

The Effects of International Capital Flows on Domestic Savings, Investment and Growth: Facts on 'F-H Puzzle' in OECD and Emerging Economies

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Abstract

This paper examines the 'puzzle' of Feldstein-Horioka (FH) (1980) which revealed the fact that domestic savings maintained a significant correlation with domestic investment in 21 OECD countries from 1960 through 1974. The analysis by FH is contrary to the expected result of a weak correlation between domestic savings and investment under liberalization of financial and capital account. This paper attempts to examine whether such a 'home bias' of resources for domestic investment still holds during the period from 1975 to 2013.

The result indicates that the correlation between domestic saving and investment has constantly declined both in OECD and emerging economies, and the correlation has become insignificant in recent years, especially during the early 2000s in OECD countries, as well as emerging economies. On the other hand, the variable of capital inflows (net) included in the regression equation of domestic investment against domestic savings shows positive significance, and also shows that variable of financial account together with domestic savings increased significance in the regression of domestic savings nexus investment in OECD countries during the 1990s and 2000s. However, after the Global Financial Crisis, significant changes in the domestic savings and investment nexus have been taken place: the regression of domestic investment against domestic savings has gained significance substantially during 2010-2013. Also the coefficient of financial account shows insignificance of the regression in both OECD and emerging economies during the same period. The overall results in this paper show that small countries with capital account and financial liberalization tend to have been more affected by capital flows on domestic savings and investment, as well as GDP growth. It implies that in the case of small countries dependence of domestic economic activities on external capital could increase risk in terms of stability of their economies. In this respect, there should be several measures to

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strengthen management and controls in capital and financial transactions in the global market, to achieve more stable growth in both emerging/developing countries and advanced economies.

Introduction

This paper analyses the overall changes in the saving/investment relationship as well as economic growth under increasing international capital flows in both OECD and emerging economies in recent years, from the period of 1970s and 2010s.

Domestic saving and investment ratios are closely related in principle in any country, however, the correlation is not always clear under the increasing global capital flows in both advanced industrial and emerging economies. Increased domestic savings may not result in higher domestic investment in the real economy, since investment in the financial sector for short-term speculative investment is commonly observed in many countries recently, and it has not contributed to economic growth in several emerging economies. Therefore, the domestic investment-saving nexus has become weaker in recent decades both in advanced economies (OECD) and emerging economies.

The pioneering work done by Feldstein-Horioka (1980) (hereafter, F-H) analysed the relationship between domestic savings and investment during the period which capital flows were relatively limited between 1960 and 1974. The F-H analysis indicated that the correlation between domestic savings and investment in OECD countries was still high during the period, which is contrary to the assumed hypothesis that the correlation between domestic savings and investment was expected to become lower under the capital account liberalization. The result was explained by some institutional constraints as well as 'home bias' of each country among the OECD. This is called 'Feldstein-Horioka puzzle (or paradox)'.

The results of F-H analyses are plausible if we consider the period covered in the analysis is 1960-1974, during which most of the OECD nations had not liberalized capital account in the covered period, and it was only after the mid-1980s that major advanced economies including European countries and Japan undertook capital account liberalization. However, the F-H puzzle might have already been solved, since the correlation between saving and investment has steadily declined with increasing capital flows under the capital account liberalization in the past decades.

This paper will examine whether such a hypothesis of F-H has become valid in explaining the changes in relationships between domestic savings and investment under increasing capital flows between the countries in both OECD (incl. CG7) and emerging economies during the past decades (1975-2013) in view of the importance of domestic investment utilizing domestic savings. It is also shown that the importance of capital management and controls in several countries in attaining positive correlation between domestic savings and investment for stable growth.

It should be noted that very few relevant literatures have analysed the FH hypothesis covering recent period, especially after 2000. The variables taken up by several research papers are fairly complicated, which may not necessarily be applicable in many countries.

In this paper, the analyses include multiple regression equations which include those variables as domestic savings, total trade (exports/imports as the share among GDP), as well as financial inflows (net, percent of GDP), covering the period between 1975 and 2013. Although the variable of financial inflows was not used in the F-H hypothesis, it is useful to explain how the domestic investment has become dependent on the imported financial capital. This is because capital flows in the global market have increased in the past three decades, which would justify to use the variable of capital flows (FDI, portfolio and other investment) in the regression equations. Among the explanatory variables, trade (exports/imports) variables could be significance in the regression equations, during the period which international trade was the major element in the international transactions. However, the correlation between domestic saving and investment ratios in the OECD countries has become insignificant since late 1990s until recently. The analysis in this paper also indicates that the effects of capital inflows on the domestic savings/investment are larger in small economies as compared with large economies among the emerging economies.

The capital flows are generally put positive effects on domestic savings in those countries with capital management and controls (i.e. India), and naturally an increase in savings could contribute to achieve higher GDP growth rate. In this connexion, the relationship between domestic savings and GDP growth is analysed in both OECD and emerging economies. The result shows that domestic savings are not always correlated with domestic savings and GDP growth, and that this could be due to the fact that capital flows between the countries have increased significantly. The analysis also found that the positive correlation between domestic savings and investment has become significant, while that of

financial flows and GDP growth insignificant in recent years (2010-2013) in both OECD and emerging economies

The above analyses suggest that accumulation of domestic savings is important for a country to attain stable growth, and cautious approach towards capital account liberalization would be required to maximize the benefit of resources.

1. The Roles of Savings and Investment under Increased Capital Flows in Economic Development

1.1 Feldstein-Horioka Puzzle: Pioneering Research on the nexus of Savings and Investment

The original hypothesis proposed by F-H was the correlation between national saving and investment would become less apparent as capital account liberalization in OECD countries taken place, and the analysis was made based on the regression equation, and the model assumes that the coefficient (β) should become smaller towards zero under the condition that capital account liberalization of country i is totally undertaken and capital flows among the nations are fully realized.

$$(I/Y)_i = a + \beta (S/Y)_i \quad (1)$$

$(I/Y)_i$: domestic investment as percentage of GDP;

$(S/Y)_i$: domestic savings as percentage of GDP

The coefficient (β) during 1960-74 is 0.89 (standard error: 0.07) indicated that capital mobility among the advanced nations was still limited, and that domestic investment is mostly explained by the domestic savings in OECD (Table 1). This indicates that there still existed strong 'home bias' in the sense that

Table 1: Domestic Investment and Savings(F=H)[1980]

【Dependent Variable】	①Gross Domestic Investment			②Net Domestic Investment		
	Constant	S/Y (β)	R ²	Constant	S/Y (β)	R ²
1960-74	0.035 (0.018)	0.887 (0.074)	0.91	0.017 (0.014)	0.938 (0.091)	0.87
1960-64	0.029 (0.015)	0.909 (0.060)	0.94	0.017 (0.011)	0.936 (0.072)	0.91
1965-69	0.039 (0.025)	0.872 (0.101)	0.83	0.022 (0.020)	0.908 (0.133)	0.75
1970-74	0.039 (0.024)	0.871 (0.092)	0.85	0.018 (0.018)	0.932 (0.107)	0.83

Note: Countries covered are OECD member nations (21).

Source: M.Feldstein; C.Horioka (1980) Table2

domestic savings (resources) to be utilized for investment in advanced countries until mid-1970s.

The F-H study also included the trade openness variable (as measured by the sum of exports and imports of goods and services) in the regression equation as follows:

$$(I/Y)_i = a + (\beta_0 + \beta_1 X_i) (S/Y)_i \quad (2)$$

(X_i : total trade amount of country i [percentage of GDP])

The result of the above also shows that the trade openness (trade [X_i] is measured by the sum of exports and imports of goods and services) is not a major factor to explain the domestic investment, and that it is almost correlated with domestic saving rate.

The above results show that there exists strong 'home bias' of domestic resources in investment even in those countries of OECD which are expected to be opening the capital and financial markets, and it is contrary to the hypothesis that free capital flows would result in insignificant association between the domestic savings and investment. It is now commonly called as 'F-H puzzle' in the context of international finance.

The 'home bias' that was identified by the F-H paper (1980) is probably due to the fact that most of the advanced nations during the covered period (1960-1974) still maintained capital management and control regimes, so that domestic investment was mostly financed by domestic resources (savings), which shows high correlation between the domestic savings and investment in 21 OECD countries. However, the close correlation between savings and investment has become changed in the past decades, along with the capital account liberalization. Particularly, this trend is more applicable to smaller countries among the OECD members. In the case of emerging economies, dependency of domestic investment resources on domestic savings had kept until 1980s, but it has become changed since the 1990s, when capital and financial account liberalization was universally undertaken in many emerging countries.

The results shown by F-H may be natural outcome, since the covered period was 1960-1974 when capital account liberalization was not commonly adopted in many OECD countries. Therefore, the next section will examine the changes in the capital account liberalization resulted in the relationship between domestic savings and investment in the past decades

1.2 'Feldstein-Horioka Puzzle' and Relevant studies

Several studies have confirmed integration of global financial markets, and many

studies have undertaken on the 'F-H puzzle' and several papers have already pointed out the 'puzzle' has been solved. The analysis by Giannone & Lenza(2008) has shown the fact that correlation between the domestic savings and investment has become insignificant for 23 OECD countries between 1970 and 2004.¹ Likewise, Ohta (2008) maintained that the F-H puzzle is not applicable any more in the sense that correlation between saving and investment has become insignificant in the past decades between 1975 and 2005 in both advanced (21 OECD countries) and selected emerging economies.

Kumar & Rao (2011) also show that the coefficient of correlation on domestic savings and investment among 13 OECD countries during 1960-2007 steadily declined, while they claim that too much focus on the domestic saving and investment may not appropriate in understanding the current globalization. Likewise, There is some argument that robustness could not be maintained if regression exercises were based on the pooled panel data.²

On the other hand, Wahid et al. (2011) pointed out that the association between domestic savings and investment is still high based on the analysis covering both advanced and emerging/developing countries. However, the countries selected (21 countries) include those countries with lower capital account openness.³ Some research results of Ventura (2003) and Obstfeld and Rogoff (2000) tried to explain the F-H hypothesis by frictions in the global financial market.

The study by Misztal (2011) utilized the VAR model in the analysis of domestic savings and investment nexus, and concluded that emerging and developing countries have relatively higher correlation between domestic savings and investment, as compared with that of advanced economies industrial countries.⁴

The study on F-H puzzle by Chang et al. (2014) confirms two puzzles, namely the commonly understood one of positive saving-investment correlations in

1. The analysis by Ginnone and Lenza (2008) made their conclusion, taking account of the effects of external shocks including the global financial crises.

2. Kitamura and Fujiki (1995) suggested that robustness may be affected by the pooled data, without considering specific conditions of each country.

3. The countries covered in the analysis by Wahid et al. (2011) include Bangladesh, Indonesia, Kenya, Lesotho, Niger, Togo, Zambia, Bolivia, China, Colombia, Dominican Republic, Egypt, Peru, South Africa, Sri Lanka, Swaziland, Turkey, Hungary, Oman, and Uruguay.

4. Misztal (2011) insisted that the varied result in terms of correlation between domestic saving and investment could be explained by the differences in economic policies which usually reflect the fiscal balance and current account in each country.

advanced and emerging economies (the 'FH1 puzzle') and significantly higher saving-investment correlations in advanced economies than in emerging economies (the 'FH2 puzzle'). They showed that there should be some features of the model including long-run risk, and endogenous world interest rate, and cross-correlations of national and global shocks.

The past study by Ohta (2008) shows that among the capital flows FDI has close relationship with domestic investment and had positive correlation with domestic savings in both advanced and emerging economies during the period of 1975 and 1980, but not recent years. The study covered the period before the Global Financial Crisis, so that several important changes in the global economy and financial markets are not taken into account. Therefore, it is necessary to analyse the structural changes in terms of domestic investment and savings situation in recent years. In this respect, we may have to take into account the capital management and prudential controls after the Global Financial Crisis in 2008, which might have resulted in significant changes in the capital flows and economy policies in several countries in both advanced and emerging economies.

This paper shows that the above-mentioned 'FH1 and 2 puzzles' also confirmed in the recent period, however, the saving and investment correlation in advanced countries has significantly decreased during the 2001 and 2010, though such a trend is also observed in emerging economies. The covered period is from 1975 to 2013, to analyse the whole period that was not analysed by the F-H study (1980). It should be noted that a new variable of capital inflows (net) is included in the regression equations to test the effects on the overall savings and investment, as well as the effect on GDP growth.

2. Capital Flows and Domestic Savings and Investment

2.1 The effects of capital flows on domestic savings and investment on economic growth

One of the important aspects of increase in national saving rate for domestic investment and less dependent on external financial resources is that it may facilitate stable economic growth in a country. Dependency on external financial resources could increase vulnerability in those small open economies, which are easily affected by the global economic and market conditions, and it could have significant effects on the domestic economies. In this respect, capital flows in the global market should be focused in the analyses of the effects of investment and

savings on economic growth in general⁵ Rajan et al. (2006) has already pointed out the fact that capital inflows in developing and emerging economies has not always contributed to increase GDP growth, and that those countries which are not dependent on external capital are likely to have higher growth.

This paper will analyse recent trends of investment-saving nexus, and focus on the overall effects of domestic savings / investment and capital inflows (net) on GDP growth in advanced and emerging economies during the period 1980-2013 in the following sections⁶.

2.2 Capital Account Liberalization and Domestic Savings/Investment

The analysis by F-H (1980) was focused on the relationship between domestic investment and domestic savings as well as trade in OECD countries. In the F-H analysis only trade variable (sum of exports and imports as percentage of GDP) was used to measure openness of the economies. However, capital and financial account is to be considered if the effects of openness of the economy should be taken into account on the nexus of domestic investment and savings, since domestic saving rates are not necessarily high if external financial resource are mobilised under the massive capital flows between the regions and economies in recent years.

Therefore, capital flows (net inflows) should be considered as important variables in the analysis of domestic saving and investment, since domestic financial resources could be easily substitute to capital and financial resources in the global market.

2.3 Capital Account Openness (KAOPEN) in regional basis

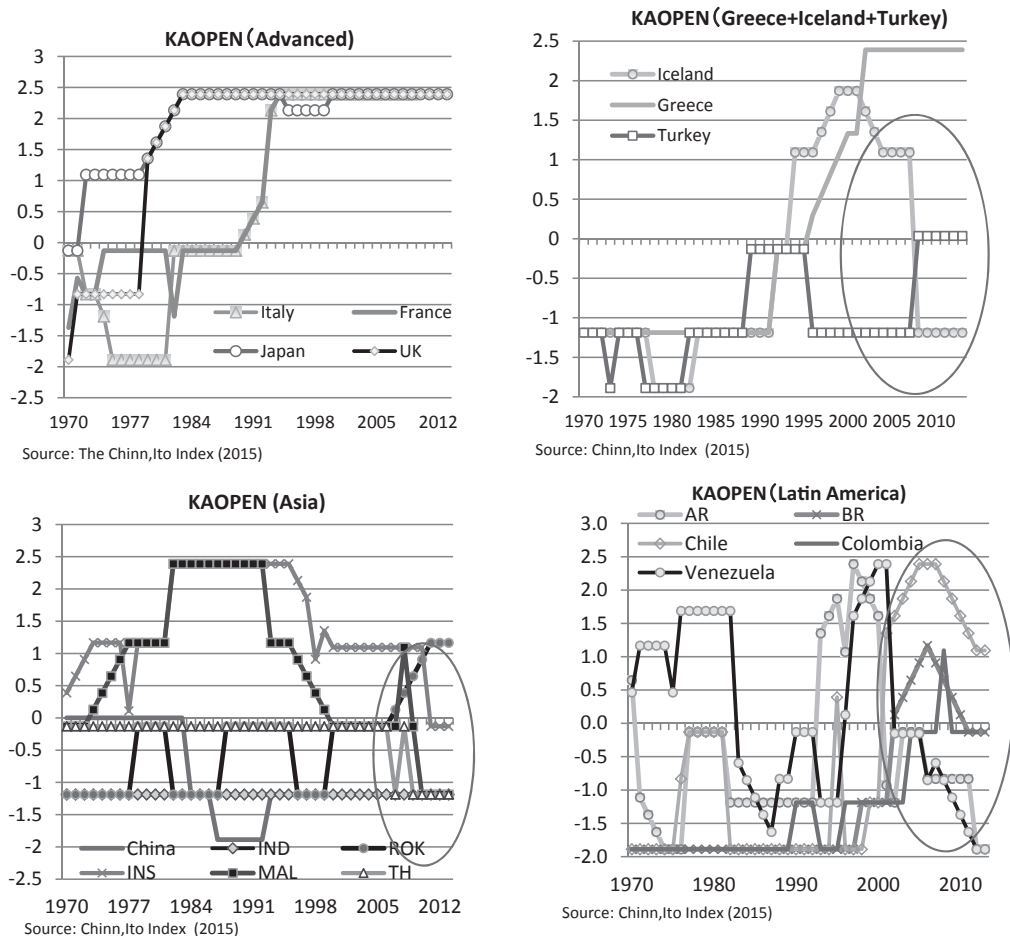
Before analytical work utilizing the capital flows in the regression exercises in discussing saving and investment correlation, some survey on the general feature of the changes in the capital account openness in major emerging and some advanced countries. The indicators to show the capital account openness should be available for everyone easily, so that the Chinn-Ito Index is adopted to show the changes of capital account openness in both advanced and emerging economies.

5. Khalkhali et al. (2003) found that crowding out in the domestic financial sector has been relieved gradually with capital account liberalization in the selected 19 OECD countries during the period of 1971 and 1999.

6. The capital and financial account figures are net inflows of all financial flows including FDI, portfolio investment and other investment (short-term loans, etc.).

Capital and financial account liberalization has been undertaken in both advanced and emerging economies, as the Chinn-Ito index indicates⁷. Most of the countries had not liberalized capital account transactions in both OECD and emerging economies until 1970s⁸. As shown in Fig.1, it was only early 1990s that all the advanced economies liberalized capital account. This fact shows that the assumption of F-H was not met in most of the countries among OECD during

Fig. 1: Capital Account Openness (KAOPEN)



7. http://web.pdx.edu/~ito/Chinn-Ito_website.htm The data for 1970-2013 are available all the major countries of both advanced and emerging/developing economies.

8. Latin American is the only region that liberalized financial account, especially short-term investment of bank loans during 1970s. This has resulted in the heavy external borrowings in late 1970s, which lead to external debt crises in Latin America in the 1980s.

which the analysis by F-H covered between 1960 and 1974.

It is to be noted that several countries including advanced and emerging economies have introduced some capital management and controls after the Global Financial Crisis (2008), which may not always reflected in the KAOPEN index (Fig. 1)

As we have already confirmed in the F-H study (1980), trade openness (sum of exports and imports, percentage of GDP) is not statistically significant variable in the equations. Therefore, it would be important to include net capital inflows in the regression equations in the analysis on saving and investment correlations as shown in the following sections.

3. Empirical Analyses on F-H Hypothesis since 1970s

3.1 Analysis of Investment and Saving and Capital Account Openness in OECD during 1975 and 2013

As already mentioned above, the 'F-H puzzle' may not now be exactly 'puzzle', since the period (1970-1974) covered by the F-H analysis is during the period of capital account liberalization had not been fully undertaken even in major advanced economies. Therefore, we should examine the effects of capital account liberalization on domestic investment as well as growth in the OECD economies in the past decades.

In this section, analysis on the of domestic investment on domestic savings and trade as well as net capital flows in is undertaken on the basis of data of the selected 21 OECD countries during the period of 1975 and 2013 ⁹.

The regression equation including net capital/financial account is presented as follows*:

$$(I/Y)_i = a + (\beta_0 + \beta_2 \text{CapFin}_i) (S/Y)_i \quad (3)$$

CapFin_i : Capital/Financial net flows (% of GDP) of Country i

(*the equation (2) $(I/Y)_i = a + (\beta_0 + \beta_1 X_i) (S/Y)_i$ is same as above)

The regression exercises are undertaken to show the relationship between the domestic savings and investment, together with trade and capital flows in Table 2.

The correlation between domestic savings and investment in the OECD

9. The countries do not include Korea, Mexico, and Turkey which were not included in those the countries analysed in the F-H paper (1980). These countries are included as emerging economies in this paper, since they were categorised as 'middle income' countries and Korea and Mexico were not member countries of OECD until mid-1990s.

Table 2: Domestic Savings and Investment in OECD [1975-2013]

[Explanatory Variables]	[Dependent Variable] Domestic Investment							
	Saving (S/Y)	R ²	Trade	Saving (S/Y)	R ²	Cap Fin	Saving (S/Y)	R ²
1975-79	0.8085 *** (0.134) (6.013)	0.6556	-0.0005 (0.001) (-0.590)	0.8038 *** (0.137) (5.865)	0.6621	0.0110 ** (0.004) (2.444)	0.7699 *** (0.150) (5.138)	0.6513
1980-85	0.4943 *** (0.142) (3.491)	0.3908	-0.0012 (0.001) (-1.429)	0.5261 *** (0.140) (3.768)	0.4528	0.0286 *** (0.009) (3.086)	0.8325 *** (0.177) (4.716)	0.5836
1986-90	0.9509 *** (0.241) (3.953)	0.4513	0.0026 *** (0.001) (3.670)	1.0228 *** (0.188) (5.442)	0.6861	-0.0305 (0.005) (-0.006)	0.9508 *** (0.107) (8.913)	0.8984
1991-95	0.4276 *** (0.089) (4.817)	0.5498	-0.0016 *** (0.000) (-5.232)	0.6704 *** (0.074) (9.078)	0.8214	0.0271 *** (0.005) (5.483)	0.8226 *** (0.069) (11.87)	0.9037
1996-00	0.1873 ** (0.096) (1.946)	0.1661	-0.0005 *** (0.000) (-1.482)	0.3088 *** (0.124) (2.485)	0.2568	0.0222 (0.006) (3.551)	0.6786 *** (0.151) (4.505)	0.5602
2001-05	0.0075 (0.105) (0.072)	0.0003	-0.0001 (0.000) (-0.160)	0.0343 (0.159) (0.216)	0.0017	0.0218 *** (0.005) (4.295)	0.4810 *** (0.134) (3.595)	0.5063
2006-2010	0.1339 (0.097) (1.384)	0.0916	-0.0005 (0.000) (-1.394)	0.2057 * (0.108) (1.912)	0.1801	0.0109 ** (0.004) (2.644)	0.3223 *** (0.110) (2.919)	0.3457
2010-2013	0.2611 ** (0.109) (2.396)	0.2321	-0.0004 (0.000) (-1.108)	0.3175 ** (0.120) (2.653)	0.2812	0.0060 (0.006) (1.037)	0.3461 ** (0.136) (2.542)	0.2754

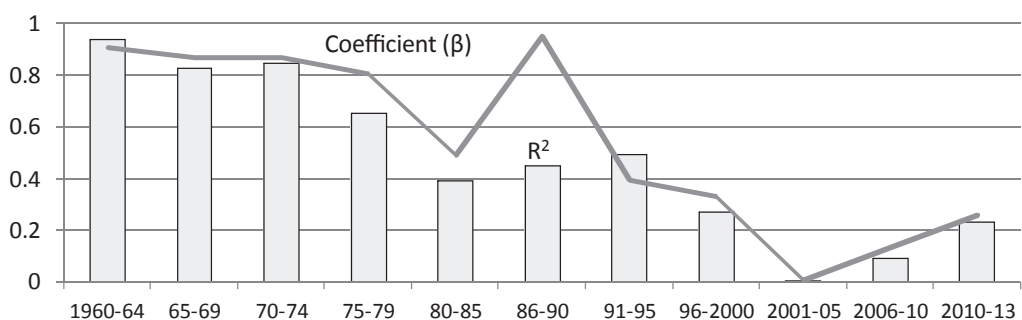
Notes: 1. Countries include OECD (Austraria, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxemburg, Netherland, New Zealand, Norway, Spain, Sweden, Switzerland, U.K., USA)

2. Figures in parenthesis (upper): standard errors; (lower): T-values. Savings: Savings per GDP (%) Investment: Domestic Investment per GDP (%) *** denotes coefficients significant at the 1% level, ** at the 5 % level, * at the 10% level.

3. Regression of Total Investment on Gross National Savings, savings*Trade, and savings*capital flows (IMF database)

Sources: Author's Calculation based on the IMF Database, World Bank Database (Trades of Goods & Services)

Fig. 2: Domestic Saving/Investment Correlations (OECD)



Noes: OECD countries(21). Figures for 1960-74 based on theF-H(198.0).

Source: World Economic Outlook database (IMF)

countries has become weaker; the coefficient of savings variable significantly decreased from 0.9509 in 1986-90 to 0.003 in 2001-05. The coefficient of determination (R^2) of the regression equations during the 2000s also indicate that there was no significant correlation between the domestic saving and investment.

It should be noted that the coefficient of determination (R^2) in regression equations including capital flows indicates relatively high correlation between savings and investment during the 1990s, when most of the OECD nations liberalized capital account. This is contrast to the correlation between domestic saving and investment which became lower during the same period. The insignificant regression variables of capital flows for the period 1986-90 and 1996-2000 may indicate the major debt crises in Latin America and the Asian Crisis, respectively. In this regard, the results of regressions during the 2000s clearly indicate the capital flows in the advanced economies have contributed to domestic investment in general.

The above facts indicate that capital and financial liberalization has facilitated dependence of many countries on the external financial resources for domestic investment rather than domestic savings during the 1990s and 2000s. This is very indicative fact that many smaller countries among the OECD members have increased external financing.

However, the savings/investment relationship has become slightly different after the Global Financial Crisis. In general, the coefficients in the regression equations of saving/investment slightly increased to 0.261 with the coefficient of determination (R^2) of 0.232 during 2010-2013, as compared with that of 2006-2010 with 0.0916 and 0.1339, respectively. On the other hand, the coefficient of capital flows*savings (0.006) for the period 2010-2013 shows no significance in the equation, though the coefficient of determination (R^2) is still significant with 0.2754, which is slightly lower than that of 2000s (2001-2005, 2006-2010).

The above results generally confirm the fact that most of the OECD nations have increased capital mobility, which accelerated dependence on the external resources for domestic investment during the last two decades until 2000s. This is exactly the situation that was assumed in the discussion of F-H hypothesis in their paper (1980). Thus, the 'F-H puzzle' is no more paradox; rather, 'solved fact' in the past decades.

In the post Global Financial Crisis since 2010, however, the domestic savings and investment nexus has become significant in the sense that the correlation between domestic savings and investment in 2010-2013 has become significant and the coefficient determinant (R^2) increased to 0.231 from 0.09 that during 2006-2010.

The trend of 'recovery' of significance of correlation between the domestic savings and investment may reflect the recent situation that global capital flows have relatively smaller in scale as compared with that before 2007. This is partly due to the fact that several kinds of capital and financial controls as well as prudential controls have become common among the advanced economies in the past years. However, most of OECD economies, especially small countries still depend on external financing for domestic investment.

3.2 Analysis of Investment / Saving and Capital Account Openness in G7 during 1975 and 2013

Since majority of the OECD countries are small economies, so that the share of external trade and capital flows are larger than that of large countries. Correlation between domestic savings and investment is easily affected by capital flows in such small nations like Austria, Belgium, Luxemburg, Netherlands, and Nordic countries. It is therefore necessary to examine the cases of larger countries, namely G7, whether any substantial change has been taken place in those economies¹⁰.

It should be noted that the correlation between domestic savings and investment was relatively significant in G7 even during the 1990s (Table 3, Fig. 3).

The coefficient for savings in the single regression equation was fairly high with 0.8742 during 1991-95, and it came down to 0.2514 during 2001-05. On the other hand, the coefficient of variable of capital flows has become significant since 1996 (during the periods of 1996-2000, 2001-2005, 2006-2010).

The coefficient of domestic savings became lower (-0.0011) during 2010-2013, which shows that no significant correlation existed between saving and investment though the coefficient of determination was kept around 0.35 (0.3462) in G7 during the period 2010-2013.

The results indicate that even large economies of G7 have increased their dependence on external capital under capital account liberalization. In fact, the USA has significant amount of capital to be mobilized through foreign resources, and several other G7 countries including the UK, France and Italy are dependent on capital import.

In the post-Global Financial Crisis, however, dependence on external capital for domestic investment in G7 has become less apparent in terms of the correlation between domestic savings and investment during the period 2010-

10. The regression analyses for G7 are based on the panel data, due to the sample number of variables are relatively small (see Table 3).

Table 3: Domestic Savings and Investment in G7 [1980-2013]

[Explanatory Variables]	[Dependent Variable] Domestic Investment							
	Saving (S/Y)	R ²	Trade	Saving (S/Y)	R ²	Cap Fin	Saving (S/Y)	R ²
1975-79	0.7240 *** (0.067) (10.834)	0.7806	0.0003 (0.001) (0.367)	0.7294 *** (0.069) (10.528)	0.7815 ***	0.0147 *** (0.005) (2.788)	0.7815 *** (0.085) (9.219)	0.7391
1980-85	0.8404 *** (0.077) (10.926)	0.7490	0.0001*** (0.001) (0.095)	0.8410 *** (0.078) (10.761)	0.7491 **	0.0268*** (0.005) (5.132)	0.9211 *** (0.062) (14.808)	0.8502
1986-90	0.5909 *** (0.042) (13.957)	0.8551	-0.0016 (0.001) (-2.003)	0.5869 *** (0.041) (14.462)	0.8713 ***	0.0158 *** (0.004) (4.259)	0.7449 *** (0.050) (14.938)	0.9075
1991-95	0.8742 *** (0.114) (7.664)	0.6403	-0.0027* (0.001) (-2.061)	0.8042 *** (0.114) (7.054)	0.6824 **	-0.0146 *** (0.014) (-1.030)	-0.0146 *** (0.014) (-1.030)	0.6518
1996-00	0.4152 *** (0.092) (4.537)	0.3841	-0.0015** (0.001) (-1.873)	0.3699 *** (0.091) (4.043)	0.4449	0.0220 *** (0.009) (2.441)	0.6214 *** (0.120) (5.175)	0.4808
2001-05	0.2514 *** (0.077) (3.265)	0.2441	-0.0020*** (0.000) (-4.405)	0.3297 *** (0.064) (5.135)	0.5295 ***	0.0231 *** (0.004) (6.145)	0.5468 *** (0.072) (7.645)	0.6533
2006-10	0.3189 *** (0.074) (4.313)	0.3605	-0.0012 (0.001) (-1.391)	0.5320 *** (0.109) (4.885)	0.3970 ***	0.0225 *** (0.004) (5.553)	0.6259 *** (0.077) (8.130)	0.6743
2010-2013	-0.0011 (0.001) (-1.017)	0.3462	-0.0011 (0.001) (-1.017)	0.4511 *** (0.143) (3.154)	0.3462 ***	0.0123 (0.008) (1.566)	0.5239 *** (0.149) (3.517)	0.3800

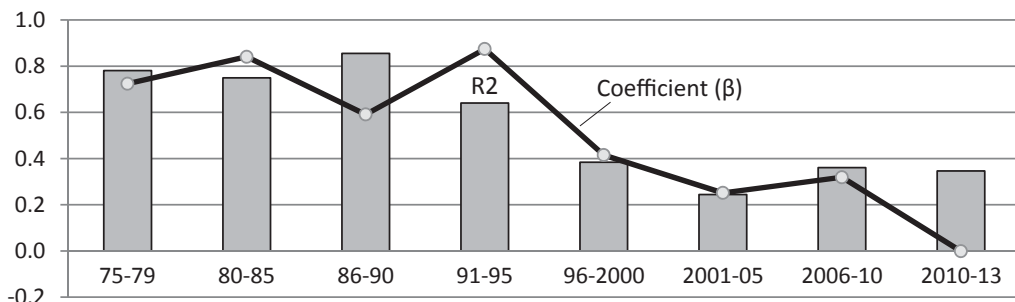
Notes: 1. G7 (Canada, France, Germany, Italy, Japan, UK, USA) Domestic Savings/Investment per GDP (%)

2. Figures in parenthesis (upper): standard errors; (lower): T-values.

*** denotes coefficients significant at the 1% level, ** at the 5% level, * at the 10% level.

3. Regression of Domestic Investment on Gross National Savings, Trade (exports & imports of Goods & Services), Net Financial Account (% GDP)

Sources: Author's Calculation based on the IMF Database, World Bank Database (Trades of Goods & Services)

Fig. 3: Domestic Saving/Investment Correlations (G7)

Sources: World Economic Outlook database (IMF), World Bank Database

2013. The coefficient of determination for capital flows in the equation for the period of 2010-2013 is 0.38, which is lower than 0.6743 of 2006-2010. The coefficient of capital flows during the same period is also smaller for 2010-2013 than that of 2006-2010. This result may show that more cautious stance towards capital flows has become common for all G7 countries, which could be accounted for by the fact that prudential controls and regulatory frameworks have been strengthened in many advanced countries in the past years.

3.3 Analysis of Saving/Investment and Capital Account Openness in Emerging Economies¹¹ during 1975 and 2013

In emerging economies the correlation between domestic investment and saving ratios were generally high with β coefficients of 0.5717 in 1986-1990 and also 0.523 in 1996-2000 (Table 4). Relatively high correlation between saving and investment during the periods could be explained by the fact that capital flows to emerging economies were practically stopped due to the capital account crises in Asia and Latin America, and as a result, the correlation between savings and investment increased at that period. However, the coefficients of determination in the equations during the 2000s came down to 0.4621 and 0.1716 and during 2001-2005 and 2006-2010 and β coefficients also came down to 0.4327 and 0.229, respectively. However, after the Global financial crisis (2008), many emerging countries introduced several measures for capital management and controls, which are reflected in the relatively high coefficients of determination (0.3099) and β (0.3334) of the saving and investment regression during 2010-2013¹².

It is also remarkable to note that the coefficient of capital flows declines significantly to 0.0065 during the period from 2010 to 2013, as compared with that 0.0105 in 2001-2005 and 0.0193 in 2006-2010. The regression results indicate that in general there was not significantly positive effect of capital flows on domestic investment in emerging economies.

In general, the correlation between savings and investment has not significantly decreased in emerging economies, in comparison with that in advanced countries. This result shows that the 'FH 2 puzzle' is now confirmed.

This could be possibly due to the fact that the sample countries include those large countries which are under capital controls like India and China in the

11. The 25 countries selected are mainly from Asia, Latin America and some Africa/Middle East, excluding Central and Eastern Europe and the CIS, since the data during the covered period are not available for the whole covered period.

12. The variables are average during the period as in the analysis for OECD.

Table 4: Emerging Economies: Domestic Savings and Investment [1980-2013]

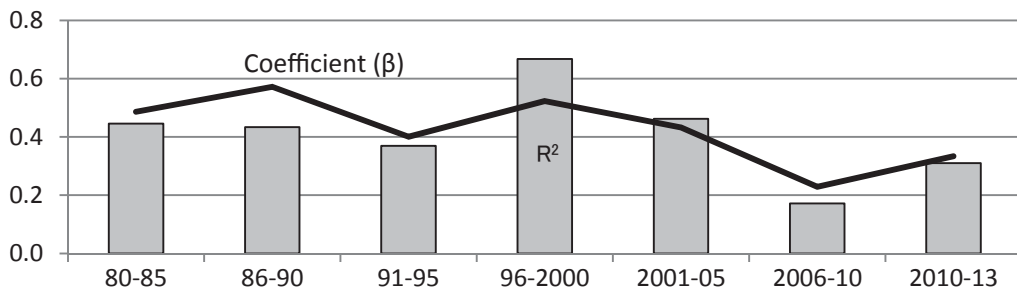
[Explanatory Variables]	[(Dependent)] Domestic Investment rate (% , GDP)							
	Saving (S/Y)	R ²	Trade	Saving (S/Y)	R ²	Cap Fin	Saving (S/Y)	R ²
1980-1985	0.4860 *** (0.113) (4.302)	0.4459	0.0014 *** (0.000) (4.249)	0.3001 *** (0.096) (3.121)	0.6957	0.0335 *** (0.007) (4.770)	0.3326 *** (0.087) (3.817)	0.7276
1986-1990	0.5717 *** (0.136) (4.198)	0.4338	0.0005 (0.000) (0.979)	0.4784 *** (0.166) (2.877)	0.4574	0.0306 *** (0.010) (3.051)	0.4592 *** (0.122) (3.752)	0.6022
1991-95	0.4007 *** (0.109) (3.671)	0.3695	-0.0011 ** (0.000) (-2.682)	0.6553 *** (0.136) (4.831)	0.5248	0.0176 * (0.010) (1.830)	0.3502 *** (0.108) (3.256)	0.4528
1996-00	0.5230 *** (0.077) (6.790)	0.6672	-0.0004 (0.000) (-1.082)	0.6241 *** (0.121) (5.162)	0.6840	0.0114 * (0.006) (1.849)	0.6189 *** (0.090) (6.894)	0.7119
2001-05	0.4327 *** (0.097) (4.445)	0.4621	-0.0007 ** (0.000) (-2.081)	0.5892 *** (0.118) (4.992)	0.5506	0.0193 *** (0.007) (2.788)	0.4624 *** (0.086) (5.363)	0.6025
2006-10	0.2290 ** (0.105) (2.183)	0.1716	-0.0003 (0.000) (-0.793)	0.2913 ** (0.132) (2.211)	0.1946	0.0105 (0.009) (1.145)	0.2551 *** (0.107) (2.391)	0.2182
2010-2013	0.3334 *** (0.104) (3.214)	0.3099	-0.0004 *** (0.000) (-0.821)	0.3985 *** (0.131) (3.038)	0.3304	0.0065 (0.009) (0.693)	0.3516 *** (0.108) (3.250)	0.3246

Notes. 1. Argentina, Brazil, Columbia, Chile, Mexico, Peru, Venezuela, Costa Rica, Ecuador, Egypt, Israel, Tunisia, Morocco, Turkey, Nigeria, South Africa, China, Korea, India, Indonesia, Malaysia, Philippines, Pakistan, Singapore, Thailand.

2. Figures in parenthesis (upper): standard errors; (lower): T-values. Average of each period
*** denotes coefficients significant at the 1% level, ** at the 5% level, * at the 10% level.

3. Regression of Total Investment on Gross National Savings, savings*Trade, and savings*capital flows

Sources: Author's Calculation based on the IMF Database, World Bank Database (Trades of Goods & Services)

Fig. 4: Domestic Saving/Investment (Emerging Economies)

Note: 25 EM Countries; Variables based on the average for each period

Sources: WorldBank/ IMF database

covered period. In contrast, most of the OECD nations include small open economies with full capacity and functions of convertibility of currency and capital transactions freely would result in mobilisation of external resources fully for domestic investment resources.

3.4 Capital Account Liberalization and F-H hypothesis

As already shown in the previous sections, the correlation between domestic savings and investment generally weakened in the past decades in both advanced and emerging economies under significant liberalization of capital and financial account globally.

The fact that correlation between savings and investment is generally higher in emerging economies than that in advanced economies could be explained by the fact that capital and financial transactions have been expanded in small open economies of OECD countries, which have become more dependent on external financial resources for domestic investment. This could be one of the reasons why the 'FH 2 puzzle' holds in the past experience.

We should also note that positive effect of capital inflows on domestic investment has been expected especially emerging economies, as compared with that in advanced (OECD) countries. The capital flows have more volatility in the domestic investment in emerging economies rather than that in advanced countries (Table 2, 3 & 4). Particularly, the capital inflows have become insignificant in the regressions in both advanced and emerging economies, and put some negative impact upon domestic investment in the latter recently (during 2010 and 2013).

4. The Effects of Capital Account Openness on the Domestic Investment/Savings and GDP Growth Savings

The above parts of this paper discussed on the correlation between savings and investment, and the effects of trade and capital account openness on domestic savings in both OECD and emerging countries. In this section, the effect of domestic savings upon GDP growth is analysed in both advanced and emerging economies from 1975 to 2013. The regression equations are as follows:

$$y_i = a + \beta (S/Y) \quad (4)$$

y_i : GDP growth rate (average of the period)

$(S/Y)_i$: domestic saving rate as percentage of GDP

$$y_i = a + \beta_1 X_i + \beta_2 (S/Y)_i \quad (5)$$

$$y_i = a + \beta_1 \text{CapFin} + \beta_2 (\text{S/Y})_i \quad (6)$$

X_i : Total Trade (exports + imports per GDP) of country i

CapFin_i : Capital/Financial net flows (% of GDP) of Country i

4.1 Domestic Investment/Savings and GDP Growth Savings in OECD

The capital account was not liberalized in most of the OECD countries before the 1980s, so that there was a certain positive correlation between domestic saving and GDP growth until 1980s (Table 5). However, the correlation became insignificant since 1990s. This could be explained by the fact that domestic savings have not been effectively utilized for domestic investment in the real economy, but mobilized for other non-productive sectors of economies (e.g. financial sectors and real estates) in both domestic and foreign markets.

It should be also noted that although capital inflows had positive effect on the domestic growth during the 1980s, it has become insignificant since 1990s when

Table 5: OECD : GDP Growth and Domestic Savings/ Investment [1980-2013]

[Dependent variable: Real GDP Growth]										
[Explanatory Variables]	Saving (S/Y)	R ²	Investment (I/Y)	R ²	Trade	Saving (S/Y)	R ²	Cap Fin	Saving (S/Y)	R ²
1975-1979	0.1566 ** (0.077) (2.039)	0.1796	0.2156 *** (0.066) (3.244)	0.3564	-0.0075 (0.010) (-0.733)	0.1265 (0.088) (1.439)	0.2034	0.2436 *** (0.052) (4.712)	0.1786 *** (0.067) (2.656)	0.6210
1980-1985	0.0722 * (0.044) (1.635)	0.1234	0.0440 (0.066) (0.668)	0.0230	0.0009 (0.006) (0.158)	0.0738 (0.046) (1.589)	0.1246	0.1101 (0.081) (1.353)	0.1564 * (0.072) (2.186)	0.2382
1986-1990	0.1114 (0.058) (1.918)	0.1622	-0.0348 (0.098) (-0.355)	0.0066	0.0107 (0.007) (1.583)	0.0886 (0.058) (1.534)	0.2646	-0.1150 (0.089) (-1.287)	0.0000 (0.059) (0.000)	0.1320
1991-95	0.0115 (0.053) (0.216)	0.0025	-0.0742 (0.090) (-0.821)	0.0342	0.0164 ** (0.007) (2.329)	-0.0394 (0.052) (-0.751)	0.2334	-0.0787 (0.130) (-0.605)	-0.0720 (0.075) (-0.955)	0.0540
1996-00	0.0135 (0.096) (0.141)	0.0010	-0.0818 (0.208) (-0.394)	0.0081	0.0313 *** (0.008) (4.105)	-0.1668 * (0.083) (-2.003)	0.4840	0.0763 (0.229) (0.334)	0.0057 (0.189) (0.030)	0.0173
2001-05	-0.0442 (0.054) (-0.825)	0.0346	0.3035 *** (0.097) (3.140)	0.3417	0.0072 (0.005) (1.383)	-0.0825 (0.059) (-1.393)	0.1273	0.1777 * (0.090) (1.972)	0.0842 (0.082) (1.026)	0.2061
2006-10	0.0421 (0.030) (1.420)	0.0960	0.0964 (0.067) (1.440)	0.0985	0.0049 * (0.003) (1.886)	0.0267 (0.029) (0.919)	0.2452	0.0104 (0.043) (0.242)	0.0486 (0.040) (1.202)	0.0989
2010-2013	0.0075 (0.075) (0.100)	0.0005	0.3204 ** (0.118) (2.714)	0.2794	0.0056 (0.006) (0.874)	-0.0037 (0.077) (-0.048)	0.0413	-0.1040 (0.113) (-0.923)	-0.0421 (0.093) (-0.454)	0.0457

Notes: 1. Countries include OECD (Austraria, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxemburg, Netherland, New Zealand, Norway, Spain, Sweden, Switzerland, U.K., USA)

2. Figures in parenthesis (upper): standard errors; (lower): T-values.

*** denotes coefficients significant at the 1% level, ** at the 5% level, * at the 10% level.

3. Regression of real GDP growth on Gross Savings, Domestic Investment (% of GDP), Domestic Savings/Investment (% of GDP). Trade (Export and Import) (% of GDP), Capital Flows (net, % of GDP) I/S for 1975-79 are based on WB database.

Sources: Author's Calculation based on the IMF Database and World Bank Database (Trades of Goods & Services)

capital account liberalization became universally conducted in advanced countries. Capital flows had negative effect on GDP growth during the period of crises (1990s, early 2000s, 2010-2013), which indicate high volatility caused by increased capital flows in the global market. This fact could be accounted for by the fact that investment has become concentrated in financial sectors ('speculative') and other non-productive sectors of the economies globally.

4.2 Domestic Investment/Savings and GDP Growth Savings in Emerging Economies

While capital and financial liberalization took place well before 1980s in Latin America, most of emerging countries in Asia and other regions initiated capital account liberalization in the late 1980s and early 1990s.

The results of the regression equations on domestic saving, investment as well as trade and capital account show that there was positive correlation between domestic saving and GDP growth during the early period (1980-1995) with higher coefficients of the variables on savings with significant correlation.(e.g. coefficient

Table 6: Emerging Economies: GDP Growth and Domestic Savings/ Investment [1980-2013]

[Explanatory Variables]	[Dependent Variables] Real GDP Growth (% y/y)									
	Saving (S/Y)	R ²	Investment (I/Y)	R ²	Trade	Saving (S/Y)	R ²	Cap Fin (%GDP)	Saving (S/Y)	R ²
1980-85	0.0837 (0.072) (1.165)	0.0557	0.2692 *** (0.085) (3.179)	0.3053	0.0111 (0.010) (1.120)	0.0570 (0.075) (0.757)	0.1067	0.4290 *** (0.133) (3.226)	0.0410 (0.062) (0.662)	0.3589
1986-90	0.1843 ** (0.079) (2.334)	0.1915	0.3215 *** (0.076) (4.243)	0.4391	0.0113 (0.010) (1.114)	0.1394 (0.088) (1.579)	0.2346	0.3647 ** (0.141) (2.583)	0.1236 (0.075) (1.659)	0.3797
1991-95	0.2021 *** (0.055) (3.651)	0.3669	0.2892 *** (0.087) (3.340)	0.3265	-0.0026 (0.011) (-0.241)	0.2125 *** (0.071) (2.988)	0.3685	0.3478 *** (0.117) (2.969)	0.1869 *** (0.048) (3.886)	0.5480
1996-00	0.0935 ** (0.038) (2.479)	0.2108	0.1485 ** (0.059) (2.534)	0.2183	-0.0074 (0.008) (-0.928)	0.1297 ** (0.054) (2.386)	0.2405	0.2396 ** (0.086) (2.780)	0.1432 *** (0.038) (3.801)	0.4160
2001-05	0.0769 ** (0.032) (2.429)	0.2042	0.1318 ** (0.048) (2.718)	0.2431	-0.0044 (0.005) (-0.912)	0.0943 ** (0.037) (2.544)	0.2332	0.0204 (0.070) (0.293)	0.0763 ** (0.032) (2.360)	0.2073
2006-10	0.0825 *** (0.028) (2.908)	0.2688	0.1398 ** (0.052) (2.663)	0.2356	-0.0047 (0.005) (-0.877)	0.0956 *** (0.032) (2.970)	0.2935	0.0487 (0.082) (0.592)	0.0858 *** (0.029) (2.927)	0.2803
2010-13	0.0994 *** (0.019) (5.180)	0.5385	0.1214 *** (0.040) (3.054)	0.2885	-0.0037 (0.004) (-0.960)	0.1091 *** (0.022) (5.024)	0.5571	0.0408 (0.058) (0.706)	0.1029 *** (0.020) (5.137)	0.5487

Notes. 1. 25Countries (Argentina, Brazil, Columbia, Chile, Ecuador, Mexico, Peru, Venezuela, Costa Rica, Ecuador, Egypt, Israel, South Africa, Tunisia, Morocco, Turkey, China, Korea, India, Indonesia, Malaysia, Philippines, Pakistan, Singapore, Thailand.).

2. Figures in parenthesis (upper): standard errors; (lower): T-values.

*** denotes coefficients significant at the 1% level, ** at the 5 % level, * at the 10% level.

3. Regression of Domestic Investment on Gross National Savings, Trade (exports & imports of Goods & Services [% GDP]), Net Financial Account (% GDP)

Sources: Author's Calculation based on the World Bank Database & IMF (Capital Flows)

of determination is 0.3669 in 1991-95).

It is also to be noted that changes in the results of regressions including the variables of capital inflows; while the coefficient for capital flows was significantly positive during 1980-95 when substantial investment in FDI and other productive investment was made in many emerging countries, short-term capital investment has increased since late 1990s. As a result, capital inflows show no positive effects on GDP growth and the effect became insignificant since 2000 and onward. On the other hand, domestic savings have become significantly correlated with GDP growth during 2010-13 with higher coefficient of determination (0.5487) in emerging economies.

This may indicate that after the Global Financial Crisis in 2008, many emerging economies have become more independent from external resources, which may be related to the fact that several kinds of capital and financial management and control measures have been introduced in several countries.

The above analyses suggest that in many emerging economies domestic savings may contribute to GDP growth, while capital flows generally influence pro-cyclically on the economy in recent years.

5. Concluding remarks

Some implications from the analyses and discussion in this paper could be given as follows:

Firstly, the correlation between savings and investment has been significantly affected by the capital account liberalization in the past decades, and the correlation has become less significant in both advanced countries of OECD and emerging economies. The results indicate that there should be no Feldstein-Horioka puzzle in recent decades, and now the puzzle (especially 'FH puzzle 1') has been solved, since the covered period (1960-1974) by FH (1980) was totally different from the current global markets in the sense that capital account openness in each country has drastically increased, which has resulted in weak correlation between saving and investment ratios in both advanced and emerging economies.

Secondly, in the post-Global Financial Crisis period (2010-13) the correlation between savings and investment has recovered, while capital flows have no more significant correlation with domestic investment and growth in both OECD (incl. G7) and emerging economies. This may indicate that capital flows have not contributed to productive investment in both advanced and emerging economies

as a result of massive financial investment have been undertaken recently.

Thirdly, the correlation between saving and investment has been generally higher in emerging economies than that in OECD (advanced) countries, even during the period of high capital mobility during 1990s and 2000s. This result would support 'FH puzzle 2', which was mentioned earlier. This could be explained by the fact that several countries in emerging economies have still kept capital and financial controls i.e. India), and also several major countries which have experienced capital account crises (especially in Asia) have introduced several kind of management and controls of capital flows and foreign exchange. On the other hand, complete capital and financial account liberalization has been done in most of the OECD countries, which include many small open economies that have to import capital resources from external markets in domestic investment. These factors may explain the reason why the level of correlation between saving and investment ratios has been kept relatively high, as compared with that of OECD countries.

Fourthly, the correlation between saving and GDP growth has become recovered in emerging economies in the period of post-Global Financial Crisis (2010-13). This could be interpreted that many emerging economies now have to be more independent on their own resources, and less dependent on external financial resources for economic growth. It could be an improvement in terms of volatility of economic growth has been improved.

The above results in this paper show that the correlation between savings and investment in the OECD nations has been lower in the past decades with capital and financial account liberalization, which has resulted in the FH puzzle (especially 'FH puzzle1') has been solved in most of the advanced economies.

On the other hand, emerging economies which include several large scale countries with capital controls/management as well as crisis-experienced countries have relatively higher correlation between savings and investment. This fact confirms so called 'FH puzzle 2', that indicates emerging economies have higher correlation between national saving and investment than that in advanced countries.

It is also noted here that capital management and controls as well as stronger prudential controls and regulations have been introduced not only in emerging economies but also many advanced countries, especially since mid-2000s. Several major emerging economies has introduced controls in foreign exchange transactions in Asia (e.g. Indonesia), as well as indirect controls like transaction

tax (e.g. EU, Brazil) in the past decade¹³.

In many countries, whether advanced or emerging economies, dependence on external financial resources for domestic economic activities, including investment generally could have relatively high risks in balance of payments, especially capital and financial account, mainly in short-term capital flows, as well as economic growth. This is because economic growth in those countries which are heavily dependent on capital inflows are more likely to have higher volatility in the markets, and that the economy with pro-cyclical nature is vulnerable to the external shocks of global markets. Some countries may be exempted from such higher risks, like the USA where the dollar is the key currency so that the country could easily be financed by imports of capital through issuing government bonds (e.g. T-bills). Small open economies of OECD members and/or emerging economies, however, are very vulnerable to the global conditions which may deteriorate at any moment, and in such a situation massive capital outflows and/or 'sudden stops' of capital inflows could take place. The lack of financial resources could be a serious issue especially for developing and emerging economies, since there should be absolute needs for sustainable domestic investment for stable economic growth and development.

Several Asian countries have been successful in achieving economic growth through external borrowings and direct investment. However, these countries could not have achieved such a success without introducing several effective policy measures in controlling capital and financial account to relieve several external shocks in the global markets.

As shown in the result of analysis in this paper, increase in domestic saving rates would be one of the most important issues for developing / emerging economies country to achieve more stable and sustainable economic growth, avoiding pro-cyclical capital flows which are influenced by the global financial markets. Therefore, there should be need to establish some mechanism and framework to promote mobilizing domestic resources to be utilized effectively in productive investment in a country. In this respect, there should be several measures to strengthen management and controls in capital and financial transactions in the global market. It could contribute to achieve more stable growth not only in emerging/developing countries, but also advanced economies like Japan. In this respect, more detailed and comprehensive empirical

13. Several measures for management and controls in capital/financial account are shown in several literatures (e.g. Chapter 6 of Ohta [2012], Kawai & Takagi [2010]), Fernandez et al. [2015]).

investigations of capital management/ controls and their effects would be needed.

[Notes]

1. Variables used for calculation of investment/saving regression for OECD countries are mainly based on the IMF database, while that for emerging economies (EM) are based on the World Bank database.

The variables of investment and savings for each country used are as follows:

[IMF]

- Gross National Savings (% of GDP)
- Total Investment (% of GDP)

[World Bank]

- Gross Savings (% of GDP): gross national income less total consumption, plus net transfers
- Gross Capital Formation (formerly gross domestic investment) (% of GDP): consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories.

2. Trade figures [exports and imports, % of GDP] are based on the World Bank database.

3. Capital and financial account balance (% of GDP) data are based on the IMF database.

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* Written in Japanese

[Appendix]

Table 1-1: Domestic Saving / Investment (OECD)

(percent of GDP)

	Domestic Savings												
	1975-1979	1980-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2010-2014	1980-1990	1990-2000	2000-2014	1975-1995	1996-2014
	1979	1985	1990	1995	2000	2005	2010	2014	1990	2000	2014	1995	2014
Austraria	25.5	24.8	24.5	20.3	21.2	21.2	22.6	24.1	24.7	21.0	22.5	23.8	22.3
Austria	26.3	23.7	25.1	24.8	24.6	25.9	27.0	25.7	24.4	24.9	26.2	25.0	25.8
Belgium	24.0	18.1	20.1	23.8	24.9	25.9	25.9	23.5	19.3	24.2	25.1	21.5	25.1
Canada	22.2	21.4	19.9	16.2	20.9	23.0	22.2	20.9	20.7	18.5	22.3	20.0	21.9
Denmark	23.4	19.1	22.2	22.8	24.3	26.0	25.8	25.3	20.7	23.5	25.7	21.8	25.4
Finland	28.6	28.2	27.0	20.0	28.2	29.5	26.7	21.0	27.7	24.3	26.3	26.1	26.5
France	25.0	21.3	22.0	22.0	23.4	23.0	22.1	20.6	21.8	22.7	22.1	22.6	22.4
Germany	22.8	20.6	22.8	23.1	22.2	22.4	25.8	26.2	21.8	22.8	24.6	22.3	24.1
Greece	33.1	27.2	25.0	24.2	20.2	17.0	9.7	12.3	26.0	22.4	13.8	26.9	15.3
Ireland	25.0	19.4	19.7	22.3	26.6	26.5	20.6	19.1	19.7	24.4	22.7	21.6	23.5
Italy	25.3	22.8	21.7	20.2	21.5	20.8	19.2	17.9	22.3	20.9	19.5	22.5	20.0
Japan	32.0	30.7	32.8	32.1	28.9	25.9	25.3	22.3	31.7	30.8	24.8	31.9	25.7
Luxemburg	15.5	17.0	31.1	31.7	20.3	25.4	20.1	16.5	23.5	26.7	21.0	26.1	20.9
Netherlands	27.3	25.9	27.4	27.6	28.8	27.2	27.9	27.6	26.7	28.2	27.7	27.1	27.9
New Zealand	20.0	20.3	19.7	17.5	18.6	20.3	17.3	18.6	20.1	18.0	18.9	19.4	18.8
Norway	27.5	31.1	27.7	25.7	31.0	34.7	38.7	38.1	29.2	28.2	37.2	28.0	35.6
Spain	24.0	20.0	22.4	20.4	22.7	23.9	21.5	20.3	21.2	21.6	22.1	21.7	22.2
Sweden	26.7	24.6	27.8	21.7	25.8	28.3	31.5	29.5	26.2	24.2	29.6	25.2	28.7
Switzerland	29.8	33.1	34.4	31.6	33.5	34.2	34.6	35.3	33.7	32.8	34.5	32.5	34.2
U.K.	23.8	18.5	16.1	14.0	17.8	17.0	14.6	13.1	17.3	15.7	15.2	18.0	15.7
USA	24.0	21.7	19.6	18.0	20.6	18.1	16.2	17.1	20.7	19.2	17.5	20.9	18.1

Source: World Bank Database

	Domestic Gross Investment												
	1975-1979	1980-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2010-2014	1980-1990	1990-2000	2000-2014	1975-1995	1996-2014
	1979	1985	1990	1995	2000	2005	2010	2014	1990	2000	2014	1995	2014
Austraria	26.8	27.6	28.5	24.1	25.5	25.7	28.0	27.8	28.0	25.2	27.1	26.8	26.7
Austria	28.4	25.4	25.3	26.4	26.2	24.3	23.7	23.2	25.4	26.4	24.0	26.3	24.4
Belgium	26.6	21.5	21.2	22.3	22.7	22.1	24.0	23.1	21.6	22.7	23.1	22.9	23.0
Canada	24.7	22.0	22.5	19.2	20.6	21.0	23.4	24.2	22.3	20.0	22.7	22.1	22.2
Denmark	24.6	20.1	22.5	19.1	21.6	21.7	22.3	19.0	21.2	20.4	21.2	21.5	21.3
Finland	29.1	28.5	28.5	20.8	22.3	23.0	23.5	22.0	28.6	22.3	23.0	26.9	22.7
France	25.1	22.8	22.8	21.1	20.6	21.7	22.9	22.4	22.9	21.2	22.4	23.0	21.9
Germany	25.5	24.2	23.4	24.4	23.2	19.9	19.8	19.5	23.9	23.9	20.0	24.4	20.6
Greece	35.2	29.7	28.1	25.1	24.7	24.6	22.4	13.8	28.6	25.2	20.9	29.4	21.6
Ireland	27.3	24.7	18.5	17.5	23.3	26.0	23.3	16.4	21.8	20.5	22.5	22.1	22.6
Italy	24.3	23.7	22.2	20.1	19.7	21.1	21.1	18.5	22.9	20.1	20.3	22.6	20.1
Japan	31.6	29.4	29.9	29.6	26.5	22.8	21.6	20.8	29.8	28.5	22.1	30.2	23.1
Luxemburg	17.2	18.2	20.0	20.5	21.0	20.6	17.9	17.8	19.4	20.8	19.1	19.1	19.4
Netherlands	23.2	21.2	23.3	22.3	23.1	21.2	21.4	19.4	22.3	22.8	20.8	22.5	21.3
New Zealand	25.2	26.0	23.3	20.7	22.4	24.1	22.3	21.7	24.4	21.5	22.8	23.7	22.7
Norway	34.6	27.7	29.0	22.5	24.4	21.0	25.5	27.0	28.5	23.6	24.2	28.5	24.4
Spain	26.3	22.0	23.9	23.0	24.1	28.0	28.1	20.8	23.2	23.8	25.8	23.9	25.3
Sweden	27.7	24.8	27.4	21.6	21.3	21.9	23.2	23.0	26.0	22.1	22.7	25.4	22.3
Switzerland	26.1	29.9	31.0	26.8	25.3	23.4	25.0	24.3	30.5	26.7	24.3	28.6	24.5
U.K.	23.6	19.8	22.2	18.5	19.9	18.7	17.4	16.8	21.0	19.4	17.9	21.0	18.3
USA	23.1	23.5	23.0	20.6	22.7	22.2	20.5	18.9	23.2	21.6	21.0	22.5	21.3

Note: Average of the period. 'Gross Capital Formation' for investment and 'Gross Savings' for domestic saving.

Source: World Bank database

Table 1-2: Domestic Saving / Investment (Emerging Economies)

	Domestic Saving (percent of GDP)												
	1975-1979	1980-1985	1986-1990	1991-1995	1996-2000	2001-2005	2005-2009	2010-2013	1980-1990	1990-2000	2000-2013	1975-1995	1995-2013
	Argentina	30.5	18.9	14.8	14.9	14.5	18.8	21.7	18.1	17.1	14.8	19.2	19.2
Brazil	19.6	16.7	23.5	18.6	11.9	15.5	17.0	18.4	19.8	15.5	16.4	19.4	15.3
Chile	15.6	6.2	19.7	22.9	21.9	20.6	23.4	22.2	12.3	22.5	21.8	15.6	21.9
Mexico	21.8	22.5	20.3	16.9	19.9	20.3	22.4	21.2	21.5	18.6	21.2	20.2	20.9
Colombia	19.2	13.4	18.8	18.7	14.7	17.3	20.2	20.6	15.9	16.9	19.0	17.3	18.0
Peru	14.9	49.9	33.1	11.9	15.5	16.7	22.4	23.5	42.3	14.0	20.2	30.0	19.1
Venezuela	31.8	21.6	18.3	8.5	11.6	10.6	-1.1	-4.7	20.1	10.8	3.7	20.1	5.1
Costa	13.7	11.7	13.0	14.2	13.1	16.6	17.9	15.7	12.3	13.4	16.5	13.0	15.8
Ecuador	20.4	18.2	14.7	16.9	19.3	19.7	26.9	26.9	16.6	18.1	24.3	17.5	22.9
China		33.7	36.0	40.9	39.3	42.4	50.9	49.7	34.8	39.9	46.5	36.7	45.1
India	19.6	20.1	22.4	23.6	24.8	29.6	34.7	33.2	21.1	24.1	31.8	21.3	30.2
Indonesia		25.3	27.4	25.7	23.5	23.7	28.8	32.1	26.2	24.9	27.4	26.1	26.4
Korea	20.5	23.0	33.6	33.7	33.0	33.2	33.2	34.6	27.8	33.4	33.6	27.8	33.4
Indonesia	25.8	23.1	28.0	32.9	37.6	34.4	36.7	32.8	25.3	34.8	34.9	27.3	35.6
Philippines	27.2	20.0	17.5	19.5	29.4	47.3	55.2	47.8	18.8	23.9	48.8	20.3	43.9
Pakistan	20.8	15.1	15.2	13.4	13.3	17.8	13.4	13.6	15.1	13.5	15.1	15.8	14.6
Thailand	21.7	23.4	29.6	34.6	32.2	28.1	31.0	30.1	26.2	33.3	29.7	27.1	30.3
Singapore	32.4	39.0	40.4	46.8	50.2	40.9	47.5	48.7	39.6	48.0	45.1	39.6	46.5
India	24.1	20.6	25.1	28.0	18.8	19.7	21.0	14.8	22.7	24.1	18.8	24.3	18.8
Israel	12.9	14.3	15.6	16.0	17.2	20.4	22.2	21.7	14.9	17.1	21.2	14.7	20.3
Morocco	16.5	21.4	25.1	23.2	24.1	30.5	31.6	27.6	23.1	24.1	29.6	21.5	28.4
Tunisia	24.8	24.8	22.2	21.0	22.2	20.9	21.2	16.2	23.7	21.8	19.8	23.2	20.3
S.Africa	26.7	25.2	25.7	16.6	25.4	23.1	16.0	15.4	25.4	22.6	19.5	23.6	20.4
Turkey	14.4	20.0	23.4	21.9	20.2	16.2	14.8	13.5	21.6	21.2	15.2	19.9	16.4
Nigeria	—	21.5	19.6	16.0	13.9	10.6	24.2	25.8	20.7	15.7	20.1	19.2	17.8

Source: Gross national savings, World Bank database

	Domestic Gross Investment												
	1975-1979	1980-1985	1986-1990	1991-1995	1996-2000	2001-2005	2005-2009	2010-2013	1980-1990	1990-2000	2000-2013	1980-2013	1995-2013
	Argentina	29.0	21.4	17.0	17.7	18.3	15.7	19.9	18.6	19.4	17.6	17.8	21.3
Brazil	23.6	19.9	22.2	20.3	18.2	17.8	20.1	21.2	20.9	19.3	19.4	21.4	19.1
Mexico	18.4	16.0	22.8	24.9	25.1	21.9	22.2	24.0	19.1	25.0	22.6	20.3	23.5
Chile	23.7	23.2	21.3	20.4	20.9	21.5	23.3	22.3	22.3	20.9	22.4	22.2	21.7
Colombia	18.0	19.7	18.9	21.1	18.1	18.3	22.7	23.5	19.3	19.5	20.9	19.4	20.7
Peru	21.4	25.8	19.1	18.5	20.4	17.2	23.0	26.3	22.8	19.0	21.4	21.4	21.4
Venezuela	37.8	21.3	19.4	18.7	25.1	21.7	26.4	24.7	20.4	20.8	24.4	24.2	24.3
Uruguay	23.7	20.8	17.9	19.5	17.7	22.2	23.1	21.2	19.5	18.6	22.0	20.5	20.9
Costa	23.1	21.9	25.2	21.4	20.7	21.5	25.0	28.2	23.4	21.3	24.2	22.9	23.2
Ecuador	35.5	34.8	37.2	40.2	37.3	39.9	44.5	47.4	35.9	38.5	42.8	36.8	41.7
Turkey	19.1	21.2	23.7	23.5	24.2	28.7	36.4	36.1	22.3	23.9	32.7	21.8	30.6
China	24.0	27.4	30.4	30.9	22.6	23.7	28.4	33.7	28.8	27.1	27.5	28.1	26.7
Korea	28.9	27.9	30.1	34.7	30.3	31.8	31.8	31.3	28.9	32.7	31.7	30.3	31.4
Indonesia	23.5	30.3	25.7	39.4	32.1	23.5	21.7	24.6	28.2	35.4	23.4	29.7	26.6
Malaysia	31.2	24.8	19.4	22.4	21.9	22.6	18.4	19.7	22.4	22.3	20.1	24.5	20.8
Thailand	17.7	18.7	18.8	19.6	17.5	17.2	18.1	14.9	18.7	18.6	17.0	18.7	17.2
Philippines	26.6	28.8	32.6	41.0	27.9	26.2	26.2	27.9	30.5	35.1	26.5	32.1	27.8
Singapore	38.7	45.1	35.3	34.7	34.5	23.1	26.3	28.5	40.6	34.7	26.3	38.8	28.4
India	31.1	28.3	29.1	20.3	19.7	17.6	20.1	16.8	28.7	20.8	18.3	27.2	18.7
Egypt	27.4	21.9	19.9	24.9	23.2	19.8	18.9	19.7	21.0	24.1	19.8	23.5	20.8
Tunisia	27.4	28.6	25.4	24.9	24.5	27.5	34.1	35.1	27.1	25.1	31.4	26.6	29.5
Morocco	29.9	32.2	24.4	26.8	25.0	23.7	24.9	24.1	28.6	26.0	24.2	28.5	24.4
S.Africa	27.4	26.4	18.7	16.8	17.4	17.2	20.9	19.7	22.9	17.2	19.0	22.5	18.7
Israel	17.9	17.0	23.5	23.9	22.3	17.9	19.9	21.0	20.0	23.2	19.6	20.4	20.6
Nigeria	—	20.8	12.9	11.7	7.7	7.5	11.0	15.8	17.2	10.1	10.4	15.5	9.7

Note: Average of the period. 'Gross Capital Formation' for investment and 'Gross Savings' for domestic saving.

Source: World Bank database

Table 2-1: Self Financing Ratio (OECD)

	1975- 1979	1980- 84	1985- 89	1990- 94	1995- 99	2000- 04	2005- 2009	2010- 2013	1980- 90	1990- 00	2000- 2013	1975- 1995	1996- 2014
Austraria	1.0	0.90	0.86	0.84	0.83	0.83	0.81	0.87	0.88	0.84	0.83	0.89	0.83
Austria	0.9	0.94	0.99	0.94	0.94	1.07	1.14	1.11	0.96	0.99	1.09	0.95	1.06
Belgium	0.9	0.84	0.95	1.07	1.10	1.17	1.08	1.02	0.90	0.96	1.09	0.94	1.09
Canada	0.9	0.97	0.89	0.85	1.01	1.10	0.95	0.86	0.93	0.74	0.99	0.90	0.98
Denmark	0.9	0.95	0.99	1.19	1.12	1.20	1.16	1.33	0.98	0.93	1.21	1.01	1.19
Finland	1.0	0.99	0.95	0.96	1.27	1.28	1.13	0.96	0.97	0.96	1.14	0.97	1.16
France	1.0	0.94	0.97	1.04	1.13	1.06	0.96	0.92	0.95	0.90	0.99	0.98	1.02
Germany	0.9	0.85	0.97	0.95	0.96	1.13	1.31	1.34	0.91	0.91	1.23	0.92	1.17
Greece	0.9	0.92	0.89	0.97	0.82	0.69	0.44	0.89	0.91	0.89	0.66	0.92	0.71
Ireland	0.9	0.79	1.06	1.27	1.14	1.02	0.89	1.16	0.90	0.97	1.01	0.98	1.04
Italy	1.0	0.96	0.98	1.00	1.09	0.99	0.91	0.97	0.97	0.83	0.96	1.00	1.00
Japan	1.0	1.04	1.10	1.08	1.09	1.13	1.17	1.07	1.07	1.22	1.12	1.06	1.11
Luxemburg	0.9	0.93	1.56	1.55	0.97	1.23	1.13	0.93	1.21	1.06	1.10	1.36	1.08
Netherland	1.2	1.22	1.18	1.24	1.25	1.28	1.30	1.42	1.20	1.12	1.33	1.20	1.31
New Zealand	0.8	0.78	0.85	0.84	0.83	0.84	0.78	0.86	0.82	0.71	0.83	0.82	0.82
Norway	0.8	1.12	0.95	1.14	1.27	1.66	1.52	1.41	1.03	1.12	1.53	0.98	1.46
Spain	0.9	0.91	0.94	0.89	0.94	0.85	0.76	0.97	0.91	0.86	0.86	0.91	0.88
Sweden	1.0	0.99	1.02	1.01	1.21	1.29	1.36	1.28	1.00	0.96	1.31	1.00	1.29
Switzerland	1.1	1.11	1.11	1.18	1.33	1.46	1.38	1.45	1.10	1.30	1.42	1.14	1.39
U.K.	1.0	0.94	0.73	0.76	0.90	0.91	0.84	0.78	0.82	0.62	0.85	0.86	0.86
USA	1.0	0.93	0.85	0.87	0.90	0.81	0.79	0.91	0.89	0.76	0.83	0.93	0.85

Note: Self Financing Ratio = Domestic Savings [% , GDP] / Domestic Investment [% , GDP]

Source: Author's Calculation based on the World Bank Database

Table 2-2: Self Financing Ratio (Emerging Economies)

	1975- 1979	1980- 1985	1986- 1990	1991- 1995	1996- 2000	2001- 2005	2005- 2009	2010- 2013	1980- 90	1990- 00	2000- 2013	1980- 2013	1995- 2013
Argentina	1.1	0.89	0.87	0.84	0.79	1.20	1.09	0.97	0.88	0.84	1.08	0.90	1.01
Brazil	0.8	0.84	1.06	0.91	0.65	0.87	0.85	0.87	0.94	0.88	0.85	0.91	0.80
Chile	0.8	0.39	0.86	0.92	0.87	0.94	1.06	0.93	0.65	1.28	0.97	0.77	0.93
Mexico	0.9	0.97	0.95	0.83	0.95	0.94	0.96	0.95	0.96	1.05	0.95	0.91	0.96
Colombia	1.1	0.68	0.99	0.89	0.81	0.94	0.89	0.87	0.82	0.96	0.91	0.89	0.87
Peru	0.7	1.94	1.73	0.64	0.76	0.97	0.97	0.89	1.86	0.79	0.94	1.40	0.90
Venezuela	0.8	1.01	0.95	0.46	0.46	0.49	-0.04	-0.19	0.98	0.61	0.15	0.83	0.21
Costa	0.6	0.56	0.72	0.73	0.74	0.75	0.77	0.74	0.63	0.76	0.75	0.64	0.75
Ecuador	0.9	0.83	0.58	0.79	0.93	0.92	1.07	0.96	0.71	1.02	1.01	0.76	0.98
China	0.0	0.97	0.97	1.02	1.05	1.06	1.14	1.05	0.97	2.27	1.09	1.00	1.08
India	1.0	0.95	0.94	1.00	1.02	1.03	0.95	0.92	0.95	1.37	0.97	0.98	0.99
Indonesia	0.0	0.92	0.90	0.83	1.04	1.00	1.01	0.95	0.91	1.41	1.00	0.93	0.99
Korea	0.7	0.82	1.12	0.97	1.09	1.05	1.05	1.11	0.96	1.90	1.06	0.92	1.06
Indonesia	1.1	0.76	1.09	0.84	1.17	1.46	1.69	1.33	0.90	1.98	1.49	0.92	1.34
Philippines	0.9	0.81	0.90	0.87	1.34	2.10	3.01	2.43	0.84	1.35	2.43	0.83	2.11
Pakistan	1.2	0.81	0.81	0.68	0.76	1.03	0.74	0.91	0.81	0.77	0.89	0.85	0.85
Thailand	0.8	0.81	0.91	0.84	1.15	1.07	1.18	1.08	0.86	1.89	1.12	0.85	1.09
Singapore	0.8	0.86	1.15	1.35	1.46	1.77	1.81	1.71	0.98	2.73	1.71	1.02	1.64
India	0.8	0.73	0.86	1.38	0.96	1.12	1.04	0.88	0.79	1.37	1.03	0.89	1.01
Israel	0.5	0.65	0.78	0.64	0.74	1.03	1.17	1.10	0.71	0.97	1.07	0.63	0.97
Morocco	0.6	0.75	0.99	0.93	0.98	1.11	0.93	0.78	0.85	1.36	0.94	0.81	0.96
Tunisia	0.8	0.77	0.91	0.79	0.89	0.88	0.85	0.67	0.83	1.24	0.82	0.82	0.83
S.Africa	1.0	0.95	1.38	0.99	1.46	1.35	0.76	0.78	1.11	1.28	1.03	1.05	1.09
Turkey	0.8	1.18	0.99	0.92	0.90	0.90	0.74	0.64	1.08	1.20	0.77	0.98	0.80
Nigeria	—	1.04	1.52	1.37	1.81	1.41	2.19	1.64	1.20	0.89	1.93	1.24	1.84

Note: Self Financing Ratio = Domestic Savings [% , GDP] / Domestic Investment [% , GDP]

Source: Author's Calculation based on the World Bank Database

Table 3-1: GDP Growth rate (OECD)

	(percent, y/y)												
	1975-1979	1980-84	1985-89	1990-94	1995-99	2000-2004	2005-2009	2010-2014	1980-1989	1990-1999	2000-2014	1975-1995	1996-2014
Austraria	2.8	3.1	3.9	2.7	4.1	3.4	2.7	2.7	3.3	3.2	3.0	3.0	3.3
Austria	2.8	1.6	2.6	2.2	3.0	1.7	1.3	1.2	2.1	2.8	1.5	2.3	1.8
Belgium	2.0	1.5	2.9	1.6	2.9	1.7	1.3	1.1	2.2	2.3	1.5	2.0	1.7
Canada	3.6	2.6	3.0	1.7	4.0	2.5	1.3	2.5	2.6	2.6	2.2	2.7	2.6
Denmark	2.2	2.2	1.9	2.3	3.0	1.4	0.1	0.5	1.9	2.6	0.8	2.1	1.2
Finland	2.3	3.1	3.1	-0.4	5.1	2.6	0.9	0.5	3.1	2.0	1.5	2.1	2.2
France	2.6	1.6	3.1	1.3	2.9	1.7	0.8	1.0	2.4	2.2	1.3	2.2	1.6
Germany	2.8	1.2	3.2	2.0	1.9	0.5	1.3	2.1	2.2	2.3	1.2	2.3	1.3
Greece	5.3	0.2	1.5	1.3	3.7	3.9	-0.2	-4.8	0.7	2.3	0.3	1.9	1.0
Ireland	4.4	1.9	3.7	4.6	10.1	5.3	0.9	2.0	2.9	7.4	3.4	3.7	4.8
Italy	3.2	2.0	3.1	1.2	2.0	0.9	-0.3	-0.5	2.5	1.6	0.2	2.4	0.5
Japan	4.6	4.1	5.2	1.4	0.9	1.2	0.4	1.5	4.5	1.5	0.9	3.8	0.8
Luxemburg	0.8	2.9	7.2	4.0	6.2	3.0	2.6	3.5	5.0	5.1	3.2	3.7	3.7
Netherland	2.0	1.5	3.5	2.2	4.3	1.3	1.3	0.5	2.5	3.3	1.2	2.3	1.9
New Zealand	0.9	2.5	1.4	2.9	3.2	3.8	1.5	2.4	2.0	2.9	2.7	2.0	2.8
Norway	4.7	3.7	2.3	3.7	3.6	2.2	0.9	1.5	2.8	3.5	1.7	3.5	2.1
Spain	1.6	1.3	4.3	1.7	4.1	3.4	1.1	-0.5	2.8	3.0	1.7	2.3	2.1
Sweden	1.4	3.2	2.4	0.8	3.6	2.6	1.7	2.4	2.8	2.1	2.1	2.0	2.4
Switzerland	-0.4	2.1	3.1	0.1	2.3	1.5	2.2	1.9	2.5	1.4	2.0	1.2	1.9
U.K.	2.4	1.5	3.5	1.7	3.1	2.9	0.6	1.8	2.4	2.2	1.9	2.2	2.1
USA	3.7	2.8	3.5	2.6	4.3	2.5	0.8	2.1	3.0	3.3	1.9	3.1	2.4

Note: Average of the period.

Source: International Financial Statistics (IFS), IMF

Table 3-2: GDP Growth rate (Emerging Economies)

	(percent, y/y)												
	1975-1979	1980-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2010-2014	1980-1990	1990-2000	2000-2014	1975-1995	1996-2014
Argentina	2.1	-1.3	-0.3	6.7	2.7	2.4	5.8	4.4	-0.9	4.0	3.5	1.6	3.5
Brazil	5.9	2.5	2.3	3.1	2.2	2.9	4.5	3.2	2.4	2.1	3.3	3.4	3.0
Chile	3.4	2.3	6.8	8.7	4.2	4.2	3.5	4.6	4.3	6.2	4.0	5.1	4.1
Mexico	6.4	3.2	1.7	2.2	5.1	1.7	2.0	3.3	2.5	3.8	2.3	3.4	2.9
Colombia	5.0	2.6	4.9	4.1	1.3	3.6	4.6	4.8	3.6	3.0	4.4	4.1	3.5
Peru	2.4	1.1	-1.5	5.3	2.6	4.3	6.9	5.8	-0.1	3.2	5.3	1.8	4.7
Venezuela	4.0	-1.5	2.8	3.5	0.8	3.1	3.8	1.1	0.4	2.6	3.0	2.0	2.4
Costa	5.5	0.2	5.1	5.6	5.0	4.1	4.7	4.3	2.4	5.1	4.2	3.9	4.5
Ecuador	5.9	2.7	2.8	3.0	1.1	4.9	3.4	5.0	2.7	2.2	4.3	3.5	3.6
China	6.8	10.3	8.0	12.3	8.6	9.8	11.3	8.6	9.2	9.9	9.7	9.4	9.5
India	3.7	5.4	6.0	5.1	6.1	6.7	8.3	7.3	5.7	5.6	7.0	5.1	6.9
Indonesia	7.4	6.2	7.1	7.9	1.0	4.7	5.7	5.8	6.6	4.8	5.3	7.1	4.2
Korea	10.3	7.2	10.4	7.9	5.4	4.7	4.1	3.7	8.7	6.9	4.4	8.9	4.4
Indonesia	7.2	5.5	6.9	9.5	5.0	4.8	4.5	5.8	6.2	7.4	5.1	7.2	4.9
Philippines	6.2	-0.1	4.7	2.2	3.6	4.6	5.0	6.3	2.1	2.9	5.1	3.1	4.7
Pakistan	5.0	7.4	5.8	4.6	3.3	5.0	3.4	3.5	6.6	4.0	4.2	5.8	3.9
Thailand	8.0	5.4	10.3	8.6	0.6	5.1	3.6	3.6	7.6	5.2	3.9	8.0	3.0
Singapore	7.5	7.4	8.7	8.7	5.7	4.9	6.9	6.4	8.0	7.4	5.7	8.0	5.5
India	9.6	7.3	4.2	3.4	5.2	3.5	6.2	2.7	5.9	4.4	4.2	6.2	4.4
Israel	3.1	3.6	4.3	9.5	5.3	2.1	4.6	3.8	3.9	7.4	3.7	5.1	3.9
Morocco	6.3	4.1	5.2	1.8	4.3	5.0	4.9	3.6	4.6	3.0	4.4	4.3	4.5
Tunisia	6.3	4.8	3.0	3.9	5.6	4.1	4.7	2.5	4.0	5.0	4.0	4.5	4.4
S.Africa	2.1	2.3	1.7	0.9	2.8	3.8	3.1	2.4	2.0	1.6	3.2	1.8	3.1
Turkey	4.4	3.6	5.7	3.3	4.1	4.7	3.3	5.4	4.6	4.2	4.3	4.2	4.1
Nigeria	2.2	-1.5	1.5	0.5	3.3	6.8	7.2	5.7	-0.1	2.9	6.4	0.6	5.6

Note: Average of the period.

Source: International Financial Statistics (IFS), IMF

