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Rebalancing Savings-Investment Gaps in East Asia

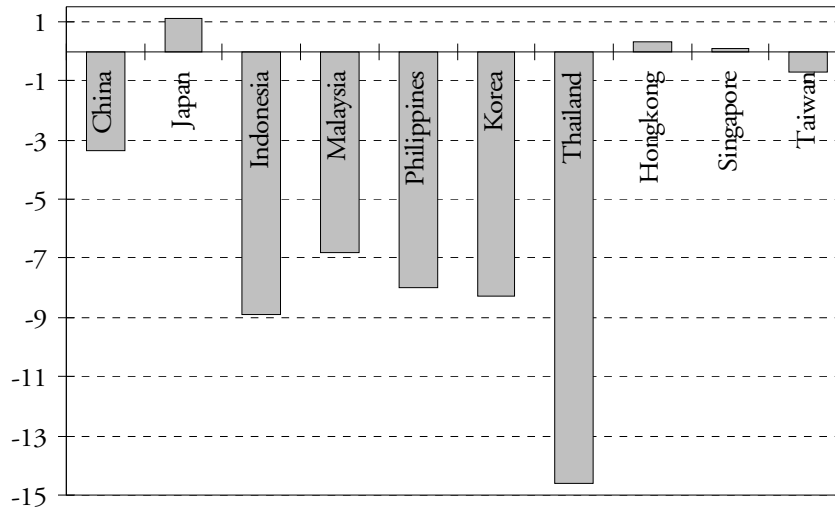
Yonghyup Oh and Seeun Jeong

Yoshitomi, Liu and Thorbecke address three issues in their chapter: the magnitude of global imbalances, their sustainability and what the United States and East Asian countries can do to resolve them. The chapter concludes that these imbalances are already too large (the US current account deficit is 6.5 percent of GDP in 2006), and cannot be sustained. The East Asian current account surpluses as well as reserve accumulations are not sustainable and East Asia can no longer finance US debt. Yoshitomi *et al.* explain that the optimal policy mix for the United States would involve recessionary fiscal policies with dollar depreciation. For East Asian countries, the authors propose a policy mix of a simultaneous currency appreciation and absorption-increasing policies. The chapter was written primarily from an East Asian perspective, as the authors' policy focus is on East Asia.

The recent appreciation of some East Asian currencies and the slowing pace of reserve accumulations of East Asian economies could be seen as signs toward a balance. However, East Asia's still-increasing trade balance with the United States and the high savings surplus relative to investment in most East Asian countries certainly point to the fact that the magnitude of imbalances is not diminishing.

Yoshitomi *et al.* argue that a simultaneous currency appreciation by East Asian economies would be the most effective way to resolve the imbalances. However, Figure 1 and 2 indicate that the trade balances of the US with Asia do not show any signs of improvement despite currency appreciation. In addition, those currencies that have sharply appreciated – the Thai baht and the Korean won – are recovering, while

Figure 1 Exchange Rates Changes with Respect to the US Dollar in East Asia (end-2005 to end-2006)
(annual change in percentages)

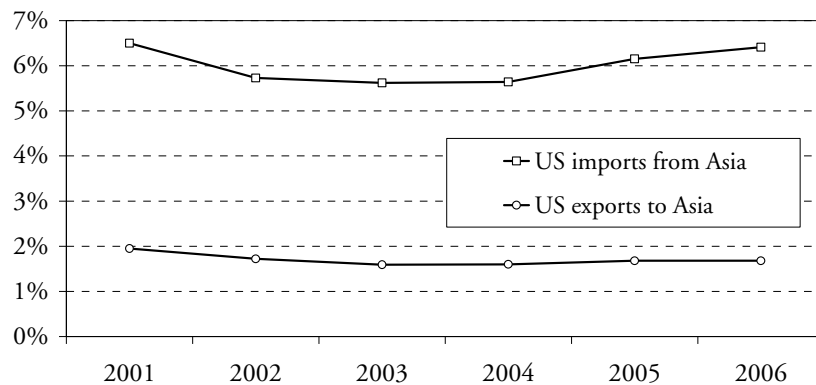


floating currencies that have actually depreciated with respect to the US dollar such as the Japanese yen are not yet showing signs of appreciation. The currency appreciation of most East Asian economies has not seemed to help in resolving global imbalances. How much exchange rate adjustment would suffice to turn the imbalances? Will East Asian economies be willing to make a commitment to simultaneous appreciation?

The role of China is very important, as their trade surplus with the United States is the largest among the East Asian economies. The picture may drastically change if China reacts by, say, floating its yuan. Yoshitomi *et al.* argue that the trade relations between China and other East Asian economies are a reason for concerted appreciation: China is a deficit economy in trade with respect to other East Asian economies and much of Chinese exports are processed goods that use imported goods from other East Asian economies. Thus Yoshitomi *et al.*'s argument can be rephrased to say that Chinese goods are in fact not purely Chinese, but rather East Asian, and that the imbalances caused by trade imbalances between the United States and China need to be taken as an East Asian responsibility, not just China's responsibility.

Yoshitomi *et al.* cover a wide spectrum of issues, and their policy suggestions are relevant. Concerted exchange rate appreciations would,

Figure 2 Recent Trade Balances Between the US and Asia
(as percentage of United States' GDP)



Note: 2006 is up to November.

Source: IMF, Direction of Trade Statistics, 2006

if done, be very effective. However, we doubt whether East Asia is ready for this type of arrangement, at least in the short run, considering the differing impacts of external shocks on East Asian economies due to an enormous degree of heterogeneity across East Asian countries. Below we would like to argue that market-driven initiatives are as important as exchange rate arrangements in East Asia and should be taken as necessary steps to achieve a concerted exchange rate arrangement.

1 Should East Asian Capital Be Relocated Within the Region?

As the high level of savings relative to investment in East Asia is, as far as East Asia is concerned, the principal source of global imbalances, policy measures to directly reduce this gap would be desirable. Table 2 shows that the savings-investment gap evaluated at the regional level has increased: the GDP-weighted average gap of nine East Asian economies, exclusive of Japan, were 2.92 and 4.63 percent of regional GDP in 2003 and 2005 respectively.

Fixing the so-called investment-savings mismatch so that investment and savings move in opposite directions has been demanded of both East Asia and the United States; this would require East Asia to make an upward shift in investment relative to savings while the United States would have to do the exact opposite. A large portion of the US current

Table 1 The Savings-Investment Gap in East Asia as a Percentage of GDP

	1990	1995	2000	2003	2005
Taiwan	4.5	0.6	1.5	6.3	2.8
Thailand	-7.1	-4.8	10.4	7.9	-2.2
Singapore	6.9	16.1	15.9	33.3	30.0
China	4.0	1.7	2.6	-1.7	2.8
Philippines	-5.5	-7.9	-3.9	1.4	4.4
Malaysia	2.0	-3.9	20.0	21.1	23.5
Korea	-0.5	-1.1	2.9	3.4	3.2
Indonesia	1.5	-1.3	9.5	5.5	4.1
Hong Kong	7.6	-5.5	3.6	8.7	12.5

Note:

1990–2003 are from Yoshitomi *et al.*

Source: Key indicators, Asian Development Bank.

Table 2 The Savings-Investment Gap in East Asia as Percentage of Regional GDP

	2003	2005
Taiwan	0.28	0.12
Thailand	0.35	-0.09
Singapore	0.96	0.84
China	-0.87	1.52
Philippines	0.03	0.10
Malaysia	0.68	0.74
Korea	0.65	0.60
Indonesia	0.40	0.28
Hong Kong	0.43	0.53
Total GDP-weighted average	2.92	4.63

Note:

Calculated from Table 1 with nominal GDP in US dollars. The GDP of the above countries comprise the regional GDP.

account deficit is accounted for by the surplus in East Asian countries; this phenomenon clearly shows how the mismatch in the investment-savings ratio creates a global imbalance between the two regions. On the balance sheet, these imbalances are recorded as high foreign reserve levels in East Asian countries, which leads to the depreciation of the US dollar vis-à-vis East Asian currencies.

Regarding this issue, it would be unfair to leave the entire task of encouraging firms to increase domestic investment up to policymakers since the current level of domestic investment is probably just an outcome of best practice business methods. Because markets for domestic capital have these inevitable limitations, it would be interesting to turn to markets for capital in other East Asian markets, namely East Asian real capital markets, for capital coming from other East Asian economies. A real capital market is a market in which a company's direct investment is traded; therefore, unlike equity capital or money market capital, this type of capital is heavy in transactions, slow in the execution of cross-border trades and is not very reversible. The good part is, when the markets are integrated, firms will find it easier to allocate their resources more effectively. For instance, if companies are earning unequal rates of return from domestic and foreign investment, then *ceteris paribus*, capital will be allocated in such a way that greater profit is earned from foreign investment. This will not only increase the efficiency of investment, but also stimulate economic growth in East Asian countries.

Since the 1990s, trade in goods has increased significantly in East Asia, leading to greater economic integration. China has been a driving force behind this new trend. However, despite considerable achievements in trade, studies show that the integration of financial markets in East Asia is sluggish at best and it has even been suggested that East Asian markets have become more dependent on the United States in recent years (Jeon *et al.*, 2006). However, as studies show, it is generally easier to cooperate regionally, as market forces seem to work better at that level. Thus, real capital market integration will help increase regional investment and may have the potential to bring extra growth to the region. This is generally accompanied by financial market integration and it is likely that monetary cooperation in East Asia will eventually be needed.

Table 3 shows how different the country rates of return for real capital are in East Asia. The rates of return are controlled for their respective risk profiles using a simple CAPM relation: a rate of return is

Table 3 Risk-Controlled Rates Of Return Of East Asian Firms

	1996–2004(Reg. 1)		96, 99–2004 (Reg. 2)		1999–2004 (Reg. 3)	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
$\beta_{i^*}(\rho_{mt}-r_t)$	1.38	9.57	1.37	0.25	1.39	5.2
Japan	-0.76	-2.06	-0.03	0.33	0.57	1.54
Hong Kong	-0.34	-0.6	0.03	0.51	0.44	0.77
Korea	-6.49	-13.29	-2.42	0.44	-1.15	-2.34
Singapore	-0.21	-0.35	0.33	0.53	0.47	0.8
China	-4.02	-5.56	-3.15	0.64	-1.87	-2.58
Indonesia	-13.09	-22.54	-6.14	0.52	-5.97	-10.25
India	-0.71	-1.48	-0.16	0.43	-0.39	-0.8
Malaysia	-0.81	-1.61	-0.66	0.45	-0.96	-1.91
Philippines	-8.67	-10.84	-7.24	0.71	-7.62	-9.48
Thailand	-6.38	-11.65	0.52	0.49	1.11	2.01
No. Obs.	19356		15059		12904	
R ² adjusted	0.12		0.08		0.08	

Note:

Returns are firm level ROA's from DataStream. See eq. (1) in the annex for the full specification.

$\beta_{i^*}(\rho_{mt}-r_t)$ represents the compensation of the intrinsic risks of firm i .

Sector and year dummies are included in the regressions to control the sector and the time effects, which are not reported here.

compensation for the risk the underlying asset has with respect to market rates. The underlying asset is the firm value and the market is East Asia. We use firm-level rates of return (return on asset or ROA) converted to the same currency – US dollars – with national inflation controlled. Rates of return are thus real – expressed in US dollars. ROA is a measure of firm performance valid for capital providers to the firm regardless of the type of the capital, equity, loans, bonds or their derivatives. It is based on a firm's business performance. Thus it differs from the price earnings ratio (P/E) that is based on a firm's performance in the stock market or return on equity (ROE), which is return from firm's businesses attributed only to equity holders. As investment in this chapter refers to both real business investment as well as financial investments, ROA is appropriate. This is the empirical

Table 4 Should East Asian Capital Be Relocated Within the Region?

	S-I gap 2005	Pressure on capital flows	Country rates of return 1999–2004	Pressure on capital flows	
Singapore	29.98	Push+++	Thailand	1.11	Pull++
Malaysia	23.50	Push+++	Japan	0.57	Pull+
Hong Kong	12.47	Push++	Singapore	0.47	Pull
Philippines	4.37	Push+	Hong Kong	0.44	Pull
Indonesia	4.10	Push+	Malaysia	-0.96	Push+
Korea	3.17	Push+	Korea	-1.15	Push++
China	2.84	Push	China	-1.87	Push++
Thailand	-2.23	Pull	Indonesia	-5.97	Push+++

Note:

+ signs indicate the subjective degree given by the author.

framework used in De M n l (1999) for European real capital markets. The detailed model specification and the data description are given in the annex.

Due to a lack of available data on Chinese firms prior to 1996, our analysis begins from that year. The three regressions are: including the crisis period, not including the crisis period and including only the post-crisis period, respectively. The rates of return are well-modeled for regression (1) and (3), but not for (2), as the risk prospects represented by $\beta_{i,t}(\rho_{mt}-r_t)$ are very significant in (1) and (3). This leads us to suppose that the crisis may not have affected the East Asian capital market system to such a degree that a deletion of the crisis period might distort the picture of the East Asian capital market. Table 3 shows the levels of country rates of return after firm-level profitability ratios are controlled for their risks. The discrepancy across country rates of return is not small, both for the post-crisis period as well as for the whole period. This discrepancy should trigger capital movement in East Asia, helping to rebalance the savings-investment gaps in the region.

Country rates of return together with the savings-investment gaps can be interpreted as push-pull factors of cross-border capital flows. Countries with higher rates would attract foreign capital (pull) *ceteris paribus*, while savings-affluent economies would look for better investment opportunities abroad (push).

Table 4 indicates that East Asian markets are more attractive than their savings-investment gaps would indicate. There are significant pulling factors within the region. For instance, all the other countries are attractive destinations for Indonesian capital. Thailand is the only country with a higher investment ratio to savings and highly positive rates of return. Her capital market is therefore pulling. This coincides well with the fact that the Thai baht has recently been the most appreciated currency in East Asia. However, low returns may not just imply that the country needs to export capital to countries of higher return; in particular, Malaysia and Korea may do well to export their capital further, but too-low returns for Indonesia might suggest instead that she try using industrial policies to improve domestic firm competitiveness first.

While the other countries are in the position of being capital abundant, Japan, Singapore and Hong Kong show market pulling characteristics. This is a complex phenomenon and it would be too simplistic to say that their capital should be mobilised internally. It is not always easy to mobilise capital within a country from savings-created industries to high-yield industries. The suggestion that Japan internalise its capital while allowing more capital imports from abroad would probably be more reasonable. This implies that there is room for appreciation for the yen, the only East Asian currency that has been consistently depreciating in recent years. In short, Tables 4 and 5 seem to suggest that East Asian countries can gain by mobilising more of their capital between them to rebalance the savings-investment gaps in East Asia. This will help in resolving global imbalances.

2 Barriers to Capital Market Integration in East Asia

One of the reasons why financial capital generated in East Asia has been bound for the US market is because the US market is very mature and offers sound investment returns. This is certainly not the case in East Asia. Aside from Singapore and Hong Kong, there is no market in East Asia that can compete with US financial centres. Furthermore, there is no anchor currency in East Asia to match the US dollar. After the crisis with abundant financial capital, East Asia needed dollar-denominated assets. However, the level of dollar reserves has reached a very high level and the US dollar has been losing its competitiveness somewhat as an international currency as the macroeconomic stability of the United States erodes. East Asia could be described as passive in

its reserve accumulations and capital outflows to the United States in the post-crisis era, and the region can now take the initiative by making efforts to rebalance savings-investment gaps.

This section attempts to see what factors serve as hurdles to cross-border capital movements. When national capital markets are completely integrated, capital is completely free to move across national borders. Departures from this state of integration are captured by country effects. The diminution of the country effects implies that markets are integrating and cross-border capital flows would increase in the process. Note that cross-border mergers and acquisitions have increased in Europe in the course of the integration process leading to EMU and with the inclusion of new EU members from Eastern Europe. Oh (2006) lists several variables to show that heterogeneity in East Asia is a hurdle to achieving monetary coordination. Some of these variables were used in Lemmen and Eijffinger (1996) and others in La Porta *et al.* (2000). Lemmen and Eijffinger studied the interest rate parity relation to test the progress of European financial integration and found that some macroeconomic factors, such as inflation, liquidity, current accounts, seignorage, openness, domestic credit, etc., indeed account for the cross-country interest rate disparity among EMU countries. La Porta *et al.* show that the degree of legal protection of stockholders and creditors has impacts on the efficiency of corporate governance and performance, which can influence returns.

We have tried to use as many variables we could gather for East Asia to test how relevant these variables were in accounting for country effects as barriers to integration. However, due to a lack of public data for these countries, we were confined to the use of only a few variables, which we classify as either macroeconomic or institutional. The macroeconomic variables included are *CA* (current account balance as a percentage of GDP), *Credit* (domestic credit as a percentage of GDP), *GDPR* (GDP growth in percentage), *INF* (inflation in percentage), *M1* (= $M1/GDP$), *M2* (= $M2/GDP$), *M2M1* ($M2/M1$), and *Openness* [= (Exports + Imports)/GDP]. *M1* is defined as “currency in circulation + holdings of sight deposits” and *M2* as “*M1* + holdings of time deposits.” Institutional factors include shareholder protection, creditor protection and efficiency of the judicial system, values of which are obtained from La Porta *et al.*

The results are presented in Table 5. Regression 1 is the output we get when only macroeconomic factors are included in the regression as explanatory variables. In Regression 2 only institutional factors are used.

Table 5 Real Capital Market Integration in East Asia and Impediments

	Regression 1		Regression 2		Regression 3	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
$\beta_{i^*}(\rho_{mt}-r_i)$	1.39	5.19*	1.42	5.25*	1.43	5.34*
CREDIT	0.57	1.04			-0.77	-1.09
M2	-0.96	-2.60*			0.63	1.48
M2M1	-0.23	-4.04*			-0.27	-3.89*
GDPR	0.23	4.78*			0.38	6.16*
Openness	1.12	3.71*			0.38	0.96
CA	-0.21	-4.98*			-0.21	-4.10*
INF	-0.60	-10.84*			-0.51	-7.36*
Shareholder			-0.53	-2.66*	-1.19	-4.08*
Creditor protection			0.16	0.69	0.69	3.68*
Efficiency in judicial system			0.64	7.91*	0.62	4.81*
No. Obs.	12755		12665		12516	
Adj. R2	0.07		0.07		0.07	
F-stat.	34.02		35.41		33.88	

Note:

* refers to the variables that are significant at the 95% level. See eq. (2) in the annex for the full specification. The sample period is 1996-2004. Time and sector dummies are included in the regressions, the results of which are not reported here. Credit (domestic credit as a percentage of GDP), M1 (= M1/GDP), M2 (= M2/GDP), M2M1 (M2/M1), GDPR (GDP growth in percentage), Openness (= (Exports + Imports)/GDP), CA (current account balance as a percentage of GDP), and INF (inflation in percentage) are averages of annual figures from 1996-2004. M1 is defined as "currency in circulation + holdings of sight deposits" and M2 as "M1 + holdings of time deposits" and are calculated by the author from national sources. The values of the other three institutional factors are from La Porta *et al.* (2000). See also complementary tables in J.J. Teunissen *et al.* (2006), Chapter 8.

In Regression 3 both factors are included. While Regression 3 looks to be the most complete of the three, the estimated results of Regression 3 are very similar to cases 1 and 2, especially with regard to the *beta* coefficient.

The first term on the right hand side is significant for all cases, indicating that the risk factor is significant when accounting for returns.

The high number of significant variables reveals that the country effect is indeed strongly felt in the real capital markets of East Asia and shows that these markets are not as integrated as originally thought. The statistically significant macroeconomic variables are the real rate of growth, inflation, the *M2M1* ratio and the current account balance. A company's excess return tends to increase as the growth rate or current account balance increases and inflation or its *M1M2* ratio decreases. This result is hard to accept because common sense tells us that the allocation of capital becomes more efficient as financial markets develop. In this case, though, the increase in real excess returns seems to be caused by legal institutional characteristics: a company's real excess return increases as stockholder protection weakens, creditor protection strengthens and the efficiency of judicial systems improves. Legal institutional characteristics seem to matter strongly.

If capital markets were perfectly integrated, country-specific macroeconomic or institutional factors would not be important in explaining the risk-adjusted rates of return for firms. However, our results show that this is not the case and suggest that the factors that come up as significant could be interpreted as responsible for segmenting and putting wedges in East Asian markets. The results in this section are only suggestive as not all the factors could be included in the current exercise. What these results imply is that East Asia needs to find ways to minimise the impacts of these barriers.

3 Concluding Remarks

What is the relation between global imbalances and regional capital market integration? Could regional capital market integration lead to greater global imbalances? Could it result in even more savings flowing from the region, or flowing within the region from the poorer countries to the richer ones? Are current global imbalances preventing deeper financial integration in East Asia?

We think that financial integration between East Asian economies and the US has led to greater global imbalances. There is much evidence that the Asian crisis brought deepening integration between individual East Asian markets and the US market rather than regional financial integration between the East Asian economies. Capital market integration is important, as it automatically involves the set-up of a regional financial market system. East Asian economies became capital

exporters in the post-crisis period, with saving exceeding investment and financial market opening. Yet there are no financial market developments at the regional level in East Asia that could continuously attract regional capital. This combined with domestic fiscal policies directed to expand domestic absorption could cause the savings-investment gaps in East Asia to be more effectively balanced. Regional capital market development for real capital, which includes financial capital, will absorb wealth created in East Asia.

Capital tends to flow generally from capital-abundant countries to capital deficient countries, provided the recipient countries offer good returns. A substantial part of regional capital will still flow outside of the region, since it is not optimal to lock the capital within the region. Capital will continue to flow from outside of the region. How much of the exported capital from East Asia should be circulated within the region is hard to quantify, although it is certain that the level needs to be increased substantially. This movement will obviously force the United States to respond and may have important consequences on the geography of global financial markets. When this mechanism is visibly working and sends positive signals to both market participants and policymakers, concerted efforts toward any form of an exchange rate arrangement in East Asia will have a better chance of success.

East Asia needs an upward shift in investment in order to help resolve global imbalances. An important way to increase investment is enhancing the facilitation of real capital flows, such as FDI, within the region. For this to take place, cross-border barriers across East Asian markets have to be lifted to deepen regional capital market integration. By examining the degree of integration that East Asian real capital markets achieved from 1996–2004, this chapter argues that real capital markets in East Asia should be more integrated. By using firm-level ROA data from eleven East Asian countries, we attempt to verify macroeconomic and institutional factors that cause segmentation in the capital markets of East Asia. Our empirical results indicate that the differences between countries are still large, especially with regard to the level of economic development and institutional factors. Differences in the level of investor protection and efficiency in judicial systems seem to act as barriers to integration among East Asian real capital markets. The weak degree of market integration in East Asia reveals that potential profits can be accrued through increasing international investment in the East Asian region. This present disparity between investment and savings in East Asia clearly shows that East Asia has excess capital. Much of it is retained either

within the nation of its origin, as asset bubbles, or is invested abroad in low-risk US securities, thus exacerbating global imbalances. In order to resolve them, East Asia needs to increase its investments relative to savings. Diminishing barriers to capital market integration will help East Asian capital flow more effectively to its own regional markets. This move, if successful, will facilitate financial cooperation in East Asia, which in turn will help East Asian economies to tackle even greater obstacles, such as monetary cooperation and currency union.

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Annex 1 Methodology and Data

We examine the convergence of real rates of return at the firm level across countries in order to analyse the degree of integration in East Asia. Equations we use are as follows.

$$\rho_{isct} - r_t = \alpha_0 \text{beta}_i^*(\rho_{mt} - r_t) + \sum_t \delta_t D_t + \sum_s \gamma_s D_s + \sum_c \lambda_c D_c + \varepsilon_{isct} \quad (1)$$

$$s = s_1, \dots, s_m : c = c_1, \dots, c_n : t = t_1, \dots, t_T$$

$$\rho_{isct} - r_t = \alpha_0 \text{beta}_i^*(\rho_{mt} - r_t) + \sum_t \delta_t D_t + \sum_s \gamma_s D_s + \sum_c \lambda_c Y_c + \varepsilon_{isct} \quad (2)$$

$$s = s_1, \dots, s_m : c = c_1, \dots, c_n : t = t_1, \dots, t_T$$

ρ_{isct} is the rate of return of company i of industry s in country c (adjusted for the country's risk) during period t . As these data are nominal and expressed in local currency, we first convert them to real rates of return – corrected for the rates of inflation expressed in a reference currency.¹ r_t is the risk free interest rate of the reference country. $\text{beta}_i^*(\rho_{mt} - r_t)$ is beta_i^* (excess market return) where ρ_{mt} is the market rates of return of all companies. beta_i is $\text{cov}(\rho_{ist}, \rho_{mt})/\text{var}(\rho_{mt})$, where beta_i is industry beta and is calculated using the rate of return of all companies in that industry. Often industry beta reflects the true risk profile of the company's return.² D_t , D_s , D_c are dummy variables for period, industry and country, respectively. α_0 , δ_t , γ_s , and λ_c are coefficients.

In equation (1) the company's rate of return is adjusted for appropriate risks (first term on the right hand side) and the time and the sector effects have been controlled. The country effect is summarised in $\sum_c \lambda_c D_c$. Y_c refers to selected macroeconomic and institutional factors to see more specifically which of these variables would account for the country effect. If national markets are perfectly integrated, the country effect should be insignificant. However, this was not the case – as our results show – when we assigned specific variables that have been suggested in the literature to Y_c in order to test their validity as barriers to capital market integration.

¹ $\rho_{isct} = {}^n \rho_{isct} - \ln(E_{ct}^f/E_{ct-1}) - \ln(P_{rt}^f/P_{rt-1})$. Nominal rates of return, ${}^n \rho_{isct}$, are converted to real rates of return in reference currency with correction of forecasted exchange rate depreciation, $\ln(E_{ct}^f/E_{ct-1})$ and forecasted inflation, $\ln(P_{rt}^f/P_{rt-1})$. See De Ménil (1999), Oh (2003).

² Koller *et al.* (2005), Chapter 10.

For our reference currency, we use US dollars and firm-level return on assets (ROA) data for the period 1996–2004 (there were, however, several missing values for this period). ROA represents the profitability that accrues from a firm's total capital, not just equity or debt capital. All data are sourced from DataStream. The countries included in this study are Japan, Korea, Taiwan, Singapore, Hong Kong, China, Indonesia, Malaysia, Thailand, the Philippines, and India. The firms we examine are from 18 industries: automobile and parts, beverages, chemicals, construction and building materials, electrical and electronic equipment, engineering and machinery, food processors, paper, clothing and footwear, consumer electronics, textiles and leather goods, IT hardware, oil and gas, pharmaceuticals, software and computer services, steel and other metals, tobacco, and utilities.

We see that Japan has a large number of firms in the areas of chemistry, construction and building materials, electrical and electronic equipment, textiles and leather goods, and IT hardware, which indicates that Japan has strong competitiveness in these industries. In addition, both Japan and Singapore have a large number of firms in engineering and machinery, while Korea, Taiwan and Hong Kong only have a small number of firms in this industry. Moreover, there are a large number of sample cases for Korea, Taiwan and Japan in the steel and other metals industry, whereas there is only a small number for Hong Kong and Singapore. Compared to other developing countries, China has a relatively smaller number of companies in all industries; this is mainly because most companies in China only began reporting their rates of return after 2001.