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Financial Liberalization: Temporary and Permanent Growth Effects on Developed Countries and Emerging Economies

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Abstract

Numerous theoretical and empirical studies have verified the positive effects of financial liberalization on growth. The question which however remains unanswered is whether these growth effects of financial liberalization are temporary in nature that is do these effects fade off over a span of time or are these growth effects permanent. The present study investigates whether the growth effects of financial liberalization (with respect to equity market liberalization and banking sector liberalization) are of temporary nature that is the effects die down within five years of liberalization or the growth effects of financial liberalization are of permanent nature which lasts beyond five years also, separately on a panel data set of nine developed and nine emerging economies over a period of 1971-2013. Our study finds permanent growth effects of financial liberalization in our set of developed countries and temporary growth effects of liberalization in our set of emerging economies.

Keywords: Financial Liberalization; Panel Data; Emerging Economies; Banking Sector Liberalization, Equity Market Liberalization.

JEL Classification

C23, C26, F15, F43, F62

Introduction

The main motivations behind the push towards international financial integration of less developed countries have been the work of Domar (1946) and Solow (1956).

Review of Literature

The influential article by Domar by predicting that growth is proportional to the ratio of investment to GDP (Gross Domestic Product) formed the basis of openness to international capital flows and to the belief that international capital flows from rich to poor countries can spur growth in poor countries and can close the gap between rich and poor. LDCs (Least Developed Countries) can thus accelerate the growth by attracting foreign capital which will be facilitated by removal of capital controls. Solow (1956) model also predicts that capital account liberalization will cause resources to flow from capital abundant countries where expected returns on capital are low to capital scarce countries where expected returns are high. This flow of resources is expected to reduce the cost of capital, increase investment and raise output in the recipient country. Post the Second World War; the world witnessed a gradual shift towards liberalization which was both unilateral and multilateral. However, free trade was restricted through various means such as trade barriers, financial assistance, piracy, violation of intellectual property rights. Mckinnon (1973) and Shaw (1973) started the whole discussion on what they termed as financial repression. Governments of most countries have long controlled the financial markets by fixing interest rates below market levels and controlling the allocation of credit through ownership of banks. The two authors through their independent work draw the attention of academician towards the ill effects of financial repression. The low rates of interest yields negative and unstable return on savings and thus promote low saving rate, leads to inadequate financial deepening and unsustainable budgetary deficits, trade deficits with an overvalued exchange rate and to financial crisis which often correlate with exchange rate crisis. A solution to this state, as advocated by Mckinnon and Shaw, can be achieved through financial liberalization. Financial liberalization is viewed as a set of operational reforms and policy measures designed to deregulate and

transform the financial system and its structure with a view to achieve a liberalized market oriented system within an appropriate regulatory framework. It thus includes lifting capital controls, allowing foreign investors to invest in domestic equity and deregulating banking sector. Degree of financial liberalization can be assessed by studying the following three areas (a) capital account liberalization (b) stock market liberalization (c) banking sector liberalization (Johnston and Sundararajan 1999).

Financial liberalization positively impacts growth through various channels including the capital flows. These channels are (a) improvement in stock market liquidity and a resultant fall in the cost of equity capital (Bekaert and Harvey (2000); Levine (2001); Holmstrom and Tirole (1993); Boot and Thakor (1997). (b) Enhanced performance of domestic banking sector through entry of foreign banks (Levine (1996); McFadden (1994); Demiguc-Kunt et al (1998); Klein and Olivei (2005). (c) International portfolio diversification which leads to diversification of risks and reduction in cost of capital (Obstfeld (1994). (d) Improvement in TFP (Total Factor Productivity) through adoption of new methods of production, organization and training of personnel (Borensztein and Lee (1998); Grossman and Helpman (1991); Haskell et al (2007); Javorcik (2004); Atiken and Harrison (1999). (e) Improvements in institutions and governance (Bartolini and Drazen (1997); Gourinchas and Jeanne (2006); Quinn (2000); Matos (2008); Gilchrist and Himmelberg (1999)). Numerous empirical studies have verified these positive effects These include Quinn (1997), Klein and Olivei (2005), Edwards (2001), Henry (2000), Raza et al (2011), Giannetti et al (2002), Bekaert et al (2000, 2005, and 2011). Bhatia and Sharma (2019) in their study verify that financial liberalization from the perspective of capital account liberalization, equity market liberalization and banking sector liberalization positively affects the economic activity of developed countries and emerging economies individually.

The question which however remains unanswered is whether the growth effects of financial liberalization are temporary in nature that is do these effects fade off over a span of time or are these growth effects permanent. According to Henry (2007), in neoclassical model, capital account liberalization can only have a temporary growth effect as capital is subject to diminishing returns. However, capital account liberalization is still good for the economy because it permanently raises the level of PCGDP. According to the neo-classical theory, capital account liberalization which operates through capital accumulation will only have a temporary growth effect or a permanent level effect. In the neo classical model, differences in the long run growth rates are due to differences in their growth rates of total factor productivity (TFP). Permanent growth effects which are due to TFP improvements cannot be explained by the neoclassical model as the model contains no channel through which capital account liberalization affects TFP growth. TFP is exogenous in the neoclassical model. The endogenous growth models which have regarded TFP to be endogenous to the system can explain permanent growth effects of liberalization via TFP channel. It is often asserted that liberalization will lead to TFP improvements by (a) lifting liquidity constraints (b) easing adoption of newer technology (c) improving risk sharing (d) facilitating development of financial markets and (e) improving the quality of governance and institutional arrangements. If all this hold true, we can build a case for endogenous growth theory and can look out for permanent growth effects of liberalization via TFP channel. However, Henry (2007) raises serious doubts regarding the plausibility of the claims that liberalization raises TFP. He points out that there is no evidence to support that capital account liberalization improves allocative efficiency of the financial system in the light of the evidence provided by Chari, Oniment, Tesar (2004). While it is true that capital account liberalization increases financial development (Levine 2001, Levine and Zervos 1998). It has also been shown by Rajan and Zingales (1998), Eichengreen (2004) that countries with high level of financial development allocate capital more efficiently. According to Henry (2007), we cannot conclude that liberalization will lead to efficient capital allocation. He asserts that there is no basis to conclude that liberalization improves capital allocation through its impact on financial development. Further, there is also no sound way to conclude from the aggregate data that a possible increase in adoption rate of technology by developing countries has improved risk sharing or eased liquidity constrains. Gourinchas, Jeanne (2006) in their widely cited article comment that GDP per capita gap between rich and poor countries can be split into a transitory component due to capital scarcity and a permanent component due to productivity differences. For international financial integration to have a substantial impact on convergence, the second component would have to be really important. In other words, if productivity channel of liberalization is instrumental in contributing to growth, the effects will be of permanent nature and will massively help in closing the gap between rich and poor countries. According to Gehringer (2013), in the exogenous growth models, attracting investment will permanently increase the stock but not rate of growth. The effect will be temporary and will burn out as capital depreciation destroys a part of capital each year. The endogenous growth models with technological progress permit a permanent effect on the rate of growth to take place. In an only empirical study, Bekaert et al (2011) conclude from GDP growth results that financial liberalization effect either through the general capital account liberalization or the specific equity market liberalization is not a purely temporary phenomenon. Their results suggest that liberalization has both temporary and permanent growth effects.

Thus it is essential to empirically test whether growth effects of liberalization are temporary or permanent in nature. The studies on this aspect of liberalization have been very limited. Besides the past literature has clubbed developed and emerging economies together which is incorrect as these economies are inherently different with very different

levels of financial, institutional and infrastructural development. Besides, developed countries started liberalizing in early 70s, whereas the emerging economies started this process in 80s. Secondly, past literature has though extensively looked at the effects of capital account liberalization; however, effects of equity market and banking sector liberalization have either been completely ignored or only scantily covered.

The present study examines whether the growth effect of financial liberalization (that is equity market liberalization and banking sector liberalization) on a set of nine developed countries and nine emerging economies individually is temporary or permanent in nature. The study is of considerable importance because in case the growth effects of financial liberalization fades off over a period of five years, then adequate steps could be taken in the direction of prolonging the growth effects. It is only after we know the nature and duration of these growth effects, that we can implement measures to strengthen and prolong such effects.

Econometric Methodology

We study the duration of the growth effects of financial liberalization (equity market liberalization and banking sector liberalization) on the set of nine developed economies (U.S.A., Canada, Australia, Japan, France, Italy, Sweden, Spain and U.K.) and nine emerging economies (Chile, Mexico, Peru, India, Indonesia, Philippines, Malaysia, Korea and Thailand) during the period 1971 to 2013. The IFI indicator takes a value of 1 for the first five years after liberalization and 0 otherwise. This effect is defined as the temporary effect of IFI on growth. To calculate the permanent effect, the IFI indicator takes a value of 1 from sixth year of liberalization and 0 for the first five years of liberalization. As the dating of capital account liberalization for the countries is not available, we used dates of equity liberalization and banking liberalization to mark the onset of liberalization process in our sample of developed and emerging countries.

In our study, we use panel data modelling technique to overcome the problem of omitted variable bias caused by time- invariant individual country specific effects which arise as one country is different from another like the geographical region in which a country lies, whether it is rich or poor, whether it has quality infrastructure or not.

We estimate equation 1 and 2 to calculate the temporary and permanent effects of IFI on economic growth, respectively. Both equations 1 and 2 are estimated for the sample of nine developed countries over the period 1971-2013and for the sample of nine emerging economies over the period 1971-2013.

$$y_{it} = \alpha_0 + \Theta Q_{i,t-5} + \gamma' X_{i,t} + \alpha_T Lib_{i,t} + \eta_i + \varepsilon_{i,t}$$

..... Equation 1

α_T is a measure for temporary effects of liberalization. $Lib_{i,t}$, liberalization indicator takes a value of 1 for the period 1-5 years after liberalization.

$$y_{it} = \alpha_0 + \Theta Q_{i,t-5} + \gamma' X_{i,t} + \alpha_P Lib_{i,t} + \eta_i + \varepsilon_{i,t}$$

..... Equation 2

α_P is a measure for permanent effects of liberalization. $Lib_{i,t}$, liberalization indicator takes a value of 1 for the period 6 years and beyond after liberalization.

y_{it} , is the growth of real per capita GDP calculated as log of real Per Capita GDP_t – log of real Per capita GDP_{t-1}. The subscripts *i* and *t* refer to the country and the year of observations where *t* = 1971-2013 for the set of both developed and emerging economies.

$Q_{i,t-5}$, is the log of real per capita GDP for 1971, 1976, 1981, 1986, 1991, 1996, 2001, 2006, 2011 and serves as a proxy for initial PC GDP. This is reset at 5-year interval.

Θ , is the conditional convergence coefficient which is expected to be negative. When steady state PCGDP is raised (e.g. through policy reforms) above the initial GDP, the country will converge towards the higher PCGDP level.

$X_{i,t}$, is the matrix containing variables which control for different levels of long run PCGDP across countries. The matrix contains determinants of long run PCGDP growth such as human capital measured by human capital index (in logs) based on secondary school enrolment ratio, population (in logs) and investment rate measured by the ratio of GCF to GDP (in logs).

$Lib_{i,t}$, is an indicator of equity market liberalization/ banking sector liberalization.

η_i and $\varepsilon_{i,t}$, are respectively the unobservable country specific effects and the stochastic error process

Empirical Results

Results of equations 1 and 2 are presented in Table 1. Columns 2-5 of Table 1 present the results for developed country set and Columns 6-9 present the results for emerging economies set. Columns 2, 4, 6 and 8 present the results for the temporary effects while Columns 3, 5, 7 and 9 present the results for the permanent effects. Since we use two different IFI indicators, thus Columns 2, 3 and 6, 7 list the results when we employ 0/1 equity liberalization indicator and Columns 4, 5 and 8, 9 do the same when we use 0/1 banking liberalization indicator. Rows 8 and 9 of Table 1 present the F-test statistic that all individual effects are 0, the Hausman test statistic for FE, respectively.

We estimate equation 1 to calculate the temporary effects of equity liberalization dummy on economic growth for a set of developed economies (Column 2 of Table 1). It reports the results from pooled regression. The F-test that, all individual specific effects are 0 (Row 8), with a p-value of 0.16, shows absence of individual specific effects in the regression equation. The Hausman test for the presence of FE (Row 9) has a p-value of 0.03, which also means that the RE model is inconsistent. Therefore pooled OLS model is selected as the consistent model. The coefficient estimate of initial income is negative and significant at 1% level, pointing towards conditional convergence When steady state PCGDP is raised (e.g. through policy reforms) above initial GDP, the country will converge towards the steady state PCGDP level. The coefficient estimate of investment is positive and

statistically significant. However, the coefficient of temporary effects of equity liberalization is not significant. We estimate equation 2 to calculate the permanent effects of equity liberalization on growth on a set of developed countries (Column 3 of Table 1). We select the FE model from the Hausman test and F-test (Row 8 and 9). The equity indicator with a coefficient of 0.0060 is now significant at 10% significance level. We estimate equation 1 to calculate the temporary effects of banking liberalization on growth for the set of developed countries (Column 4 Table 1). The coefficient of initial income is negative and statistically significant and that of investment is positive and statistically significant. The coefficient estimate of temporary effects of banking liberalization is not significant. We select the pooled OLS model from the p-vales of F-test and Hausman test (Row 8 and 9). We then, estimate equation 2 to calculate the permanent effects of banking liberalization on growth on the developed country sample (Column 5 of Table 1). The coefficient estimate of 0.0059 for the permanent effects of banking liberalization is positive and significant at 10% level. We select the FE model as the consistent (Row 8 and 9). The magnitude of the permanent effects of equity liberalization and banking liberalization on economic growth of developed country set is the same. An integration of equity markets and banking sector of the developed countries with the rest of the world will increase PCGDP growth in these countries by 0.6% beyond five years of liberalization. Since we find permanent growth effects and not temporary growth effects of liberalization, we conclude by saying that in this set of nine developed countries, the liberalization affects growth through an increase in TFP and not through capital accumulation.

Column 5 of Table 1 reports the results of equation 1 for the temporary effects of equity liberalization on the economic growth of nine emerging economies. The negative and statistically significant coefficient of initial income implies that each of these nine emerging economies is converging towards their own steady state levels of real PCGDP. A 1% increase in population will reduce the growth rate in these economies by 0.55% and the results are significant at 1% significance levels. The coefficient estimates for human capital and ratio of GCF to GDP are positive and significant at 1 % significance level. The coefficient estimate of IFI indicator measuring temporary effects of equity liberalization on growth is significant at 10% significance level. Liberalizing equity markets in these nine emerging economies will cause economic growth to go up by 1% for the first five years post liberalization. We select the FE model as the p-values for the F-test and the Hausman test are both 0.00 (Rows 8 and 9). Column 7 of Table 1 presents the results of equation 2 for the permanent effects of equity liberalization on economic growth of the set of emerging economies. The coefficient estimates for initial income and population are negative. The coefficient estimates for human capital and physical capital are positive. All coefficients are statistically significant at 1% significance level. The coefficient estimate for permanent effects of equity market liberalization is statistically insignificant. We select the FE model as the consistent model (Rows 8 and 9). Column 8 of Table 1 presents the results of equation 1 for the temporary effects of banking liberalization on economic growth for the set of emerging economies. The coefficient estimates for initial income and population are negative and that for human capital and physical capital are positive. All coefficients are statistically significant at 1% significance level. The coefficient estimate for temporary effects of banking liberalization is statistically insignificant. The FE model is chosen (Rows 8 and 9). Column 9 of Table 1 presents the results of equation 2 for the permanent effects of banking liberalization on economic growth of the set of emerging economies. The coefficient estimate of banking liberalization is not statistically significant. We select the FE model given the p-values of 0.00 for both the F-test and the Hausman test (Rows 8 and 9). Thus, for our sample of emerging economies the growth effects of 0/1 equity dummy are temporary. We find neither temporary nor permanent effects with 0/1 banking liberalization indicator

Table 1: Temporary and Permanent Impact of Liberalization on Economic Growth: The Results of Regression Analysis

	Developed Countries				Emerging Economies			
	Equity Indicator		Banking Indicator					
Variables (1)	Temporary Effects (Pooled OLS) (2)	Permanent Effects (FE) (3)	Temporary Effects (Pooled OLS) (4)	Permanent Effects (FE) (5)	Temporary Effects (FE) (6)	Permanent Effects (FE) (7)	Temporary Effects (FE) (8)	Permanent Effects (FE) (9)
Initial real RCGDP	-.0225* (.0061)	-.0207 (.0142)	-.0226* (.0064)	-.0221 (.0144)	-.0499* (.0082)	-.0522* (.0082)	-.0525* (.0081)	-.0524* (.0081)
Population	.0017 (.0011)	.0077 (.0197)	.0017 (.0011)	.0104 (.0198)	-.0055* (.0016)	-.0048* (.0016)	-.0049* (.0016)	-.0047* (.0016)
Human Capital	.0183 (.0114)	-.0197 (.0368)	.0183 (.0122)	-.0165 (.0365)	.1485* (.0271)	.1452* (.0345)	.1487* (.0275)	.1720* (.0306)
GCF to GDP	.0297* (.0078)	.0439* (.0101)	.0298* (.0079)	.0453* (.0102)	.0867* (.0096)	.0897* (.0095)	.0900* (.0096)	.0888* (.0095)
Equity Indicator	.0003 (.0022)	.0060*** (.0036)			.0109*** (.0059)	.0013 (.0064)		
Banking Indicator			-.0001 (.0019)	.0059*** (.0035)			-.0014 (.0052)	-.0106 (.0067)
Constant	.1150*** (.0552)	.0679 (.0853)	.1163*** (.0569)	.0633 (.0847)	.0696 (.0555)	.0803 (.1490)	.0798 (.0555)	.0707 (.0556)
F-test that all u_i = 0	1.48 p-value: 0.1614	1.74*** p-value: 0.088	1.47 p-value: 0.1673	1.81*** p-value: 0.0730	4.76* p-value: 0.0000	4.84* p-value: 0.0000	4.88* p-value: 0.0000	4.79* p-value: 0.0000
Hausman test for FE (9)	10.40** p-value: 0.0342	12.43** p-value: 0.0293	10.32*** p-value: 0.0668	12.94** p-value: 0.0240	19.66* p-value: 0.0006	22.58* p-value: 0.0004	26.63* p-value: 0.0001	17.69* p-value: 0.0034

Note (1) *, **, *** indicate significance at 1%, 5% and 10%, respectively.
(2) The standard errors are in parentheses.

Conclusion

Bonfiglioli (2008) points out that if liberalization affects economic growth through capital accumulation channel, the liberalization effect will be short lived or temporary. We find the coefficients of temporary effects of equity liberalization and banking liberalization on growth to be not significant, while the coefficients of both permanent effects of equity and banking liberalization on growth to be significant in our sample of developed countries. For our sample of emerging economies the growth effects of 0/1 equity dummy are temporary. We find neither temporary nor permanent growth effects of 0/1 banking liberalization indicator. Thus we conclude by stating that we find permanent growth effects of liberalization in our set of developed countries and temporary growth effects of liberalization in our set of emerging economies. Presence of permanent growth effects of liberalization in our set of developed countries and temporary growth effects of liberalization in our set of emerging economies reinforces that it is the TFP channel through which IFI is effecting economic growth in developed countries and capital accumulation channel through which financial liberalization is effecting growth in emerging economies, which is also in line with Bonfiglioli (2008) argument.

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Appendix

Table A1. Variables Description and Data Sources

Variables	Definition	Source
Dependent Variable		
Growth of Real per capita GDP	log of real Per Capita GDP_t – log of real Per capita GDP_{t-1}	The Conference Board Total Economy Database™, Sept 2015
Control Variables		
Human Capital	Index of human capital per person	Penn World Tables 9.0
Population	Population (in millions)	Penn World Tables 9.0
GCF to GDP	Gross capital formation (% of GDP)	World Development Indicators
Liberalization Measures		
a) Equity Market liberalization		
a) Equity Liberalization Dummy	Official equity market liberalization date is a date of formal regulatory change after which foreign investors can invest in domestic equity securities and domestic investors can transact in foreign equity securities abroad	Data on Official equity market liberalization dates for emerging markets are from Bekaert et al. (2003) and for developed countries are from Zhen Li (2012)
b) Banking Sector Liberalization		
a) Banking Liberalization Dummy	The measure takes into account the chronology of bank liberalization taking into account regulations on deposit interest rates, lending interest rates, allocation of credit, foreign currency deposits.	Data on Official domestic financial sector liberalization dates are from Kaminsky and Schmukler (2003)