (Chou, 2006). Putnam (1993) and La Porta et al (1997) stated that trusting in institutions is the most important aspect of the relationship between social capital and financial areas and Stulz and

Williamson (2003) emphasized on the role of culture, norms and social capital on financial development. As Arrow (1972) said once "Virtually every commercial transaction has within itself an element of trust". Trust as the key component of social capital, plays an important role in financial obligations. For example, to be assured of the repayment of principal and interest on deposits by banks, compensation from insurance companies, payment for delivery and informal debts repayment, all require a certain level of trust between the parties of the transaction. Exchange is the most important link between social capital and economic areas like financial development and what promotes trust and reduces the opportunism in the community is to strengthen the positive social capital. Exchange itself depends on the circumstances of the place and time and it is impossible to cover financial contracts with iron coatings. Networks and trust will be important tools to regulate contracts in situations where law enforcement is not able to prevent individuals from opportunism. Therefore the effect of social capital on financial development can be pursued from financial contracts and the role of trust in them (Francois, 2002).

Fukuyama (1995) states that people in areas with low social capital rely on trade with the sub-groups such as friends and Knack and Keefer (1997) believe that individuals in higher-trust societies spend few resources to protect themselves from being exploited in transactions. The success of any micro-finance system depends on creating social capital among its members (Maclean, 2010). Based on the above lines it is expected that there is a significant relationship between social capital and financial development. Therefore, we are going to examine this relationship in Iran`s economy in this paper.

2- Background

Knack and Keefer (1997) on their cross-country investigation reported that the impact of trust on growth should be higher in countries with underdeveloped financial sector.

Calderon et al (2001) explored the link between trust and a broad range of financial structure and development measures in selected countries during 1980 to 1994 and showed that trust is correlated with financial depth and efficiency as well as with stock market development.

Garretsen et al (2004) on their study on the role of social norms in explaining differences of financial development in selected countries showed that societal norms are important in value added of including societal norms in models that explain financial development or, indirectly, economic growth largely coincides with the inclusion of formal institutions, like legal variables.

Guiso et al (2004) investigated the role of social capital on financial development at household level of Italy during 1989 to 1995 and concluded that in high-social-capital areas, households are more likely to use checks, invest less in cash and more in stock, have higher access to institutional credit and make less use of informal credit. They also concluded that the effect of social capital is stronger where legal enforcement is weaker and among less educated people.

Boulila et al (2008) explored the possible transmission channels of social capital to economic growth for a sample of some developed and developing countries during the period 1980-2000 and found out the improvement of the social infrastructure with high levels of trust and cooperation between individuals has an indirect effect on economic growth through the development of financial institutions..

Dadgar and Nazari (2009) have considered legal and cultural factors as evaluating financial development indicators as well as institutional and legal infrastructure as determinants of financial development in Iran.

Georgarakos and Pasini (2009) examined the effects of trust and sociability on stock market participation in selected countries and showed that the effect of generalized trust is strong in countries with limited participation in stock market.

Sangnier (2011) on his cross-section analysis of the relationship between trust and financial development over the twentieth century showed that increasing trust is associated with increasing financial development at country level.

Papaioannou (2013) examined the role of trust in economic development in Europe during 2002 to 2010. It is showed that accessing bank funding is higher in countries with higher social capital and these areas have more developed capital markets.

3- Data and Model

3-1- Social Capital Measure

Social capital is a qualitative variable and is not easy to measure as quantitative variables and due to its complex nature, there is no consensus on the selection of one appropriate indicator to measure it (Samadi et al, 2012). Social capital consists of several components and different indicators such as trust and membership in voluntary (Krishna and Uphoff, 1999), frequency of attendance in church (Durlauf, 2002), visiting neighbors (Hong et al, 2004) and so on. In this regard, Knack and Keefer (1997), Berggren et al (2007) and Dearmon and Grier (2009) used traditionally accepted paradigm of "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" in order to quantify trust.

In this paper we employed the number of annually judicial cases in public courts of Iran per thousand individuals as an inverse indicator of social capital. In this case, the higher number of judicial cases, the decline of social capital and loss of public trust. To do so, annually data collected from Iran Statistical Yearbooks.

3-2- Financial Development Measure

The measures of financial development generally are in associated with the role of monetary policies or indicate the bank and non-bank sector development. Due to the specific characteristics of any financial system, various indicators have been proposed to measure financial development. To measure financial development, many researchers consider a set of indicators such as liquidity, credits and deposits as a percentage of GDP. For example, Demetriades and Hussein (1996) in their time series study to examine the relationship between financial development and economic growth in 16 selected countries used the ratio of bank deposit liabilities to nominal GDP and the ratio of bank claims on the private sector to nominal GDP to measure financial development and Levine (1997) in his investigation on the relationship between financial development and economic growth, used four measures including currency plus demand and interest-bearing liabilities of banks and nonbank financial intermediaries divided by GDP, the ratio of bank credit divided by bank credit plus central bank domestic assets, the ratio of credit allocated to private enterprises to

total domestic credit and credit to private enterprises divided by GDP to gauge financial development.

Iran`s financial system is a highly bank based system (Moayedi and Aminfard, 2012) and banks play the main role in funding NGOs and enterprises. For this reason, we used the ratio of bank claims on the private sector to nominal GDP to measure financial development. To do so, annually data collected from The Economic Time Series Database of Central Bank of Iran.

3-3- **The Model**

This paper employs a Vector Error Correction Model (VECM) to investigate the causal relationship between social capital and financial development in Iran using annually data over the period 1983 to 2012. The general assumption in the proposed model is that there is at least one long-run co-integration vector among the variables and the value of each dependant variable can be defined as a function of past values of the dependent variable, past values of the independent variable and error term as follow:

$$lsc = f_1 \; (\; lsc_{(-1)}, \; lsc_{(-2)},..., \; lsc_{(-n)}, \; lfd_{(-1)}, \; lfd_{(-2)},..., \; lfd_{(-n)}, \; \varepsilon_1 \;) \qquad (1)$$

$$lfd = f_2 \; (\; lfd_{(-1)}, \; lfd_{(-2)},..., \; lfd_{(-n)}, \; lsc_{(-1)}, \; lsc_{(-2)},..., \; lsc_{(-n)}, \; \varepsilon_2 \;) \qquad (2)$$

To adjust fluctuations of the variables during the observation period, logarithmic values is used in the model so that *lsc* and *lfd* represent the logarithmic values of social capital and financial development measures respectively and ε_1, ε_2 are error terms.

To estimate such a model, the numbers of lags included, stationary of the time series and the results of the co-integration tests are of crucial importance. Thus using Schwarz (1978) Information Criterion (SIC), two optimal lags considered to specify the model as the following linear relations:

$$lsc = \alpha_1 lsc_{(-1)} + \alpha_2 lsc_{(-2)} + \alpha_3 lfd_{(-1)} + \alpha_4 lfd_{(-2)} + \alpha_5 \varepsilon_1 + c_1 \qquad (3)$$

$$lfd = \beta_1 lfd_{(-1)} + \beta_2 lfd_{(-2)} + \beta_3 lsc_{(-1)} + \beta_4 lsc_{(-2)} + \beta_5 \varepsilon_2 + c_2 \qquad (4)$$

4- Empirical Results

Using econometric methods in empirical studies is based on the stationary of the variables. Thus, In order to test the stationary of the variables in level, Phillips–Perron (1988) Unit Root Test employed using Eviews6. The results are shown in Table 1.

Table 1: The Results of Phillips–Perron (1988) Unit Root Test for Variables in Level.

Variable	Adj. t-Stat	Test Critical Value In %1 Level	Test Critical Value In %5 Level	Test Critical Value In %10 Level
Lsc	-1.65	-3.70	-2.98	-2.63
Lfd	-0.56	-3.70	-2.98	-2.63

The results show that both variables are unstable in level. Therefore Phillips–Perron (1988) Unit Root Test for variables in 1st difference applied which the results are shown in Table 2.

Table 2: The Results of Phillips–Perron (1988) Unit Root Test for Variables in 1st Difference.

Variable	Adj. t-Stat	Test Critical Value In %1 Level	Test Critical Value In %5 Level	Test Critical Value In %10 Level
D(lsc)	-8.62	-3.71	-2.98	-2.63
D(lfd)	-4.17	-3.71	-2.98	-2.63

The results indicate both variables are stable in 1st difference in 1% level. Stationary of the variables at the same level could indicate the existence of a long-run relationship between them. Examining the co-integration between economic variables is performed by different methods such as Engle and Granger (1987), Stock and Watson (1988) and Johansen (1988), which Johansen`s approach has clearly better properties than the other two estimators in situations where there is more than one co-integration vector (Gonzalo, 1994). Therefore in the next step we applied Johansen (1988) Co-integration Test using Eviews6 to examine the long-run relationship between social capital and financial development which the results are shown in Table 3.

Table 3: The Results of Johansen (1988) Co-Integration Test for Variables.

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.02 Critical Value	Prob
None *	0.50	19.43	18.07	0.01

* Denotes rejection of the hypothesis at the 0.02 level

According to the Table 3, Johansen`s trace statistic is greater than critical value at the 0.02 level which indicates that there is at least one long-run co-integration vector among the variables with the certainty of more than 98%. This provides the basis of using estimation methods. As mentioned earlier, in this paper we employed Vector Error Correction Model (VECM) using Eviews6 to estimate the model which the results are shown in Table 4.

Table 4: The results of Vector Error Correction Estimates for variables.

Coefficient	Value	Standard Error	T-Statistics	Coefficient	Value	Standard Error	T-Statistics
α_1	-0.60	0.16	-3.81	β_1	0.28	0.26	1.05
α_2	-0.11	0.20	-0.55	β_2	0.27	0.26	1.00
α_3	1.82	0.86	2.11	β_3	-0.10	0.05	-2.00
α_4	0.14	0.86	0.16	β_4	-0.06	0.06	-0.94
α_5	-0.50	0.06	-3.81	β_5	-0.04	0.04	-0.90
c_1	-0.02	0.05	-0.47	c_2	0.01	0.02	0.27

Based on the estimated coefficients, the general linear relations can be described as follow:

$$D\,(lsc\,) = -0.60D\,(lsc_{(-1)}) - 0.11D\,(lsc_{(-2)}) + 1.82D\,(lfd_{(-1)}) + 0.14D\,(lfd_{(-2)}) - 0.50\varepsilon_1 - 0.02 \quad (5)$$

$$D\,(lfd\,) = 0.28D\,(lfd_{(-1)}) + 0.27D\,(lfd_{(-2)}) - 0.10D\,(lsc_{(-1)}) - 0.06D\,(lsc_{(-2)}) - 0.04\varepsilon_2 + 0.01 \quad (6)$$

5- Conclusion

This paper examined the causal relationship between social capital and financial development in Iran using annually data during 1983 to 2012. For this purpose, measures of the variables introduced and the proposed model estimated via Vector Error Correction Model (VECM). The Results of this study can be outlined as follow:

Phillips–Perron (1988) Unit Root Test for variables showed that social capital and financial development time series both have unit root and become stationary after first differencing (see Table 2).

Based on the results of Johansen (1988) Co-integration Test for variables (shown in Table 3), there is at least one significant long-run relationship between social capital and financial development and at least one co-integration vector between the variables with the certainty of more than 98%.

According to the results of Vector Error Correction Estimates for variables (shown in Table 4), coefficients of $\alpha_5 = -0.50$ and $\beta_5 = -0.04$ which called error correction coefficients, appeared in the model with the negative sign and their significance approves in 6% and 4% level, respectively. Negative sign of error correction coefficients indicates the tendency for long-run equilibrium relationship among the variables. The significance of $\alpha_3 = 1.82$ and $\alpha_4 = 0.14$ which indicate the impact of financial development on social capital, rejects. Also, since the social capital measure used in this paper is an inverse indicator and according to the theoretical bases should have an inverse relationship with financial development, sign of the coefficients $\beta_3 = -0.10$ and $\beta_4 = -0.06$ which indicate the impact of social capital on financial development is consistent with the theoretical bases and their significance approves in 5% and 6% level, respectively.

This finding shows that financial development has no significant impact on social capital and the inverse indicator of social capital has a negatively significant impact on financial development in Iran. In other words, the results suggest that there is a one-way causal relationship from social capital

to financial development in Iran during the observation period, so that 1% decline of social capital has led to approximately 0.10% decline of financial development in bank sector in the next period and approximately 0.06% decline of financial development in bank sector in the next two period. These results are consistent with Calderon et al (2001), Guiso et al (2004), Boulila et al (2008) and Sangnier (2011) for selected countries.

The results indicate that the descent of institutional factors such as the level of social-capital, increased the transaction costs and this process has a negative effect on the strengthening of the financial markets in Iran in the recent years. Thus, it seems that the attention of policymakers to strengthening of the legal considerations in cases like embezzlement and use of financial instruments such as check can have a positive impact on the level of financial development in Iran.

References

1- Arrow, K. (1972). Gifts and Exchanges, Philosophy and Public Affairs, 1(4), 343-362.

2- Bagehot, W. (1873), Lombard Street: A Description of the Money Market. Orion, 1-359.

3- Berggren, N. et al. (2007). Trust and Growth: A Shaky Relationship. IFN Working Papers, No 705, 1-20.

4- Boulila, Gh. et al. (2008). Social Capital and Economic Growth: Empirical Investigations on the Transmission channels. International Economic Journal, 22(3), 399-417.

5- Calderon, C. et al. (2001). Structure and Development of Financial Institutions and Links with Trust: Cross-Country Evidence. Inter-American Development Bank, Working Paper No 444, 1-25.

6- Choong, C. and Chan, S. (2011). Financial development and economic growth: A review, African Journal of Business Management. 5(6), 2017-2027.

7- Chou, Y. (2006). Three Simple Models of Social Capital and Economic Growth, Journal of Socio-Economics, 35(5), 889-912.

8- Coleman, J. (1988). Social Capital in the Creation of Human Capital, American Journal of Sociology, 94, 95-120.

9- Dadgar, Y. and Nazari, R. (2009), Evaluating the financial development indicators in Iran, 1st Conference on Development of Financial System in Iran, 1-37. (In Persian)

10- Dearmon, J. and Grier, K. (2009), Trust and development. Journal of Economic Behavior & Organization, 71(2), 210-220.

11- Demetriades, P. and Hussein, Kh. (1996), Does financial development cause economic growth? Time-series evidence from 16 countries, Journal of Development Economics, 51, 387-411.

12- Durlauf, S. (2002), On The Empirics of Social Capital. The Economic Journal, 112, 459-479.

13- Engle, R. and Granger, C. (1987), Co-integration and Error Correction: Representation, Estimation, and Testing. Econometrica, 55(2), 251-276.

14- Francois, P. (2002), Social capital and economic development, Routledge Chapman & Hall, 1-144.

15- Fukuyama, F. (1995), Trust: The social virtues and the creation of prosperity. Free Press, 1-458.

16- Fukuyama, F. (2001), Social capital, civil society and development, Third World Quarterly, 22(1), 7-20.

17- Garretsen, H. et al. (2004), Growth, financial development, societal norms and legal institutions. Journal of International Financial Markets, Institutions and Money, 14(2), 165-183.

18- Georgarakos, D. and Pasini, G. (2009), Trust, Sociability and Stock Market Participation, CFS working papers, No 29, 1-46.

19- Gonzalo, J. (1994), Five Alternative Methods of Estimating Long-Run Equilibrium Relationships. Journal of Econometrics, 60(1-2), 203-233.

20- Guiso, L. et al. (2004), The Role of Social Capital in Financial Development. The American Economic Review, 94(3), 526-556.

21- Hawe, P. and Shiell, A. (2000), Social capital and health promotion: a review. Social Science & Medicine, 51(6), 871-885.

22- Hong, H. et al. (2004), Social Interaction and Stock Market Participation, The Journal Of Finance, 59(1), 137-163.

23- Johansen, S. (1988), Statistical Analysis of Co-integration Vectors, Journal of Economic Dynamics and Control, 12(2-3), 231-254.

24- Kaasa, A. (2009). Effects of different dimensions of social capital on innovative activity: Evidence from Europe at the regional level. Technovation, 29(3), 218-233.

25- Knack, S. and Keefer, Ph. (1997), Does social capital have an economic payoff? a cross-country investigation, The Quarterly Journal of Economics, 112(4), 1251-1288.

26- Krishna, A. and Uphoff, N. (2009), Mapping and Measuring Social Capital: A Conceptual and Empirical Study of Collective Action for Conserving and Developing Watersheds in Rajasthan, India. Social Capital Initiative Working Papers, No 13, 1-68.

27- La Porta, R. et al. (1997). Trust in large organizations. American Economic Review, 87(2), 333-338.

28- Levine, R. (1997). Financial Development and Economic Growth: Views and Agenda. Journal of Economic Literature, 35(2), 688-726.

29- Lyon, F. (2000), Trust, Networks and Norms: The Creation of Social Capital in Agricultural Economies in Ghana. World Development, 28(4), 663-681.

30- Moayedi, V. and Aminfard, M. (2012), Iran's post-war financial system. International Journal of Islamic and Middle Eastern Finance and Management, 5(3), 264–281.

31- Papaioannou, E. (2013), Trust(ing) in Europe? How increased social capital can contribute to economic development, CES Research Paper, 1-130.

32- Phillips, P. and Perron, P. (1988), Testing for a Unit Root in Time Series Regression. Journal of Biometrika, 75, 335-346.

33- Portes, A. (1998). Social Capital: Its origins and applications in modern sociology. Annual Review of Sociology, 24, 1-24.

34- Putnam, R. (1993), Making Democracy Work-Civic Traditions in Modern Italy. Princeton University Press, 1-280.

35- Robison, L. et al. (2011). Social capital and the distribution of household income in the United States: 1980, 1990, and 2000. Journal of Socio-Economics, 40, 538-547.

36- Samadi, A. et al. (2012), Social capital, human capital and economic growth: The case of Iran (1971-2008), Quarterly Journal of Applied Economics Studies, 1(2), 145-176. (In Persian)

37- Sangnier. M. (2011), The co-evolution of social capital and financial development. Economics Bulletin, 14, 1-23.

38- Schumpeter, J. (1961), The Theory of Economic Development. Transaction Publishers, 1-255.

39- Schwarz, G. (1978), Estimating the dimension of a model. Annals of Statistics, 6(2), 461-464.

40- Stock, J. and Watson, M. (1988), Variable Trends in Economic Time Series. Journal of Economic Perspectives, 2(3), 147-174.

41- Stulz, R. and Williamson, R. (2003), Culture, openness, and finance, Journal of Financial Economics, 70(3), 313-349.

42- Temple, J. and Johnson, P. (1998), Social capability and economic growth, Quarterly Journal of Economics, 113, 965-990.

43- Thoni, C. et al. (2012), Micro foundations of social capital, Journal of Public Economics, 96, 635-643.

44- Woolcock, M. and Narayan, D. (2000), Social Capital: Implications for Development Theory, Research, and Policy. The World Bank Research Observer, 15(2), 225-249.

45- Yamagishi, T. (1986), The provision of a sanctioning system as a public good. Journal of Personality and Social Psychology, 51, 110-116.