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Financial Integration and Financial Development: Does Financial Integration Metter?

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Abstract:

The aim of this paper is to investigate the effects of financial development and financial integration on economic growth in 89 developed and countries in transition, from the period of 1996 to 2007. We have focused in modeling threshold effects regarding financial markets depth as measure of economic absorption capacity of the countries. The results show that both financial development and integration have positive effect on economic growth in countries in transition, which is not case for developed countries. However, the effects are highly non-linear. First, the effect of development domestic financial markets on growth is higher in less developed countries. The effect may vanish as financial development reaches the level of the developed economies. Secondly, financial integration may not have a positive effect on growth, as its effects depend on the development of domestic financial markets, macroeconomic stability, and quality of institutions.

Key Words: *Transition Economies, Financial Integration, Financial Development, Economic Growth, GMM Estimation*

JEL Classification : *F33, F36, G15*

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1. Introduction

The effect of financial integration and financial development on economic growth has traditionally involved vast interest from many researchers. However, the investigations of the effect of financial integration and financial development on economic growth have become more pronounced during the global financial crisis, especially for countries in transition. In those countries the benefit of the political and trade integration, which are closely linked have now widely accepted by scientists. However, the criticism is focused in the effect of the financial integration on economic growth.

According to the theoretical point of view the financial integration may take several ways on having positive effect on economic growth, both by direct and indirect channels. The direct channel of financial integration may have positive effect on growth through the facilitation of the efficient international allocation of the capital and, international risk allocation (see more Obstfeld, 1994; Kose at al., 2009; Thalassinos et al., 2012; Thalassinos et al., 2013; Thalassinos et al., 2014a and 2014b; Thalassinos et al., 2015; Thalassinos and Liapis, 2013). The indirect channel of the financial integration may affect positively the economic growth through its effect on development of the domestic financial markets. This appears in two ways. The financial integration may increase the competition from foreign financial intermediation, which in turn leads to decrease of investment cost and efficiency (Levine, 2001). In addition, the financial integration affects the financial development by allowing access to foreign financial markets in term of direct lending by the foreign financial intermeddles.

However, the empirical evidence of the effect of financial integration on economic growth is mixed, inconclusive and remains still debatable (see Kose et al., 2009). Therefore, there is still debate for the effect of the financial integration on economic growth, particularly for countries in transition. The study by Klein and Olivei (2000) and Bekaert at al. (2005) shows that the financial integration has positive effect on economic growth. On the other hand, Edwards (2001) finds that the financial integration has positive effect on economic growth in advanced countries and potentially detrimental for less developed countries. Also Edison at al. (2002) examines the effect of the financial integration using various measures of the financial integration and different econometrics techniques, and they find that the effect of financial integration depends on financial institutional quality and factors of economic development. The empirical papers that tend to disaggregated data show that the financial integration has positive effect on economic growth (see more Kose, Prasad, Rogoff, and Wei, 2009b), for an excellent overview of the empirical evidence). For example, Prasad at al. (2007) using industry-level data find evidence of threshold effects that financial integration have positive effect on economic

growth once the financial system is sufficiently developed. They show that the experience of the EU countries in transition do not prove the relationships between financial integration and economic growth. Moreover, the studies by Bekaert, Harvey and Lundblad (2009) find positive effect of financial integration on economic growth through equity market capitalization. On the other hand, Gourinchas and Jeanne (2007) show the negative correlation of the capitals flows and economic growth. In general, the empirical evidence is still mixed and debatable regarding the effect of financial integration in determining impact of financial development on economic growth.

Therefore, the main objective of this paper is empirically to investigate the effect of financial integration and financial development on economic growth in developed countries and countries in transition. We use cross-country macroeconomic data to evaluate the direct and indirect effect of financial integration on economic growth. For this purpose, I employ Dynamic Panel Model General Method of Moments Estimators (GMM-henceforth) in order to assess correctly the effect of financial integration and financial development on economic growth. In order to check for the robustness results we take into the account several measures of financial integration. We also find a presence of nonlinear effect of financial integration on economic growth.

The reminder paper is organized as follows: Section II shows our research methodology and the data. Section III shows our nonlinear modeling. Section IV shows our research result and discussion and, Section V the conclusion.

2. Research Methodology and Data

We investigate the effect of financial integration and development on economic growth in two steps: in the first step I investigate the direct channels of financial integration and financial development on economic growth. Moreover, in this step I investigate the impact of financial integration and financial development on economic growth by distinguish developed economies from the countries in transition. In the second step I investigate the indirect channel of the financial integration, which operates through determining the impact of financial development on economic growth and economies' absorptive capacity measured by the depth of the financial market.

The specification of dynamic panel model (GMM) for testing the impact of financial integration and development on economic growth is as a follow:

$$\Delta y_{it} = By_{it-1} + \varphi IFI_{it} + \lambda FD_{it} + \eta Z_{it} + \delta_i + \gamma_i + \varepsilon_{it} \quad (1)$$

Where y_{it} is real GDP per capita, the subscript i indexes country and the subscript t indexes time period. The y_{it-1} is lagged level of per capita real GDP. Following Lane and Milesi-Ferretti (2006 and 2007), I measure the financial integration (IFI-henceforth) based on size-based measure. Following Rajan and Zingales (1998) and Guiso at al., (2004) I measure the financial development (FD-henceforth) as a market capitalization and private credit of banking sector as a ratio of real GDP.

The Z_{it} is the vector of variable apart from financial integration and financial development includes inflation that represent macroeconomic stability. The term δ_i are the country fixed effects that enable us to control for time-invariant of unobservable factors that may affect economic growth which otherwise may lead to the bias coefficients. The term γ_i are common time effects that cover business cycle effect which otherwise may lead to spurious regression between dependant variable and explanatory variables.

For robustness result we take into the account several measures of the financial integration. The first variable (TIFI) is the stock of total foreign assets and liabilities as ratio of real GDP. The second variable is used (TLiabil), which points out the financial source from abroad and the third variable is TFDI inflows as huge important source of capitals flow (Lane and Milesi-Ferretti, 2006b).

We employ GMM estimator in order to deal with endogeneity problem in my regression. Following Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998), we solve the problem of lagged dependant variable as an explanatory variable which may correlate with country fixed effect in error terms, by putting it in the first difference. By transforming the variables in the first difference the country fixed effect will be removed. The lagged differences in the repressors are utilized as instruments in the GMM estimation. Since the explanatory variable may correlate with error term, I solve this problem by using explanatory variable as instruments. The efficiency of GMM estimator depends on validity of its instruments. For this purpose I use Hansen J- test in order to prove or reject null hypothesis for the overall significance of the validity of instruments. Then I use AR (1) and AR (2) test in order to test the hypothesis whether or not the error term are not serially correlated, i.e. no autocorrelation between the residuals.

3. Nonlinear Modelling

The nonlinear effect of the financial integration on economic growth is examined in two ways. Since the developments of financial market differ between countries in

transition and developed countries, it allows us to estimate the coefficient φ (from equation 1) between transition and non transition. The considerable difference between developed and transition countries can be considered as nonlinear effects of financial integration on economic growth.

In the second way we make tentative to measure the effect of financial integration on economic growth whether effect depends on level of the domestic financial market and economies' absorptive capacity, which is in our research as a proxy of the financial depth. We estimate the threshold effect by the following model:

$$\Delta y_{it} = By_{it-1} + \varphi IFI_{it} + \lambda IFI_{it} \times D_K + \eta Z_{it} + \delta_i + \gamma_i + \varepsilon_{it} \quad (2)$$

where, D_k is a dummy variable which take value one if the depth of domestic financial markets is larger or equal *k*, and zero otherwise. *k* ranges between 90 and 150% of GDP. The estimation of the coefficient φ among different value of *k* provides evidence for possible threshold effects.

4. Research Result

The empirical result is summarized in the table from equation (1) and (2). As seen in table 1 the dynamic panel models are well modeled, because the coefficients lagged real GDP per capita are statistically significant. In addition, the Hansen J-test with associated p-value, which tests the validity of the instrumental variables, is proved as healthy instruments for all tasted equations. Therefore, the results from GMM estimator have proved the hypothesis that instrumental variables are not correlated with the set of residuals. As result, Hansen p-value test can not reject the null hypothesis. In addition, AR (1) and AR (2) test with associated p-value is accepted in second order which confirm that there is no autocorrelation in second order in the errors term. As we expected that the coefficient of the inflation rate as a control variable is negative and statistically significant. The result in the column (2) shows that financial integration has positive effect on economic growth and statistically is at 5% significant level. The effect of financial development is insignificant. For robustness check we measure financial development only by domestic credit as ratio to GDP, the result in column (3) is still unchanged. Again the financial integration has positive effect on growth, whereas the financial development is insignificant. We precede our investigation by allowing the effect of financial integration and development to differ between non-transition countries and countries in transition.

Table 1: Effect of Financial on Economic Growth-GMM Estimates, Dependant Variable: Annual GDP per Capita Growth. (Measurement of financial integration and financial development).

Variables (1)	IFI FD (2)	IFI Credit_priv (3)	IFI FD (4)	IF I Credit_priv (5)	TFDI FD (5)	TLiabil FD (7)
GDP growth	0.612**	0.681***	0.513**	0.685***	0.697**	0.528***
pc (-1)	(0.142)	(0.131)	(0.191)	(0.291)	(0.321)	(0.236)
IFI	0.0069**	0.005*				
	(0.002)	(0.002)				
FD	-0.004	-0.005				
	(0.0031)	(0.004)				
IFI_trans			0.202*	0.021**	0.068**	0.05**
			(0.008)'	(0.007)	(0.029)	0.022)
IFI_nontrans			0.0006	0.002	0.048**	0.021
			(0.001)	(0.291)	(0.022)	(0.016)
FD_trans			0.007	0.012**	0.008**	0.002**
			(0.004)	(0.006)	(0.002)	(0.0004)
FD_nontrans			-0.0009	-0.007	-0.008	0.005
		(0.012)	(0.15)	(0.002)	(0.011)	(0.01)
infl	-0.006*	-0.005***	-0.003*	-0.085*	-0.01**	-0.05**
	(0.002)	(0.001)	(-0.09)	(0.007)	(0.007)	0.008)
FI(FD<90% of GDP)						0.002 (0.007)
FI(FD 90-150% of GDP						0.016** (0.003
FI(FD>150% of GDP)						0.0002 (0.0004)
AR (1)	0	0	0	0	0	0
AR (2)	-0.652	-0.193	-0.432	-0.123	-0.654	-0.324
Hansen p- value	0.30	0.16	0.05	0.000	0.000	0.51

Note: GDP per capita is dependant variables. The results are first step GMM estimator. Two lags are utilized as instruments in GMM method. All GMM regression is used robust standard error. Robust standard error in parenthesis, *, **, ***, denotes significance at the 10%, 5% and 1% respectively. Hansen J test shows the p-value for Null hypothesis of the validity of instruments. The AR (1) and AR (2) are p-values for first and second order of auto correlated of error term. That is no autocorrelation between the residuals.

From columns (4) to (5), we find that financial integration and financial development has positive effect on economic growth only in countries in transition, regardless of which measure of financial integration and financial development we take into the account. Regarding non-transition countries the effect of financial integration and financial development does not show positive effect on economic growth, expect, financial integration measure by TFDI inflow show positive effect on economic growth. As seen from table 1, the effect of accumulated stock FDI inflows on growth rates is larger in any measure of financial integration. This result is in line with Lane and Milesi-Ferretti, 2006**.** In addition, we may conclude that the less developed countries gain more from financial integration in determining the impact of financial development on economic growth than the developed countries.

We precede our investigation to control for threshold effects financial integration on economic growth whether effects depend on level of development of the domestic financial market and economies' absorptive capacity. The effects are highly nonlinear. The financial integration may not have a positive effect on growth, as its effects depend on the development of domestic financial markets, macroeconomic stability, and quality of institutions. In table 1, column (5) the coefficient of the effect of financial integration measured by the level of the financial development (less than 90% of GDP) is statistically insignificant. Therefore, the countries in transition with lower level of financial development, the result show that those countries do not have sufficient economics' absorption capacity to benefit from the financial integration. Once the domestic financial development is developed (between 90-150% of GDP), the coefficient is positive and statically significant.

Therefore, the countries in transition with higher level of financial development have sufficient economic' absorption capacity to benefit from the financial integration. In addition, the effect of financial development may vanish as financial development reaches the level of the developed economies (higher than 150% of GDP) Therefore, we may conclude that financial integration may not have positive effect on growth because their effect depends on the level of financial development.

5. Conclusion

The paper investigates the effects of financial development and financial integration on economic growth in developed and countries in transition. We find that the effect of the financial integration measured by the financial development is highly nonlinear. Our result shows both positive effect of financial integration and financial development in countries in transition, which is not case with in developed countries. The effect may vanish as financial development reaches the level of the developed economies. In addition, the financial integration may not have a positive effect on growth, as its effects depend on the development of domestic financial markets, macroeconomic stability, and quality of institutions. With other wards, the result shows that the financial integration measured by the level of financial development has positive effect only for the countries in transition by the sufficient abortive capacity, measured by the level of financial development. Finally, most new EU members and acceding countries in transition have already achieved sufficient level of financial development that enables them to gain from further financial integration through the development of the domestic financial markets.

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