

PRIVATE CAPITAL FLOWS TO LOW-INCOME COUNTRIES: THE ROLE OF DOMESTIC FINANCIAL SECTOR

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Abstract. The relationship between private capital flows and growth has been examined extensively in the literature, yet numerous controversies still remain. The study examines the relationships among private capital flows (foreign direct investment, portfolio investment and foreign debt), financial development and economic performance in a sample of 16 low-income developing countries over the period 1988–2006, by employing generalized method of moments (GMM) panel data analysis. We find that private capital flows have a positive impact on growth in low-income countries with well-developed financial sector but have a negative effect in the presence of poor financial sector development. Well-developed financial sectors are ones that are themselves crucial for economic growth. Our results indicate that private capital flows would be more effective if they were more systematically conditional on well-developed financial systems.

Keywords: private capital flows, stock market, growth, panel data analysis.

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1. Introduction

In recent years, there has been a revival of interest on the nature and role of private capital flows and their impact on investment and economic growth of host countries (Andersen and Tarp 2003; Albuquerque 2003; Soto 2003; Mody and Murshid 2005; Giovanni 2005; Khamfula 2007; Paziienza and Vecchione 2009; Tvaronavičienė *et al.* 2008; Tvaronavičienė and Kalašinskaitė 2010; Weng *et al.* 2010). In developing countries, this interest has been fueled by the reappearance of huge private capital inflows

since the early 1990s, through a process of rapid financial sector liberalization (Blejer 2006; Bordo and Meissner 2006; Eller *et al.* 2006).

The findings of the research between private capital flows and economic growth, however, have been mixed. On the one hand, some studies conclude that private capital inflows raise the efficiency of recipient country such as stimulating capital accumulation (de Mello 1996, 1997; Adams 2009), improving resource allocation (Reisen and Soto 2001), interacting with human capital (Borensztein *et al.* 1998; Wang and Wong 2009), promoting international trade (Balasubramanyam *et al.* 1996; Basu and Guariglia 2007; Liu *et al.* 2009) and deepening domestic financial sector (Hermes and Lensink 2003; Alfaro *et al.* 2004; Durham 2004; Azman-Saini *et al.* 2010). On the other hand, counterevidence also exists and argues that: “There is a growing agreement that excessive build-up of short-term debt was a proximate cause of the recent crises...” (Rodrik and Velasco 1999); “... short-term capital inflows can be counterproductive as they may hinder economic growth through externalities emanated both during the surges and sudden reversals” (Baharumshah and Thanoon 2006: 81); and “... private capital flows do not help but do not hurt either economic growth in developing countries” (Soto 2003: 218). In short, the effects of private capital flows on economic growth still remain ambiguous.

Bearing this in mind, therefore, the study aims to investigate the role of domestic financial sector in examining the linkages between private capital flows (foreign direct investment (FDI), portfolio investment and foreign debt) and economic growth in the selected low-income countries from 1988 to 2006, using generalized method of moments (GMM) panel data model. A number of studies point out the importance of domestic financial system in attracting the private capital flows (Reisen and Soto 2001; Hermes and Lensink 2003; Alfaro *et al.* 2004; Dumludag 2009). For example, Reisen and Soto (2001: 12–13) concluded that “Foreign saving ... has been shown to contribute to growth only if the banking system is well-capitalised; otherwise “good” risks will be underfinanced and “bad” risks overfinanced”¹. Moreover, the extent of direct participation in local exchanges and gains due to the presence of private capital flows (financial liberalization) depends on market investability manifested by financial market breadth, depth, liquidity, efficiency, regulation, information, removal of perceived barriers (risks), transparency of investment and repatriation rules (Errunza 2001; Ucal *et al.* 2010)². This would mean that a minimum level of financial development must be met before a country is in conformity to attract private capital flows in pursuit of enhancing its economic growth (Hermes and Lensink 2003; Alfaro *et al.* 2004; Durham 2004; Azman-Saini *et al.* 2010).

¹ A well-developed financial system provides fertile ground for the allocation of resources, better monitoring, better information symmetries, and economic growth (King and Levine 1993).

² Greater financial sector efficiency should result in an overall reduction of transaction costs. As a result, cost of borrowing (capital cost) might decline, as interest margins shrink. If these gains are being forwarded to the investors, the cost of borrowing in the markets will decline and promote investments and economic growth (Levine 1997).

Growth of developing countries, especially low-income groups depends on a large extent on their own financial sector development³. Albuquerque (2003: 380) reveals: "... the relatively large proportion of FDI in private capital flows to less developed countries or low-income countries reflects their poor financial status rather than any comparative advantage". Therefore, we investigate a new about private capital flows: these capital flows do affect economic growth in the low-income countries; however, their impact is conditional on the development of domestic financial system.

While most studies on link between private capital flows, financial development and economic growth focus on the middle-income countries and high-income countries, there is a dearth of evidence on low-income countries as financial market and system in these countries are less developed. Questions remain regarding the relevance for researchers of previous literature that domestic financial system enhances the effect of private capital flows on growth in low-income countries. By focusing on this low-income group, we could identify the role of financial development in influencing the link between private capital flows and growth. In other words, this study tends to find that financial systems may have a different impact on growth in earlier stages of development. It is believed that low-income countries with well-developed financial sector benefit directly more from private capital flows, and this environment accelerates the growth rate of economic.

The remainder of the paper is organized as follows: In Section 2, we present the panel data model used in this study. In Section 3, we discuss the impact of private capital flows on growth with and without interaction with financial sector development. The fourth section contains concluding remarks ad policy recommendations.

2. Panel data regression models: generalized method of moments (GMM)

The study uses recently developed dynamic panel generalized method of moments (GMM) techniques to examine the interactions among different sorts of private capital flows, financial development and economic growth in the 16 low-income countries in the period of 1988–2006⁴. Following standard growth equation, we construct the following dynamic panel data model, as suggested by Arellano and Bond (1991):

$$\Delta y_{i,t} = \alpha + \beta_1 \Delta l_{i,t} + \beta_2 \Delta k_{Di,t} + \beta_3 \Delta k_{Fi,t} + \beta_4 \Delta fd_{i,t} + \beta_5 \Delta X_{i,t} + \beta_6 \Delta fd * \Delta k_{Fi,t} + \tau_t + \eta_i + \varepsilon_{i,t}, \quad (1)$$

where $y_{i,t}$ be the logarithm of real GDP per capita growth rate in a country i at time t , l is the natural log of labour force; k_D and k_F represent the natural log of domestic capital stock and foreign capital flows respectively; fd represents the natural log of

³ In this regard, Levine (1997), Andersen and Tarp (2003), and Wachtel (2003) have provided comprehensive surveys on the relationship between financial development and economic growth.

⁴ This method is fully described in Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond (1998).

chosen financial development indicator; X is a set of macroeconomic variables that are generally accepted to be important to explain economic growth; and ε is a normally distributed error term.

Then Equation 1 can be simplified as follows:

$$y_{i,t} - y_{i,t-1} = -\alpha y_{i,t-1} + \beta X_{i,t} + \tau_t + \eta_i + \varepsilon_{i,t}, \quad (2)$$

where $y_{i,t} - y_{i,t-1} (= \Delta y_{i,t})$ is the growth rate in real per capita GDP; α is a parameter reflecting the convergence speed; $X_{i,t}$ is a set of explanatory variables, including a measure of financial development, labour, domestic capital stock, national saving, inflation, foreign capital flows and the interaction term, with associated parameter β ; η_i captures unobserved country-specific effects; τ_t is a period-specific effect common to all countries; and ε_{it} is disturbance term.

According to Arellano and Bond (1991), there is a strong autoregressive structure in the residual term. This is not a surprise because the model is using annual data and business-cycle effects may propagate for more than one year. In order to deal with this problem, these business-cycle effects can be taken into account by assuming that $\mu_{it} = \rho\mu_{it-1} + \varepsilon_{it}$, where $|\rho| < 1$, and ε_{it} is white noise disturbance term. After rearranging terms, Equation 2 becomes:

$$y_{i,t} = (1 - \alpha + \rho)y_{i,t} - \rho(1 - \alpha)y_{i,t-2} + X_{i,t}\beta - \rho X_{i,t-1}\beta + \tau_t - \rho\tau_{t-1} + (1 - \rho)\eta_i + \varepsilon_{i,t}. \quad (3)$$

First-differences are required in order to eliminate the country-specific effects.

From Equation 3, the lagged difference in per capita GDP is correlated with disturbance term, which may produce an endogeneity of the explanatory variables, X . Besides, Blundell and Bond (1998) argue that persistence in the explanatory variables may adversely affect the small-sample and asymptotic properties of the difference estimator, therefore, the difference estimator is further combined with an estimator in levels to produce a system estimator. In dealing with this econometric problem, it is required the use of instruments. Arellano and Bond (1991) have proposed few steps to overcome the problem. The first step is to eliminate the time effect, τ_t by subtracting from each variable by its cross average in period t . After that, the variables are transformed into first differences to eliminate the individual effect as follows:

$$\Delta y_{i,t} = (1 - \alpha + \rho)\Delta y_{i,t-1} + \rho(1 - \alpha)\Delta y_{i,t-2} + \Delta X_{i,t}\beta + \rho\Delta X_{i,t-1}\beta + \Delta\varepsilon_{i,t}. \quad (4)$$

Arellano and Bond (1991) essentially propose estimating Equation 4 with GMM using lagged levels of the endogenous variables as instruments. Nevertheless, the selection of instruments is important. The GMM difference estimator uses the lagged levels of the explanatory variables as instruments under the condition that the disturbance term is not serially correlated and that the levels of the explanatory variables are weakly exogenous – that is, they are uncorrelated with future error terms. If the condition that the explanatory variables are weakly exogenous is not hold, which is likely to be happen in the present context as the higher economic growth may promotes more capital inflows,

both X_{it} and X_{it-1} are correlated with disturbance term in Equation 4. Therefore, only levels of variables lagged 2 years or more may be used as instruments.

Then, the following moment conditions are used to calculate the difference estimator:

$$E[y_{i,t-s}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for } s \geq 2, \quad t = 3, \dots, T, \quad (5)$$

$$E[X_{i,t-s}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for } s \geq 2, \quad t = 3, \dots, T. \quad (6)$$

This is a necessary way in the estimation as the equation in levels uses the lagged differences of the explanatory variables as instruments under two conditions. First, the error term is not serially correlated. Second, although there may be correlation between the levels of the explanatory variables and the country-specific error term, there is no correlation between the difference in the explanatory variables and the error term.

This yields the following stationarity properties:

$$E[y_{i,t+p}\eta_i] = E[y_{i,t+q}\eta_i] \text{ and } E[X_{i,t+p}\eta_i] = E[X_{i,t+q}\eta_i] \text{ for all } p \text{ and } q. \quad (7)$$

The additional moment conditions for the regression in levels are:

$$E[y_{i,t-s} - y_{i,t-s-1})(\eta_i + \varepsilon_{i,t})] = 0 \text{ for } s = 1, \quad (8)$$

$$E[X_{i,t-s} - X_{i,t-s-1})(\eta_i + \varepsilon_{i,t})] = 0 \text{ for } s = 1. \quad (9)$$

In summary, the GMM system estimator is obtained using the moment conditions in Equations 5, 6, 8, and 9. Following Blundell and Bond (1998), the validity of the instruments used in these regressions is examined with two different statistics. The first is Sargan (or overidentifying restrictions) test aims to examine the null hypothesis that the instruments used are not correlated with the residuals. The second test is proposed by Arellano and Bond (1991), which examines the hypothesis that the residuals from the estimated regressions is first-order correlated but not second-order correlated⁵.

3. Data sources

Databases on the various categories of foreign capital flows to low-income countries from 1988 to 2006 are employed for the study. The sources of the variables used in this study are summarized in Table 1. The low-income countries chosen are based on the World Bank's income classification 2008. The selection of country and period were determined exclusively by data availability. This results in 16 low-income countries as shown in Table 2 to examine the relationship between private capital flows, financial development and economic growth.

⁵ Arellano and Bond (1991) have called this test statistic as m2 test. For the test statistic, if the residuals ε_{it} were first-order correlated, then $y_{i,t-2}$ would be correlated with $\Delta\varepsilon_{it}$ and it could not be used as an instrument. The same is true with any variable from X_{it} that is temporarily correlated with ε_{it} .

Table 1. Data Sources

Variable	Data Source
Real GDP per capita growth rate (GDPGR)	World Development Indicators, World Bank
Capital stock (CAP)	World Development Indicators, World Bank
Labour force (LF)	World Development Indicators, World Bank
Saving as % of GDP (NSAV)	World Development Indicators, World Bank
Inflation (INF)	World Development Indicators, World Bank
Foreign direct investment (FDI)	World Development Indicators, World Bank
Portfolio investment (PI)	World Development Indicators, World Bank
Foreign debt (DEBT)	World Development Indicators, World Bank
Central Bank Assets to GDP ratio (CBAGDP)	Beck <i>et al.</i> (2000a) World Bank database
Deposit money bank assets to GDP ratio (DBAGDP)	Beck <i>et al.</i> (2000a) World Bank database
Private credit by deposit money bank to GDP ratio (PCGDP)	Beck <i>et al.</i> (2000a) World Bank database

Table 2. Low-income Countries based on the 2005 World Bank Income Classification

Low Income Countries	Total
Bangladesh, Benin, Cameroon, Cote d’Ivoire, India, Kenya, Mauritania, Nicaragua, Niger, Nigeria, Pakistan, Papua New Guinea, Rwanda, Senegal, Togo, Zimbabwe	16

4. Results and interpretations

4.1. The relationship between private capital flows, financial development and economic growth

Equations 1, 2 and 3 in Table 3 report the estimates of private capital flow and economic growth regressions for the low-income countries when the interaction term between private capital flows (FDI, portfolio and foreign debt) and financial development is not included, while Equations 4, 5 and 6 included the interaction term. Overall, the signs of the capital stock (CAP), labour force (LF) and national saving (NSAV) are positive and significant in most of the regressions. The findings are consistent with a priori, which shows that low-income countries have benefited from their national saving, capital stock and human capital development in promoting the economic growth rate.

On the other hand, the sign of the inflation rate is negative and statistically significant associated with GDP per capita growth rate in most regressions. Referring to the financial development indicator (CBAGDP), this variable is positively associated with economic growth in all regressions and it is statistically significant at 10 percent significance level or better. This implies that financial development is crucial to promote economic growth when the countries have well-developed banking and financial sector.

Table 3. Private Capital Flows, Financial Development (CBAGDP) and Economic Growth in Low-Income Countries, 1988–2006

Variable	Equ. 1	Equ. 2	Equ. 3	Equ. 4	Equ. 5	Equ. 6
Constant	-0.025* (-1.696)	0.020 (1.454)	-0.127 (-1.457)	-0.035** (-2.139)	-0.040 (-0.547)	-0.036* (-1.930)
GDPGR _{t-1}	-0.042* (-1.954)	-0.123*** (-2.759)	0.047* (1.857)	-0.689*** (-2.746)	-0.158* (-1.768)	-0.211*** (-2.864)
CAP	1.075*** (19.141)	0.597*** (3.743)	0.078*** (3.044)	0.044* (1.883)	0.101* (1.714)	0.019 (0.976)
INF	-0.047** (-2.185)	-0.162** (-1.958)	0.016 (0.518)	-0.053** (-2.047)	-0.310*** (-2.772)	0.019 (0.976)
LF	0.912*** (16.204)	0.460*** (4.224)	0.035* (1.743)	0.205** (2.334)	0.025** (2.348)	0.044** (2.198)
NSAV	0.959*** (16.212)	0.070*** (3.551)	1.257*** (22.104)	0.217*** (3.944)	0.036* (1.678)	0.116* (1.701)
CBAGDP	0.597*** (3.743)	0.191* (1.751)	0.179*** (6.211)	1.101*** (18.695)	0.035* (1.743)	0.044** (2.198)
FDI	-0.045* (-1.768)			0.051** (2.331)		
PI		-0.090*** (-3.200)			0.044* (1.883)	
DEBT			-0.282*** (-3.157)			0.046* (1.917)
FDI*CBAGDP				0.036* (1.678)		
PI*CBAGDP					0.025** (2.348)	
DEBT*CBAGDP						0.116* (1.701)
Sargan test	10.71 [0.446]	10.33 [0.612]	14.41 [0.413]	13.06 [0.411]	6.80 [0.791]	8.24 [0.702]
A-B test 1 st Order	-1.88* [0.079]	-8.01*** [0.001]	-2.95** [0.001]	-2.78** [0.004]	-5.16*** [0.001]	-1.88* [0.086]
A-B test 2 nd Order	-0.99 [0.341]	-0.85 [0.412]	-0.67 [0.552]	-0.96 [0.361]	-0.98 [0.392]	-0.89 [0.390]
Observations	304	304	304	304	304	304

Notes: Dependent variable is real GDP per capita growth rate.

All the variables are taken in differences and lagged one period.

The Sargan Chi-square statistic tests the null hypothesis of no correlation between the instruments and residuals.

The Arellano and Bond (A-B) Z-statistic tests the null hypothesis that the residuals are first order correlated (A-B test 1st Order) and the residuals are not second order correlated (A-B test 2nd Order)

The figures in the parentheses are Z-statistic, while in the brackets are probability values (or p-value).

*, ** and *** The coefficient is significant at 10%, 5% and 1% levels, respectively.

The significant and positive association between the financial development and the development of the real economy is consistent with the empirical studies such as Roubini and Sala-i-Martin (1992), King and Levine (1993), Benhabib and Spiegel (2000), and Beck *et al.* (2000b).

Looking at the impact of the private capital flows, the signs of private capital flow variables are negative and significant in all equations when the interaction term is not included. The results demonstrate that foreign debt may hurt the low-income countries than help to promote their economic performance, as the estimated coefficient is the highest as compared to other capital flows. The negative effect of these capital flows is in line with the results previously estimated by Reisen and Soto (2001) and Levine (2001).

Interestingly, while the estimates for private capital flows are negative (Equations 1–3), the coefficient of national saving are positive, which suggesting that these sorts of capital flows are less productive than national saving, and thus there are less spillover effects from these foreign capitals. This is consistent with the findings reported in firm-level studies by Aitken and Harrison (1999), Haddad and Harrison (1993), Vissak (2009), and Zeng *et al.* (2009), which indicating that low-income countries have not enough “absorptive capacity” in transferring the advantages embodied in private capital inflows into the positive economic growth.

One possible explanation for these results may be the failure to capture contingency effects in the relationship between private capital flows and economic growth and the relationship between private capital flows and growth may be contingent on other countries’ absorptive capabilities such as domestic financial systems and laws and institutional reforms (Brock and Urbonavicius 2008). To determine the validity of the hypothesis that well-developed domestic financial system would help to benefit more from private capital flows, the interaction term is included. From Equations 4 to 6 in Table 3, it is found that the coefficients of the private capital flows and the interaction term are positive and statistically significant in all regressions at 10 percent significance level or better. The positive sign of the interaction term does support the notion that domestic financial system is effectively transforming the negative effect of all private capital flows on growth into positive impact in low-income countries. It is concluded that the effect of private capital flows on growth is greatly influenced through the domestic financial system.

In checking the validity of the instruments used, both Sargan and Arellano-Bond test statistics show that the instruments used are no-overidentifying restrictions and the residuals are independent or white noise, and hence, suitable for the estimations⁶.

4.2. Further analysis of the relationship between private capital flows, financial development and economic growth

The relationship between private capital flows, financial development and economic growth may be further investigated by using alternative indicators of financial development. Two alternative measures of financial development are used to gauge different

⁶ See Newey and McFadden (1994: 2231) for details on this test.

functions of financial intermediary in the system, namely: deposit money bank assets to GDP ratio (DBAGDP) and private credit by deposit money bank to GDP ratio (PCGDP). The first indicator measures the degree of monetization and the relative significance of particular financial institutions. The second indicator takes into account the credits to private sector only and isolates the credits channeled to public sector and credits from central bank.

The results among private capital flows, two financial development measures and growth are reported in Tables 4 and 5. The results reveal that FDI is statistically significant at 10 percent significance level or better and it has a positive impact on growth, either included or excluded the interaction term. Moreover, the coefficient of the interaction term is positive and significant. Hence, it is obvious that FDI flows have an unambiguously positive effect on growth in the low-income countries, which is in line with Amdam *et al.* (2007), and Basti and Bayyurt (2008).

Looking at both portfolio investment and foreign debt (without interaction term) as reported in Tables 4 and 5, it is noted that these capital flows are negatively associated with economic growth. However, the variable flows are positive and significant after the inclusion of interaction term. This implies an interesting situation that although portfolio investment and foreign debt are negatively associated with economic growth, the well-developed financial system would change this negative impact to positive impact on growth. This finding is consistent with the results reported in Table 3. Again, this provides additional evidence to support the notion that the negative impact of private capital flows can be transferred into positive if the domestic financial system has reached a certain minimum level of development.

Table 4. Private Capital Flows, Financial Development (PCGDP) and Economic Growth in Low-Income Countries, 1988–2006

Variable	Equ. 1	Equ. 2	Equ. 3	Equ. 4	Equ. 5	Equ. 6
Constant	−0.014 (−0.626)	−0.083 (−0.140)	0.023 (0.032)	0.130** (2.054)	−0.127*** (−2.864)	−0.105 (−0.264)
GDPGR _{t-1}	0.048** (2.415)	−0.003 (−0.140)	0.041 (0.579)	−0.407*** (−4.715)	−0.087*** (−2.842)	0.118** (2.107)
CAP	0.045* (1.884)	0.103* (1.786)	0.115* (1.748)	0.120 (1.402)	0.100** (2.443)	0.117** (2.050)
INF	−0.163* (−1.801)	−0.005 (−0.264)	−0.051** (−2.331)	−0.127*** (−2.864)	0.014 (0.860)	−0.046* (−1.917)
LF	0.035* (1.758)	0.037* (1.726)	0.032*** (3.081)	0.094** (2.308)	0.117* (1.801)	0.011 (0.158)
NSAV	0.055*** (2.772)	0.051** (2.302)	0.028** (2.556)	0.051** (2.569)	0.072* (1.689)	0.026* (1.832)
PCGDP	0.047** (2.329)	0.045* (1.924)	0.008** (2.201)	0.046** (2.308)	0.014* (1.951)	0.015** (1.980)
FDI	0.117* (1.713)			0.166** (2.452)		

End of Table 4

Variable	Equ. 1	Equ. 2	Equ. 3	Equ. 4	Equ. 5	Equ. 6
PI		-0.052*** (-2.639)			0.062*** (3.308)	
DEBT			-0.052*** (-2.639)			0.088*** (4.362)
FDI* PCGDP				0.100** (2.461)		
PI* PCGDP					0.052*** (2.621)	
DEBT* PCGDP						0.050** (2.501)
Sargan test	12.26 [0.962]	17.12 [0.837]	17.93 [0.813]	19.73 [0.725]	16.41 [0.852]	14.10 [0.931]
A-B test 1 st Order	-1.99* [0.045]	-1.83* [0.075]	-2.98** [0.008]	-1.74* [0.082]	-2.37** [0.036]	-2.46* [0.031]
A-B test 2 nd Order	-0.89 [0.365]	-0.99 [0.342]	-0.62 [0.470]	-0.76 [0.422]	-0.93 [0.301]	-0.66 [0.468]
Observations	304	304	304	304	304	304

Note: Refer to Table 3.

Table 5. Private Capital Flows, Financial Development (DBAGDP) and Economic Growth in Low-Income Countries, 1988–2006

Variable	Equ. 1	Equ. 2	Equ. 3	Equ. 4	Equ. 5	Equ. 6
Constant	3.632** (2.662)	0.029 (0.411)	-0.044*** (-3.030)	-0.080 (-0.067)	-0.069*** (-3.237)	3.926** (2.700)
GDPGR _{t-1}	0.015** (2.061)	0.036 (0.825)	-0.027 (-1.495)	-0.107* (-1.719)	0.065 (0.068)	-0.263*** (-4.262)
CAP	0.172*** (4.333)	0.037*** (2.644)	1.117*** (21.080)	2.216* (1.964)	0.021*** (2.865)	0.030* (1.672)
INF	-0.118** (-2.167)	-0.051*** (-2.644)	-0.061 (-0.043)	-0.072* (-1.759)	-3.568*** (-2.877)	-1.508 (-1.278)
LF	0.101* (1.850)	0.029 (1.320)	0.108*** (2.698)	1.647** (2.293)	0.109 (1.531)	0.032*** (3.012)
NSAV	0.033** (2.307)	0.194*** (3.474)	0.053*** (2.618)	0.048** (2.302)	0.023** (2.281)	0.057*** (2.743)
DBAGDP	0.132** (3.155)	0.086** (2.176)	0.454* (1.886)	2.771** (2.126)	0.792* (1.918)	2.321* (1.780)
FDI	0.026* (1.816)			0.085** (2.379)		
PI		-0.052*** (-2.639)			0.090** (2.255)	

End of Table 5

Variable	Equ. 1	Equ. 2	Equ. 3	Equ. 4	Equ. 5	Equ. 6
DEBT			-0.133** (-2.408)			0.052*** (2.649)
FDI* DBAGDP				0.065** (2.415)		
PI* DBAGDP					0.047*** (3.108)	
DEBT* DBAGDP						0.131*** (2.879)
Sargan test	12.23 [0.851]	17.61 [0.862]	16.88 [0.889]	13.36 [0.841]	19.69 [0.622]	15.46 [0.776]
A-B test 1 st Order	-1.93* [0.052]	-2.96*** [0.004]	-2.26** [0.021]	-2.39** [0.023]	-1.76* [0.077]	-2.19** [0.025]
A-B test 2 nd Order	-0.88 [0.362]	-0.91 [0.323]	-0.89 [0.376]	-0.99 [0.331]	-0.93 [0.321]	-0.83 [0.411]
Observations	304	304	304	304	304	304

Note: Refer to Table 3.

5. Conclusions and policy implications

In this paper, we have investigated the effect of different sorts of private capital flows (FDI, portfolio investment and foreign debt) on economic growth in the selected low-income countries for the period of 1988–2006. We found that FDI has a positive effect on economic growth in the low-income countries while portfolio investment and total foreign debt have negative and significant impacts on economic growth. Our interpretation for the negative sign for these private capital flows is that low degree of the financial sector development in the low-income countries leads to misallocation of these private capital flows, which reduces and even reverses their impacts on economic performance. Hence, well-developed financial system is of importance and the transition of the local financial market is a must in dealing with the presence of private capital flows.

To support this idea, we allowed interaction of all private capital flows (FDI, foreign debt and portfolio investment) with different measures of financial sector development. When these private capital flows were interacted with financial development indicators, even though the sign of both portfolio investment and foreign debt remain negative and significant in the regressions, the interaction terms are generally positive and significant, which implies the importance of financial sector development in benefiting from private capital flows. Our findings are different from the previous findings. Arteta *et al.* (2001), for example, do not find any significant linkages among financial opening, level of financial depth and income level in a panel of countries. On the other hand, Klein and Olivei (1999) also reveal that the presence of private capital flows only significant in OECD countries only, but not for developing countries. Similarly, Edwards (2001) shows that financial liberalisation had a positive effect on growth only in more developed countries, supporting the hypothesis of the role of well-functioning financial

institutions. Our findings show that making private capital flows more systematically conditional on the development of domestic financial sector would tend to increase its impact on growth. This explains why the impact of private capital flows on growth is not all the time positive.

A crucial starting point in designing policies to optimize the benefits from private capital flows is to have a basic understanding of a country's comparative advantage and development objectives. This helps in absorbing the benefits embodied in private capital flows effectively (United Nations Conference on Trade and Development 2002). Even though it is important for low-income developing countries to attract more foreign private capital flows, they should be careful in dealing with the presence of these capital inflows since the nature of these private capital flows are quite different. It is recommended that low-income countries, or emerging economies give priority to foreign direct investment (FDI) as this is the most preferred capital flow contributing to the economic growth.

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PRIVATAUS KAPITALO SRAUTŲ ĮTAKA MAŽAS PAJAMAS GAUNANČIOMS ŠALIMS: FINANSINIO VIDAUS SEKTORIAUS VAIDMUO

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Santrauka

Rešys tarp kapitalo srautų ir jų augimo yra intensyviai tiriamas. Pastebėta, kad daug prieštaravimų tarp jų vis dar išlieka. Šiame tyrime nagrinėjamas santykis tarp privataus kapitalo srautų (įeinančių užsienio investicijų, portfelinių investicijų ir užsienio skolų) finansinės plėtros ir ekonominės veiklos pasirinktose šešiolikoje mažas pajamas gaunančių besivystančių šalių 1988–2006 m., duomenų analizei taikant apibendrinamąjį momentų metodą (GMM). Nustatyta kad privataus kapitalo srautai turi teigiamą įtaką augimui mažas pajamas turinčiose šalyse su gerai išplėtotu finansiniu sektoriumi, tačiau daro neigiamą poveikį toms šalims, kurių finansinis sektorius yra skurdus. Gerai išvystyti ekonominiai sektoriai yra tie, kurie vaidina lemiamą vaidmenį ekonominiam augimui. Rezultatai parodė, kad privataus kapitalo srautai būtų efektyvesni, jei jie sistemiškiau priklausytų nuo gerai išsivysčiusių finansinių sistemų.

Reikšminiai žodžiai: privataus kapitalo srautai, akcijų rinka, augimas, duomenų analizė.

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