Behavioral and Empirical Perspectives on FDI: International Capital Allocation across Asia

Douglas H. Brooks[†]
Asian Development Bank Institute
David Roland-Holst
UC Berkeley
Fan Zhai
Asian Development Bank

OctoberMay 2007

Abstract

We investigate Asia's recent experience in international capital allocation through flows of foreign direct investment. A calibrated general equilibrium model with a new capital flow modelling component is applied to highlight underlying relationships between a Heckscher-Ohlin (labor and capital) endowments perspectiveof aggregate labor and capital and such considerations as human capital, productivity, endogenous growth, and institutional behaviour. Our results support the argument that all these factors played a role in Asia's recent growth, to different degrees in different countries, with complex relationships to investment incentives. In addition, new directions for further research in the FDI-growth linkages policy area are identified.

Keywords: foreign direct investment, international capital allocation, Asia

JEL: F21, D58, O16

[†] Corresponding author: Douglas Brooks, dbrooks@adbi.org. An earlier version of this paper was presented at the Eighth Annual Conference on Global Economic Analysis, June 9 - 11, 2005. Lübeck, Germany. Opinions expressed here are those of the authors and should not be attributed to their affiliated institutions. Special thanks to Dominique van der Mensbrugghe and Lea Sumulong. An anonymous referee also made very helpful suggestions.

Behavioral and Empirical Perspectives on FDI: International Capital Allocation across Asia

1. Introduction

International capital allocation has been a primary driver of modern growth dynamics, particularly for emerging economies, and this relationship has nowhere been more fortuitous than in Asia. Together with disciplined commitments to domestic and external economic reform, the region's economies have leveraged foreign savings to achieve growth and modernization beyond the imagining of prior generations. Despite the pervasive influence FDI has had on Asia's growth experience, the precise benefits of foreign investment remain challenging to quantify and the process of international capital allocation very difficult to predict. Given the nearly universal appeal of FDI as a growth catalyst, however, it would clearly be desirable for policy makers to better understand its fundamental determinants. As Asia transits from a loose federation of emerging economies to a more fully integrated and mature economic region, the need to understand multilateral investment dynamics will only increase.

During the region's evolution toward greater multilateralism, one of the most dramatic events has been the emergence of private agency across a web of supply networks and value chains, heavily mediated by FDI. Beneath an official veneer of negotiated trade agreements, there is now a remarkably diverse and dynamic mosaic of private commercial linkages that draw the region's economies into concerted value creation. These linkages are often part of global networks where tens, hundreds, even thousands of intermediate products change hands along extended value-added chains. The result is unprecedented geographic diffusion of economic activity, growth, and innovation, coexisting with, and often transcending, official networks of diplomacy and trade negotiation. The linkages involved are quite complex, and it is a significant challenge for policy makers to effectively pursue policies that facilitate dynamic and sustainable growth in such an environment. The precise interactions between financial integration and national growth remain the subject of intensive research and policy debate, but Asia's experience

indicates that the potential rewards are substantial.[1] Broadening the basis for such activities can amplify their benefits, distribute them more widely, and reduce risks of excessive economic concentration and instability.

In this paper, we advance FDI research by combining the latest GTAP database and a global forecasting model with a new capital flow modelling component.[2] The latter consists of independent data on foreign capital stocks and flows, calibrated to a sub-model that permits experimentation with diverse specifications of FDI behaviour. This hybrid approach has helped to clarify the research challenges in this area. Beyond this, it also yields illuminating evidence on the underlying relationships between a Heckscher-Ohlin (labor and capital) endowments ~~of aggregate labor and capital~~ and more modern considerations such as human capital, productivity, endogenous growth, competitive strategy, and the complex economic roles of institutional behavior. Our results indicate that all these factors have played a role in Asia's remarkable growth experience, to different degrees in different countries. Moreover, each has its own relationship to investment incentives, and policy makers must understand those relationships to attract and capture the many benefits FDI can offer.

2. Historical Trends in Asian FDI

Flows of FDI have seen a dramatic rise in recent years due to increasing openness of host economies. This trend is likely to continue. From only $53.8 billion in 1980, annual FDI outflows reached $1.2 trillion in 2000. (The global recession after that, however, considerably reduced outflows, which dropped by 39% in 2001 and a further 29% in 2002, picked up by 4% in 2003 and 45% in 2004, before falling again by 4% in 2005).

Relative to world output and exports, FDI outflows have risen tremendously since the early 1990s ~~(Figures 2.1 and 2.2)~~. World FDI outflows increased more than five times from 1990 to 2000 before falling from 2001 through 2002, while world output and exports grew at more modest paces between 1990 and 2005.

From 1980 to 2000, the growth rate of world FDI outflows surpassed that of world exports. This swift expansion in FDI was more pronounced during 1986-1990,

[1] See Kose et al (2003, 2006) for leadership in this very active literature.
[2] GTAP refers to the Global Trade Analysis Project. For more information see www.gtap.agecon.purdue.edu

when many host countries began to relax regulations in order to attract FDI, and 1996-2000, when many mergers & acquisitions (M&As) followed in the wake of privatization programs in Latin America and the 1997-98 Asian economic crisis.

Economies in developing Asia received increasingly larger shares of world FDI inflows, particularly during the 1990s. From an average of 7.5% in the 1970s, developing Asia's share in total FDI inflows increased to 18.6% in the 1990s. FDI inflows to developing Asia grew from only $842 million in 1970 to $146.5 billion in 2000, representing an average growth rate of 18.8% per year, before declining in 2001.

M&As have become important, particularly following the Asian financial crisis, as sharp local currency depreciations and liquidity constraints increased the availability of target firms. M&As in developing Asia rose more than 129 times by value between 1987 and 2001, from only $256.1 million to $33.1 billion. In descending order of size, Hong Kong, China; Republic of Korea (Korea); People's Republic of China (PRC); Singapore; and Indonesia were the top five recipients of M&A flows between 1987 and 2004.

The preferences of foreign investors for individual country destinations have shifted over time. While Europe and North America continue to be major recipients of FDI, the People's Republic of China (PRC) has emerged as another favored destination. Saudi Arabia, Malaysia, Egypt, and New Zealand, which were among the 20 largest FDI recipients during 1981-1985, were replaced by Sweden, Ireland, Russian Federation, and Bermuda during 2001-2005.

Among the favored Asian destinations for FDI, there has not been much change. Indonesia, Philippines, and Papua New Guinea, three of the top 10 FDI destinations in the early 1980s, dropped from the list and were replaced by India, Kazakhstan, and Azerbaijan in the early 2000s. Meanwhile, the PRC overtook Singapore; Hong Kong, China; and Malaysia as preferred FDI destination.

Among the countries in developing Asia, the top 10 recipients of FDI inflows in 2001-05 accounted for about 94.3% of total FDI in the region, with the top three recipients alone accounting for 76% (Table 2.1). Azerbaijan, however, which is only number 9 in the list of top developing Asian FDI recipients, had the highest ratio of FDI to GDP, reflecting the importance of new FDI in its hydrocarbons development. On the other hand, six out of the top 10 FDI recipients in developing Asia have FDI to GDP ratios lower than the average for developing Asia of 5.6%. This means that FDI to

developing Asia is heavily concentrated—only 12 out of 44 economies for which data are available have FDI shares equal to or exceeding their shares of GDP in developing Asia.

Table 2.1. FDI Inflows in Selected Developing Asian Economies, 2001-05

Economy	% of Total FDI in Developing Asia	Ratio to GDP
PRC	46.1	3.4
Hong Kong, China	18.9	13.9
Singapore	11.0	13.8
India	4.5	0.9
Korea, Rep. of	4.1	0.8
Malaysia	2.4	2.7
Kazakhstan	2.2	8.5
Thailand	1.9	1.7
Azerbaijan	1.6	25.2
Taipei,China	1.5	0.6

Sources: UNCTAD FDI September 2006 database; World Bank World Development Indicators online database; IMF WEO September 2006 database.

While the total value of FDI inflows to the top 10 Asian destinations surged during the last decade, developing Asia's share in the world total dropped from 21.3% in 1991-95 to 17.1% in 2001-05. At the per capita level, average FDI inflows have shown remarkable increases in some Asian economies. In Brunei Darussalam and Hong Kong, China, for instance, per capita inflows more than doubled between 1991-95 and 2001-05. The choice of time period matters, as some years show more remarkable increases than others. In Hong Kong, China, for example, per capita FDI inflows increased from only $574 in 1990 to $9,290 in 2000 – an expansion of 16.2 times. In Hong Kong, China and Azerbaijan, total annual inflows exceeded 60% of gross fixed capital formation in 2001-05. In other Asian economies, FDI amounts to less than 30% of gross fixed capital formation (Table 2.2).

It is important to note that it is increasingly difficult to characterize and typify foreign investment. In most economies, it enters practically all sectors. It originates from industrial and developing economies. It may take the form of long-term greenfield investment or short-term, opportunistic M&As. It ranges from the global investments of the world's largest corporations to smaller cross-border investments. The distinction between foreign and domestic investment is increasingly blurred, especially when a country's diaspora is actively involved. A world of increasingly seamless national

boundaries also connotes highly fluid capital whose national characteristics are often difficult to discern.

Table 2.2. Top 10 Destinations for FDI in Developing Asia, 1991-95 and 2001-05

Rank	Host Economy	1991-95	Rank	Host Economy	2001-05
Annual FDI Inflows (US$ million)					
1	PRC	22,835.2	1	PRC	57,232.3
2	Singapore	6,372.6	2	Hong Kong, China	23,402.2
3	Hong Kong, China	5,175.9	3	Singapore	13,653.2
4	Malaysia	5,063.6	4	India	5,551.2
5	Indonesia	2,341.8	5	Korea, Rep. of	5,145.2
6	Thailand	1,889.2	6	Malaysia	2,964.4
7	Taipei,China	1,200.2	7	Kazakhstan	2,673.6
8	Philippines	1,124.0	8	Thailand	2,377.3
9	Viet Nam	1,100.1	9	Azerbaijan	2,028.2
10	Korea, Rep. of	857.1	10	Taipei,China	1,906.0
FDI Inflows (as % of Gross Fixed Capital Formation)					
1	Vanuatu	62.1	1	Hong Kong, China	63.2
2	Viet Nam	41.5	2	Azerbaijan	61.3
3	Singapore	29.3	3	Singapore	55.4
4	Papua New Guinea	24.1	4	Kazakhstan	35.5
5	Azerbaijan	23.9	5	Tajikistan	31.9
6	Cambodia	22.9	6	Armenia	23.4
7	Fiji Islands	21.3	7	Mongolia	23.0
8	Malaysia	19.7	8	Kyrgyz Republic	21.2
9	Kyrgyz Republic	16.7	9	Fiji Islands	18.7
10	Hong Kong, China	14.8	10	Cambodia	15.1
FDI Inflows Per Capita (US$)					
1	Singapore	1,885.0	1	Hong Kong, China	3,415.8
2	Hong Kong, China	865.7	2	Singapore	3,227.4
3	Brunei Darussalam	414.6	3	Brunei Darussalam	3,051.6
4	Malaysia	261.5	4	Marshall Islands, Rep. of	2,018.6
5	Vanuatu	169.9	5	Azerbaijan	245.2
6	Fiji Islands	61.9	6	Kazakhstan	178.8
7	Taipei,China	57.1	7	Kiribati	170.0
8	Papua New Guinea	49.0	8	Malaysia	120.1
9	Thailand	33.2	9	Korea, Rep. of	107.3
10	Solomon Islands	33.2	10	Taipei,China	84.5

Sources: UNCTAD FDI September 2006 database; World Bank World Development Indicators online database; IMF WEO September 2006 database; National Statistics, Republic of China.

2.1. Impact of Foreign Direct Investment

Supporters of FDI contend that in addition to helping overcome local capital constraints, foreign investors introduce a combination of other highly productive resources into the host economy. These include production and process technology, managerial expertise, accounting and auditing standards, and knowledge of international markets, advertising, and marketing. The challenge for the host economy is to benefit from the foreign presence, and to appropriate as much of the increased income accruing from the resultant productivity growth as possible, without discouraging further investment. The large literature on FDI impacts concludes that the host economy benefits are quite uneven, both across and within countries.[3] This suggests that host country policies are an important factor in the distribution of these benefits. Of particular relevance are policy influences on the commercial environment, institutional quality, and productive capabilities.

Distinguishing characteristics of FDI are its stability and ease of service relative to other forms of external finance, such as commercial debt or portfolio investment, as well as its nonfinancial contributions to production and sales processes. Even for countries with relatively easy access to international capital markets (such as Korea) or with substantial holdings of foreign reserves (such as the PRC or India), the nonmonetary benefits of FDI still make it an attractive source of investment.

The general conclusion in the empirical literature is that FDI confers net benefits on the host economy. The capital stock is augmented, productivity rises, and some of the increase is at least partially appropriated by domestic factors of production. These benefits appear to be especially important in connecting the host country to the global economy, and in the area of technology transfer. Nevertheless, the magnitudes, channels, and lags associated with these transfers are still subject to debate.

As trade has been liberalized, the old "tariff factory" model of FDI has given way to a new FDI-led, export-oriented paradigm. This is sometimes characterized as a switch from "rent-seeking" to "efficiency-seeking" FDI (see e.g. Blonigen et al:2004, Hill:2004, and Blonigen and Figlio:1998). In a globalizing world, competition for FDI is no longer

[3] See Fan (2003), Lim (2001), and Moran (2002) for literature surveys.

about rents but instead focuses on the establishment of an enabling, business-friendly commercial environment, consistent with national development objectives.

Most countries offer incentives to attract FDI. These often include tax concessions, accelerated depreciation on plants and machinery, and export subsidies and import entitlements. Such incentives aim to attract FDI and channel foreign firms to locations, sectors, and activities identified as policy priorities. At the same time, most countries have also limited the economic activities of foreign firms operating within their borders. Relevant regulations have included limitations on foreign equity ownership, local content requirements, local employment requirements, and minimum export requirements. These measures are designed to transfer benefits arising from the presence of foreign firms to the local economy. This 'carrot and stick' approach has long been a feature of the regulatory framework governing FDI in host countries (McCulloch 1991).

Tax breaks and subsidies are common, but generally influence investment location decisions only at the margin (see e.g. Hines:1996, Dagan:2000, and Desai et al:2004). More important to most potential investors are such factors as the size and expected growth rate of the market to be served, the long-term macroeconomic and political stability of the host country, the supply of skilled or trainable workers, and the presence of modern transportation and communications infrastructure. Once these criteria are satisfied, then financial incentives may influence the investor's choice among suitable sites.

Government intervention can enhance a host country's success in attracting FDI with minimal distortions to the domestic economy by significantly reducing the uncertainty, asymmetric information, and related search costs faced by foreign investors, as well as transaction costs—especially the amount of time and number of steps involved in acquiring approval. Too often, however, policies intended to maximize the net benefits of FDI for recipient economies have resulted in subscale manufacturing plants, frequently through mandated joint ventures that are not allowed to source inputs freely and contribute little to the technological, social, or economic development of the country (Carr et al:2001). Arrangements between foreign investors and host country authorities that block other new entrants from the industry or that inhibit alternative cheap sources of supply are also common but are generally not in the best interests of

the host country. Imperfect competition raises issues of national sovereignty and the need for competition policy, as well as rent-seeking behavior among countries.

A host country will offer fewer incentives, and benefit less, when foreign investment is directed toward serving small and protected domestic markets. The benefits to the host economy are greatest when international companies can exploit economies of scale both locally and globally, and are continually driven to update their technology and managerial practices in order to remain competitive (Blonigen et al:2005, Markusen:1998, Markusen and Maskus:2002).

A central issue is whether investment promotion measures alter the allocation of resources in production and trade, or just influence the distribution of rents between firms and host countries (Blonigen et al:2004). Both suppliers and recipients of FDI may gain from the liberalization of investment measures. Foreign investors may benefit from new investment opportunities resulting from liberalized investment regulations, while host countries may benefit from increased FDI inflows and resulting greater market discipline. Since many developing countries compete with one another to offer foreign investors generous tax, infrastructure, and financial incentives, it is important to note that the mutual scaling down of investment incentives could yield additional revenue for the host country governments (see e.g. Blonigen et al:2004, Blonigen and Davies:2005).

Moran (2002) has provided much evidence to show how counterproductive and damaging domestic content and joint venture requirements can be for host country development. He also demonstrates just how beneficial for host country growth and development adopting a policy of leaving wholly owned subsidiaries unfettered by local content mandates can be. Protection may induce an expansion of output and employment in certain sectors, but this expansion often carries a substantial cost for the society implementing such a policy.

Notwithstanding their diversity, almost all developing Asian economies have adopted progressively more open policies toward FDI during the past three decades, and this trend appears likely to continue. This more open posture has been accompanied by the adoption of more liberal trade regimes, a process that has had profound implications for both the motives for, and impact of, foreign investment. These changes have been so rapid in some cases that the policy framework has been unable to keep pace.

The upsurge in FDI to developing countries since the early 1990s was largely caused by the unilateral liberalization of their FDI policies and regulatory regimes, following trade policy liberalization. Theoretical and empirical evidence provides strong support for the proposition that neutral policies designed to enhance the efficiency of investment are better suited to attracting foreign investment and enhancing its contribution to development than interventionist methods (Bora 2001).

Thus, there appears to be increasing acceptance that liberal policy regimes for most industries bring the highest benefits to host countries. FDI policies can be put in place at both the national and international level. At present, however, they are predominantly national rather than international. Despite the existence of over 2000 bilateral investment treaties, there is still much disagreement on forming and implementing a multilateral framework on investment.

3. Modeling FDI in a Global CGE Framework

3.1. Aggregate Determinants of Inbound FDI

Microeconomic determinants of FDI are so numerous that they have defied empirical generalization. A large literature exists on individual characteristics of the foreign investment decision, depending on the perspective of firms discussed above, i.e. whether they are outsourcers, market seekers, etc. These approaches are ably surveyed from a theoretical perspective by Markusen and several co-authors (1995, 1998, 2000, 2001, 2002), Helpman et al (1984, 2003), Brainard (1993), Raff and Srinivasan (1998), and Raff and Kim (1999). Empirical and industry case studies from these different perspectives include Lipsey (1999), Kleinert (2001, 2003), Head and Ries (2001), Andersson and Fredriksson (2000), Barrell and Pain (1996), and Wheeler and Mody (1992). While there are many detailed insights in this work, a general perspective on the main drivers of FDI is still lacking.

As a practical empirical response to this problem, other authors have put forth a variety of gravity models, essentially predicting FDI on the basis of historical correlations with other macroeconomic aggregates (see e.g. Anderson and Wincoop:2003). The present

authors have examined a number of aggregate explanatory variables with time series data for a diverse set of Asian economies, without obtaining satisfactory empirical performance (Brooks, Fan, and Roland-Holst: 2007). For these reasons, we instead adopt a simulation approach to assessing the potential significance of FDI to the region's economies.

In this section, we discuss how this approach can be incorporated into a global CGE framework and present a few scenarios to illustrate its use. To implement such a specification in a multi-country framework is relatively parsimonious, including only the primary drivers of inbound investment for each recipient country. These can be characterized in a generic three-variable functional form

$$Z = \alpha P^{\varepsilon_P} R^{\varepsilon_R} G^{\varepsilon_G} \qquad (3.1)$$

where

Z denotes a monotone index of the level of inbound FDI

P is a price index for capital consumption or a forward price of savings

R is an index of local relative to global real interest rates

G is an index of local real GDP growth

To assess the significance of these components in an Asian context, we estimated a logarithmic version of this model as follows

$$\log Z = \log \alpha + \varepsilon_P \log P + \varepsilon_R \log R + \varepsilon_G \log G$$

Where Z denotes the USD volume of inbound FDI, G denotes the compound (1+r) annual growth rate of real GDP. Using annual data for twelve Asian countries, we experimented with a variety of proxies for P and R. We were unsuccessful in identifying variables to represent P. For R the most useful proxy was the ratio of average domestic interbank rates to LIBOR, but even this proxy was not statistically significant.

Generally, our results indicate that variations in FDI are most dependent on initial conditions (national fixed effect coefficients), with high degrees of statistical significance and a very high R-square for pooled data (Table 3.1). From a multi-country modelling perspective, the fixed effects are simply national calibration parameters and the GDP growth effect can be incorporated into dynamic transition equations. In these results the PRC was used as the omitted condition or intercept, and the remaining fixed effects are negative because of China's status as the largest recipient of inbound FDI.

There is only weaklittle empirical evidence here to support model calibration. Like the price level variable, our real interest rate proxy contributes insignificantly to either FDI

levels (FDI) or rates of change (logFDI). Growth of GDP is significant in predicting the level of FDI, but not its rate of change. There is an obvious magnitude bias from PRC's massive FDI flows. This, coupled with PRC's above average growth rate, explains the role of log(GrGDP) in explaining sample variation for FDI levels. When FDI is re-scaled in logarithmic terms (Figure 63.1), this scale bias is substantially reduced, and fixed effects are sufficient to pick up the outlier economy.

Table 3.1: FDI Regressions

Equation: reg fdi logR logGrGDP kor twn hkg idn mys phl sgp tha vnm bgd ind lka

Source	SS	df	MS	Number of obs =	78
				F(14, 63) =	73.23
Model	1.3054e+10	14	932411577	Prob > F =	0.0000
Residual	802123492	63	12732118.9	R-squared =	0.9421
				Adj R-squared =	0.9292
Total	1.3856e+10	77	179946566	Root MSE =	3568.2

FDI	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logR	1816.127	2176.382	0.83	0.407	-2533.026	6165.279
logGrGDP	107507.1	43425.21	2.48	0.016	20728.77	194285.5
kor	-46095.11	2108.189	-21.86	0.000	-50307.99	-41882.23
twn	49871.46	2264.367	22.02	0.000	54396.43	45346.48
hkg	-42254.03	2249.505	-18.78	0.000	-46749.31	-37758.75
idn	49690.7	2446.088	20.31	0.000	54578.82	44802.58
mys	-46187.1	2138.156	-21.60	0.000	-50459.86	-41914.33
phl	47120.48	2309.259	20.41	0.000	51735.17	42505.8
sgp	-42336.87	2448.275	-17.29	0.000	-47229.35	-37444.38
tha	-44690.94	2204.846	-20.27	0.000	-49096.98	-40284.91
vnm	47143.44	2146.111	21.97	0.000	51432.1	42854.78
bgd	-47957.01	2207.56	-21.72	0.000	-52368.46	-43545.55
ind	44963.4	2167.88	20.74	0.000	49295.57	40631.24
lka	-47996.92	2401.47	-19.99	0.000	-52795.88	-43197.97
_cons	45154.94	2145.056	21.05	0.000	40868.38	49441.49

Equation: reg fdi logGrGDP kor twn hkg idn mys phl sgp tha vnm bgd ind lka

Source	SS	df	MS	Number of obs =	78
				F(13, 64) =	79.19
Model	1.3045e+10	13	1.0035e+09	Prob > F =	0.0000
Residual	810989389	64	12671709.2	R-squared =	0.9415
				Adj R-squared =	0.9296
Total	1.3856e+10	77	179946566	Root MSE =	3559.7

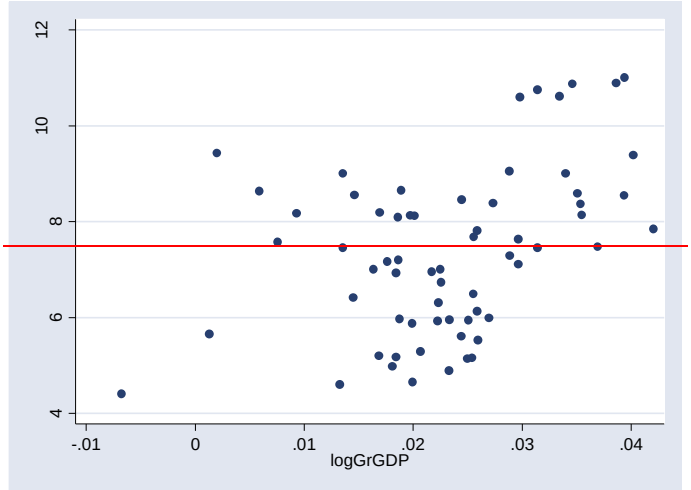
FDI	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logGrGDP	102336.3	42878.74	2.39	0.020	16676.15	187996.4
kor	-45906.83	2091.102	-21.95	0.000	-50084.29	-41729.37
twn	50249.13	2213.405	22.70	0.000	54670.91	45827.35
hkg	-42764.75	2159.507	-19.80	0.000	-47078.86	-38450.64
idn	48789.94	2189.814	22.28	0.000	53164.59	44415.28
mys	-46375.94	2121.096	-21.86	0.000	-50613.32	-42138.56
phl	-46500.71	2181.366	-21.32	0.000	-50858.49	-42142.93
sgp	-43294.78	2157.339	-20.07	0.000	-47604.56	-38985
tha	-45126.55	2137.072	-21.12	0.000	-49395.84	-40857.26
vnm	47550.69	2084.919	22.81	0.000	51715.79	43385.58
bgd	-47469.45	2123.78	-22.35	0.000	-51712.18	-43226.71
ind	44524.07	2097.984	21.22	0.000	48715.27	40332.86

Formatted: English (United States)

Formatted: English (United States)

lka	-47181.18	2188.289	-21.56	0.000	-51552.79	-42809.57
_cons	45592.05	2075.174	21.97	0.000	41446.41	49737.68

Figure 3.1: Log(FDI) and Log(GDP growth)



In the case of rate of return proxies, the results are also ambiguous. When compared to FDI levels, logR is insignificant for most of the sample, although resultsFigure 4 indicates it might be significant in a sub-sample including PRC. When examining elasticity effects, the results are indeterminate. InWhen explaining log(FDI), the implied elasticity with respect to R/RW is negative, contradicting basic Fisherian investment theory, but nearly significant.

More work with these data, particularly devising new proxies and experimenting with different lag structures, may better elucidate the macro drivers of FDI. Meanwhile, however, we accept both the intuition behind these three determinants and the need to better understand the mechanisms through which FDI works to affect growth and income distribution. To this end, we carried out a series of experiments with range values of elasticities for two of the explanatory variables, logR and LogG. We discuss the details of the simulation design in the following section 5.

3.2. FDI Behavior from a Simulation Perspective

In the absence of definitive econometric evidence regarding FDI behaviour, a simulation framework may elucidate the primary interactions between initial conditions and outcomes using a variety of alternative behavioral specifications. In this section we use a global CGE model to examine how the ultimate effects of trade policy would vary under different hypothetical patterns of FDI behavior. Given the importance of private capital flows to the modern process of globalization, it is hardly surprising that trans-boundary investment behavior can strongly influence the effects of trade liberalization. Indeed, it is apparent even in this preliminary analysis that shifting FDI patterns can make the difference between success and failure for countries joining regional FTAs and larger trade reform initiatives.

The model we use is a standard multi-country, dynamic CGE calibrated to the GTAP VI database ~~(see the annex below)~~. The present version includes an option for endogenous determination of FDI flows, based on the same logic as the estimating equation of the previous section. The economic implications of this specification of FDI behavior can be analyzed with counterfactual elasticity values.

To do this, we conducted four experiments based on a scenario of global trade liberalization (GBL). Beginning with the Baseline dynamic calibration, we run the model forward assuming all tariffs and export subsidies are removed over the period 2005-2010. This scenario has the predictable results for global efficiency gains and growth, and then forms a policy reference for four FDI scenarios based on the following ~~elaboration of~~ equation ~~3.1 above~~[4]:

$$\frac{Z_r}{GDP_r} = \lambda_r \left[\alpha_r \left(\frac{P^w}{P} \right)^{\varepsilon_P} \left(\frac{TR_r}{WRR} \right)^{\varepsilon_P} (1+\gamma_r)^{\varepsilon_G} \right] + (1-\lambda_r) Z_{r,t-1} \qquad (3.1\text{~~2~~}2)$$

where for country r, Z denotes total investment, P^w/P denotes the relative price of future consumption, TR/WRR is a the domestic to global rental rate, and γ is the growth rate of real GDP. This specification explains domestic aggregate investment shares as a product of three components. The first is based on a forward discount rate, the second on an inter-

[4] See van der Mensbrugghe (2002, 2005) for details.

country relative rate of return, and the third on an accelerator mechanism. The accelerator component includes both the growth rate of GDP and the lagged investment term in 3.12.

The benchmark values of FDI-related elasticity parameters are listed in Table 3.11 below. Using the GBL policy scenario, we run three sets of simulations to examine the possible impact of FDI on the economy through each of the component mechanisms. To control for each component, we hold it at baseline value and reduce the other two by one or two orders of magnitude.[5] The lagged investment parameter was set to 0.5 in all experiments. This biases the results in favor of the accelerator effect, but was necessary to maintain reasonable macro-stability in the solutions and is more consistent with the macroeconomics of investment behavior.

Table 3.11: Elasticity Values for FDI Simulations

Scenario		Forward Discount Rate	Elasticity Relative Rental Rate	Growth Rate of GDP
FDIGBL	Endogenous FDI under GBL	10.00	.50	10.00
FDR	Forward Discount Rate	10.00	.01	.10
RRW	Domestic Relative Rate of Return	.10	.50	.10
GGDP	Growth Rate of GDP	.10	.01	10.00

Running the model forward with endogenous FDI yields a complex adjustment process. Because an individual country constraint has been redefined as a multilateral constraint (i.e. resources can be directly transferred), the growth benefits of the GBL scenario can now be shifted between countries. For this reason, the national effects of tariff reform are no longer monotone, i.e. there are winners and losers from multilateral trade reform. This case has often been made in defense of capital account controls, but our results do not necessarily support these arguments.

Table 3.22 shows equivalent variation aggregate income (EV) for each Asian country under the globalization reference (GBL) and the four other scenarios, with results in each expressed as percentage changes from Baseline values in 2025. The most arresting feature of this table is the negative results (positive results are shaded), yet it is also important to notice that country results both exceed and fall short of the GBL scenario,

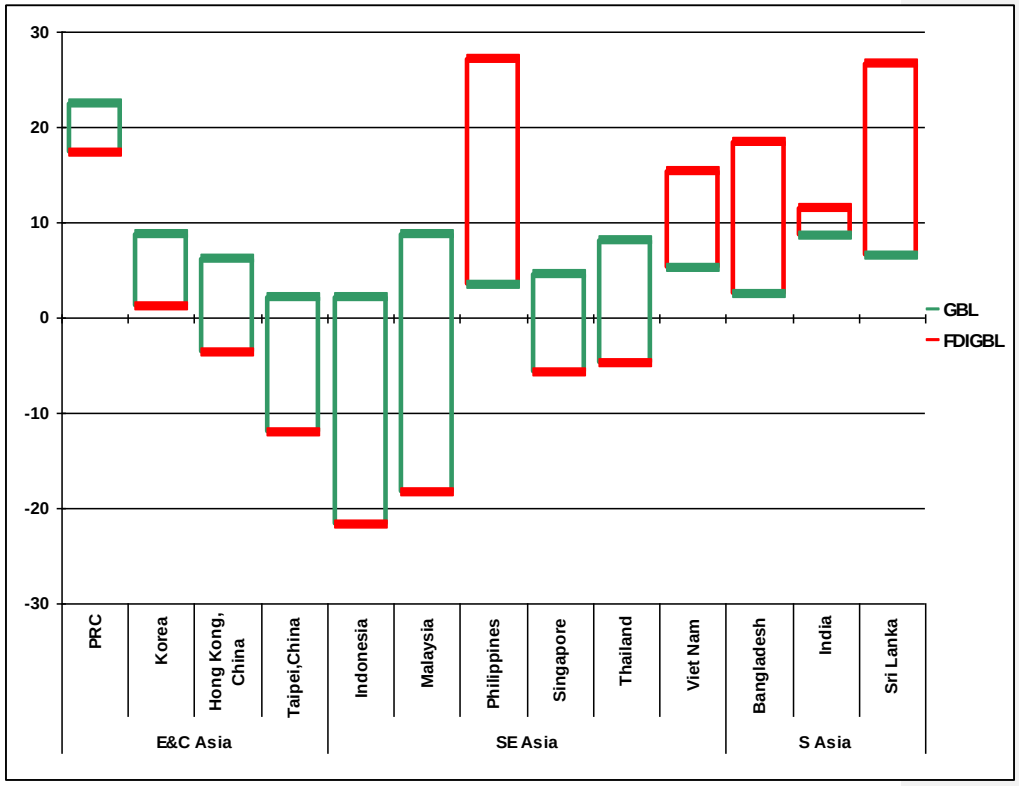
[5] In some cases, the choice of these values was informed by the FDI literature and constrained in some cases by model convergence considerations. For example, zero values were inadmissible for this reason.

depending on the country and scenario. Thus some kind of growth transfer process appears to arise from the capital movement, which is precisely what one might expect in a zero-sum, productivity-static framework like the present one.

Table 3.22: Equivalent Variation Aggregate Income
(percent change from Baseline in 2025)

Region	Country	GBL	FDIGBL	FDR	RRW	GGDP
E&C Asia	PRC	22.38%	17.24%	24.70%	28.80%	13.13%
	Korea	8.78%	1.11%	2.34%	2.32%	1.13%
	Hong Kong, China	6.18%	-3.77%	0.25%	-0.68%	-3.46%
	Taipei,China	2.03%	-12.17%	-10.37%	-10.90%	-12.00%
SE Asia	Indonesia	2.06%	-21.78%	-23.54%	-22.20%	-23.78%
	Malaysia	8.65%	-18.35%	-19.18%	-17.71%	-20.05%
	Philippines	3.37%	27.06%	9.35%	14.28%	19.52%
	Singapore	4.44%	-5.80%	-2.38%	-4.52%	-4.08%
	Thailand	8.01%	-4.84%	-11.74%	-7.88%	-9.95%
	Viet Nam	5.15%	15.35%	6.50%	6.55%	16.59%
S Asia	Bangladesh	2.38%	18.38%	11.67%	12.48%	18.14%
	India	8.59%	11.44%	7.35%	7.06%	12.55%
	Sri Lanka	6.45%	26.59%	21.02%	22.62%	24.53%
	Mean	6.81%	3.88%	1.23%	2.32%	2.48%
	Standard Deviation	5.33%	16.53%	14.52%	15.10%	16.01%

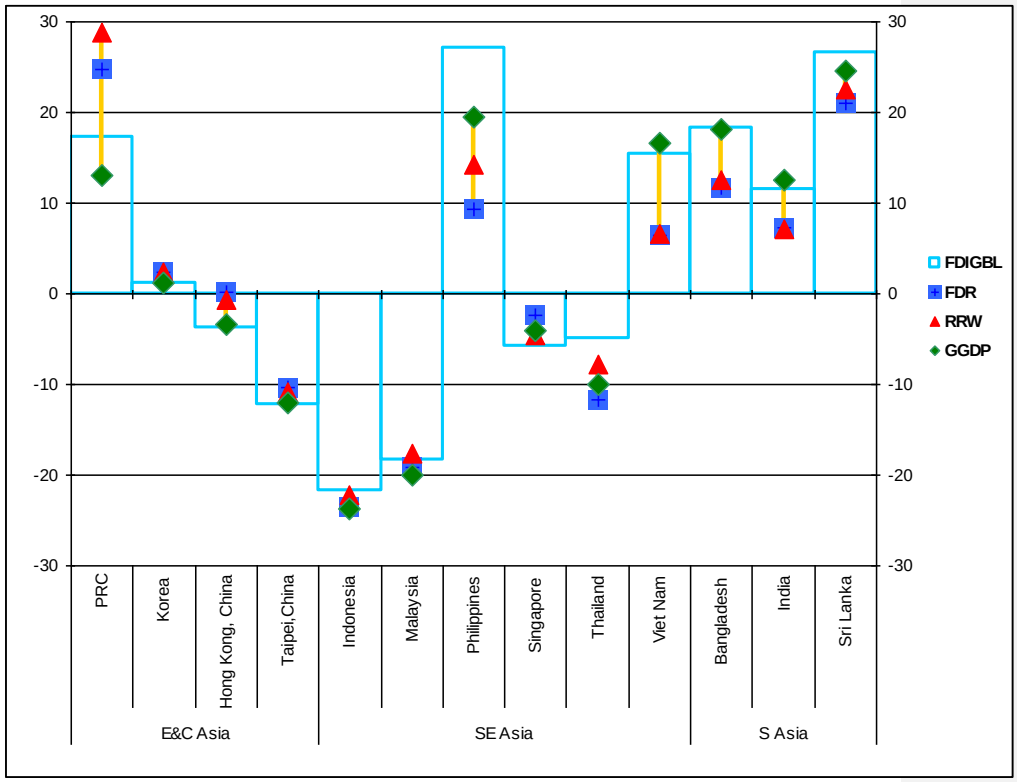
Figure 3.11: EV Income Growth Relative to Baseline
(GBL with and without endogenous FDI,
percent changes from Baseline in 2025)



One might reasonably expect efficient capital allocation to raise average productivity and even have positive local savings effects, both of which would mitigate or even eliminate the tradeoffs observed here. But compare first the GBL and combined endogenous FDI scenario (FDIGBL). These results are depicted in Figure ~~1~~3.1. Endogenous FDI reduces the EV growth benefits of multilateralism in five countries while increasing it in eight. Two of the former group still experience positive EV gains against the Baseline, but the other three actually see income decline with trade liberalization. For the winners the gains can be substantial, adding more than 15 percentage points to EV growth and in some cases doubling or tripling gains from globalization without international capital mobility.

When we decompose the three drivers of endogenous FDI determination, a more complex picture emerges. Figure 3.2~~2~~ shows aggregate EV changes for the four endogenous FDI scenarios. A few observations can be instructive.

Figure 3.2~~2~~: EV Results for Endogenous FDI
(percent changes from Baseline in 2025)



Firstly, both the interest rate components (FDR and RRW) are highly correlated, as would be expected. Secondly, the accelerator and interest rate components work in somewhat offsetting directions. This is to say that the accelerator "pulls up" against interest

rates when investment flows have a positive effect, but "pulls down" when the effects are negative (the result for Thailand is mixed). Again, this is consistent with conventional macroeconomic intuition, where interest rate sensitivity moderates Keynesian components of the business cycle. In the present case, market rental rates vary dramatically across the endogenous FDI scenarios, as indicated in Table 3.~~3~~3. As economic growth rises within a given economy, market determined rates can be expected to rise and temper that growth. This table presents simple (i.e. not GDP weighted) averages and variation in domestic rental rates, and strongly indicates that limited capital market competition raises both average returns and their absolute and relative variation across countries.

Table 3.~~3~~3: Domestic Average Rental Rates
(percent change from Baseline in 2025)

Region	Country	GBL	FDIGBL	FDR	RRW	GGDP
E&C Asia	PRC	11.81%	23.26%	32.26%	42.95%	11.05%
	Korea	7.91%	19.24%	18.00%	19.42%	18.41%
	Hong Kong, China	3.56%	18.40%	12.55%	15.10%	16.85%
	Taipei,China	2.24%	38.82%	32.91%	34.84%	38.17%
SE Asia	Indonesia	2.35%	30.24%	32.13%	30.38%	33.24%
	Malaysia	7.59%	86.17%	90.03%	85.56%	91.91%
	Philippines	2.85%	-15.82%	-5.52%	-9.78%	-10.47%
	Singapore	2.20%	19.34%	9.66%	16.00%	13.99%
	Thailand	5.48%	16.27%	22.46%	18.37%	21.68%
	Viet Nam	12.34%	-2.24%	8.16%	7.66%	-3.18%
S Asia	Bangladesh	0.09%	-30.19%	-19.70%	-21.50%	-29.54%
	India	1.81%	-5.91%	3.08%	3.19%	-7.17%
	Sri Lanka	0.26%	-29.34%	-23.38%	-25.91%	-26.59%
	Mean	4.65%	12.94%	16.36%	16.64%	12.95%
	Standard Deviation	4.08%	31.12%	28.73%	29.15%	31.61%

From a real growth perspective, it appears that capital flows reinforce superior growth rates (Table 3.4). Endogenous FDI creates international competition for an essential growth resource, and domestic rental rates reflect a kind of shadow price on this resource constraint within each economy. In the interest rate sensitive scenarios, capital flows respond to these signals, and accelerate expansion for economies with high baseline growth rates.

Table 3.44: Real GDP
(percent change from Baseline in 2025)

Region	Country	GBL	FDIGBL	FDR	RRW	GGDP
E&C Asia	PRC	14.59%	10.23%	17.01%	25.14%	8.52%
	Korea	3.59%	-3.74%	-3.18%	-3.72%	-3.36%
	Hong Kong, China	1.88%	-10.95%	-6.39%	-8.33%	-9.85%
	Taipei,China	1.85%	-13.25%	-11.59%	-12.16%	-13.07%
SE Asia	Indonesia	1.52%	-15.10%	-16.21%	-15.46%	-16.29%
	Malaysia	2.28%	-21.69%	-22.59%	-21.76%	-22.76%
	Philippines	6.36%	3.97%	4.36%	3.54%	4.76%
	Singapore	2.39%	-11.60%	-5.93%	-10.01%	-8.33%
	Thailand	5.29%	-1.32%	-4.43%	-2.70%	-3.56%
	Viet Nam	3.32%	11.78%	4.40%	4.61%	12.59%
S Asia	Bangladesh	6.01%	13.57%	9.39%	9.99%	13.12%
	India	12.41%	12.45%	12.48%	12.22%	13.03%
	Sri Lanka	6.72%	12.96%	11.23%	11.66%	12.31%
	Mean	5.25%	-0.98%	-0.88%	-0.54%	-0.99%
	Standard Deviation	4.11%	12.58%	11.91%	13.22%	12.51%

Still, it is clear from detailed inspection of these results that the accelerator component is dominant. Table 3.55 shows how closely real GDP results conform to EV. Even more strongly, relative (between-country) real GDP growth in Table 3.65 mirrors the left-hand variable in expression 3.12, Investment as a share of GDP. Countries that respond relatively slower to globalization will see capital diverted from them to those who respond faster. The interesting fact is that this happens regardless of Baseline growth rates. ~~As Figure 4.1 in the annex indicates, t~~The PRC has the highest average Baseline rate, yet when FDI is endogenous the league table shifts in favour of PRC, Philippines, Viet Nam and South Asia.

Table 3.55: Relative Real GDP Growth Across Countries
(Table 4 values, normalized by mean and standard deviation in each scenario)

Region	Country	GBL	FDIGBL	FDR	RRW	GGDP
E&C Asia	PRC	2.27	.89	1.50	1.94	.76
	Korea	-.40	-.22	-.19	-.24	-.19
	Hong Kong, China	-.82	-.79	-.46	-.59	-.71
	Taipei,China	-.83	-.98	-.90	-.88	-.97
SE Asia	Indonesia	-.91	-1.12	-1.29	-1.13	-1.22
	Malaysia	-.72	-1.65	-1.82	-1.60	-1.74
	Philippines	.27	.39	.44	.31	.46
	Singapore	-.70	-.84	-.42	-.72	-.59
	Thailand	.01	-.03	-.30	-.16	-.20
	Viet Nam	-.47	1.01	.44	.39	1.09
S Asia	Bangladesh	.18	1.16	.86	.80	1.13
	India	1.74	1.07	1.12	.96	1.12
	Sri Lanka	.36	1.11	1.02	.92	1.06

Given the complexity of the macro-adjustment process, and indeed its ambiguous effects on capital allocation and growth patterns, it is reasonable to look more carefully at the endogenous growth effects associated with FDI. It was emphasized earlier that FDI confers dynamic benefits in terms of (domestic and internal) market expansion and productivity growth. In the following two sections, we assess the empirical significance of these with the simulation framework.

3.3. FDI and Market Expansion

FDI enables propagation of production linkages by establishing new upstream or downstream capacity for existing enterprises, either as wholly owned subsidiaries or in joint ventures. One distinctive characteristic of the new production facility is that it is created with established market linkages, in contrast with autonomous new enterprises who must initiate market linkages for themselves. For this reason, FDI is often thought to accelerate market growth and intra-industry trade for recipient countries. In this section, we present a few experiments to indicate how these growth externalities could influence Asian FDI recipients.

Consider an individual country receiving FDI. At the individual enterprise level, FDI might interact with established upstream, downstream, or both, linkages. Thus creation of this new capacity would stimulate absorption and/or output, regardless of whether the

origin or destination is in the domestic market or abroad. To get a sense of the potential significance of this network effect, we consider import and export stimulus, since much FDI is targeted at export promotion.

It is difficult to overstate the significance of private agency and supply networks in the global economy. Modern globalization is now a world wide web of interconnected asset ownership and contractual ties that bind assets and capital flows. Over 70 percent of US-Japan bilateral trade is between wholly owned subsidiaries (Zelie:2002) and over 50 percent of China's exports to the US are produced by foreign owned companies (CRS:2006) from US subsidiaries. In this process, FDI is expanding markets and markets are expanding FDI.

We focus the present discussion on aggregate interactions to give a sense of the relative magnitudes at the national level. Thus we assume that the market expansion effect of FDI is confined to trade, and we further assume for simplicity that the effect is purely bilateral. In other words, we posit a relationship of the form

$$\hat{T}_{ij} = -\varepsilon_{ij}\hat{K}^F$$

where T_{ij} denotes trade costs from country i to j, K^F denotes the domestic stock of foreign capital,

$$\hat{T}_{ij} = \frac{\Delta(T_{ij} + T_{ji})}{T_{ij} + T_{ji}}$$

and

$$\hat{K}_F = \frac{FDI_{ij}}{K^F}$$

Because we lack information on FDI by origin, in the following CGE simulation experiments we consider ~~only~~ the aggregate relationship

$$\hat{T}_i = -\varepsilon_i\hat{K}^F$$

for country i's total trade costs and the average trade cost elasticity of foreign capital inflows to show how FDI can benefit an economy through market expansion.

Table 3.66: Equivalent Variation Aggregate Income
(percent change from Baseline in 2025)

		Scenario			
		1	*2*	*3*	*4*
Region	**Country**	**GBL**	**TC**	**FDIGBL**	**FDITC**
E&C Asia	**PRC**	22.38%	50.12%	17.24%	51.02%
	Korea	8.78%	25.07%	1.11%	9.87%
	Hong Kong, China	6.18%	33.86%	-3.77%	19.86%
	Taipei,China	2.03%	62.17%	-12.17%	-6.91%
SE Asia	**Indonesia**	2.06%	132.57%	-21.78%	-16.57%
	Malaysia	8.65%	56.07%	-18.35%	-1.42%
	Philippines	3.37%	13.51%	27.06%	68.00%
	Singapore	4.44%	35.59%	-5.80%	12.55%
	Thailand	8.01%	87.61%	-4.84%	28.37%
	Viet Nam	5.15%	22.77%	15.35%	204.89%
S Asia	**Bangladesh**	2.38%	8.17%	18.38%	30.56%
	India	8.59%	14.49%	11.44%	20.55%
	Sri Lanka	6.45%	16.43%	26.59%	44.80%
	Mean	6.81%	42.96%	3.88%	35.81%
	Standard Deviation	5.33%	35.44%	16.53%	56.03%

Table 3.~~6~~6 presents the EV results from the four scenarios. Two reference counterfactuals (globalization with and without endogenous capital flows) are evaluated with and without taking account of market expansion effects. The most salient feature of these results is that market expansion effects are uniformly positive, even reversing net losses in half the cases where capital mobility would otherwise be detrimental to domestic growth. This conclusion bears out our prior research on trade costs (Roland-Holst et al:2005), and supports the notion that structural barriers are important impediments to realizing the benefits from more liberal trading arrangements. For countries with capital insufficiency and substantial structural trade barriers, like Viet Nam, the combined effect can be very significant, increasing the gains from globalization by a factor of 40.

3.4. FDI and Productivity Growth

Over the last two decades, the emergence of investment opportunities in Asia has provided a new universe of choices for multinational firms and financial institutions. These markets present above average expected returns but also higher volatility. More importantly, relatively low correlation with OECD equity markets significantly reduces the unconditional portfolio risk for a global investor. Gross capital flows between OECD economies over the period 1995-2004 **rose** by 300 per cent, while growth of total trade and real GDP were more modest, at 63 percent and 26 percent, respectively. Recent

research on determinants of FDI flows has focused on portfolio theory, particularly international arbitrage and diversification. Here we summarize the main contributions of this work and make a few observations about its implications for forecasting.

~~*3.4.1.International Arbitrage*~~

~~The main streams of this literature seek to explain capital flows as responses to differential returns. Building on basic Fisherian covered interest parity theory, more advanced portfolio theory has been used to explain global capital allocation (e.g. Merton:1972, Samuelson:1969, Markowitz:1959, Henry:2000, Serrat:2001, Stockman et al:1995, Stulz:1999). For example, Evans and Lyons (2004) offer a model where information about the state of the economy is dispersed internationally, and as a result capital flows reflect information that is not available elsewhere. Evans et al (2005) proposed an interesting model for solving equilibrium multilateral flows at the national level, which could be an interesting extension for future work.~~

~~There are three main branches of international arbitrage research. The first studies effects of financial liberalization on capital flows and returns. Examples of theoretical work in this area include Obstfeld (1994, 1996 for a simplified synthesis), Bacchetta and van Wincoop (1998), and Martin and Rey (2002), while empirical assessments can be found in Bekaert, Harvey and Lumsdaine (2002a,b), Henry (2000), Bekaert and Harvey (1995, 1997, 2000), Albuquerque, Loayza and Serven (2003), and others.~~

~~The second branch focuses on the joint determination of capital flows and equity returns. Representative papers in this area include Bohn and Tesar (1996), Tesar (1993), Froot and Teo (2004), Stulz (1999), and Froot, O'Connell and Seasholes (1998). Hau and Rey (2004a,b) extend the analysis of equity return capital flow interaction to include the real exchange rate (see also Campbell et al:2000, Lewis:1999, Pesenti and van Wincoop:1996).~~

~~The third branch studies the macroeconomic implications of financial integration. Baxter and Crucini (1995) and Heathcote and Perri (2002) compare the equilibrium of models with restricted asset trade against an equilibrium with complete markets. An alternative view of integration is that it reduces the frictions that inhibit asset trade. Examples of this approach include Buch and Pierdzioch (2003), Sutherland (1996), and Senay (1998).~~

Formatted: Bullets and Numbering

Beyond these theoretical treatments, a diverse but less than conclusive empirical literature has been established around the notion that FDI is driven by identifiable links between local and global risk/return factors. Leading examples are Korajczyk and Viallet (1989), Chan et al (1992), Errunza et al (1992), Dumas and Solnik (1995), Heston et al (1995), Bekaert and Harvey (1995, 1997), Hardouvelis et al (2000) and Fratzscher (2001).

3.4.2.International Diversification

Formatted: Bullets and Numbering

As a primary response to risk, whether at home or abroad, diversification is a widely recognized investment motive. Responding to this is an extensive literature that links the diversification motive to global financial integration. Backus and Smith (1993), Kollman (1995) and many others offer evidence of the role of international capital flows in risk sharing. See also Ferson et al (1993), Flood and Rose (2006), and Griffin and Karolyi (1998). International comparability is complicated by imperfect standards for risk measurement and even more limited information on sector and firm specific risk factors. In this context, the role of contracts as risk mediating instruments is widely acknowledged to limit the relevance of macro risk analysis.

3.4.3.Industry Level Determinants of FDI

Formatted: Bullets and Numbering

Much research on firm level aspects of the FDI decision and their consequences is in the management and banking literature, and of limited use to economists who seek to generalize market driven behavior. These results provide theoretical perspective on the literature examining the relative importance of country and industry factors in explaining equity return dynamics. Our own work and prior survey are most closely allied to this, since our putative goal is to explain FDI behavior. Lessard (2000) offers a good introduction to this area from a finance perspective. See also, for example, Heston and Rouwenhorst (1994), Griffin and Karolyi (1998), Rouwenhorst (1999) and Adjaourte and Danthine (2002). In equity market research, ADR issuance has been studied as an FDI proxy behavior, as in Karolyi (2002), Hunter (2005), and others.

Empirical evidence on the precise mechanisms by which FDI spurs domestic productivity growth is relatively weak. A cross country study by Blomström et al (1992) found that FDI had a positive impact on growth rates in their higher income country sample, but not in their low income group. This suggests that there is a threshold level of

income above which the country can take advantage from the technological diffusion of FDI. Borensztein, de Gregorio and Lee (1998) analyzed the growth effect of FDI in a panel data set of 69 developing countries during the period of 1970-89 and found an important interaction between FDI and human capital. Only those countries that have a certain level of human capital accumulation can exploit the FDI spillover. They found that a permanent increase in FDI equivalent to 1 percent of GDP, in a country with an average educational attainment of 0.91 years of secondary schooling, would increase the growth rate by 0.6 percent a year. Using panel data of 20 developed countries and 20 developing countries, Xu (2000) directly estimated the impact of FDI on manufacturing productivity and reached similar conclusions of a positive relation between FDI and productivity growth above a threshold level of human capital.

As Görg and Strobl (2001) show, most cross sectional econometric work is based on country or industry level data, where the direction of causality is not clear. A number of studies have used firm level data to investigate the productivity spillover effects of FDI and the results are generally mixed. Haddad and Harrison (1993), Aitken and Harrision (1999) and Djankov and Hoekman (2000) found non significant or negative spillovers in micro panel data for Morocco, Venezuela and the Czech Republic, respectively. In developed countries, the picture is more optimistic. Haskel, Pereira and Slaughter (2002) and Keller and Yeaple (2003) are recent studies which use firm level panel data and find positive spillover effects for the UK and the US.

The lack of salient evidence from a wide array of micro level empirical studies is in part due to their focus on measuring horizontal FDI spillovers. However, there are also inter industry vertical spillovers through backward (from buyer to supplier) or forward (from supplier to buyer) linkages. As multinationals have an incentive to prevent technological leakage that would enhance the performance of their local competitors in the same industry, but at the same time might want to transfer knowledge to their local suppliers, spillovers from FDI are more likely to be vertical in nature. The importance of such vertical linkages was emphasized theoretically by Rodriguez-Clare (1996) and Markusen and Venables (1999), while Javorcik (2004) and Blalock and Gertler (2004) provide empirical evidence.

Using firm level panel data from Lithuania, Javorcik (2004) found positive productivity spillovers through backward linkages. Her results suggested that a rise of ten

percent in the foreign presence in downstream industries is associated with a 0.38 percent increase in output of each domestic firm in the upstream sector. Similarly, Blalock and Gertler (2004) found that firm output increased over 0.87 percent as the share of foreign ownership downstream rose by ten percent in Indonesia.

Empirical linkage between investment and economic performance is a significant challenge across the finance literature, and in response to this a variety of demand-side and (capital) supply-side theories have developed. The most prominent of these are the Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT) (see e.g. Dixit and Pindyck:1994 and Chriss:1998). Both approaches focus on equilibrium rates of return and rely on assumptions about market efficiency to predict real responses to capital movements. Their most attractive feature is that they implement a top-down investment allocation perspective and rely on aggregate market variables (return and risk) to explain complex underlying adjustment processes. Not incidentally, these theories are also the main drivers of investment allocation across modern financial markets.

3.4.4.International Capital Allocation from a Macro Perspective

Formatted: Bullets and Numbering

While a significant proportion of FDI is embedded in complex supply, ownership, and contractual networks whose microeconomic determinants defy generalization, it would still be desirable to model FDI flows for policy analysis. A similar situation has existed since the earliest application of GE models to international trade. While we know that import and export behavior arise from consumption and production decisions of individual agents, these have almost universally been modelled at a macro level, using CES and CET functions to model aggregate demand substitution between differentiated products. By the same token, in the absence of data and theories to support firm and investor level investment modelling, it would be useful to simulate multilateral capital allocation with aggregate proxy variables. As with the so called Armington specification and its export counterpart, however, this will necessitate restrictive assumptions and the adoption of indicative parameter values.

There are many facets to the CAPM and APT literature, with a convenient starting point in the general overviews of Baekert and Harvey (2000), Harvey (2004) and Jain (2005). More detailed institutional analysis can be found in Stulz (2005), Henry (2000), Frenkel and Menkhoff (2004), and Kim et al (2005). Technical studies of global capital

allocation elucidate the basic drivers at the financial market level, including de al Torre and Schmukler (2004), Kadiyala and Subrahmanyam (2004), and Hameed and Kusnadi (2002).

Despite exhaustive data analysis (e.g. Hwang and Satchell (1999), Griffin et al (2003)), risk factors remain difficult to measure by standardized means that enable international or inter-temporal comparison, and precise real return calibrations still have little econometric support. Despite this, the basic insights that emerge strongly support cross country allocation driven by comparable risk return factors. While financial institutions vary significantly, most authors find market forces exert themselves in analogous ways.

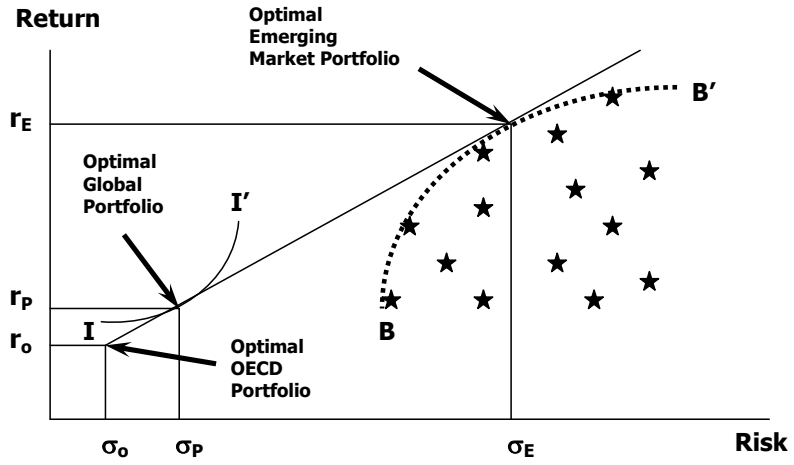
To capture these forces in a GE framework, a few special considerations are in order. Firstly, we have no practical means of modelling endogenous risk. Thus we assume that the international composition of risk is reflected in baseline FDI levels, but remains constant across our experiments. In other words, we assume the economic phenomena we model do not alter the distribution of investor risks between destination countries.

Secondly, we need to link financial returns to the real side of our model. In a GE framework, nominal returns are of no importance, and also our competitive assumptions obviate financial profits. For these reasons, returns in our model are synonymous with real productivity, and thus we proxy economywide investment returns with aggregate productivity growth. In particular, rather than positing a strict causal relationship between FDI inflows and productivity changes, we assume that domestic productivity in destination countries responds endogenously to investor criteria for rates of return. This approach corresponds to the real side perspective on CAPM and APT, with domestic capital productivity acting as a proxy for the real rate of return on FDI.

To motivate our approach, consider the FDI decision as one between two generic categories of investment destination, OECD and non OECD economies. The former can be considered to be a more homogeneous group, significantly integrated with highly liquid international equity, debt, and foreign exchange markets. The non-OECD group, however, are a more diverse universe of investment prospects, with lower levels of international capital market integration and generally higher levels of variance (risk) in real returns. From this simplified perspective, a typical foreign investor faces an investment choice depicted in Figure 3.4 below. The point (σ_e,r_e) denotes average risk (standard deviation of returns) and return for OECD economies. In contrast, non OECD returns are generally higher risk and perhaps higher return. Individual economy risk return combinations are

depicted schematically by stars. Seen from an aggregate capital market perspective, international investors can combine these non-OECD alternatives into portfolios represented by the convex set whose efficient boundary is given by BB′ in the diagram. For each OECD point and boundary BB′, there is an optimal portfolio of non-OECD investments, represented by (σ_E, r_E), where the E refers to "emerging market" or non-OECD economies.

Figure 3.4: Risk and Real Profiles for Global FDI



How the international investment community chooses to blend these two investment categories will depend on their preferences toward risk and return (e.g. the indifference curve II′). This can be determined, for example, by the national inbound FDI drivers like those given in expression (3.2) above. In any case, we assume for the present that aggregating these across emerging economies yields a blended portfolio with share α_E of total global investment allocated to emerging markets. The return and risk for such a portfolio would then be given by

$$r_P = (1 - \alpha_E) r_O + \alpha_E r_E \qquad (3.3)$$

and

$$\sigma_P^2 = (1 - \alpha_E)^2 \sigma_O^2 + \alpha_E \sigma_E^2 + 2\alpha_E (1 - \alpha_E) \sigma_O \sigma_E \rho_{OE} \qquad (3.4)$$

where ρ_{OE} denotes the correlation of returns in OECD and non-OECD economies. As a practical matter, we assume a weak form of the Efficient Markets Hypothesis and calibrate the portfolio shares to baseline values and simulate the aggregate allocation process using the three macro drivers (expression 3.2) at the inbound national level.

The next step with the portfolio approach is linking FDI and domestic productivity. To do this, we use the basic principle of APT, that domestic returns reflect efficient arbitrage between investors' required returns and real profits (proxied in this neoclassical model by real productivity growth). More specifically, assume for the moment that a representative emerging market economy offers a prospective return r_E on new investment, while the average return on old (vintage) capital is denoted r_V. The basic tenets of APT then imply that new investment will contribute to domestic rates of return as follows

$$r_t = (1-\alpha)r_V + \alpha r_E \qquad (3.5)$$

Where r_t denotes the domestic aggregate rate of return in time t and α denotes the share of new capital in the total domestic capital stock. To implement this approach with the CGE model, we assume that total investment is determined by the three macro drivers, we apply the emerging market premium to all new capital, and capital productivity adjusts endogenously with respect to an exogenous emerging market interest rate r_E.

$$r_t = (1-\alpha)r_V + \alpha\, r_E \qquad (3.6)$$

With regard to risk, we assume heterogeneity but fixity of initial conditions. That is, the initial data incorporate information about relative risk across countries, but we incorporate no additional risk information in the dynamic scenarios, so relative risks among countries remain constant over these scenarios.

Table 3.87: Equivalent Variation Aggregate Income (percent change from Baseline in 2025)

		Scenario			
		1	*2*	*3*	*4*
Region	Country	GBL	ATP	FDI111	APT111
E&C Asia	***China***	22.38%	67.47%	17.24%	198.46%
	Korea	8.78%	10.11%	1.11%	3.35%
	Hong Kong, China	6.18%	9.40%	-3.77%	7.18%
	Taipei,China	2.03%	3.07%	-12.17%	-11.27%
SE Asia	***Indonesia***	2.06%	57.51%	-21.78%	-26.30%
	Malaysia	8.65%	61.94%	-18.35%	-58.63%
	Philippines	3.37%	19.78%	27.06%	215.37%
	Singapore	4.44%	9.50%	-5.80%	-0.87%
	Thailand	8.01%	43.35%	-4.84%	6.02%
	Viet Nam	5.15%	9.37%	15.35%	158.80%
S Asia	***Bangladesh***	2.38%	27.29%	18.38%	151.23%
	India	8.59%	58.50%	11.44%	455.37%
	Sri Lanka	6.45%	40.19%	26.59%	194.29%
	Mean	6.81%	32.11%	3.88%	99.46%
	Standard Deviation	5.33%	23.66%	16.53%	145.69%

~~Results in Table 3.87 are analogous to those of the previous subsection, except that here we consider globalization, with and without endogenous FDI, taking account of international emerging market arbitrage. In particular, the APT scenario considers simple global tariff abolition when emerging market Asian economies (names underlined) are required to return a premium on new investment that is 10% above baseline average rates of return. This return is achieved in the model with endogenous increases in factor productivity, simulating the mechanism of capital market discipline thought to govern emerging market investment allocation.~~

~~Compounded over the time interval we consider, the induced productivity effects exert a strong growth effect, both within the emerging economies and across the region. Countries whose baseline data include high growth rates, large FDI shares, or low productivity levels are most affected in the case with exogenous capital flows. On average, terminal year EV income growth is about five times higher with capital market discipline in these cases.~~

~~The case of endogenous capital flows is more complex, but individual differences are also more dramatic. Unlike trade cost reductions, adverse effects can be reversed, reduced, or even amplified (emerging economies only). When an economy benefits from endogenous FDI, however, this is always amplified by the companion productivity effect. For emerging economies, this effect is dramatic, increasing EV percentage gains by up to~~

~~tenfold. These results make it clear that the arbitrage effect can be a potent growth stimulus to the extent that it is a driver of emerging market capital allocation.~~

4. Conclusions and Extensions

International capital mobility has been an essential component of modern globalization and a strong catalyst for growth in many emerging market economies. For Asia in particular, FDI has played a prominent role in the majority of dynamic and sustained success stories, supplementing domestic savings and transferring a variety of technical and market externalities to accelerate modernization and outward orientation. The development process across Asia is only partially complete, however, and the next phase of regional growth will need to propagate successful experiences across a more diverse set of initial conditions. To take full advantage of the transformative role that FDI can play in this process, a better understanding of the fundamentals of international capital allocation is essential.

This paper reviews the literature on FDI determinants from a regional perspective, followed by application of a variety of empirical approaches to elucidating these issues. ~~Firstly, we estimate a simple macroeconomic model of determinants using country specific data on three alternative drivers of inbound FDI, discount rates, domestic relative rental rates, and real domestic GDP growth. Our findings here are inconclusive, with statistically significant results only for real GDP.~~ Absence of definitive

~~Ambiguous~~ econometric results in this area lead us to apply a simulation framework to the same kind of specification in an effort to assess the potential significance of each of the three drivers. For plausible elasticity values (borrowed from the investment literature), we find again that real GDP is the primary determinant of regional capital allocation when FDI is endogenous. In the context of globalization scenarios for multilateral tariff reduction, this apparently induces transfers of growth impetus between economies, making former winners from globalization into losers. To the extent that accelerator effects may be amplified by FDI, it is essential to get better estimates of these effects.

Looking beyond the empirical evidence on macro drivers of FDI, we use our modelling framework to examine how FDI might be linked to trading efficiency and domestic productivity. Here we see that, for moderate levels of efficiency and productivity effects, growth dividends in the Asian region can be very substantial. In particular, our findings echo earlier work indicating that structural barriers to trade are now much more

significant impediments to regional integration and expansion that nominal protection. We also find, to the extent that regional capital allocation follows principles of modern portfolio theory, capital-productivity linkages can accelerate growth dramatically.

The analysis here thus shows that further research in several areas could be productive. In particular, incorporation of the portfolio model in CGE analysis could highlight direction and magnitude of capital allocations. While considerable work has already been done to identify the determinants of FDI flows, this portion of the feedback loop between growth and investment still lacks consensus. Better estimation of the accelerator effects of capital-productivity linkages on growth would also improve out understanding.

As Asian regional savings and investment flows rise to unprecedented levels, it becomes ever more important to improve our understanding of FDI-growth linkages. The results presented here offer guidance about new directions for more detailed research in this important policy area. If the forces at work are as momentous as some believe, then growth need not be a fixed-sum game and all could benefit from more efficient regional resource allocation. To ascertain the potential of such win-win scenarios, more experimental study of the FDI-growth nexus is needed.

5. References

Abel, A. B., and Blanchard, O. J (1993) "An Intertemporal Model of Savings and Investment". Econometrica 51, 675-692.

~~Adjaoute, Kpate and Jean-Pierre Danthine (2002). "European Financial Integration and Equity Returns: A Theory-Based Assessment", *European Central Bank.*~~

~~Aitken, B., G. H. Hanson, and A. E. Harrison. 1997. Spillovers, Foreign Investment and Export Behaviour. Journal of International Economics 43:103-32.~~

~~Aitken, Brian J. and Ann E. Harrison. 1999. "Do domestic firms benefit from direct foreign investment? Evidence from Venezuela." *American Economic Review.* 89(3): 605-18.~~

~~Albuquerque, Rui, Norman Loayza, and Luis Serven (2003). "World Market Integration Through the Lens of Foreign Direct Investors".~~

Anderson, J.E., and E. van Wincoop (2003) "Gravity with Gravitas: A Solution to the Border Puzzle," American Economic Review, 93(1), March, pp. 170-92.

Andersson, T., and T. Fredriksson (2000). "Distinction Between Intermediate and Finished Products in Intra-Firm Trade." International Journal of Industrial Organization 18: 773–792.

Ariff, M. (1989) "TRIMs: A North-South Divide or a Non-issue?" *World Economy* 12(3): 347-60.

~~Asness, Clifford, John Liew, and Ross Stevens (1997). "Parallels Between the Cross-Sectional Predictability of Stock and Country Returns." Journal of Portfolio Management, Spring, 79-87.~~

~~Augusto de la Torre and Sergio L. Schmukler. (2004) Coping with Risks through Mismatches: Domestic and International Financial Contracts for Emerging Economies. International Finance 7:3, 349-390~~

~~Ayuso, Juan and Roberto Blanco (1999). "Has Financial Market Integration Increased During The Nineties?" *Banco de* Espa*n*a *Working Paper 9923.*~~

~~Bacchetta, Philippe and Eric van Wincoop (1998). "Capital Flows to Emerging Markets: Liberalization, Overshooting, and Volatility", *NBER Working Paper No. 6530.*~~

~~Backus, Dave and Gregory Smith (1993). "Consumption and Real Exchange Rates in Dynamic Exchange Economies with Nontraded Goods", *Journal of International Economics, Vol. 35, pp. 297-316.*~~

~~Baele, Lieven, Annalisa Ferrando, Peter H. Srdahl, Elizaveta Krylova, and Cyril Monnet "Measuring Financial Integration in The Euro Area" *ECB Occasional Paper Series No. 14.*~~

Baldwin, R., and G.I.P. Ottaviano (1998), "Multiproduct Multinationals and Reciprocal FDI Dumping." Working Paper No. W6483, NBER, March.

Formatted: Indent: Left: 0", First line: 0"

Barrell, R., and Pain N. (1996). "An Econometric Analysis of US Foreign Direct Investment." Review of Economics and Statistics 78: 200–207.

~~Baxter, Marianne and Mario J. Crucini (1995). "Business Cycles and the Asset Structure of Foreign Trade", *International Economic Review, Vol. 36, pp. 821-854.*~~

~~Bekaert, Geert (1995). "Market Integration and Investment Barriers in Emerging Equity Markets." World Bank Economic Review, 9, 75-107.~~

~~Bekaert, Geert and Campbell R. Harvey (1995). "Time-Varying World Market Integration" *The Journal of Finance, Vol. 50, No. 2, pp.* 403-444.~~

~~Bekaert, Geert, and Campbell Harvey (2000). "Foreign Speculators and Emerging EquityMarkets." Journal of Finance, 55, 565-613.~~

~~Bekaert, Geert, and Campbell Harvey (1995). "Time-Varying World Market Integration." Journal of Finance, 50, 403-444.~~

~~Bekaert, Geert, Claude Erb, Campbell Harvey, and Tadas Viskanta (1997). "What Matters for Emerging Equity Market Investments." Emerging Markets Quarterly, Summer, 17-46.~~

~~Bekaert G., Harvey C.R. 2000. "Foreign Speculators and Emerging Equity Markets," The Journal of Finance, Volume 55, Number 2, April 2000, pp. 565-613(49)~~

~~Blalock, Garrick, and Paul J. Gertler. 2004 "Welfare gains from foreign direct investment through technology transfer to local suppliers." Cornell University, photocopy~~

~~Blomström, Magnus, Robert E. Lipsey and Mario Zejan. 1992. "What explains developing country growth?" NBER Working Paper, No. W4132.~~

Blonigen, B.A. , K. Tomlin, and W.W. Wilson (2004) "Tariff-jumping FDI and Domestic Firms' Profits," Canadian Journal of Economics, 37(3), August, pp. 656-77.

Blonigen, B.A. and M. Wang (2005) "Inappropriate Pooling of Wealthy and Poor Countries in Empirical FDI Studies," Does Foreign Direct Investment Promote Development? T.H. Moran, E.M. Graham, and M. Blomstrom, eds., Institute for International Economics, April, pp. 221-44.

Blonigen, B.A., and R.B. Davies (2004) "The Effects of Bilateral Tax Treaties on U.S. FDI Activity," International Tax and Public Finance, 11(5), September, pp. 601-22, and

Blonigen, B.A., and D.N. Figlio (1998) "Voting for Protection: Does Direct Foreign Investment Influence Legislator Behavior?" American Economic Review, 88(4), September, pp. 1002-14.

Blonigen, B.A., C.J. Ellis, and D. Fausten (2005) "Industrial Groupings and Foreign Direct Investment," Journal of International Economics, Vol. 65(1), January, pp. 75-91

Bohn, Henning and Linda L. Tesar (1996). "U.S. Investment in Foreign Markets: Portfolio Rebalancing or Return Chasing?", *The American Economic Review, Vol. 86, No. 2, Papers and Proceedings, pp. 77-81.*

Bora, B. 2001. *Trade Related Investment Measures and the WTO: 1995-2001.* United Nations Conference on Trade and Development. United Nations, Geneva.

~~Borensztein, E., De Gregorio, J. and Lee, J. W. 1998. "How does Foreign Direct Investment affect economic growth? " *Journal of International Economics.* 45: 115-~~

~~35~~

Bosworth, B. P., and S. M. Collins. 1999. Capital Flows to Developing Economies: Implications for Saving and Investment. Brookings Papers on Economic Activity 1:143-69.

Bourguignon, F., Branson, W.H. and J. de Melo (1992). "Adjustment and income distribution_ a micromacro model for counterfactual analysis," Journal of Development Economics 38: 17–39.

Brainard, S.L. (1993). "A Simple Theory of Multinational Corporations and Trade with a Trade-off between Proximity and Concentration." NBER Working Paper 4269. National Bureau of Economic Research, Cambridge, Mass.

Brandt, Michael W., Amit Goyal, and Pedro Santa-Clara (2001). "Dynamic Portfolio Choice: A Simulation Approach", *Anderson Graduate School of Management Finance Paper No. 4-01.*

Brooks, D.H. and H. Hill. 2004. Managing FDI in a Globalizing Economy: Asian Experiences. London: Palgrave Macmillan.

Brooks, D.H., Z. Fan, and D. Roland-Holst 2007. Macroeconomic Determinants of Asian FDI: An Econometric Analysis, Processed, ERD, Asian Development Bank, Manila.

Brooks, D.H., E.X. Fan, and L.R. Sumulong. 2004. "Foreign Direct Investment: Recent Trends and the Policy Context," In Managing FDI in a Globalizing Economy: Asian Experiences, edited by D.H. Brooks and H. Hill. London: Palgrave Macmillan.

Brooks, D.H., and H. Hill (2004), "Divergent Asian Views on Foreign Direct Investment," Asian Development Review, 21:1.

~~Buch, Claudia M., Jorg Dopke, and Christian Pierdzioch (2002). "Financial Openness and Business Cycle Volatility", *Kiel Working Paper No. 1121.*~~

~~Campbell, John Y., Yeung Lewis Chan, and Luis M. Viceira (2000). "A Multivariate Model of Strategic Asset Allocation".~~

Carkovic, M. and R. Levine. 2002, "Does Foreign Direct Investment Accelerate Economic Growth? " *mimeo*

Carr, D.L., J.R. Markusen, and K.E. Maskus (2001) "Estimating the Knowledge-Capital Model of the Multinational Enterprise," American Economic Review, 91(3), June, pp. 693-708.

Carrieri, Francesca, Vihang Errunza, and Ked Hogan (2003). "Characterizing World Market Integration Through Time" *McGill University.*

~~Chan, K.C., G. Andrew Karolyi, and Renl M. Stulz (1992). "Global Financial Markets and the Risk Premium on U.S. Equity" *Journal of Financial Economics Vol. 32, pp.137-167.*~~

Chen, Zhiwu and Peter J. Knez (1995). "Measurement of Market Integration and Arbitrage" *The Review of Financial Studies Vol. 8, No. 2, pp. 287-325.*

~~Chriss, N.A. (1997), Black Scholes and Beyond, Irwin:Chicago.~~

Claessens, Stijn, Susmita Dasgupta, and Jack Glen (1998). "The Cross-Section of Stock Returns: Evidence from the Emerging Markets." Emerging Markets

Quarterly, Winter, 4-13.

~~Cochrane, John H. (2001). "Asset Pricing", Princeton University Press, Princeton, New Jersey.~~

Congressional Research Service (2006) "China's Trade with the United States and the World," Report to Congress RL31403, Washington, January.

~~Cooper, Ian, and Evi Kaplanis (1995). "Home Bias in Equity Portfolios and the Cost of Capital for Multinational Firms." Journal of Applied Corporate Finance, Fall, 95-102.~~

~~Corsetti, Giancarlo, Luca Dedola and Sylvain Leduc (2003). "International Risk Sharing and the Trans mission of Productivity Shocks".~~

Dagan, T. (2000) "The Tax Treaties Myth," New York University Journal of International Law and Politics, Summer, pp.939-96.

~~Danthine, Jean Pierre and John B. Donaldson (1994). "Asset Pricing Implications of Real Market Frictions".~~

Decaluwe, B. and Martens, A. (1988). "CGE modeling and developing economies: a concise empirical survey of 73 applications to 26 countries," Journal of Policy Modeling 10: 529–568.

Desai, M.A., C.F. Foley, and J.R. Hines (2004) "Foreign Direct Investment in a World of Multiple Taxes," Journal of Public Economics, 88(12), December, pp. 2727-44.

Dewatripoint, M. and G. Michel, "On Closure Rules, Homogeneity and Dynamics in Applied General Equilibrium Models," Journal of Development Economics 26:65-76, 1987.

~~Diamonte, Robin, John Liew, and Ross Stevens (1996). "Political Risk in Emerging and Developed Markets." Financial Analysts Journal, May/Jun, 71-76.~~

Diao, X. and A. Somwaru (2000). "An Inquiry on General Equilibrium Effects of MERCOSUR — An Intertemporal World Model," Journal of Policy Modeling. 22: 557-558.

~~Diermeier, Jeff and Bruno Solnik (2000). "Global Pricing of Equity".~~

~~Dixit, A.K., and R. S. Pindyck (1994), Investment Under Uncertainty, Princeton University Press: Princeton.~~

~~Djankov, Simeon. J. and Bernard Hoekman. 2000. "Foreign investment and productivity growth in Czech enterprises.." *World Bank Economic Review.* 14(1): 49-64.~~

~~Dumas, Bernard and Bruno Solnik (1995). "The World Price of Foreign Exchange Risk" *The Journal of Finance Vol. 50, No. 2, pp. 445-479.*~~

Easterly, W. (1990). "Portfolio effects in a CGE model: Devaluation in a dollarized economy," in L. Taylor (ed.), Socially relevant policy analysis: structuralist computable general equilibrium models for the developing world, MIT press, Cambridge, pp. 269–301.

~~Engel, Charles and Akito Matsumoto (2004). "Home Bias in Equities under New Open Economy Macro economics".~~

~~Erb, Claude, Campbell Harvey, and Tadas Viskanta (1995). "Country Risk and Global Equity Selection." Journal of Portfolio Management, Winter, 74-83.~~

~~Erb, Claude, Campbell Harvey, and Tadas Viskanta (1996a). "Expected Returns and Volatility in 135 Countries." Journal of Portfolio Management, Spring, 46-58.~~

~~Erb, Claude, Campbell Harvey, and Tadas Viskanta (1996b). "Political Risk, Economic Risk, and Financial Risk." Financial Analysts Journal, Nov/Dec, 29-46.~~

~~Errunza, Vihang and Etienne Losq (1985). "International Asset Pricing under Mild Segmentation: Theory and Test", *The Journal of Finance Vol. 40, No. 1, pp. 105-124.*~~

~~Evans, Martin D. D. and Viktoria V. Hnatkovska (2005). "Approximation Methods for Solving General Equilibrium Models with Incomplete Markets and Many Assets".~~

~~Fama, Eugene, and Kenneth French (1992). "The Cross-Section of Expected Stock Returns." Journal of Finance, 47, 427-465.~~

Fan, E. X. 2003. Technological Spillovers from Foreign Direct Investment—A Survey. *Asian Development Review* 20(1): 34-56.

Fargeix, A. and Sadoulet, E. (1994). "A Financial computable general equilibrium model for the analysis of stabilization programs," in J. Mercenier and T. Srinivasan (eds), Applied general equilibrium and economic development: present achievements and future trends, Michigan University Press, Michigan, 147–181.

Feltenstein, A. and Shah, A. (1995). "General equilibrium effects of investment incentives in Mexico," Journal of Development Economics 46: 253–269.

~~Ferson, Wayne E. and Campbell R. Harvey (1993). "The Risk and Predictability of International Equity Returns", *The Review of Financial Studies Vol. 6, No. 3, pp. 527-566.*~~

~~Flood, Robert P. and Andrew K. Rose "Financial Integration: A New Methodology and an Illustration" http://faculty.haas.berkeley.edu/arose.~~

Francois, J., Bradley McDonald and Hakan Nordstrom (1997), "Capital Accumulation in Applied Trade Models," in Applied Methods for Trade Policy Analysis, Francois and Reinert, eds., Cambridge University Press, Cambridge, 364-382.

~~Fratzscher, Marcel (2001) "Financial Market Integration In Europe: On The Effects Of EMU On Stock Markets" *ECB Working Paper No. 48.*~~

~~Froot, Kenneth A. and Melvyn Teo (2004). "Equity Style Returns and Institutional Investor Flows, *NBER Working Paper 10355.*~~

~~Froot, Kenneth A., Paul G. J. O'Connell and Mark S. Seasholes (1998). "The Portfolio Flows of International Investors", *NBER Working Paper No. 6687.*~~

~~Girma, Sourafel, Holger Gorg and Manuro Pisu. 2004. "The role of exports and foreign linkages for FDI productivity spillovers." *mimeo.*~~

~~Godfrey, Stephen, and Ramon Espinosa (1996). "A Practical Approach to Calculating Costs of Equity for Investment in Emerging Markets." Journal of Applied Corporate Finance, Fall, 80-89.~~

~~Goldberg, L.S., and M.W. Klein (2000), "International Trade and Factor Mobility: An~~

Empirical Investigation," Festschrift in Honor of Robert Mundell, Calvo, G., R. Dornbusch, andM. Obstfeld, eds., Cambridge: MIT Press, 2000.

Görg, Holger and Eric Strobl. 2001. "Multinational companies and productivity spillovers: a meta analysis. " *The Economic Journal.* 111: 723-39.

Griffin, John M. and G. Andrew Karolyi (1998). "Another Look at the Role of the Industrial Structure of Markets for International Diversification Strategies" *Journal of Financial Economics Vol. 50 pp.* 351-373.

Griffin, John M., Xiuqing Ji and J. Spencer Martin. (2003) "Momentum Investing and Business Cycle Risk: Evidence from Pole to Pole," The Journal of Finance 58:6, 2515-2547

Gunasekarage, Abeyratna, and Anirut Pisedtasalasai (2004). "Macroeconomic Influence on the Stock Market: Evidence from an Emerging Market in South Asia,"

Haddad, Mona and Ann Harrison. 1993. "Are there positive spillovers from direct foreign investment? Evidence from panel data for Morocco." *Journal of Development Economics.* 42: 51-74.

Hameed, Allaudeen, and Yuanto Kusnadi. (2002) "Momentum Strategies: Evidence from Pacific Basin Stock Markets," Journal of Financial Research 25:3, 383-397

Hansson, Bo (2004). "Human Capital and Stock Returns: Is the Value Premium an Approximation for Return on Human Capital?". Journal of Business Finance & Accounting 31:3-4, 333-358

Hardouvelis, Gikas, Dimitrios Malliaropulos, and Richard Priestley (2000). "EMU and European Stock Market Integration" *CEPR Discussion Paper No. 2124.*

Harvey, C.R. (2004). "Predictable Risk and Return in Emerging Markets," Journal of Emerging Market Finance, Vol. 3, No. 3, 285-304.

Harvey, Campbell, and Akhtar Siddique (2000). "Conditional Skewness in Asset Pricing Tests." Journal of Finance, 55, 1263-1295.

Haskel, Jonathan, Pereira, Sonia C. and Slaughter, Matthew J., 2002 "Does Inward Foreign Direct Investment Boost the Productivity of Domestic Firms?" NBER Working Paper No. W8724.

Hau, Harald and Helene Rey (2004a). "Exchange Rates, Equity Prices and Capital Flows".

Head, K., and J. Ries (2001). "Overseas Investment and Firm Exports." *Review of International Economics* 9 (1): 108–122.

Heathcote, Jonathan and Fabrizio Perri (2002). "Financial Autarky and International Business Cycles", *Journal of Monetary Economics Vol. 49, pp. 601-627.*

Helpman, E. (1984). "A Simple Theory of International Trade with Multinational Corporations." *Journal of Political Economy* 92 (3): 451–471.

Helpman, E., M.J. Melitz, and S.R. Yeaple (2003). "Export versus FDI." National Bureau of Economic Research (NBER). Working Paper 9439. Cambridge, MA.

Henry, Peter Blair (2000) "Stock Market Liberalization, Economic Reform, and Emerging Market Equity Prices," The Journal of Finance, 55:2, p.529, April.

Henry, Peter Blair (2000). "Stock Market Liberalization, Economic Reform, and Emerging Market Equity Prices" *The Journal of Finance Vol. 55, No.2, pp. 529-564.*

Hertel, Thomas, Ianchovichina, Elena, and Robert McDougall (1999), "A Disequilibrium Model of International Capital Mobility," GTAP Working Paper 10, Department of Agricultural Economics, Purdue University @(http://ae761-e.agecon.purdue.edu/gtap/resources/res_display.asp?RecordID=399).

Heston, Steven L. and K. Geert Rouwenhorst (1994). "Does Industrial Structure Explain the Benefits of International Diversification?" *Journal of Financial Economics Vol. 36, pp. 3-27.*

Hill, H. 2004. "Six Asian Economies: Issues and Lessons," In Managing FDI in a Globalizing Economy: Asian Experiences, edited by D.H. Brooks and H. Hill. London: Palgrave Macmillan.

Hines, J.R. (1996) "Altered States: Taxes and the Location of Foreign Direct Investment in America," American Economic Review, 86(5), December, pp. 1076-94.

Hulten, Charles R. 2000. "Total Factor Productivity: A Short Biography." National Bureau of Economic Research (NBER) Working Paper no. 7471. Boston.

Hunter, Delroy M. (2005). "What Drives Time Variation in Emerging Market Segmentation", *The Journal of Financial Research Vol. 28, No. 2, pp. 261-280.*

Hwang, Soosung, and Stephen E. Satchell 1999. "Modelling emerging market risk premia using higher moments," International Journal of Finance & Economics, Volume 4, Issue 4 , Pages 271 – 296.

Javorcik, Beata Smarzynska. 2004. "Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages", *American Economic Review.* 94 (3): 605-27.

Jermann, Urban J. and Robert G. King (1998). "Nontraded Goods, Nontraded Factors and International Non-diversification", *Journal of International Economics Vol. 44, pp. 211-229.*

Kandel, Shmuel, and Robert Stambaugh (1995). "Portfolio Inefficiency and the Cross-Section of Expected Returns." Journal of Finance, 50, 157-184.

Karolyi, Andrew G. (2002). "The Role of ADRs in the Development and Integration of Emerging Equity Markets", *Ohio State University.*

Keller, Wolfgang and Yeaple, Stephen R., 2003. "Multinational enterprises, international trade and productivity growth: Firm-level evidence from the US" NBER Working Paper No. W9504.

Kim, Wi Saeng, Esmeralda Lyn, and Edward J. Zychowicz. (2005) Can Stock Market Liberalization In Emerging Economies Mitigate Legal Systems Deficiencies?. Journal of Financial Research 28:3, 421-437

Kleinert J. (2003). "Growing Trade in Intermediate Goods: Outsourcing, Global Sourcing or Increasing Networks of Multinational Enterprises?" *Review of International Economics*.

Kleinert, J. (2001). "The Time Pattern of the Internationalisation of Production." *German Economic Review* 2 (1): 79–98.

~~Kollmann, Robert, (1995). "Consumption, real exchange rates and the structure of international asset markets", *Journal of International Money and Finance, 14, pp. 191–211.*~~

~~Korajczyk, Robert A. and Claude J. Viallet (1989). "An Empirical Investigation of International Asset Pricing", *The Review of Financial Studies Vol. 2, No. 4, pp. 553-585.*~~

Kose, M. Ayhan, Eswar S. Prasad, Kenneth Rogoff, and Shang-Jin Wei (2003). "*Effects of Financial Globalization on Developing Countries:Some Empirical Evidence*," *IMF Occasional Paper* 220.

Kose, M. Ayhan, Eswar S. Prasad, Kenneth Rogoff, and Shang-Jin Wei (2006). "Financial Globalization: A Reappraisal," *IMF Working Paper* WP/06/189.

Kose, M. Ayhan, Eswar S. Prasad, and Marco E. Terrones (2003). "Financial Integration and Macro-economic Volatility", *IMF Working Paper* WP/03/50.

Leamer, E.E., and J. Levinsohn (1995). "International Trade Theory: The Evidence." In: Grossman, G., and K. Rogoff (eds.). Handbook of International Economics. Vol. III. Elsevier: 1339–1394.

Lee, H., D. Roland-Holst, and D. van der Mensbrugghe (2001). "General Equilibrium Assessments of Trade Liberalization in APEC Countries," in M. Dutta (ed.), Restructuring of Asian Economies for the New Millennium, Amsterdam: Elsevier.

~~Lessard, Donald (1996). "Incorporating Country Risk in the Valuation of Offshore Projects." Journal of Applied Corporate Finance, Fall, 52-63.~~

~~Lessard, Donald R. "World, National, and Industry Factors in Equity Returns", The Journal of Finance, Vol. 29, No. 2, Papers and Proceedings of the Thirty-Second Annual Meeting of the American Finance Association, New York, New York, pp. 379-391.~~

Lewis, J. (1994). "Macroeconomic stabilization and adjustment policies in a general equilibrium models with financial markets: Turkey," in J. Mercenier and T. Srinivasan (eds), Applied General Equilibrium and Economic Development_ present achievements and future trends, The University of Michigan press, Michigan, pp. 101–136.

~~Lewis, Karen K. (1999). "Trying to Explain Home Bias in Equities and Consumption", *Journal of Economic Literature* Vol.37, *pp. 571-608.*~~

Lipsey, R.E (1999). "The Location and Characteristics of US Affiliate in Asia." NBER Working Paper 6876. Cambridge, MA.

Lipsey, R.E. (2000), "Interpreting Developed Countries' Foreign Direct Investment," Working Paper No. W7810, NBER, July.

~~Malkiel, Burton, and Yexiao Xu (1997). "Risk and Return Revisited." Journal of Portfolio Management, Spring, 9-14.~~

~~Markowitz, Harry (1952). "Portfolio Selection", The Journal of Finance, Vol 7, No. 1, pp. 77-91.~~

Markusen, J. (1995). "The Boundaries of Multinational Enterprises and the Theory of International Trade." *Journal of Economic Perspectives* 9 (2): 169–189.

Markusen, J.R. (1998) "Multinationals, Multi-Plant Economies, and the Gains from Trade," Journal of International Economics, 16(3-4): pp. 205-26.

Markusen, J.R. and A. Venables (2000). "The Theory of Endowment, Intra-Industry, and Multinational Trade," *Journal of International Economics* 52 (2): 209–234.

Markusen, J.R. and A. Venables, (1998). "Multinational Firms and the New Trade Theory." *Journal of International Economics* 46 (2): 183–203.

~~Markusen, J.R. and A.J. Venables. 1999. "Foreign direct investment as a catalyst for industrial development." *European Economic Review. 43: 335-56.*~~

Markusen, J.R., and K.E. Maskus (2002) "Discriminating Among Alternative Theories of the Multinational Enterprise," Review of International Economics, 10(4), Novembe, pp. 694-707.

~~Martin, Philippe and Helene Rey (2000). "Financial Integration and Asset Returns".~~

McCulloch, R. 1991. "Investment Policies in the GATT," *NBER Working Paper Series No. 3672.* National bureau of Economic research. Cambridge, Massachusetts.

~~McKibbin, W.J., and P.J. Wilcoxin (1998), "The Theoretical and Empirical Structure of the G-Cubed Model," Economic Modelling, 16:1, 123-148.~~

McMahon, G. (1992). Financial computable general equilibrium models of developing countries: A critical assessment, International Development Research Centre, Ottawa, Canada.

~~Merton, Robert C. (1969). "Lifetime Portfolio Selection under Uncertainty: The Continuous Time Case", *The Review of Economics and Statistics Vol. 51, No.3, pp. 247-257.*~~

~~Michael Frenkel and Lukas Menkhoff. (2004) "Are Foreign Institutional Investors Good for Emerging Markets?" The World Economy 27:8, 1275-1293~~

Moran, T. H., 2002. Strategy and Tactics for the Doha Round: Capturing the Benefits of Foreign Direct Investment. Manila: Asian Development Bank.

~~Obstfeld, Maurice (1994). "Risk-Taking, Global Diversification, and Growth", *The American Economic Review, Vol. 84, No. 5, pp. 1310-1329.*~~

~~Padma Kadiyala and Avanidhar Subrahmanyam 2004. "Divergence of US and Local Returns in the Aftermarket for Equity Issuing ADRs," European Financial Management 10:3, 389-411.~~

~~Pankaj K. Jain. (2005) Financial Market Design and the Equity Premium," The Journal of Finance 60:6, 2955-2985~~

~~Pesenti, Paolo and Eric van Wincoop (1996). "Do Nontraded Goods Explain the Home Bias Puzzle?", *NBER Working Paper No. 5784.*~~

Raff, H. and K. Srinivasan (1998). "Tax Incentives for Import-Substituting Foreign Investment: Does Signaling Play a Role?" *Journal of Public Economics* 67: 167–193.

Raff, H. and Y.H. Kim (1999). "Optimal Export Policy in the Presence of Informational

Barriers to Entry and Imperfect Competition." *Journal of International Economics* 49: 99–123.

René M. Stulz. (2005) "The Limits of Financial Globalization," The Journal of Finance 60:4, 1595-1638

Robinson, S. (1991). "Macroeconomics, Financial Variables and Computable General Equilibrium Models," World Development, 19(11):1509-1525.

~~Rodriguez-Clare, Andres. 1996. "Multinationals, linkages, and economic development." *American Economic Review.* 85: 852-73.~~

Roland-Holst, David, Jean-Pierre Verbiest, and Fan Zhai 2005. "Growth and Trade Horizons for Asia: Long Term Forecasts for Regional Integration," ERD Working Paper No. 74, Asian Development Bank, Manila, November.

Rosensweig, J. A. and Taylor, L. (1990). "Devaluation, capital flows and crowding out: A CGE model with portfolio choice for Thailand," in L. Taylor (ed.), Socially relevant policy analysis: structuralist computable general equilibrium models for the developing world, MIT press, Cambridge, 302–332.

~~Rouwenhorst, K.Geert (1999). "Local Return Factors and Turnover in Emerging Stock Markets," The Journal of Finance, 54:4, p.1439, August.~~

~~Rouwenhorst, K.Geert (1999). "European Equity Markets and the EMU", *Financial Analysts Journal,* pp.57-64.~~

~~Samuelson, Paul A. (1969). "Lifetime Portfolio Selection by Dynamic Stochastic Programming", *The Review of Economics and Statistics Vol. 51, No.3, pp. 239-246.*~~

~~Senay, Ozge (1998). "The Effects of Goods and Financial Market Integration on Macroeconomic Volatility", *The Manchester School.*~~

~~Serrat, Angel (2001). "A Dynamic Model of International Portfolio Holdings", *Econometrica, Vol. 69, No. 6, pp. 1467-1489.*~~

~~Smith, P. N., Sorenson S., and M. R. Wickens (2003). "An Asset Market Integration Test Based on Observable Macrocoeconomic Stochastic Discount Factors", *University of York.*~~

~~Souissi, M. and Decaluwe, B. (1997). Financial deregulation in Tunisia: A prospective and retrospective analysis, Centre de Recherche en Economic et Finance Appliquees CREFA, Universite Laval, Canada.~~

~~Stockman, C. Alan and Linda L. Tesar (1995). "Tastes and Technology in a Two-Country Model of the Business Cycle: Explaining International Comovements", *The American Economic Review, Vol. 85 (1), pp. 168-185.*~~

~~Stulz, Rene (1999). "Globalization, Corporate Finance, and the Cost of Capital." Journal of Applied Corporate Finance, Fall, 8-25.~~

~~Stulz, Rene M. (1999). "International Portfolio Flows and Security Markets", *Working Paper.*~~

~~Sutherland, Alan (1996). "Financial Market Integration and Macroeconomic Volatility", *Scandinavian Journal of Economics, Vol. 98 (4), pp. 521-539.*~~

~~Tesar, Linda L. (1993). "International Risk-Sharing and nontraded Goods", *Journal of*~~

~~*International Economics, Vol. 35, pp. 69-89.*~~

Thissen, M., and R. Lensink (forthcoming). "Macroeconomic Effects of a currency devaluation in Egypt: An analysis with a computable general equilibrium model with financial markets and forward looking expectations." Journal of Policy Modeling.

Tobin, J. (1971). "A general equilibrium approach to monetary theory," Essays in Economics, Markham Publishing Company, Chicago, pp. 323–338.

van der Mensbrugghe, Dominique (2002), "Savings Behavior Under Linkage," processed, The World Bank.

van der Mensbrugghe, Dominique (2005), "LINKAGE Technical Reference Document," processed, The World Bank.

Vos, R. (1998). "Aid flows and "dutch disease" in a general equilibrium framework for Pakistan," Journal of Policy Modeling 20: 77–109.

~~Werin, L. (1990). "An applied general equilibrium model of the asset markets in Sweden," in D. J. Bergman, L. and E. Zalai (eds), General equilibrium modelling and economic policy Analysis, Basil Blackwell, Oxford, pp. 149-191.~~

Wheeler, D. and A. Mody (1992). "International Investment Location Decisions: the Case of U.S. Firms." *Journal of International Economics* 33: 57–76.

~~Xu, Bin. 2000, "Multinational enterprises, technology diffusion, and host country productivity growth." *Journal of Development Economics*, 62(2): 477-93.~~

Yeldan, A. (1997). "Financial liberalization and Fiscal repression in turkey: Policy analysis in a CGE model with Financial markets," Journal of Policy Modeling 19: 79–117. 25

Zelie, William J. (2002), "U.S. Intrafirm Trade in Goods," Survey of Current Business, Department of Commerce, Washington.

~~6.Annex - Overview of the Model and Data~~

Formatted: Bullets and Numbering

~~6.1.Model Specification~~

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

~~The complexities of today's global economy make it very unlikely that policy makers relying on intuition or rules of thumb will achieve anything approaching optimality in either the domestic or international arenas. Market interactions are so pervasive in determining economic outcomes that more sophisticated empirical research tools are needed to improve visibility for both public and private sector decision makers. The preferred tool for detailed empirical analysis of economic policy is now the Calibrated General Equilibrium (CGE) model. It is well suited to trade analysis because it can detail structural adjustments within national economies and elucidate their interactions in international markets. The model is more extensively discussed in an annex below and the underlying underlying methodology is fully documented elsewhere, but a few general comments will facilitate discussion and interpretation of the scenario results that follow.~~

~~Technically, a CGE model is a system of simultaneous equations that simulate price directed interactions between firms and households in commodity and factor markets. The role of government, capital markets, and other trading partners are also specified, with varying degrees of detail and passivity, to close the model and account for economywide resource allocation, production, and income determination.~~

~~The role of markets is to mediate exchange, usually with a flexible system of prices, the most important endogenous variables in a typical CGE model. As in a real market economy, commodity and factor price changes induce changes in the level and composition of supply and demand, production and income, and the remaining endogenous variables in the system. In CGE models, an equation system is solved for prices that correspond to equilibrium in markets and satisfy the accounting identities governing economic behavior. If such a system is precisely specified, equilibrium always exists and such a consistent model can be calibrated to a base period data set. The resulting calibrated general equilibrium model is then used to simulate the economywide (and regional) effects of alternative policies or external events.~~

~~The distinguishing feature of a general equilibrium model, applied or theoretical, is its closed form specification of all activities in the~~

~~*economic system under study. This can be contrasted with more traditional partial equilibrium analysis, where linkages to other domestic markets and agents are deliberately excluded from consideration. A large and growing body of evidence suggests that indirect effects (e.g., upstream and downstream production linkages) arising from policy changes are not only substantial, but may in some cases even outweigh direct effects. Only a model that consistently specifies economywide interactions can fully assess the implications of economic policies or business strategies. In a multi country model like the one used in this study, indirect effects include the trade linkages between countries and regions which themselves can have policy implications.*~~

~~*The model we use for this work is a version of the LINKAGE 5 model developed at the World Bank by Dominique van der Mensbrugghe, implemented in the GAMS programming language, and calibrated to the GTAP (version 6) global database.[6] The result is a sixteen-country/region, twelve-sector global CGE model, calibrated over a twenty-five year time path from 2001 to 2025. Apart from its traditional neoclassical roots, an important feature of this model is product differentiation, where we specify that imports are differentiated by country of origin and exports are differentiated by country of destination (e.g., de Melo and Tarr, 1992). This feature allows the model to capture the pervasive phenomenon of intra industry trade, where a country is both an importer and exporter of similar commodities, and avoids tendencies toward extreme specialization.*~~

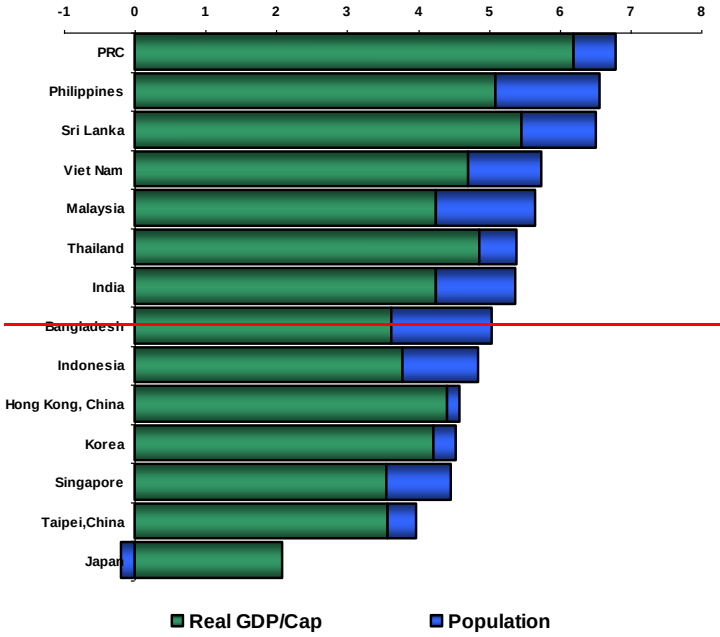
~~*6.2. Model Calibration*~~

Formatted: Bullets and Numbering

~~*The model is calibrated to country and regional real GDP growth rates, obtained as consensus estimates from independent sources (DRI, IMF, Cambridge Econometrics). These Baseline growth rates are displayed in Figure 6.1 below, using a "league table" format that takes account of the effect of population growth on per capita incomes. Using exogenous rates of implied TFP growth, the model computes supply, demand, and trade patterns compatible with domestic and global equilibrium conditions. Equilibrium is achieved by adjustments in the relative prices of domestic resources and commodities, while international equilibrium is achieved by adjusting trade patterns and real exchange rates to satisfy fixed real balance of payments constraints.*~~

~~[6] The original model is fully documented in van der Mensbrugghe (2005).~~

~~***Figure 6.1: Baseline Real GDP Growth Rate, Including Population Growth***~~
~~***(average percent change over 2005-2025)***~~



Formatted: Heading 2,B-level head, Indent: Left: 0", Tab stops: 0.9", Left

Formatted: Tab stops: 0.9", Left

Formatted: Bullets and Numbering

~~*6.3.Notes on the Adjustment Process*~~

~~*The calibration procedure highlights the two salient adjustment mechanisms in the model (as well as the real economies), domestic and international prices. General equilibrium price adjustments are generally well understood by professional economists but, in the multilateral context, the role of exchange rates can be a source of confusion. Generally, in a neoclassical model like this one, there are no nominal or financial variables and the function of the exchange rate is only to equalize real purchasing power between different economies.*~~

~~*Because models like this do not capture the aggregate price level or other nominal quantities, there is no nominal exchange rate in the sense of traditional macroeconomics or finance. Since there is no money metric in the model, all prices are relative prices, and the exchange rate (the composite relative price of foreign goods) is no exception. If there were financial assets in the model, one could define a nominal exchange rate as the relative price of two international financial assets (money, bonds, etc.). Without them, the exchange rate is defined in terms of real international purchasing power, i.e. the relative price of tradeable to nontradeable goods. In a multi-sector setting, the real exchange rate is defined as the ratio of an index of the value of all tradeables (on world markets) to an index of the value of all nontradeables.*~~

~~*Since any tax (or other price elevating distortion) on an import is an implicit tax on all tradeable goods, trade liberalization causes tradeable goods prices to fall and the real exchange rate depreciates. Real exchange rate depreciation also makes exports more competitive, one of the principal motives for unilateral liberalization. The general implication of this is that trade will expand rapidly for a country removing significant import protection, and more rapidly for countries removing more protection. The pattern of trade expansion, and the domestic demand and supply shifts that accompany it, depend upon initial conditions and adjustments among trading partners. At the same time, each country has rising marginal cost in production and diminishing marginal utility in consumption and, with a close multilateral trading system, trade volume changes induce terms of trade effects exactly as intuition would dictate.*~~

Formatted: Heading 2,B-level head, Indent: First line: 0", Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Table 6.1. FDI Inflows in Selected Developing Asian Economies, 2001-05

Economy	*% of Total FDI in Developing Asia*	*Ratio to GDP*
PRC	***46.1***	***3.4***
Hong Kong, China	***18.9***	***13.9***
Singapore	***11.0***	***13.8***
India	***4.5***	***0.9***
Korea, Rep. of	***4.1***	***0.8***
Malaysia	***2.4***	***2.7***
Kazakhstan	***2.2***	***8.5***
Thailand	***1.9***	***1.7***
Azerbaijan	***1.6***	***25.2***
Taipei,China	***1.5***	***0.6***

Sources: UNCTAD FDI September 2006 database; World Bank World Development Indicators online database; IMF WEO September 2006 database..

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Right: 0", Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Right: 0", Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Right: 0", Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Right: 0", Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Right: 0", Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Right: 0", Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Right: 0", Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Right: 0", Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Right: 0", Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Right: 0", Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Table 6.2. Top 10 Destinations for FDI in Developing Asia, 1991-95 and 2001-05

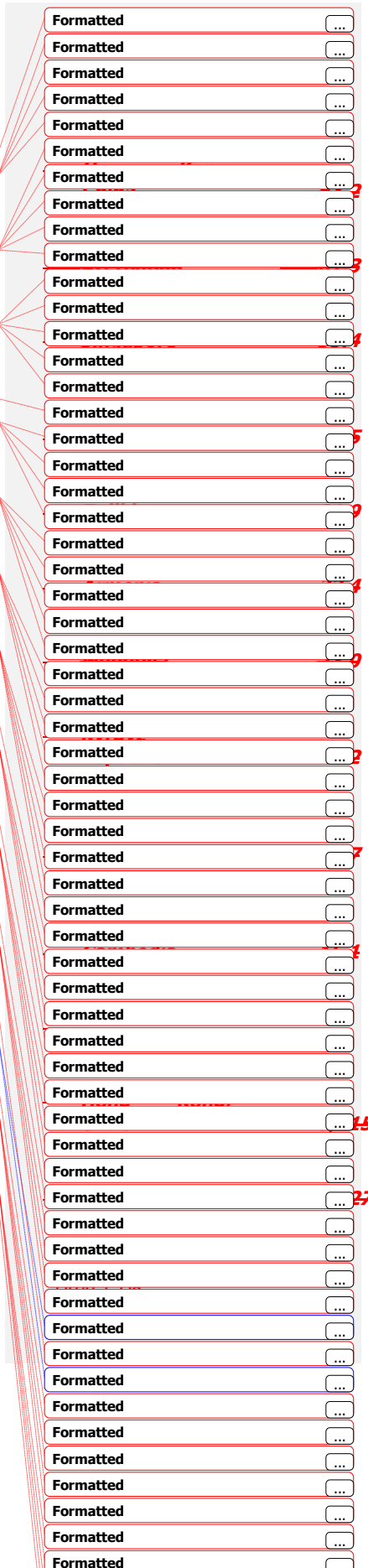
Rank	*Host Economy*	*1991-95*	*Rank*	*...1-05*
Annual FDI Inflows (US$ million)				
1	*PRC*	*22,835.2*	*1*	*...232.3*
2	*Singapore*	*6,372.6*	*2*	*...402.2*
3	*Hong Kong, China*	*5,175.9*	*3*	*...553.2*
4	*Malaysia*	*5,063.6*	*4*	*...51.2*
5	*Indonesia*	*2,341.8*	*5*	*...45.2*
6	*Thailand*	*1,889.2*	*6*	*...54.4*
7	*Taipei,China*	*1,200.2*	*7*	*...73.6*
8	*Philippines*	*1,124.0*	*8*	*...77.3*
9	*Viet Nam*	*1,100.1*	*9*	*...28.2*
10	*Korea, Rep. of*	*857.1*	*10*	*...96.0*
FDI Inflows (as % of Gross Fixed Capital Formation)				

Formatted ...

1	Vanuatu	62.1	1
2	Viet Nam	41.5	2
3	Singapore	29.3	3
4	Papua New Guinea	24.1	4
5	Azerbaijan	23.9	5
6	Cambodia	22.9	6
7	Fiji Islands	21.3	7
8	Malaysia	19.7	8
9	Kyrgyz Republic	16.7	9
10	Hong Kong, China	14.8	10

FDI Inflows Per Capita (US$)

1	Singapore	1,885.0	1
2	Hong Kong,	865.7	2



	China			
3	Brunei Darussalam	414.6	3	51.6
4	Malaysia	261.5	4	18.6
5	Vanuatu	169.9	5	.2
6	Fiji Islands	61.9	6	.8
7	Taipei,China	57.1	7	.0
8	Papua New Guinea	49.0	8	.1
9	Thailand	33.2	9	.3
10	Solomon Islands	33.2	10	

Sources: UNCTAD FDI September 2006 database; World Bank World Development Indicators online database; IMF WEO September 2006 database; National Statistics, Republic of China.

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted ... (repeated)

Table 6.3: FDI Regressions

Equation: reg fdi logR logGrGDP kor twn hkg idn mys phl sgp tha vnm bgd ind lka

```
      Source |       SS       df       MS              Number of obs =      78
-------------+------------------------------           F( 14,    63) =   73.23
       Model |  1.3054e+10    14   932411577           Prob > F      =  0.0000
    Residual |   802123492    63  12732118.9           R-squared     =  0.9421
-------------+------------------------------           Adj R-squared =  0.9292
       Total |  1.3856e+10    77   179946566           Root MSE      =  3568.2

------------------------------------------------------------------------------
         FDI |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        logR |   1816.127   2176.382     0.83   0.407    -2533.026    6165.279
     logGrGDP |   107507.1   43425.21     2.48   0.016     20728.77    194285.5
         kor |  -46095.11   2108.189   -21.86   0.000    -50307.99   -41882.23
         twn |  -49871.46   2264.367   -22.02   0.000    -54396.43   -45346.48
         hkg |  -42254.03   2249.505   -18.78   0.000    -46749.31   -37758.75
         idn |   -49690.7   2446.088   -20.31   0.000    -54578.82   -44802.58
         mys |  -46187.1   2138.156   -21.60   0.000    -50459.86   -41914.33
         phl |  -47120.48   2309.259   -20.41   0.000    -51735.17    -42505.8
         sgp |  -42336.87   2448.275   -17.29   0.000    -47229.35   -37444.38
         tha |  -44690.94   2204.846   -20.27   0.000    -49096.98   -40284.91
```

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: English (United States)

```
         vnm |  -47143.44   2146.111   -21.97   0.000    -51432.1   -42854.78
         bgd |  -47957.01    2207.56   -21.72   0.000   -52368.46   -43545.55
         ind |   -44963.4   2167.88   -20.74   0.000   -49295.57   -40631.24
         lka |  -47996.92   2401.47   -19.99   0.000   -52795.88   -43197.97
       _cons |   45154.94   2145.056    21.05   0.000    40868.38    49441.49
------------------------------------------------------------------------------

    Equation: reg fdi logGrGDP kor twn hkg idn mys phl sgp tha vnm bgd ind lka

      Source |       SS       df       MS              Number of obs =      78
-------------+------------------------------           F( 13,    64) =   79.19
       Model |  1.3045e+10    13  1.0035e+09            Prob > F      =  0.0000
    Residual |   810989389    64  12671709.2            R-squared     =  0.9415
-------------+------------------------------           Adj R-squared =  0.9296
       Total |  1.3856e+10    77   179946566           Root MSE      =  3559.7

------------------------------------------------------------------------------
         fdi |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    logGrGDP |   102336.3   42878.74     2.39   0.020     16676.15    187996.4
         kor |  -45906.83   2091.102   -21.95   0.000    -50084.29   -41729.37
         twn |  -50249.13   2213.405   -22.70   0.000    -54670.91   -45827.35
         hkg |  -42764.75   2159.507   -19.80   0.000    -47078.86   -38450.64
         idn |  -48789.94   2189.814   -22.28   0.000    -53164.59   -44415.28
```

Formatted: English (United States)

```
            mys |  -46375.94   2121.096   -21.86   0.000   -50613.32   -42138.56
            phl |  -46500.71   2181.366   -21.32   0.000   -50858.49   -42142.93
            sgp |  -43294.78   2157.339   -20.07   0.000   -47604.56       -38985
            tha |  -45126.55   2137.072   -21.12   0.000   -49395.84   -40857.26
            vnm |  -47550.69   2084.919   -22.81   0.000   -51715.79   -43385.58
            bgd |  -47469.45    2123.78   -22.35   0.000   -51712.18   -43226.71
            ind |  -44524.07   2097.984   -21.22   0.000   -48715.27   -40332.86
            lka |  -47181.18   2188.289   -21.56   0.000   -51552.79   -42809.57
          _cons |   45592.05   2075.174    21.97   0.000    41446.41    49737.68
------------------------------------------------------------------------------
```

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

~~Table 6.4: FDI Elasticity Regressions~~

~~Equation: logFDI logR logGrGDP kor twn hkg idn mys phl sgp tha vnm bgd ind lka~~

~~Source | SS df MS Number of obs = 65~~

~~-------------+------------------------------ F(13, 51) = 20.93~~

~~Model | 158.649624 13 12.2038172 Prob > F = 0.0000~~

~~Residual | 29.7340597 51 .583020778 R-squared = 0.8422~~

~~-------------+------------------------------ Adj R-squared = 0.8019~~

~~Total | 188.383684 64 2.94349506 Root MSE = .76356~~

~~--~~

~~logFDI | Coef. Std. Err. t P>|t| [95% Conf. Interval]~~

~~-------------+--~~

~~logR | -.9106291 .5019144 -1.81 0.076 -1.918264 .097006~~

~~logGrGDP | 16.88279 11.14914 1.51 0.136 -5.500035 39.26562~~

~~kor | -3.207413 .4760129 -6.74 0.000 -4.163049 -2.251777~~

~~twn | (dropped)~~

~~hkg | -2.034895 .5077449 -4.01 0.000 -3.054235 -1.015555~~

~~idn | -3.979752 .7145343 -5.57 0.000 -5.41424 -2.545265~~

~~mys | -3.521003 .4640808 -7.59 0.000 -4.452684 -2.589322~~

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

```
         phl |  -3.763287   .5090549    -7.39   0.000    -4.785258   -2.741317
         sgp |  -2.448458   .5418926    -4.52   0.000    -3.536353   -1.360563
         tha |  -3.166567   .4813388    -6.58   0.000    -4.132895   -2.200239
         vnm |  -4.474914   .4639033    -9.65   0.000    -5.406239   -3.543589
         bgd |  -4.403957   .4811483    -9.15   0.000    -5.369902   -3.438011
         ind |  -2.220983   .4699593    -4.73   0.000    -3.164466      -1.2775
         lka |  -5.046396   .5316096    -9.49   0.000    -6.113646   -3.979145
       _cons |   10.33753   .5076863    20.36   0.000     9.318304    11.35675
------------------------------------------------------------------------------

Equation: logFDI logGrGDP kor twn hkg idn mys phl sgp tha vnm bgd ind lka

      Source |       SS       df       MS              Number of obs =      65
-------------+------------------------------           F( 12,    52) =   21.46
       Model |  156.730479    12  13.0608732            Prob > F      =  0.0000
    Residual |  31.6532047    52  .608715476            R-squared     =  0.8320
-------------+------------------------------           Adj R-squared =  0.7932
       Total |  188.383684    64  2.94349506            Root MSE      =   .7802

------------------------------------------------------------------------------
      logFDI |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   logGrGDP |   19.49777   11.29658     1.73   0.090    -3.17047    42.16601
         kor |  -3.270825   .4850763    -6.74   0.000    -4.244202   -2.297448
```

```
            twn |  (dropped)
            hkg |  -1.76354    .495794    -3.56   0.001    -2.758424   -.7686568
            idn |  -4.540919   .6581624    -6.90   0.000    -5.861618   -3.22022
            mys |  -3.426042   .4711715    -7.27   0.000    -4.371517   -2.480568
            phl |  -4.073672   .4898987    -8.32   0.000    -5.056726   -3.090619
            sgp |  -1.975308   .4853677    -4.07   0.000    -2.94927    -1.001347
            tha |  -2.947845   .4761556    -6.19   0.000    -3.903321   -1.992369
            vnm |  -4.270531   .4598275    -9.29   0.000    -5.193242   -3.347819
            bgd |  -4.648148   .4720098    -9.85   0.000    -5.595305   -3.700991
            ind |  -2.441053   .4639334    -5.26   0.000    -3.372003   -1.510102
            lka |   -5.45503   .4920369   -11.09   0.000    -6.442374   -4.467686
          _cons |   10.11758   .5037472    20.08   0.000     9.106742    11.12843
------------------------------------------------------------------------------
```

Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Table 6.5. Benchmark values of the FDI parameters

Parameter	**Value**
Determents of FDI	
Forward discount rate	***5.0***
Relative real interest rate	***0.1***
Real GDP growth rate	***10.0***
FDI productivity nexus	
Emerging Market ROR Premium	***0.10***
FDI trade expansion	
Elasticity of trade cost to domestic stock of FDI	***-0.10***

Table 6.6. Impacts on Real GDP (% change)

	HighElas.to	***HighElas.to***	***Low produ***	***Highprodu***	***Low trade***	***Hightradee***

Formatted: Heading 2,B-level head, Left, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

	interest rate	GDP growth	cetivity spillover effect	cetivity spillover effect	expansion effect	xpansion effect
USA	0.0	-0.1	0.0	0.2	-0.3	-1.1
EU	-0.1	-0.4	-0.2	-0.5	-0.3	-0.8
Japan	0.0	0.0	0.0	0.2	-0.4	-1.3
Australia & New Zealand	-0.2	-0.1	0.0	-0.1	-0.5	-0.9
Korea	-0.3	-0.3	-0.1	-1.1	-0.8	-4.5

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Hong Kong, China	-	-1.7	-0.8	-0.5	-0.9	-1.4	-3.1
Taipei ,China	-	0.0	-0.2	-0.2	-0.2	-1.1	-2.4
PRC	-	-0.6	-2.4	-0.1	-1.4	-0.8	-7.2
Singapore	-	-9.0	-1.7	-0.1	-1.1	-3.9	-1.1
Malaysis	-	-2.0	-1.8	-0.6	-2.2	-4.1	-7.1
Indonesia	-	-0.4	-0.4	-0.3	-0.4	-0.5	-1.7
Thailand	-	-1.9	-1.0	-0.6	-1.3	-1.7	-4.6
The Philippines	-	-0.5	-0.1	-0.0	-0.1	-0.0	-0.5
Viet	-	-	-1	-0	-0	-0	-

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

~~Nam~~	~~2.1~~	~~.0~~	~~.0~~	~~.1~~	~~.9~~	~~1.4~~
~~India~~	~~0.1~~	~~0.1~~	~~0.0~~	~~2.2~~	~~1.2~~	~~4.3~~
~~Bangladesh~~	~~0.0~~	~~0.0~~	~~0.0~~	~~1.0~~	~~0.3~~	~~2.1~~
~~Sri Lanka~~	~~0.3~~	~~0.2~~	~~0.0~~	~~-0.1~~	~~-1.1~~	~~1.2~~
~~L. America~~	~~0.2~~	~~-0.1~~	~~-0.1~~	~~0.1~~	~~-0.5~~	~~0.6~~
~~ROW~~	~~0.4~~	~~0.0~~	~~-0.2~~	~~0.5~~	~~-0.4~~	~~1.1~~

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Table 6.7. Impacts on Share of Foreign Capital (% in total capital)

	High Elas. to interest rate	High Elas. to GDP growth	Low productivity spillover effect	High productivity spillover effect	Low trade expansion effect	High trade expansion effect
USA	0.0	-0.1	0.0	0.0	0.0	-0.1
EU	0.1	-0.4	0.0	-0.1	0.1	-0.2
Japan	0.0	0.0	0.0	0.0	0.0	0.0
Austr	0	-	0	-	0	-

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

alia & New Zealand	.2	0.1	.0	0.1	.1	0.3
Korea	0.2	0.1	0.0	0.0	0.1	0.2
Hong Kong, China	0.6	0.2	0.2	0.4	0.6	1.4
Taipei ,China	0.0	0.0	0.0	0.0	0.1	0.2
PRC	0.4	1.0	0.0	0.1	0.3	0.7
Singapore	3.3	0.5	0.1	0.1	0.8	1.9
Malaysis	0.2	0.0	0.1	0.3	0.9	1.8
Indonesia	0.1	0.0	0.0	0.0	0.0	0.1
Thaila	0	0	0	-	0	-

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

~~nd~~	~~.8~~	~~.2~~	~~.1~~	~~0.2~~	~~.3~~	~~0.7~~
~~The Philippines~~	~~0.5~~	~~0.0~~	~~0.0~~	~~0.0~~	~~0.0~~	~~0.0~~
~~Viet Nam~~	~~-2.3~~	~~1.2~~	~~-0.1~~	~~0.2~~	~~-0.5~~	~~1.1~~
~~India~~	~~0.0~~	~~0.1~~	~~0.0~~	~~0.0~~	~~0.0~~	~~0.0~~
~~Bangladesh~~	~~0.0~~	~~0.0~~	~~0.0~~	~~0.0~~	~~0.0~~	~~0.0~~
~~Sri Lanka~~	~~0.4~~	~~0.2~~	~~0.0~~	~~0.0~~	~~0.1~~	~~-0.1~~
~~L. America~~	~~0.3~~	~~-0.2~~	~~0.0~~	~~-0.1~~	~~0.1~~	~~-0.2~~
~~ROW~~	~~0.3~~	~~0.0~~	~~0.0~~	~~-0.1~~	~~0.1~~	~~-0.2~~

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Left, Line spacing: single, Tab stops: 0.9", Left
Formatted: Heading 2,B-level head, Line spacing: single, Tab stops: 0.9", Left

Table 6.8. Impacts on Exports (% change)

	High Elas. to interest rate	High Elas. to GDP growth	Low productivity spillover effect	High productivity spillover effect	Low trade expansion effect	High trade expansion effect
USA	0.0	0.0	0.0	0.4	-8.2	17.4
EU	0.0	-0.8	-0.9	1.7	-4.6	8.0
Japan	0.2	-0.3	0.1	0.4	-9.2	22.5

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Australia & New Zealand	0.0	0.1	0.0	0.5	5.0	1.3
Korea	1.9	1.0	0.1	0.4	1.4	3.3
Hong Kong, China	1.5	0.9	1.4	2.7	4.4	0.0
Taipei ,China	0.0	0.2	0.5	0.7	4.7	9.6
PRC	1.1	3.8	0.4	1.3	14.2	42.5
Singapore	15.7	4.2	0.3	0.1	27.6	10.2
Malaysis	2.1	1.9	2.5	5.1	3.7	9.0
Indonesia	0.0	0.0	0.0	1.0	5.0	1.2

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

	4	7	9	3	3	2
Thailand	3.3	1.8	1.2	2.7	7.2	19.3
The Philippines	0.5	0.9	1.0	2.6	1.5.5	7 1.2
Viet Nam	- 4.8	2.4	2.8	6.0	1.4.6	36.2
India	0.7	1.1	0.2	3.1	6.3	25.2
Bangladesh	0.2	0.5	0.2	1.3	6.7	18.3
Sri Lanka	1.3	1.0	0.1	0.2	6.9	16.5
L. America	0.5	0.8	0.6	1.1	5.3	9.3
ROW	1.	0.	0	1.	6	15.

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

~~2 0 , 7 , 0~~
~~6 7~~

Formatted: Heading 2,B-level head, Left, Line spacing: single, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Line spacing: single, Tab stops: 0.9", Left

Table 6.9. Impacts on Imports (% change)

	High Elas. to interest rate	High Elas. to GDP growth	Low productivity spillover effect	High productivity spillover effect	Low trade expansion effect	High trade expansion effect
USA	0.0	0.0	0.0	0.6	-11.2	29.1
EU	0.4	-1.7	-0.9	1.8	-9.3	20.8
Japan	0.1	-0.3	0.2	1.0	-15.	46.8

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Australia & New Zealand	0.4	0.0	0.1	0.6	0.5	2.3
Korea	2.3	2.1	0.1	4.3	2.4	4.1
Hong Kong, China	2.6	2.3	0.9	2.4	2.4	3.2
Taipei,China	0.3	0.7	0.5	0.4	0.7	2.9
RPC	2.6	6.5	0.4	1.4	1.6	7.8
Singapore	16.0	4.3	0.3	0.1	7.3	10.7
Malaysis	2.3	3.3	2.9	5.7	9.0	2.3

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Indonesia	0.1	1.7	1.0	1.0	10.7	29.6
Thailand	4.6	2.7	1.1	3.1	12.9	40.2
The Philippines	0.8	0.9	0.7	2.9	16.4	81.3
Viet Nam	6.8	3.7	1.9	4.0	18.6	52.9
India	0.7	1.8	0.2	2.4	12.2	43.6
Bangladesh	0.1	0.9	0.2	1.5	10.7	30.6
Sri Lanka	2.3	1.7	0.1	0.3	11.5	29.6

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

~~L. America~~	~~1.3~~	~~0.3~~	~~0.5~~	~~1.8~~	~~9.9~~	~~26.1~~
~~ROW~~	~~1.9~~	~~0.1~~	~~0.5~~	~~2.2~~	~~1.2~~	~~31.1~~

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

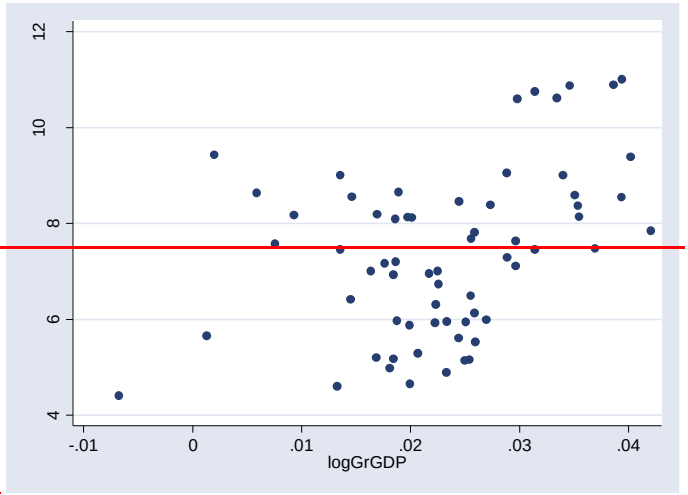
Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left

~~*Figure 6.2: Log(FDI) and Log(GDP growth)*~~



~~*Figure 6.3: FDI and Log(R/RW)*~~

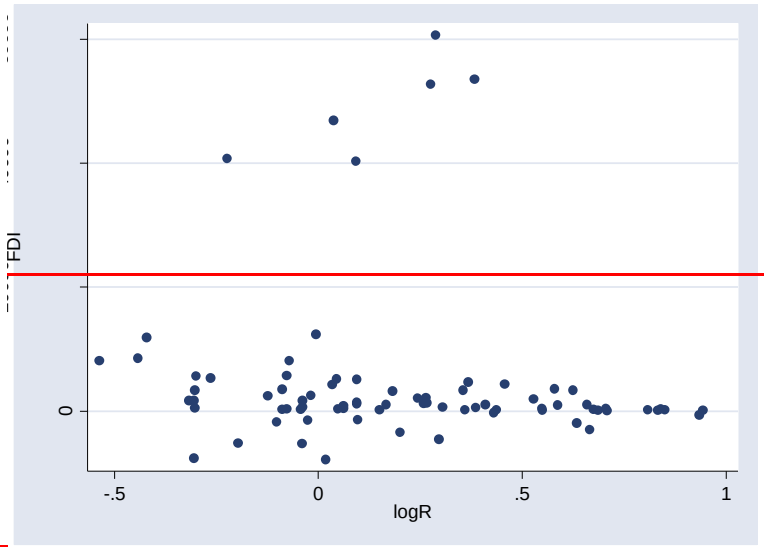
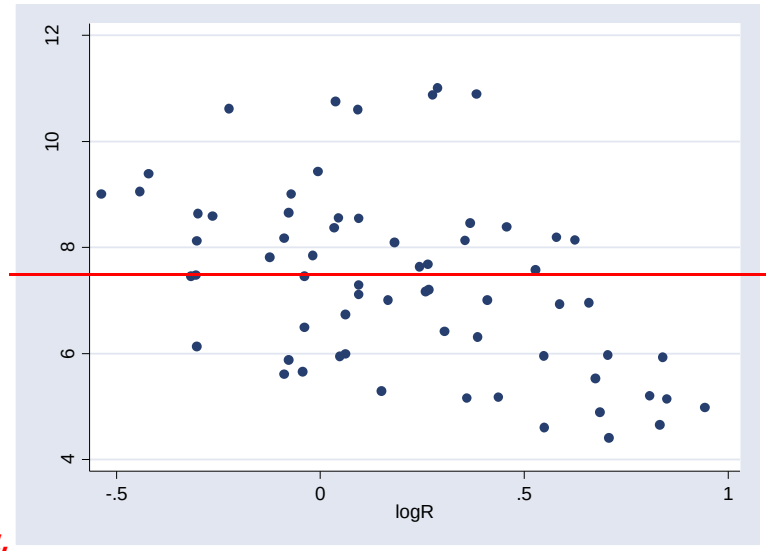


Figure 6.4: Log(FDI) and Log(R/RW)

Formatted: Heading 2,B-level head, Tab stops: 0.9", Left

Formatted: Heading 2,B-level head, Left, Tab stops: 0.9", Left



5.1.