Testing the Financial Convergence Hypothesis and Estimating the Convergence Rate in Selected Countries

Prueba de la hipótesis de convergencia financiera y estimación de la tasa de convergencia en países seleccionados

Hatef Hazeri Niri
Assistant Professor in Financial Economics, Department of Economics, Mohaghegh Ardabili University, Ardabil, Iran.
Email: Hatef.Hazeriniri@uma.ac.ir
ORCID: https://orcid.org/0000-0002-2473-6130

Resumen

La hipótesis de la convergencia financiera como uno de los resultados de los modelos neoclásicos de crecimiento económico, enfatiza el proceso de reducción de la brecha financiera entre países. El objetivo principal de este estudio es probar la hipótesis de la convergencia financiera y estimar la tasa de convergencia en países desarrollados y en desarrollo seleccionados mediante el uso de GMM durante el período 2018-1990. Resultados Según los dos modelos, el crédito interno al sector privado (porcentaje del PIB) y la moneda corriente al PIB aprobaron la convergencia financiera en estos países. Además, la tasa de convergencia en términos de crédito interno al sector privado en los países en desarrollo es más alta que en los países desarrollados. Sin embargo, la tasa de convergencia en términos de moneda corriente con respecto al PIB entre los dos grupos de países desarrollados y en desarrollo es muy pequeña y se aproxima al 1%.

Palabras clave: Convergencia; Profundización Financiera; Cuenta de Capital; Panel Dinámico.
Clasificación JEL: F41 ، F21. C58 ، E44

Abstract

The hypothesis of financial convergence as one of the results of neoclassical economic growth models, emphasizes the process of reducing the financial gap between countries. The main purpose of this study is to test the financial convergence hypothesis and estimate the convergence rate in selected developed and developing countries by using GMM during the period 2018-1990. Results According to both of two models, the domestic credit to the private sector (percentage of GDP) and the current money to GDP approved the financial convergence in these countries. Also, the convergence rate in term of domestic credit to the private sector in developing countries is higher than that's in developed countries. However, Convergence rate in term of current money to GDP between the two groups of developing and developed countries is very small and about 1%.

Keywords: Convergence; Financial Deepening; Capital Account; Dynamic Panel.
JEL Classification: F41 ،F21. C58 ،E44

Introduction

Over the decades, we have seen the need for financial openness in emerging markets. In general, one of the functions of financial markets is to strengthen financial development by exchanging international knowledge and reducing the knowledge gap in the financial field between developed and developing countries (Goldberg, 2007), Also, one of the goals of the real economy is to raise capital for investment and stimulate economic growth in order to helping emerging markets to achieve a standard of living in developed countries (Aghion et al, 2005). While the benefits of financial development are well defined, but there is very little systematic evidence to show whether financial development in developing countries is approaching and converging to financial development in developed countries. Therefore, the convergence process has been more considered as one of the results of economic growth models in recent years, and therefore the importance of reducing the income and financial gap among countries leads to the formation of research on convergence and the factors affecting it.

Another point is that the reflection of the reduction of restrictions on cross-border transactions between countries and on the other hand the recent global financial crisis and the increase in global financial integration over recent decades has led to widespread debate about the complexity of integration and even financial convergence. On the other hand, financial reforms in developing countries, which are usually accompanied by capital account liberalization, have not only made domestic financial markets more competitive, but also made countries more financially integrated with the rest of the world. In recent years, the issue of the effects of the growth of capital account openness has always been raised, and therefore in recent decades, more countries have moved to reduce and eliminate restrictions on capital flows (Eichengreen et al,2011). Therefore, the main purpose of this paper is to test the financial convergence hypothesis and also to estimate the convergence rate using the Dynamic Panel data (DPD) approach in selected developed countries (38 cases1) and developing countries (34 countries2) based on generalized method of moments (GMM) during the period 2018-1990.

The next section of the article provides the literature review on financial convergence. Experimental data and results are presented in Section three and finally in forth Section the conclusions and research recommendations are discussed.
Literature Review

In recent decades, various experimental studies have been conducted to investigate the convergence hypothesis. The first studies on the convergence hypothesis were conducted by Barro and Sala- i-Martin (1990), which examined the convergence of Sigma and Beta between 48 US states during the period 1990- 1880 and showed that there was

---

[1] Sample of developed countries based on available information include the United States, Germany, the United Kingdom, Italy, Austria, Spain, Australia, Estonia, Scotland, Slovakia, Slovenia, Ireland, Iceland, Belgium, Bulgaria, Portugal, Czech Republic, Denmark, Romania, Japan, Sweden , Switzerland, France, Finland, Cyprus, Canada, Croatia, Latvia, Luxembourg, Lithuania, Malta, Hungary, Norway, New Zealand, the Netherlands and Greece.

[2] Including Iran, Turkey, Jordan, Uruguay, UAE, Indonesia, Bahrain, Brazil, Bangladesh, Pakistan, India, Thailand, Tunisia, Algeria, Chad, China, Singapore, Sudan, Chile, Iraq, Saudi Arabia, Oman, Philippines, Qatar, Congo, Kenya, Kuwait, Lebanon, Malaysia, Morocco, Egypt, Angola, Nigeria and Yemen.

a convergence of beta and sigma between these areas, and that these areas were converging in terms of per capita income. Summers and Hesto (1991), using data from 118 selected countries around the world during the period 1880-1990, also found that countries with higher per capita incomes and more developed countries grew faster than countries with lower per capita incomes. Alejandro (2000) examined convergence and economic growth in Mexico in the form of a neoclassical model between 31 states in Mexico and showed that the rate of convergence with human capital varies from 3.55 to 4.58 percent. Parikh & Shibata (2003) in selected countries in Asia, Africa and Latin America showed that financial openness has accelerated the convergence of real per capita income in Asian countries and the United States. Also, the study of Burk Bahadi and Nun Valva (2013) through threshold models shows that indicators of financial development such as private sector credit as a percentage of GDP in different countries are converging to each other and the rate of convergence is higher in developing countries and in Countries with a high level of development in financial institutions have a slower rate of convergence.

Robert Dekel and Mojave Pandit (2015) studied the recent convergence of financial development in Asia based on 23 countries and the results showed that Asian countries with a less developed financial system converge to a developed financial system and are affected from variables such as GDP Domestic per capita and banking systems. Luke (2017) tested Latin American countries in terms of high financial convergence using the Phillips-Sol method and showed that regional and global financial convergence in Latin America is based on economic infrastructure and the need for economic convergence to increase economic growth and Improving the level of development of the financial market. In another study, Rasekhi and Ranjbar (2009) have examined trade openness impact on the speed of convergence for D8 members by using powerful panel data technique during time 1975-2004. Results indicated that trade openness has significant and positive effect on speed of convergence among D8 members it and also seemed that D8 members decrease income gap between themselves by developing mutual trade.

In general, according to the Solo-Swan (1956) growth model, the concept of convergence is the faster growth of economies with a level of financial depth less than k* (as a proxy for the optimal level of financial depth) than economies with a level of financial depth greater than k* (Barro and Sala- i- Martin, 1992). Convergence hypothesis is one of the implications of neoclassical growth models. The Solow–Swan model is an economic model of long-run economic growth. It attempts to explain long-run economic growth by looking at capital accumulation, labor or population growth, and increases in productivity, commonly referred to as technological progress. At its core is an aggregate production function, often specified to be of Cobb–Douglas type, which enables the model "to make contact with microeconomics as shown in Figure (1):

Figure (1): Solow–Swan Model
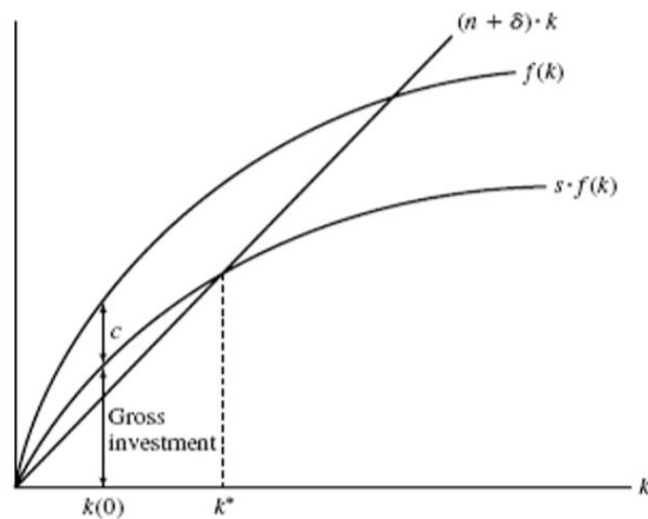
In the figure above, k represents the state of capital stock and, in other words, financial market performance, s: savings rate, n: population growth rate, δ: depreciation rate, growth from technology change, f (k) financial deepening function and financial deepening growth rate. It is obvious that in the long run countries are converging to the point k* (Steady State). When the growth rate is zero($k_{t+1} - k_t = 0$): so convergence rates can be determined linearly (Romer, 2006):

$$\dot{k} = \dot{k}(k) = sf(k) - (n + g + \delta).k$$

$$\dot{k} \cong -\lambda(k_t - k^*) \, , \qquad -\lambda = \left[\frac{\partial \dot{k}(k)}{\partial k} \bigg|_{k=k^*} \right] , \qquad \dot{k}(k) \cong 0 + \left[\frac{\partial \dot{k}(k)}{\partial k} \bigg|_{k=k^*} \right] .(k_t - k^*)$$

Convergence speed:

$$-\lambda = \frac{\partial \dot{k}(k)}{\partial k} \bigg|_{k=k^*} = -\frac{\partial \left[sf(k) - (n+g+\delta).k \right]}{\partial k} \bigg|_{k=k^*} =$$

$$= -\left[sf'(k) - (n+g+\delta) \right] = \left[1 - \alpha_k(k^*) \right].(n+g+\delta) \qquad \frac{\alpha_k(k^*)}{1-\alpha_k(k^*)} = \frac{s}{y^*}.\frac{\partial y^*}{\partial s} = \frac{k^* f'(k^*)/f(k^*)}{1 - \left[k^* f'(k^*)/f(k^*) \right]}$$

This means that the convergence rate (λ) is proportional to the difference from the steady state. Countries that are far from steady state may converge rapidly, which means that countries with less financial deepening grow faster (Gaspar, 2012). In Figure (1), the horizontal axis represents capital, and the vertical axis represents income and economic growth, and the equilibrium state in this diagram is k*. In this figure, s.f (k) represents the

amount of income saved and (n + δ) k is a function of per capita investment. Shows the vertical distance between f (k) and s.f (k) per capita consumption. The change in capital is obtained by the vertical distance s.f (k) and the line (n + δ) k. Optimal and objective financial deepening, or in other words, sustainable capital k* is obtained from the intersection of the curve s.f (k) with the line (n + δ) k, and the growth of capital at this point is zero. If the capital (k0) is below equilibrium, k0 will increase and the growth rate of financial deepening will be positive and consequently financial deepening will also increase. Since the f-curve is an ascending curve with a decreasing rate, when k increases towards the optimal and target financial deepening (stead state), the rate of increase of the financial deepening decreases and as k level approaches to stead state so the growth rate of financial deepening will slow down.

Figure (2) also shows the growth rate of capital of economies against the level of capital. This Figure results in a kind of convergence. As it turns out, the growth rate is higher for an economy with less initial capital. This means that economies with lower capital values have higher financial deepening growth rates. And will therefore converge towards economies with higher financial deepening ratios.

Figure (2): The Capital Growth Rate in Solow–Swan Model
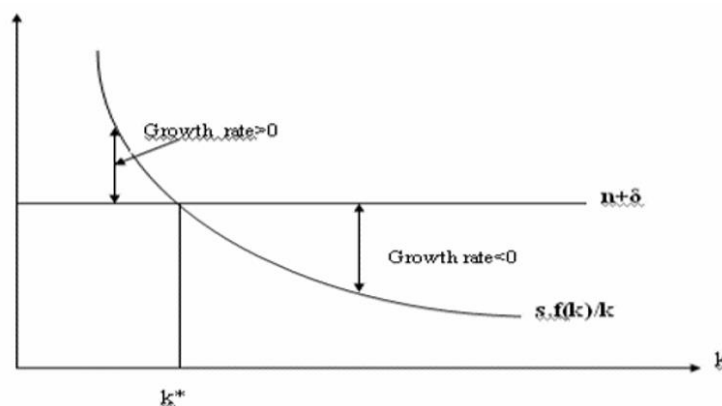
The vertical distance between the effective depreciation line (n + δ) and the curve (s.f (k) / k) gives the capital growth rate (k). The growth rate of capital is stable (k*). Capital growth rate (K) is negative when k0> k* and decreases to steady state (k*), but if k0<k*, capital growth rate (k) is positive and towards equilibrium (k*) will increase. In the economic literature, this is known as Beta convergence (Barro and Sala-i-Martin, 1992), which is itself divided into two types of conditional convergence and absolute convergence. In conditional convergence, each economy converges to an equilibrium level with its own stability. An economy that is further away from its steady state will experience higher financial convergence, but in absolute convergence all economies will eventually converge to a level of stable equilibrium and income.

Materials and Methods

The data used is taken from the World Bank database (Global Development Indices, WDI, 2018) and the International Monetary Fund, IMF, 2018). Before estimating the model, the mania properties of the model should be examined using the conventional unit root test. In this section, the generalized Dickey Fuller (ADF) test Fisher for more flexibility and applicability for unbalanced panel as well as using fixed cross-sectional effects (single) as a regressor and automatic calculation of interrupt and bandwidth differences We use.

Result and discussion

Model Specification and Results

In this research, the model used to estimate the absolute and conditional convergence in the dimensions of financial deepening is based on the specification of Trabelsi & Cherif, (2016). Therefore, the regression model for estimating econometrics is specified as Equation (1):

(1)
$$FD_{it}^* = \beta_0 + \beta_1 kAL_{it} + \beta_2 X_{it} + e_{it}$$

In the above function i denotes the number of countries, t time, FD_{it}^* (financial deepening) indicates the optimal level of financial deepening and the target (as proxy k_{it}^* in growth model function), KALit capital account liberalization, Xit vector explanatory variables (annual average official exchange rate, Trade openness, initial level of capital account) and eit is residual. It is obvious that the level of financial deepening of all countries is gradually adjusted to the optimal and expected level(k_{it}^*) according to the model of the partial adjustment mechanism.

(2)
$$FD_{it} - FD_{i,t-1} = \gamma (FD_{it}^* - FD_{i,t-1})$$

In the above function FD_{it} actual level of financial deepening at the end of the period and γ as convergence parameter which is between zero and one ($0 \le \gamma \le 1$). Equation (2) shows that in each period a percentage of the difference between the current level and k_{it}^* is adjusted in growth model. By replacing Equation (1) in the second equation and simple algebra, Equation (2) is rewritten as follows:

(3)
$$FD_{it} = \beta_1 \gamma KAOEN_{it} + \beta_2 \gamma X_{it} + (1-\gamma) FD_{i,t-1} + \gamma U_{it}$$

Therefore, for testing the financial convergence, the final model is presented as Equation (4):

(4) $$FD_{it} = \beta_1 dumcrise_{it} + \beta_2 kaopen_{it} + \beta_3 exch_{it} + \beta_4 netcptl_{it} + \beta_5 FD_{i,t-1} + \beta_6 trade_{it} + e_{it}$$

As noted, FDit represents financial deepening (measured by two indicators, the first is the ratio of domestic credit to the private sector (percentage of GDP) and the other is the current money to GDP), although the two are related, but are not equivalent (Abiad et al, 2008), For the banking system crisis variable (dumcriseit), dummy variable (0 and 1) is used. The measure of capital account openness is based on the kaopenit proxy. The compound index kaopenit is compiled according to binary imaginary variables coded on the limits of foreign accounts contained in IMF reports and currency restrictions and foreign exchange agreements and securities arrangements and stock exchange restrictions. exchit average annual official exchange rate and netcptlit is net capital account, which is a proxy for the initial level of the capital account, the need to achieve the benefits of capital liberalization, development and improvement of financial infrastructure and upgrade of the initial levels of the capital account affects the level of financial deepening (Eichengreen et al, 2011). tradeit variable as a proxy for international Trade openness and mobility is the real part of any economy, measured as a percentage of trade volume of GDP. The $FD_{i,t-1}$ is the lagged dependent variable and β5 is the coefficient of effect of the previous period of the dependent variable, which measures the effect of convergence. It shows how quickly financial convergence is affecting countries' financial deepening. If the $|\beta|$ absolute value is less than one, there is financial convergence and it tends towards k * (optimal and target level of financial deepening), which means that countries with low capital levels have more financial deepening comparably. If β is between zero and one and (k0> k*) there is financial convergence and is descending towards optimal financial deepening. If β is between zero and one and (k0 <k*) there is financial convergence and it is upward towards optimal financial deepening. If β is between negative one and zero, the oscillating answer is damped and converged to k*. If β is greater than one, it will be divergent and β is less than or equal to negative one, then the oscillation will be divergent (PourKazemi, 2000).

The results are summarized in Table (1):

Table (1): Results of unit root test (Fisher-ADF test) - total sample

Variable	Condition	Generalized Dickey Fuller test statistics		
		level	First Diffrence	Result
Financial Deepening (FD1)	Intercept and trend	176.26(0.033)	559.6(0.00)	I(1)

Financial Deepening (FD2)	Intercept and trend	146.16(0.04)		I(0)
opennessof capital account	Intercept and trend	1120.3(0.00)	-	I(0)
Net capital account	Intercept and trend	379.9(0.00)	-	I(0)
Trade openness	Intercept and trend	134.52(0.659)	1124.1(0.00)	I(1)
Banking crisis	Intercept and trend	126.6(0.00)		I(0)
exchange rate	Intercept and trend	265.8(0.00)	-	I(0)

The results of the unit root test indicate that the variables of capital account liberalization, net capital account and exchange rate, banking crisis, the second index of financial deepening (FD2), are stationary at the level, but the first index of financial deepening (FD1) and Trade openness are not stationary, However, the mentioned variables are the first-order difference. Therefore, all research variables remain as first-order levels or differences, and the stability of the data used in the research is confirmed before estimating the research models. In addition to the stationary of variables, the stability of long-term linear composition can be tested with the help of Co-integration analysis in Table (2):

Table (2): Results of Co-integration test (based on FD1) - total sample

In-group statistics	Statistic	Intergroup statistics	Statistic
Panel v- Statistic	2.58(0.00)	-	-
Panel rho- Statistic	3.33(0.99)	Group rho-Statistic	5.22(1.00)
Panel PP- Statistic	-1.84(0.03)	Group PP-Statistic	-3.33(0.00)
Panel ADF- Statistic	-3.24(0.00)	Group ADF-Statistic	-4.75(0.00)

The results of Pedroni test for the whole sample show that based on the intragroup component of the statistics (V, PP, ADF) the coefficient of variables is not rejected and also based on the two statistics of the intergroup component (Group PP, Group ADF) the null hypothesis of the test is rejected, in other words, the variables are Co-integrated at the inter-country level in the long run and there is a long-term relationship between them.

The Results of the model specification (equation 4) by using the generalized method of moments (GMM) n-step method for both of indicators the ratio of domestic credit to private sector (percentage of GDP) and the ratio of money supply to GDP as measures of financial deepening are presented in Table (3) and Table (4), respectively:

Table (3): Results of model: n-step GMM method (dependent variable: (FD1))

Explanatory variables	Whole sample		Developed countries		Developing countries	
	Coefficient	p-val	Coefficient	p-val	Coefficient	p-val
lagged Financial Deepening (FD1,t-1)	0.86	0.00	0.87	0.00	0.81	0.00
opennessof CA	1.94	0.00	5.38	0.00	0.41	0.00
Initial capital account:	0.04	0.06	-0.18	0.12	-0.43	0.00
Trade openness	0.05	0.00	0.05	0.00	0.06	0.00
Banking crisis	-6.68	0.00	-3.70	0.00	1.91	0.58
exchange rate	0.005	0.00	-0.04	0.00	-0.002	0.00
J-Statistics	58.41		25.90		0.31	
Sargan Test P-Val	0.460		0.412		0.456	
Instrument Rank	64		31		32	

Table (4): Results of model: n-step GMM method (dependent variable: (FD2))

Explanatory variables	Whole sample		Developed countries		Developing countries	
	Coefficient	p-val	Coefficient	p-val	Coefficient	p-val
lagged Financial Deepening (FD1,t-1)	0.72	0.00	0.71	0.00	0.72	0.00
opennessof CA	1.05	0.00	2.26	0.00	0.29	0.00
Initial capital account:	0.14	0.00	0.12	0.00	0.13	0.67
Trade openness	0.09	0.00	0.11	0.00	0.013	0.17
Banking crisis	1.22	0.00	3.39	0.01	-4.58	0.00
exchange rate	0.002	0.00	-0.05	0.00	0.001	0.23
J-Statistics	49.40		18.91		26.14	
Sargan Test P-Val	0.338		0.373		0.399	
Instrument Rank	52		22		31	

According to the results of Sargan test in both of table 4,5, the null hypothesis of non-correlation of the instrument variables used with the residuals is not rejected and the validity of the instrument variables and the compatibility of the generalized moment of method estimation in the first model are confirmed. The results of financial convergence based on both dependent variables, namely the ratio of domestic credit to private sector (percentage of GDP) and the ratio of current money to GDP for the whole sample and group of developed and developing countries are presented in Table 5.

Table (5): Results of financial Convergence

Model	Whole sample		Developed countries		Developing countries	
	Convergence Coefficient	Convergence speed	Convergence Coefficient	Convergence speed	Convergence Coefficient	Convergence speed
FD1	0.86	0.14	0.87	0.13	0.81	0.19
FD2	0.72	0.28	0.71	0.29	0.72	0.28

As can be seen in Table (5), the absolute values of the coefficient of the variable dependent the ratio of domestic credit to the private sector (percentage of GDP) in the whole sample and the group of developing and developed countries are 0.86, 0.87 and 0.81 respectively, since the value of all of them is less than one and so indicate financial

convergence in these countries. Similarly, in the second model, the absolute value of the coefficient of the variable dependent the ratio of current money supply to GDP in the whole sample and developed and developing countries are 0.72, 0.71 and 0.72 respectively that indicates convergence. To calculate the convergence rate, it is sufficient to subtract the coefficient of the lagged-dependent variable from one, as seen in the first model for the whole sample and the developed and developing countries convergence rate is 0.19, 0.13 and 0.14respectively which indicates that the rate of convergence in developing countries is higher than in developed countries and indicates that since the level of capital in developing countries is low so the growth rate of financial deepening is more than that's in developed countries and therefore speed of convergence is greater in financial deepening. However, Convergence rate in term of current money to GDP between the two groups of developing and developed countries is very small and about 1%.

Conclusion

The reflection of the reduction of restrictions on cross-border transactions between countries and on the other hand the recent global financial crisis and the increase in global financial integration over recent decades has led to widespread debate about the complexity of integration and even financial convergence.

The hypothesis of financial convergence as one of the results of neoclassical economic growth models, emphasizes the process of reducing the financial gap between countries. The main purpose of this study is to test the financial convergence hypothesis and estimate the convergence rate in selected developed and developing countries by using GMM during the period 2018-1990.

Results According to both of two models, the domestic credit to the private sector (percentage of GDP) and the current money to GDP approved the financial convergence in these countries. Also, the convergence rate in term of domestic credit to the private sector in developing countries is higher than that's in developed countries. However, Convergence rate in term of current money to GDP between the two groups of developing and developed countries is very small and about 1%. Considering that the positive effect of capital account openness on the ratio of credit granted to the private sector as the first criterion of financial deepening in developing countries is less compared to developed countries and also the coefficient of initial level of capital account in these countries is negatively significant, therefore These mentioned results indicate the weakness of financial infrastructure, especially in the field of international capital movements and also indicate the low level of institutional and legal development of capital account openness in this group of countries compared to the developed group, so that the positive effect of promoting capital account openness on financial deepening, in the case of efficient and strong promotion of financial institutions and infrastructure can increase the flow of capital

accounts between countries, especially in developing countries, leading to an increase in the ratio of credit to the private sector.

In addition, the results show that banking instability and crisis, exchange rate and trade liberalization index have a significant effect on the financial deepening. Also, capital account openness, banking crisis, exchange rate and economic openness index have a significant effect on the ratio of money supply to GDP. Therefore, considering the role of the private sector in the process of financial deepening, especially the criterion of the ratio of credit to the private sector as the first criterion of financial deepening, as long as the financial sector isn't supported and planned by a large and dynamic private sector so mayn't lead to financial deepening due to capital account openness, which is especially evident given the low coefficient of the index in developing countries.

Referencias

1. Arellano, M, Bond S, 1991. Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. Review of Economic Studies, 58, 277-297.

2. Baltagi, B., Demetriades, P., Law, S. H, (2008), '' Financial Development and Openness: Evidence from panel data'', Journal of Development Economics.

3. Boromand et al. (2012). Study of the Impact of Financial Liberalization on the Stock Market in Iranian economy. Journal of strategy, Vol64, 7-26. (In Persian).

4. Chinn, M. D. , & Ito, H. (2008). A new measure of financial openness. Journal of comparative policy analysis, 10(3), 309-322.

5. Eichengreen, B., Gullapalli, R., & Panizza, U. (2011). Capital account liberalization, financial development and industry growth: A synthetic view. Journal of International Money and Finance, 30(6), 1090-1106.

6. Fischer, S, (1998), "Capital Account Liberalization and the Role of IMF", should the IMF Pursue Capital-Account Convertibility?'' Princeton University, Essays in International Finance No. 207, 1-10.

7. Hazeri, H, N. (2016), the Effect of Financial Liberalization on Stock Market Development: Co-integration Application in Dynamic Panel Data, Beheshti University, Journal of Economics and Modeling, No 25. (In Persian).

8. Henry, P. B. (2000), "Stock market liberalization, economic reform, and emerging market equity prices," Journal of Finance, Vol. 55, No. 2, 529-564.

9. Ishii. S, et al (2002), "Capital Account liberalization and Financial Sector Stability," IMF, Occasional Paper, Washington DC.

10. Ito, H. (2006). Financial development and financial liberalization in Asia: Thresholds, institutions and the sequence of liberalization. The North American Journal of Economics and Finance, 17(3), 303-327.

11. Klein, M., & Olivei, J. (2008). Capital Account Liberalization, Financial Depth and Economic Growth. Journal of International Money and Finance, 27, 861-875.

12. Law, S. H. (2007). Openness and financial development: Panel data evidence from various stages of economic development. Journal of Emerging Market Finance, 6(2), 145-165.

13. McKinnon, R. I. (1973) Money and Capital in Economic Development Washington DC: Brookings Institution

14. Nazifi, F (2004), Financial Development and Economic Growth in Iran, Economic Research, No 14. (In Persian).

15. Pedroni, P. (1999). Critical values for co-integration tests in heterogeneous panels with multiple repressors. Oxford Bulletin of Economics and statistics, 61(S1), 653-670.

16. Prasad, E., Rogoff, K., Wei, S., & Kose, M. (2007). Financial Globalization, Growth and Volatility in Developing Countries. In Globalization and Poverty (pp. 457– 516). National Bureau of Economic Research.

17. Prasad, E., Rogoff, K., Wei, S. J. , & Kose, M. A. (2005). Effects of financial globalization on developing countries: some empirical evidence. In India's and China's recent experience with reform and growth (pp. 201-228). Palgrave Macmillan, London.

18. Rodrik, D. (1998). Who needs capital-account convertibility?. Essays in international finance, 55-65.

19. Shaw, E. S. (1973). Financial Deepening In Economic Development. ‖ Oxford University press. New York.

20. Stiglitz, J. E. (2000). Capital market liberalization, economic growth, and instability. World development, 28(6), 1075-1086.

21. Stultz, R (1999), "Globalization, corporate finance and the cost of capital," Journal of Applied Corporate Finance, v12 (3), 8-25.

22. Trabelsi, M. , and Cherif, M. ,Capital Account Liberalization and Financial Deepening: Does the private sector Matter?, Quarterly Review of Economics and Finance(2016)

23. World Bank, (2014), World Development Indicators.