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FDI Effects of ASEAN Integration

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I. Introduction

The decision to create an ASEAN Economic Community (AEC) by 2020 at the Ninth ASEAN Summit in October 2003 represented an important milestone in ASEAN economic cooperation. While regional economic integration had become a much more important part of the ASEAN Member Countries' commercial policies beginning with the creation of the ASEAN Free-Trade Area (AFTA) ten years earlier, the decision to establish a unified market underscored the desire on the part of the ASEAN leaders to embrace comprehensive market integration. Indeed, even though the details of the AEC roadmap are only now being worked out, the AEC seeks to create a regional marketplace in which not only goods but also services would flow freely, and in which there would be a freer flow of capital and skilled labor. Such an endeavour requires far more effort in terms of policy harmonization, and much more willingness to cede "sovereignty", than has ever been the case in the past.

The attraction of foreign direct investment (FDI) inflows is an important goal of the AEC; it will also in large part determine the success of ASEAN's integration efforts. In fact, stimulating FDI inflows by reducing business costs associated with multinational activity in the region has always been a primary objective of ASEAN economic cooperation. FDI inflows have become paramount to an outward-looking development strategy in the contemporary global economy. They bring in new (risk-sharing, non-debt-creating) capital flows, foreign exchange, easy access to foreign markets, and technology transfer. They also have a tendency to strengthen institutions within developing countries, including in the financial sector (see, for example, Prasad, Kose, Rogoff, and Wei, 2006), and create a more stable environment and internal "policy competition".[1] In doing so, they establish an attractive business environment within which multinationals can easily profit from a vertical division of labor and production and facilitate the emergence of multinationals within the developing region itself. These are all explicit goals of ASEAN economic cooperation. The diversity of economic structure in the ASEAN region makes it a particularly strong candidate for investment cooperation.

In addition to reducing transaction costs through trade liberalization and facilitation, in the past ASEAN has tried to enhance the attractiveness of the region through industrial cooperation, with somewhat disappointing results. The ASEAN Industrial Projects (AIP) and ASEAN Industrial Complementary (AIC) programs were early attempts at doing this, though their top-down approach proved to be unappealing to the private sector. The ASEAN Industrial Joint Ventures (AIJV) approach, which at the Third ASEAN Summit in 1987 was reinforced to allow for deeper margins of preference and more attractive equity schemes, also produced relatively disappointing results, due to a variety of inhibiting factors, including: bureaucratic costs, some confusion in terms of regional and national legal applications and jurisdictions, and lack of active promotion.

With the advent of AFTA, the margin of preferences in the AIJV scheme became redundant. Hence, a transitional program that could serve as a base from which to build future cooperation was established in the ASEAN Industrial Cooperation Scheme (AICO) in 1996, which officially superseded the Basic Agreement on AIJVs (15 December 1987) and the Memorandum of Understanding on the Brand-to-Brand Complementation (BBC) Scheme dated 18 October 1988.[2] The AICO would reduce preferential tariff rates to between zero and five percent and would have other advantages over other programs, such as a guaranteed rapid turnaround on applications,

[1] By "policy competition" here we imply that countries within a free-trade area will have an incentive to adopt best-practices, promote a low-cost business environment, and embrace greater transparency if they are to compete effectively for FDI flows within a given trade area.

[2] The Brand-to-Brand Complementation Scheme was an augmented version of the original AIC program discussed above. It was intended to enhance vertical FDI across ASEAN Member Countries.

references to dispute settlement, and benefits in terms of more liberal equity restrictions for foreign investors. It has been especially popular in the area of vertical integration of auto parts production and electronics.

The most significant attempt at economic cooperation in the area of FDI is the ASEAN Investment Area (AIA), created in October 1998. Rather than merely expanding existing programs in the new context of AFTA like the AICO, the AIA was designed to enhance a process of FDI policy liberalization, promotion, and, to some extent, harmonization across ASEAN Member Countries, as well as having certain investment facilitation features. It covers five sectors: manufacturing, agriculture, fishery, mining, and quarrying, as well as services incidental to the five sectors ("Services Incidental"). Thus, its scope is far larger than any other program; moreover, it will likely be an essential pillar in the building of the AEC.

Given the high stakes being placed on ASEAN integration, tracking its progress in the area of FDI is of the essence. After eight years, has there been any discernable effect on FDI inflows to ASEAN? The purpose of this paper is to gauge empirically, through both descriptive and econometric techniques, whether or not ASEAN integration has had any effect on FDI flows. We begin in Section II with a review of FDI patterns in the region, followed in Section III by an econometric investigation of the determinants of FDI. Section IV considers issues of complementarity and competitiveness in FDI, with a view to assessing what these imply for policy consistency. Finally Section V gives some concluding remarks.

II. Trends in Foreign Direct Investment in ASEAN

There exist a plethora of potential approaches to evaluating FDI data; in this study, we employ several of them in order to gauge FDI performance from diverse perspectives.[3] In general, FDI to ASEAN has been strong over the past few years in terms of flows and rate of growth after a period of slow growth associated with the 1997-98 Asian Crisis. Below we provide descriptive background data with accompanying analysis, including the sources of FDI to ASEAN from around the globe, its distribution by sector, and changes over time.

a. FDI Inflows in ASEAN Member Countries

Table 1 puts FDI inflows to ASEAN in a global context over the 1995-2005 period. From this table we see that world FDI inflows have more almost tripled since 1995 to $916 billion in 2005, though this is less than the heydays of the 1998-2000 period, when FDI flows peaked at $1.4 trillion in 2000. These flows have been concentrated in the developed countries; the United States and the EU member-states alone have consistently accounted for more than half of global FDI, with the exception of 2004 when their share was 47 percent. Over the entire period their combined share came to almost two-thirds of the total.

Inflows into Japan and South Korea have actually been insignificant; together, inflows to these two large, OECD countries constituted less than two percent of global flows (only a fraction of flows

[3] The available information on how FDI is defined by ASEAN countries and their major investment partners (i.e., the EU, Japan, and the US) generally indicates that these countries officially define FDI flows in conformance with IMF and OECD standards. According to the IMF and the OECD, FDI refers to an investment that gives an effective voice in the management of an enterprise operating outside of the economy of the investor. The IMF and OECD both suggest that a threshold of 10 per cent of equity ownership qualifies an investor as a foreign direct investor.

going to ASEAN and China). FDI inflows into ASEAN as a percentage of total world inflows have dropped from their highs of the mid-1990s when ASEAN countries accounted for about 8 percent of world inflows to the current percentage of only about 4 percent. Clearly, the cause for this downward trend was related to the Asian Crisis, which not only affected ASEAN countries but also other East Asian countries like China, though the Chinese share picked up relatively rapidly after the Crisis. Inward FDI into China has been on the rise in absolute and percentage terms. The rise in China begs the question as to why its share has been generally rising when ASEAN's has been falling in terms of flows, even years after the Asian Crisis. Is this due to ASEAN policies, Chinese policies, or something else? We address these issues later.

Table 1
World Shares of FDI Inflows to ASEAN and Selected Other Countries and Regions
(Percentage of Total World FDI Inflows)

Year / Host	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	% of Cumul. Total (1995-2005)
United States	17.3	21.5	21.1	24.5	25.8	22.3	19.2	12.1	9.53	17.2	10.9	18.9
EU 25	37.9	31.8	29.2	39.8	45.7	49.4	45.9	49.7	45.5	30.1	46.0	42.8
Japan	0.01	0.06	0.66	0.45	1.16	0.59	0.75	1.50	1.13	1.10	0.30	0.74
China	11.0	10.6	9.24	6.38	3.67	2.89	5.63	8.54	9.59	8.53	7.90	6.65
South Korea	0.37	0.51	0.54	0.71	0.88	0.61	0.46	0.49	0.70	1.09	0.79	0.68
East Asia	21.7	21.9	19.4	12.2	9.58	9.87	11.7	13.2	15.8	18.3	16.8	14.1
ASEAN	8.27	7.77	7.01	3.13	2.62	1.67	2.34	2.55	3.57	3.61	4.05	3.53
World (US$million)	340,336	392,424	489,709	712,032	1,099,919	1,409,568	832,248	617,732	557,869	710,755	916,277	8,078,868

Source: UNCTAD FDI Statistics Online
1) The EU 25 include Austria, Belgium, Luxembourg, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, and the UK.
2) The figures for China do not include inflows to Hong Kong and Macao.
3) East Asia includes China, Hong Kong, Taiwan, South Korea, Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.
4) ASEAN includes Brunei, Cambodia, Indonesia, Lao People's Dem. Rep., Malaysia, Myanmar, Philippines, Thailand, Vietnam and Singapore.

Regarding FDI to individual ASEAN Member Countries, Table 2 shows total inflows of FDI by destination in ASEAN over 1995-2005, using the ASEAN Secretariat database (as opposed to the UNCTAD database used in Table 1). 2005 was a strong year for ASEAN with inflows of $38 billion. Still, half of total inward FDI to ASEAN over the 1995-2005 period went to one country (Singapore). Thailand and Malaysia, whose growth during the "miracle" years was fuelled in part by robust FDI inflows, saw a significant slowdown in inflows coming into the 2000s, and Indonesia's FDI inflows have usually been negative (sometimes significantly so) since the onset of the Asian Crisis until 2004 due, for example, to huge repayments of intra-company loans by foreign affiliates.[4] All three, however, picked up in 2005, with Indonesia having a particularly strong year ($6.1 billion). Flows to the Philippines also relented significantly in the early 2000s but rebounded somewhat in 2005. Inflows into Vietnam have been relatively stable, generally falling in the range of $1.2 billion-$2.6 billion range without any obvious trend. FDI inflows into the other transitional economies (Cambodia, Laos, and Myanmar) have been low and somewhat volatile.

[4] It should be noted, however, that accounting for FDI inflows in Indonesia is tricky, especially with respect to the petroleum sector, where there is a large foreign presence but the inflows are generally not counted as FDI (but rather part of "product sharing" agreements). Moreover, as there was a large depreciation of the *rupiah* during this period, end-year valuations of the change in FDI stocks would generally have a strong negative effect on the numbers.

Table 2
FDI Flows to ASEAN 1995 – 2005
(USD $ Million)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Cumulative Total:95-05
Brunei	583	654	702	573	748	549	526	1,035	3,123	212	289	8,993
Camb	151	294	168	243	232	149	149	145	84	131	381	2,127
Indo	4,346	6,194	4,678	-356	-2,745	-4,550	-3,279	145	-596	1,895	6,107	11,839
Laos	88	128	86	45	52	34	24	25	20	17	28	547
Malay	5,815	7,297	6,323	2,714	3,895	3,788	554	3,203	2,473	4,624	3,965	44,651
Myan	318	581	879	683	304	208	192	191	291	251	72	3,970
Phil	1,577	1,618	1,261	1,718	1,247	2,240	195	1,542	491	688	1,132	13,709
Sing	11,503	9,303	13,533	7,594	16,067	16,485	15,649	7,338	10,376	14,819	20,081	142,748
Thai	2,070	2,338	3,882	7,491	6,091	3,350	3,886	947	1,952	1,414	4,008	37,428
VN	1,780	1,803	2,587	1,700	1,484	1,289	1,300	1,200	1,450	1,610	2,021	18,225
TOTAL	28,231	30,209	34,099	22,406	27,375	23,541	19,197	15,773	19,664	25,661	38,083	284,238

Source: Statistics of Foreign Direct Investment in ASEAN, Eighth Edition, 2006.
Notes:
1)Data compiled from the respective ASEAN Central Banks and Central Statistical Offices. Unless otherwise indicated, the figures include equity and inter-company loans.
2)Figures for Brunei Darussalam, Cambodia and Malaysia include reinvested earnings for the whole data series.
3)Figures for the Philippines include reinvested earnings for the period of 1999 - 2002.
4)Figures for Singapore include reinvested earnings for the whole data series, but exclude inter-company loans for 1995-1996.
5)Figures for Vietnam include reinvested earnings for 2003.
6)Cambodia's figures are estimated aggregate figures.
7)Indonesia's figures for 2002 and 2003 include privatization and asset sales under Indonesian Bank Restructuring Agency (IBRA) program. Figures for 2003 and 1st quarter 2004 are preliminary.
8)Myanmar's figures are in fiscal year which ends in March of the following calendar year.
9)Philippines' figures for 2003 and 1st quarter 2004 are preliminary.
10)Singapore's figures for 2003 and 1st quarter 2004 are preliminary.
11)Thailand's figures for 2003 and 1st quarter 2004 are preliminary. Figures include capital fund of banking sector.

With respect to the sources of inward FDI flows over the same period, Table 3 aggregates cumulative FDI flows from ASEAN and major non-ASEAN sources. The EU is by far the largest supplier of FDI to the region ($79 billion), which is sixty percent more than the value of US FDI in ASEAN ($49 billion) and more than twice that of Japan ($34 billion). In fact, the UK alone invested slightly more than Japan. China has been only a marginal source of FDI to the region ($1.8 billion) but the Asian NIEs (excluding Singapore) provided a total of $19 billion. While it has been declining since the Asian Crisis, intra-ASEAN FDI remains an important source of investment ($32.5 billion).

It is a well-cited figure that intra-regional trade between ASEAN countries is approximately 25 percent of the region's total trade with the world. This has led some to claim that ASEAN is not a "natural" economic bloc. Such analysis has two critical problems: first, it ignores the fact that ASEAN itself is quite small in terms of market size and, since size matters, one would not expect intra-regional trade shares to be high (indeed, controlling for size, ASEAN trades 4-5 times more with itself than one would predict if Member Countries were randomly distributed).[5] Second, since ASEAN accounts for the lion's share of its trade with the outside world, this figure only accentuates the need for ASEAN economic integration to focus on enhancing *global* competitiveness. The goal of an effective FTA should not be to raise intra-regional trade shares but to stimulate global trade, enhance productivity, and ensure a more efficient division of labor.

[5] Naya and Plummer (2005).

Table 3
FDI Flows to ASEAN Countries by Source
(Cumulative 1995 – 2005, US$ Millions)

Host / Source	Brunei	Indonesia	Lao PDR	Malaysia	Myan mar	Philip pines	Singa pore	Thai Land	Vietnam	Total Cumulative 1995-2005 *
Japan	378.88	385.81	19.42	6,086.53	119.42	3,163.75	12,201.8	9,403.70	2,619.48	34,378.79
North America	58.42	750.08	7.84	12,595.0	467.93	3,207.82	28,385.0	4,024.51	921.23	50,417.83
USA	58.10	675.72	4.66	12,228.5	406.17	3,203.50	27,559.0	3,937.23	872.78	48,945.66
Canada	0.32	74.36	3.18	366.48	61.76	4.32	825.99	87.28	48.45	1,472.14
Europe of which:	6,688.84	6,758.36	33.80	11,839.8	1,854.59	1,491.30	57,173.5	4,677.92	4,297.74	94,815.85
European Union	6,687.71	6,029.31	32.04	10,426.8	1,852.62	1,410.59	45,201.3	3,925.8	3,475.26	79,041.43
France	54.89	588.96	12.38	293.68	697.71	268.04	3,018.24	557.45	1,008.90	6,500.25
Germany	20.21	494.90	0.50	3,909.32	8.70	-295.04	14.06	1,102.49	58.50	5,313.64
Netherlands	2,636.54	3.616.36	0.06	1,303.29	8.10	411.22	16,274.7	-204.99	1,441.94	21,870.86
United Kingdom	3,958.67	1,423.21	7.98	3,597.05	1,133.22	701.43	21,204.9	1,662.69	799.24	34,488.39
ASIA of which:	18.34	545.59	37.98	288.37	159.73	311.91	1,495.12	151.23	242.96	3,251.23
China	3.44	556.64	37.15	120.59	156.26	303.72	360.30	57.13	236.86	1,832.09
ANIEs	76.81	817.28	120.90	2,204.05	301.46	1,151,43	5,777.80	4,324.24	5,237.26	18,859.80
Korea	39.22	836.23	110.10	125.23	55.79	242.29	655.16	305.93	1,686.58	4,056.53
Hong Kong	32.28	18.01	1.87	1,443.91	245.67	702.77	1,090.79	2,736.76	1,418.33	7,690.39
Taiwan (ROC)	5.31	-36.96	8.23	634.91	-	206.36	4,031.85	1,281.55	2,132.35	8,263.60
ASEAN	1,419.13	2,060.83	275.23	8,562.10	1,045.74	1,316.70	8,230.81	6,517.32	3,103.41	32,531.27
Brunei Darussalam		-26.84	0.00	298.51	-	0.29	194.89	4.12	2.00	472.97
Cambodia	-	-	0.04	2.64	-	-	5.71	13.43	0.60	22.42
Indonesia	56.90		-	293.31	38.82	38.56	3,388.06	44.30	60.65	3,920.60
Lao PDR	-	-		0.16	-	0.01	0.93	-0.64	11.62	12.08
Malaysia	232.24	976.21	97.18		57.28	87.72	4,045.94	226.72	578.12	6,301.41
Myanmar	-	-	0.05	0.48		-	59.80	1.71	-	62.04
Philippines	4.96	13.28	-	96.82	3.80		105.47	222.95	48.81	496.09
Singapore	1,117.26	954.08	10.62	7,622.90	750.20	1,167.21		5,998.91	1,909.66	19,530.84
Thailand	7.60	144.06	160.86	209.13	195.64	22.61	406.26		491.95	1,638.11
Vietnam	0.17	-	6.48	38.16	-	0.03	23.76	5.82		74.42

Source: Statistics of Foreign Direct Investment in ASEAN, Eighth Edition, 2006
Notes:

1) Data compiled from the respective ASEAN Central Banks and Central Statistical Offices. Unless otherwise indicated, the figures include equity and inter-company loans. Figures for Brunei, Cambodia and Malaysia include reinvested earnings for the whole data series.
2) Figures for the Philippines include reinvested earnings for the period of 1999-2002. data on reinvested earnings by source countries are not available.
Figures for Singapore include reinvested earnings for the whole data series, but exclude inter-company loans for 1995-1996.
3) Figures for Vietnam include reinvested earnings for 2003.
4) "*" Total cumulative figures for 1995-2005 (by source countries) exclude data on FDI flows to Cambodia

This argument is even more relevant to FDI inflows. As Table 3 shows, intra-regional FDI as a share of the total is far smaller than even in the case of trade; at $32.5 billion, it only amounts to 11 percent of the total, and is slightly less than the outflows of Japan alone. Moreover, Singapore dominates as a source of intra-regional FDI, constituting about two-thirds of the total, which is greater than its dominance of FDI inflows. Further, Singaporean outward FDI itself is concentrated in two countries, Malaysia and Thailand. About one-third of all intra-ASEAN FDI is accounted for by Singaporean investment in these two countries.

From an economic perspective, the direction of FDI flows is far less relevant than the quantity and quality of the flows. This point deserves to be stressed, as often the goal of trade and investment cooperation between developing countries is to increase intra-regional shares. But the basic advantage of FDI in terms of technology transfer, non-debt-creating capital flows, enhanced export competitiveness, and the like, has no real predetermined "nationality requirement". Moreover, to

the extent that the FDI is involved in the "fragmented production chain" across countries in the region, one would even expect that a successful policy of increasing FDI inflows could even lead to a *decrease* in intra-regional trade shares, if ASEAN valued-added in the production chain is low. But this is irrelevant if efficiency and welfare increase.

Further, it is important, perhaps, to stress the role of Singapore in the process of integration. It serves as both an *entrepot* center for intra-ASEAN trade and a hub for FDI. Without Singapore, intra-regional trade and investment would be much diminished. Hence, while Singapore apparently does extremely well by almost any measure in attracting FDI, its destiny in many ways is linked to economic performance of the region.

In short, the quantity of FDI flowing into the ASEAN countries has been generally low in early post-Crisis years, at least relative to pre-Crisis levels and the performance of key competitors, but has been picking up significantly lately, with 2005/2006 being among the best years that ASEAN has seen.

b. Sectoral Distribution of FDI

Next, we consider the sectoral structure of FDI in the ASEAN countries and how it has changed over time. In doing so, we hope not only to add another dimension to our descriptive analysis of FDI in ASEAN but also to capture its "dynamic" nature. If ASEAN development is, indeed, proceeding at a rapid pace, we would expect to see significant changes in the structure of FDI in the Member Countries.

Table 4 calculates the distribution of FDI in ASEAN by sector and source country over the 1999-2003 period.[6] As expected, the sector with the largest share of FDI is manufactures, followed by financial services and trade/commerce. Manufactures is the single-most important sector for all major sources of FDI with the exception of US FDI, whose investments in financial services and "other sectors" are greater than in manufactures. The EU also has large investments in financial services. Approximately half of Japanese and Singapore FDI went into manufactures. Trade/commerce is an important target area, with more than 10 percent of total FDI outflows, for all major source countries save the EU. South Korea, the Philippines and Thailand also have significant shares of investments in agriculture, fishery and forestry.

Finally, we try to capture the "dynamism" associated with structure change in ASEAN FDI inflows. In other words, we ask the question: "how much has the structure of FDI changed in individual ASEAN countries over the past 10 years?". Conceptually, this is a straightforward technique: we merely rank sectors by importance (in terms of the value of FDI inflows) in two periods and calculate how well the two series are correlated. A high correlation would suggest little change, while a low correlation would imply just the opposite. Our expectation would be that a highly-developed country would see little change in its structure, since the country would already be specialized in capital- and knowledge-intensive production. The same would be true of a country that engages mostly in agricultural production and the same unskilled labor-intensive goods. However, countries with rapid change in the sectoral distribution of FDI should have lower coefficients.

[6] We consider the average over the entire period because of the volatile nature of annual FDI data

Table 4
Cumulative FDI Flows to ASEAN, 1999-2003, by Economic Sector and Country
(percentage of the total)

Economic Sectors / Country	Agriculture, Fishery and Forestry	Mining and Quarrying	Manufacturing	Construction	Trade/ Commerce	Financial Intermediation and Services	Real Estate	Services	Others (Not elsewhere classified)	Total FDI flows 1992-2003 (US$ Millions)
JAPAN	0.00	2.84	48.61	1.08	18.20	13.87	2.11	2,92	10.36	9579.11
USA	0.99	5.74	23.11	0.66	10.24	28.52	2.10	4.70	23.93	19315.23
EU	0.53	13.01	33.13	0.91	6.63	26.28	3.14	0.63	10.14	35536.54
R of KOREA	13.78	3.50	23.86	2.68	26.28	3.14	0.63	10.14	16.00	1463.82
HONG KONG	0.94	0.22	12.81	0.00	17.55	25.12	0.89	5.94	36.53	3403.58
TAIWAN	3.63	0.00	40.69	2.56	9.03	21.15	2.92	9.31	10.72	2164.19
CHINA	3.12	1.41	27.50	4.89	4.73	18.49	31.19	5.58	3.09	446.4
BRUNEI	0.00	0.00	1.85	0.56	71.99	6.12	5.69	4.46	9.33	64.73
CAMBODIA	0.00	0.00	1.72	0.00	53.85	1.62	0.00	0.41	42.39	9.86
INDONESIA	0.06	0.59	2.64	0.22	5.85	11.81	71.02	1.63	6.19	1639.63
LAO	0.00	0.00	48.15	0.00	5.56	33.16	0.84	1.35	10.94	11.88
MALAYSIA	5.04	6.66	2.61	3.21	0.00	30.60	41.14	3.18	7.57	2635.11
MYANMAR	0.18	0.00	7.87	0.78	32.27	0.81	51.43	3.66	3.00	33.31
PHILIPPINES	13.72	0.01	3.86	0.31	2.39	30.15	21.72	4.73	23.10	158.4
SINGAPORE	1.19	2.65	52.97	1.12	16.78	11.11	0.03	10.70	3.45	9536.36
THAILAND	11.90	0.99	19.30	1.00	7.38	39.29	1.31	6.45	12.38	528.77
VIETNAM	0.82	0.00	28.78	0.00	25.37	2.16	26.76	2.11	14.00	20.85
ALL SOURCES	1.19	8.48	31.80	1.00	10.33	21.61	4.36	5.73	15.50	86547.77

Source: Statistics of Foreign Direct Investment in ASEAN, Seventh Edition, 2005, A*uthors' Calculations*
Note: The percentages are over the source country's cumulative FDI flows from 1999-2003 to ASEAN.

The correlation technique we use is called the Spearman Rank Correlation Coefficient (SRCC). The SRCC is a non-parametric statistic that correlates two series in the way described above. It varies from +1 (perfect correlation) to -1 (perfect negative correlation), with 0 suggesting no correlation at all. Given the volatility of annual FDI data, we choose two periods in which annual FDI flows are averaged: Pre-Crisis (1993-1997) and Post-Crisis (1998-2005). The data we use for this exercise mainly come from the UNCTAD FDI database.

Table 5 summarizes our results for these two periods. Data for Brunei, Cambodia, and Myanmar were insufficient in terms of the sectoral breakdown of FDI. Most estimates are statistically significant from zero, with the (surprising) exception of Malaysia. In addition to being the country with the lowest estimated coefficient, the fact that the SRCC is not statistically significant would imply that FDI into Malaysia has been the most dynamic over these periods. Singapore's SRCC would be next at 0.47, whereas Vietnam (SRCC=0.70) and Indonesia (SRCC=0.69) have seen the least amount of change in the structure of their FDI.

There is no "magic value" that would be consistent with a robust transformation in FDI structure. Moreover, as FDI data are notoriously problematic, we should not attach too much importance to comparative changes. This exercise suggests that the structure of FDI in ASEAN has generally been changing significantly in countries like Malaysia, Singapore, and Thailand. Regardless of what caused these structural changes in FDI (e.g. market forces, institutional changes, explicit measures applied to FDI, or shocks like the Asian Crisis), we take structural change as a positive indication of economic dynamism. The result probably reflects at least in part successful FDI liberalization and

facilitation policies adopted by the ASEAN Member Countries. Regional approaches to investment liberalization and facilitation, therefore, should help reinforce this process as well as augment the quantity of inflows.

Table 5
Structural Change of Inward FDI in ASEAN
(Spearman Rank Correlation Coefficient; Pre 1998 and Post 1998)

	SRCC
Brunei	NA
Cambodia	NA
Indonesia	0.69*
Malaysia	0.21
Myanmar	NA
Philippines	0.66*
Singapore	0.47*
Thailand	0.49*
Vietnam	0.70*

Source: UNCTAD FDI Statistics Database and Japanese FDI Statistics from the Ministry of Finance (viewed October/November 2006).
Notes:

1) Average annual FDI flows were calculated by: (a) summing inflows from Denmark, Finland, Japan, the UK and the US to each ASEAN country's industry for each year; and (b) taking the average for the periods (1993-1997) and (1998-2005). We then correlated the series using the SRCC approach.
2) The industries, across which the correlations were calculated, varied by country. The list of industries by ASEAN country is given in the appendix.
3) The data is for FDI flows classified by the ISIC Rev 3.1 System
4) "*" statistically significant at the 95% level or greater

III. Determinants of FDI in ASEAN

Which variables have been the most significant in determining ASEAN FDI over time? Has ASEAN FDI been driven by its own economic fundamentals, or has it been due to outside factors, such as FDI growth globally over this period or the emergence of China as a major recipient of FDI (at ASEAN's expense)? In this section we try to determine whether or not ASEAN as a regional organization has made a difference for the attraction of FDI inflows using a variety of techniques, including descriptive analytics and an econometric "knowledge-capital" model, which has become a common tool in the literature to do this.

A key point of departure in the theory of foreign investment is the distinction between portfolio investment and FDI. The former includes private and public transactions in securities (e.g., stocks and bonds, sovereign debt, concessionary loans from foreign donors). Portfolio flows can play a constructive role in economic development by providing investible funds and foreign exchange. In contrast, FDI involves a substantial degree of ownership control. Since FDI is associated with organizational and managerial participation by the investor, it typically produces a more complex matrix of economic interactions between the source and host countries. The minimum stock ownership used to define "control" may vary from country to country, but most countries adhere to the OECD definition of at least 10 percent of firm ownership.

The main theories of the determinants of FDI are generally encompassed in Dunning's "eclectic approach." Dunning highlights three key requirements for direct investment: (1) The firm must possess "ownership advantages" over other firms (firm specific advantages (FSAs)); (2) The firm must find it beneficial to utilize these advantages directly instead of selling or leasing them

("internalization" advantages); and (3) The firm must find it profitable to combine these advantages with at least one factor input abroad so that local production dominates exporting ("locational" advantages). Locational advantages include proximity to markets, specialized suppliers, evasion of protective barriers, and factor endowment advantages.

The eclectic approach is probably the most cited model used to explain the determinants of FDI flows. The bottom line for the ASEAN countries in this model would be simple: in order to lure FDI flows, it is necessary to affect the "locational" advantages of the region. This can be done through a variety of techniques, from adopting best practices *vis a vis* FDI inflows, providing a stable and secure environment in which FDI can thrive, reducing bureaucratic costs faced by foreign investors, and the like. At the regional level, in addition to providing peer support for efficient, sensible macroeconomic and FDI policies in the Member Countries, ASEAN as a regional organization can reinforce its attractiveness to MNCs by harmonizing FDI policies, creating a "one-stop investment center", and reducing any transactions costs that would be associated with MNC activity that exploits the advantages that ASEAN has in terms of allowing for the vertical integration of production, larger markets for the sales of intermediate and final goods, and creating a major presence on international markets.

With respect to FDI and the theory of regional economic integration, the literature is fairly sparse. At least two effects can be discerned conceptually: investment creation and diversion. If markets perceive that a regional trade grouping will lead to more dynamic growth, integration will attract greater inflows of FDI than would have otherwise been the case. This effect is consistent with economic efficiency and, hence, it is called investment creation. On the other hand, the discrimination inherent in a preferential trade grouping creates an incentive to invest in order to take advantage of free access to markets internal to the bloc. Such an effect leads to a less efficient allocation of global resources and inhibits efficiency; hence, it is known as investment diversion. As investment is likely to be diverted only in the case of high trade barriers in partner countries, investment diversion would occur in industries exhibiting trade diversion.

Another important strand in the theoretical literature distinguishes vertical FDI (i.e., where a firm unbundles its production process and relocates certain production stages to another country) from horizontal FDI (i.e., where a firm operates a separate self-contained plant in another country). In seminal articles, Helpman (1984) models vertical FDI flows as driven by differences in relative factor endowments, while Markusen (1984) models horizontal FDI as a response to trade barriers and plant fixed costs. In later work, Markusen (2002) integrates both the vertical and horizontal forms of FDI into what is known as the "knowledge-capital model". In this model, FDI is driven by both factor endowment differences and market access. A multinational will employ more vertical FDI if it has: 1) a higher ability to fragment production; 2) larger differences in comparative advantage between countries for each stage of production; and 3) lower trade costs. A multinational will deploy more horizontal FDI given: 1) more similar home and host countries' relative endowments and country sizes respectively; 2) lower plant-level fixed costs; and 3) higher trade costs. The "knowledge-capital model" provides the framework for many recent empirical studies on the determinants of FDI. We will use it in the next section to examine whether ASEAN policy initiatives aimed at attracting FDI have shown any results.

a. A "Knowledge-Capital Model" Approach to the Determinants of FDI Outflows

In this section, we estimate the "knowledge-capital model" of FDI to identify *which* factors have been the most important in determining FDI flows. Our main objective is to gauge whether or not ASEAN integration, via the AIA or other policy initiatives, has had any discernible effect on FDI

inflows into the region. Our approach follows that of Baltagi, Egger, and Pfaffermayr (2007). They devise a general econometric model that is theoretically based on the "knowledge-capital model". Although the main intention in their paper is to estimate third-country effects on FDI, the generality of their econometric model allows us to modify and use it for our purposes.

$$\ln(FDI)_{dit} = \beta_1 size_{dit} + \beta_2 similar_{dit} + \beta_3 capratio_{dit} + \beta_4 skillratio_{dit} + \beta_5 unskillratio_{dit} + \beta_6\, size * capratio_{dit} + \beta_7 dist * relfacratio_{dit} + \beta_8 BITsign + \beta_9 BITentry + \beta_{10} ASEAN \geq 92_{dit} + \beta_{11} ASEAN \geq 98_{dit} + \beta_{12} EU_{dit} + \beta_{13} NAFTA_{dit} + \lambda_t + \alpha_{di} + \varepsilon_{dit}$$

The dependent variable in the model is ln(*FDI*), which is the natural logarithm of FDI stock from country *d* (the home country) to country *i* (the host country). The FDI data are extracted from the Source OECD database. Our final sample comprises 27 home countries and 74 host countries, including ASEAN countries, which yields 1143 unique country-pairs.[7] The year subscript is *t*, and the sample period goes from 1982 to 2004. The model also includes year-specific effects (λ_t) and fixed country-pair effects (α_{di}).

In the following, we will explain the independent variables in our model. The *t* subscript is suppressed for ease of exposition. The first explanatory variable is $size_{di}$=ln(GDP_d+GDP_i), which measures absolute bilateral country size by taking the sum of the home and host countries' *GDP*. If horizontal FDI is to dominate vertical FDI, then we expect the *size* variable to have a positive coefficient. The second explanatory variable is the similarity index proposed by Helpman (1987) for bilateral trade equations. This is defined as $similar_{di} = (1-s_d^2-s_i^2)$ where $s_d = GDP_d/(GDP_d+GDP_i)$ and $s_i = GDPi/(GDP_d+GDP_i)$, i.e., these represent the share of each country's GDP in the bilateral sum. The variable *similar* is a bilateral size dispersion index, and it ranges from 0 to 0.5. Zero is the extreme case of a very large country paired with a very small country and 0.5 is the other extreme where both countries have the same size. A positive coefficient on this indicates that there is more horizontal investment. To capture differences in relative factor endowments, we *include*: $capratio_{di}$, which is the natural logarithm of the parent-to-host capital stock ratio; $skillratio_{di}$, which is the natural logarithm of the parent-to-host skilled-labor ratio; and $unskillratio_{dit}$, which is the natural logarithm of the parent-to-host unskilled-labor ratio.[8] We expect that vertical FDI is increasing in the capital stock ratio and the skilled-labor ratio, but decreasing in the unskilled-labor ratio. The model also includes an interaction between *size* and *capratio*, which interacts capital abundance and bilateral size to reflect the additional incentive for horizontal FDI when the home country is more capital abundant and the country-pair has a larger combined GDP. This may exist because the

[7] The 27 home countries are: Australia, Austria, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Rep., Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, and the United States.
The 74 host countries are: Algeria, Australia, Austria, Belgium, Belize, Bolivia, Brazil, Bulgaria, Canada, Chad, Chile, China, Costa Rica, Czech Republic, Denmark, Dominican Republic, Ecuador, El Salvador, Ethiopia, Finland, France, Germany, Ghana, Greece, Guinea, Honduras, Hong Kong (China), Hungary, Iceland, India, Indonesia, Ireland, Italy, Japan, Jordan, Kenya, Korea, Rep., Lao PDR, Luxembourg, Malaysia, Mauritius, Mexico, Morocco, Netherlands, New Zealand, Nicaragua, Norway, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Russian Federation, Rwanda, Singapore, Spain, Sri Lanka, Sweden, Switzerland, Syrian Arab Republic, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uganda, United Arab Emirates, United Kingdom, United States, Uruguay, Venezuela, and Vietnam.

[8] These variables were constructed based on the methods in Baltagi et al. (2007) with data from the World Bank's World Development Indicators (WDI). Capital stocks were calculated with data on gross fixed capital formation, using the perpetual inventory method with a depreciation rate of 7%. The endowment of skilled labor was found by multiplying the share of the labor force with a tertiary education with the size of the labor force, while the endowment of unskilled labor was (1-share of the labor force with a tertiary education) times the size of the labor force. In a few cases, the share of workers with tertiary education in the labor force was not available; data on gross enrolment in tertiary institutions were used instead as a rough indicator of the share of skilled labor in the labor force.

partner with a higher capital abundance can further exploit economies of scale with a larger bilateral market size. To account for the possible negative effects (positive effects) of trade costs on vertical (horizontal) FDI, we interact *dist* (which is measured as the great circle distance between capital cities and proxies for trade costs) with *relfacratio* (which is the log difference between the parent's and host's capital to unskilled labor ratios, i.e. *capratio* - *unskillratio*). The interaction between this distance variable and relative factor endowments accounts for the fact that higher trade costs may lead to less vertical FDI because trading intermediate inputs becomes more costly but to more horizontal FDI because serving foreign markets locally becomes more profitable.

The seven independent variables described above form the basic model used by Baltagi et al. (2007). We extend their model with two more sets of variables: one on bilateral investment treaties (BITs) and the other on regional initiatives. The latter set includes our key variables of interest. In the first set, we have: $BITsign_{di}$, which is equal to one for the year in which a BIT was signed between *d* and *i* and the following years; and $BITentry_{di}$, which is equal to one for the year in which a BIT was enforced between *d* and *i* and subsequent years. The second set comprises variables that capture the impact of regional institutional development on FDI flows. This set contains the key variables of interest in our model: $ASEAN{\geq}92_{di}$ and $ASEAN{\geq}98_{di}$. These are dummy variables that equal one for any observation on an ASEAN host country in and after 1992 or 1998 respectively. From 1992, ASEAN members in our sample were Malaysia, Indonesia, Philippines, Thailand, and Singapore, whereas, from 1998, Laos and Vietnam were added as new members. These variables are intended to capture any effects that regional institutions like the AFTA (signed in 1992) or the AIA (signed in 1998) might have had on FDI flows from outside the region to ASEAN member countries. We also include variables for NAFTA and the EU, these being major regional integration projects.[9]

Table 6 presents the results of estimating our model with fixed effects panel regressions. Column (1) shows the results from estimating the model with all home countries in our sample. Columns (2)–(6) report the results for sub-samples with the United States, United Kingdom, Germany, Japan, and France as home countries respectively. These 5 countries are singled out because up till 2004, they are the largest source countries of total world FDI and investors in ASEAN. As is clear from Table 3, the United States is the single most important source of FDI to ASEAN countries; the EU *as a region* is an even larger investor than is the United States, and the UK, Germany, and France are its largest economies; and Japan is the third largest investor in ASEAN behind the United States and the UK (Table 3). Also in Table 6, Column (7) reports results using observations on FDI to ASEAN host countries only; and Columns (8) and (9) include variables to capture the effect of FDI stock in China on other countries' FDI (what we call the "China Effect"), which will be discussed in the next sub-section. As is standard practice, we report the within R^2 for each of the regressions, i.e., the percentage of cross-time variance in the dependent variable explained by the independent variables.

In Column (1), we can see that the *size* and *similar* variables yield positive and statistically significant estimates. A 1% increase in bilateral GDP is expected to increase FDI by 3%, while countries that have more similar income levels tend to have larger investments in each other. This lends support to previous empirical findings on the importance of horizontal FDI, which is market-seeking. Among the variables that represent differences in factor endowments, the estimate on *capratio* is negative and insignificant, which suggests that differences in capital stocks do not have an impact on FDI; the estimate on *skillratio* is positive and significant, which implies that FDI moves from skilled-rich to skilled-poor countries; but, surprisingly, the estimate on *unskillratio* is

[9] NAFTA is a dummy variable that is equal to one for Canada and the USA in and after 1989 (when the CUSFTA was signed) and one for Mexico after 1994 (when NAFTA was signed), but zero otherwise. EU is also a dummy variable that is set to one for the EC-12 after 1992 and the EU-15 after 1995, but zero otherwise.

also positive, large in magnitude, and significant, implying that investment flows are higher from unskilled-abundant to unskilled-scarce countries. A possible explanation is that the *unskillratio* variable captures the ratio of the absolute size of the unskilled labor force of the home country over the host country instead of being a relative measure of unskilled-labor abundance with respect to either skilled labor or capital. As such, countries that are capital-rich in absolute terms may also be unskilled-labor rich. For example, the size of the US unskilled labor force in 2004 was 87.3 million workers, and, relative to all countries that hosted US FDI in the same year, the US unskilled labor force was around 41 times larger on average than the foreign unskilled labor force despite the US being the largest source of FDI in 2004 with an outward stock of US$2.4 trillion.[10] Baltagi et al. also find a large, positive, and significant estimate on *unskillratio*. Although they do not explicitly explain this finding, their other regressions suggest that differences in factor endowment may matter only for manufacturing FDI and not for total FDI, which includes a large component in the services industry. The coefficient estimate on *size*capratio*, although significant, is negative and small in magnitude, which suggests again that differences in factor endowment may not be important. The positive and significant estimate on the interaction between *dist*, which proxies for trade costs, and *relfacratio* (i.e., the logarithmic difference between the home-to-host capital and unskilled labor ratios) appears to be driven by *dist* given the negative estimate on *capratio* and the positive estimate on *unskillratio*. This would further support the hypothesis that horizontal FDI dominates because higher trade costs increase market-seeking FDI. Among the sub-samples, we find that the individual home countries' FDI outflows conform to the general pattern described above except for Japan. The results for Japan in Column (6) indicate a clear vertical motivation for its FDI outflows according to differences in factor endowments; Japanese FDI outflows increase in the capital and skilled-labor ratios but decrease in the unskilled-labor ratio.

With respect to the BITs and regional variables, we find that the effects of an investment treaty are not immediately evident when it is signed but are positive and significant when the treaty is enforced later. Using Kennedy's formula for the true impact of a dummy variable in a semi-logarithmic regression, we find that the enforcement of a bilateral investment treaty induces a $100*[\exp(\beta_9)-\text{Var}(\beta_9)/2)-1] = 37.1\%$ increase in FDI on average. As for the regional variables, we find that NAFTA has not had an impact on inflows into North America, while the development of the EU, which deepened integration significantly by putting in place a common market that included free capital flows along with national treatment of FDI in almost all sectors, has had a positive and statistically-significant effect.[11] Our key variables of interest are the ASEAN variables, and, although the estimates are negative, they are statistically insignificant. This implies that ASEAN has had no effect on FDI inflows from OECD countries, in general, despite existing intra-regional industrial-cooperation programs, the AFTA, and the AIA following the years 1992 and 1998 respectively. However, we can see in Column (3) that the UK increased its FDI stock in ASEAN countries after 1992 but decreased it by a larger post-1998 amount, while, in Columns (4) and (5), the *ASEAN≥98* coefficient for Germany is positive and statistically significant (at the 1 percent level) and Japan (at the 10 percent level). Therefore, although we detect a positive post-1998 "ASEAN effect" for Germany and Japan, we cannot generalize this to all OECD source countries. In Column (7), we check whether this result holds when the sample is limited to only

[10] The only host countries in our sample that had larger numbers of unskilled workers compared to the US in 2004 were China, India, and Indonesia, and these countries altogether accounted for less than 1.3% of total US outward FDI in the same year.

[11] We note that Germany and France, as home countries, have negative estimates for the EU although these are statistically insignificant. This may not be surprising, given the potential "Dunning-Robson" effect (Dunning and Robson 1988). The quantity of FDI flows to the EU as part of the Single Market Program may be indeterminate because the associated reduction in transactions costs in the EU could potentially reduce intra-regional FDI if prior projects existed in Europe to mitigate intra-regional transactions costs. That is, given the process of creating a border-free environment in the EU, it may be that EU member-states *may or may not* increase FDI outflows to partner countries. Non-partners, however, would unambiguously increase outflows to the region.

ASEAN host countries. Again, we find that the post-1992 and 1998 ASEAN variables are statistically insignificant. It is possible that, in general, ASEAN initiatives towards attracting more FDI may not have shown any impact due to the confounding effects of other developments in the region, among which the Asian Crisis would be most prominent. However, given the lack of a general positive result on the ASEAN variables, we prefer to remain agnostic on the question of whether ASEAN institutions have had any effect on FDI. To summarize, our econometric results suggest that the outward FDI stocks of most OECD countries: (1) are dominated by horizontal FDI; and (2) do not seem to have responded to post-1992 and 1998 developments in ASEAN.

Since this econometric approach allows us to separate economic characteristics from country or regional effects, as a final exercise, we might consider the "Chinese Competitive Threat" hypothesis. In this scenario, the problem does not lie with AFTA or the AIA or anything particularly related to ASEAN itself but rather is exogenous, that is, the emergence of China as a major competitor for FDI (and in third markets for trade) is driving the results. This hypothesis is frequently articulated in Southeast Asian business and policy-making circles.

b. The "China Threat" Hypothesis

China has clearly been an important recipient of FDI inflows in sectors in which ASEAN is competitive. The Chinese success is the result of many factors, including its size, relatively low-cost and well-educated workforce, increasing wealth, location, and an outward-looking policy stance that has put in place incentives to draw in FDI. China has now emerged as a major regional power and increasingly competes with ASEAN in local and third markets, which in turn no doubt has a bearing on FDI inflows. As such, we test for whether total inward stock of FDI in China has had an impact on other countries, in general, and the ASEAN countries, in particular. Columns (8) and (9) of Table 6 report the results of our econometric model with the addition of two variables: the natural logarithm of total FDI stock in China in a particular year (*ln(ChinaFDI)*) and an interaction between *ln(ChinaFDI)* and a dummy variable representing the ASEAN countries. In Column (8), we see that elasticity estimate of Chinese FDI on bilateral FDI is 0.15 (significant at the 5 percent level). This suggests that, on average, a 1% increase in the amount of total FDI stock in China raises bilateral FDI by 0.15%. In the case of the ASEAN countries, we see that the interaction term with Chinese FDI is negative but smaller than 0.15 and not statistically significant. In the ASEAN-only sample results in Column (9), we see that *ln(ChinaFDI)* has a positive but statistically insignificant estimate. Hence, after controlling for relevant variables, our results do not support the idea that China itself has become a special "threat" above and beyond what one expects from its economic characteristics; rather, globalization has led to an increasingly competitive international economy in which competition for markets and FDI have risen. Our results are consistent with those found in the literature. Lee and Plummer (2004) use a gravity model and are able to reject the hypothesis that China has had any statistically-significant bearing on outward investment from these OECD countries ***outside of the usual channels*** (i.e., those stipulated in the traditional gravity models, such as size, wealth, distance, and trade). In addition, Busakorn, et. al. (2005) find that FDI flows to China are actually positively related to FDI in other Asian countries; they find that a 10 percent increase in the former will lead to a 2-3 percent increase in flows to the latter.[12] In theory, this would be because the emergence of China as a major player has put the region "on the map" and multinationals have been using ASEAN to complement its investments in China. This result would go beyond merely dispelling the "China Threat" presumption and would actually suggest that China's success in attracting FDI has actually helped ASEAN (and other Asian) countries by attracting complementary FDI, which is no doubt part of a production fragmentation chain that would involve China and its neighbors**.** As such interaction is facilitated

[12] As cited in Cassidy (2005).

by reducing trade barriers between China and ASEAN, the ASEAN-China FTA and negotiations for its expansion (and to include FDI in the process) would make a good deal of sense. Moreover, it would give ASEAN a competitive edge over other Asian countries.

IV. Issues of Competitiveness and Complementarity

European economic integration, which is by almost any measure the most successful post-war regional grouping in existence, was made easier because of the fact that, at early stages it was quite homogeneous. The original six countries of the EEC were all relatively rich, developed countries with a shared historical, cultural, and (basic) institutional set-up. As Europe became more diverse, complications began to set in. The accession of Turkey to the EU, for example, has been problematic, even though the EEC Association Agreements with Greece (who joined the EC in 1981) and Turkey each took place in the early 1960s. And while accession talks with Turkey were officially opened in October 2005, its candidacy appears to have reached an impasse. The main reason for this is Turkey's "diversity" in terms of *per capita* income, cultural, political institutions, and the like. Many attribute the rejection of the EU Constitution to opposition to Turkish admission.

Hence, diversity matters. It poses a particular problem to ASEAN, which is one of the most diverse regional groupings in the world. It includes rich; high-income; middle-income; and Least Developed Economies; the coefficient of variationof *per capita* income in ASEAN in 2004 came to 1.62, more than twice as high as that of the EU.[13] Political institutions and historical experiences do not find many common traditions across the region; ASEAN Member Countries have Muslim, Buddhist and Christian majorities; and so on. Thus, it is often difficult to compare the EU experience to that of ASEAN. The challenge of diversity is much greater.

There are many reasons why diversity would prove to be a challenge to regional integration, including different sectoral priorities, different institutional constraints, different fiscal resources to cope with structural change, different legal institutions influencing policy formation, etc. In fact, according to the World Bank's "Doing Business," which ranks countries across the world in terms of various competitiveness-related issues, the differences existing in ASEAN could hardly be greater. In 2007, globally, Singapore is ranked Number 1; Thailand and Malaysia, Numbers 18 and 25, respectively; Vietnam, the Philippines and Indonesia numbers 104, 126 and 135; and Cambodia is number 143 (World Bank, *Doing Business in 2007*). However, ASEAN does have one thing in common that arguably the EU did not have in its early years: generally a common approach to international commercial policy. In particular, ASEAN countries are committed to macroeconomic stability and an outward-oriented approach to trade and investment relations.

Still, diversity in the region will continue to lead to problems in terms of the comprehensiveness of liberalization. This difficulty was borne out in the creation of AFTA and in subsequent disputes regarding exclusion lists, which are no doubt partly responsible for a less than stellar performance of AFTA to date (as indicated by a low level of utilization rates). Diversity could also be problematic in terms of the AIA, especially with respect to inclusion lists and the degree of liberalization.

[13] The coefficient of variation is merely the mean (in our case, mean *per capita* income in ASEAN) divided by the standard deviation across countries. Hence, it is a measure of diversity; the larger the coefficient of variation, the greater the differences in *per capita* income across countries.

Table 6
Determinants of FDI from OECD Economies:
Fixed Effects Panel Regression Results

Dependent Variable = ln (FDI)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Independent Variables	All Source Countries	United States	United Kingdom	Germany	Japan	France	Just ASEAN Hosts	With China Effect	With China Effect and Just ASEAN Hosts
size	3.516**	1.780	7.281**	11.332**	2.993	2.993	2.725**	3.526**	2.725**
	(0.435)	(4.959)	(1.244)	(2.830)	(2.744)	(3.471)	(0.930)	(0.436)	(0.930)
similar	3.888*	10.688*	-2.831	0.317	21.963**	2.015	3.900	3.944*	3.900
	(1.547)	(5.189)	(4.248)	(4.523)	(5.542)	(5.509)	(3.681)	(1.552)	(3.681)
capratio	-0.062	3.818	-24.943**	-26.697**	28.209**	-22.075*	11.780+	-0.105	11.780+
	(1.650)	(5.344)	(5.578)	(9.642)	(10.278)	(9.219)	(6.009)	(1.656)	(6.009)
skillratio	0.181**	0.026	0.407**	0.467**	0.882*	0.367*	0.284**	0.179**	0.284**
	(0.035)	(0.149)	(0.124)	(0.168)	(0.341)	(0.183)	(0.104)	(0.035)	(0.104)
unskillratio	4.789**	-3.377	4.874	8.471**	-12.164*	9.937**	-8.724+	4.762**	-8.724+
	(0.989)	(2.919)	(3.414)	(2.093)	(5.172)	(3.188)	(5.235)	(0.992)	(5.235)
size*capratio	-0.141*	-0.011	0.802**	0.749*	-0.520*	0.495	-0.108	-0.139*	-0.108
	(0.056)	(0.159)	(0.176)	(0.329)	(0.253)	(0.321)	(0.179)	(0.056)	(0.179)
dist*relfacratio	0.424**	-0.473	0.210	0.654**	-1.562**	0.918*	-0.973	0.423**	-0.973
	(0.112)	(0.308)	(0.354)	(0.201)	(0.577)	(0.355)	(0.586)	(0.112)	(0.586)
BITsign	0.124	-0.375	-0.241	-0.038	0.148	0.228+	0.294	0.123	0.294
	(0.101)	(0.263)	(0.208)	(0.141)	(0.199)	(0.134)	(0.183)	(0.101)	(0.183)
BITentry	0.355**	0.254	-0.004	0.672*	-0.632+	0.242	0.127	0.355**	0.127
	(0.110)	(0.207)	(0.232)	(0.311)	(0.332)	(0.197)	(0.193)	(0.110)	(0.193)
NAFTA	-0.151	-0.062	-0.172	-0.190	-0.150	-0.205		-0.157	
	(0.170)	(0.341)	(0.402)	(0.434)	(0.280)	(0.150)		(0.170)	
EU	0.184*	0.086	0.116	-0.089	0.256	-0.221		0.184*	
	(0.093)	(0.178)	(0.158)	(0.294)	(0.276)	(0.219)		(0.093)	
ASEAN92	**-0.071**	**-0.095**	**0.407+**	**0.230**	**-0.102**	**-0.387**	**0.295**	**0.052**	**-0.287**
	(0.120)	**(0.237)**	**(0.221)**	**(0.185)**	**(0.308)**	**(0.243)**	**(0.392)**	**(0.126)**	**(0.352)**
ASEAN98	**-0.111**	**-0.040**	**-0.583***	**0.403****	**0.406+**	**0.319**	**0.344**	**-0.046**	**0.160**
	(0.102)	**(0.091)**	**(0.233)**	**(0.140)**	**(0.239)**	**(0.215)**	**(0.399)**	**(0.118)**	**(0.197)**
ln(ChinaFDI)								0.151**	0.173
								(0.052)	(0.153)
ln(ChinaFDI)*ASEAN								-0.059	
								(0.051)	
Fixed Country-Pair Effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Year Effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10981	1082	710	857	617	934	1197	10981	1197
Number of group(home host)	1143	72	59	65	42	70	105	1143	105
R-squared	0.56	0.75	0.74	0.86	0.71	0.65	0.58	0.56	0.58
Robust standard errors in parentheses									
+ significant at 10%; * significant at 5%; ** significant at 1%									

In this section, we attempt to measure diversity by using the same Spearman Rank Correlation Coefficient (SRCC) technique again. As is well documented in the literature, MNCs can often account for a majority of a country's exports in an outward-oriented economy. It is estimated that fully two-thirds of China's exports, for example, are undertaken by MNCs. This explains why rapid growth in exports has been accompanied by rapid growth in imports as well. China is now Japan's largest market, having surpassed the United States. Much of this trade is intra-firm MNC trade. The same is true in ASEAN, particularly in the electronics sector.

Therefore, we would expect that the similarity in the structure of trade across the ASEAN countries should also be reflected in the distribution of FDI. Of course, it is easier to estimate trade correlations, with details on almost three thousand commodities used in the previous section (and even more would be possible, theoretically). But FDI information is far less available to the public (as well as to governments). Somewhat disaggregated data are available (e.g., 25 sectors, if one is lucky) but these data tend to be spotty and can frequently be censored by the public authorities due to privacy issues. For example, the OECD publishes a rich dataset of the FDI inflows and outflows of OECD countries by direction (i.e., source country in the case of inflows and recipient country in the case of outflows) and a fair number sectors (up to 25 in most cases), but it does not have information on both. That is, we know how much the United States invested in Indonesia in 2003, and we know how much of US FDI overall outflows were in electronics, but we do *not* know how much the United States invests in the Indonesian electronics sector through that publication. We can receive more information on that from US sources (the Bureau of Economic Analysis) but the data are far more aggregate (and often are unavailable due to "disclosure" concerns). Moreover, referring to individual country sources runs into the problem of the compatibility of the data and the fact that even many developed countries do not offer much in terms of FDI data.[14]

Thus, while we expect that FDI structural changes and competition across ASEAN countries would commensurately follow trade changes, we cannot exactly replicate the process in the same way as for trade. However, UNCTAD does publish relatively detailed (actual) FDI data by year and country. Using these data, we were able to perform the same structural correlation tests using the SRCC. The number of industries are far less than in the case of trade (usually around 24 sectors per year) but we were able to obtain a smooth time series for most ASEAN countries from 1993-2005.

As noted above, yearly FDI data can be unpredictable; hence, rather than highlighting changes by year, we take averages over two periods: pre-Asian Crisis (i.e., 1993-1997) and post-Crisis (1998-2005). The SRCCs are presented in Table 7 for (a) pre-1998 and (b) post-1998. The results are illuminating. Among the original members of ASEAN, Singapore's structure of FDI was remarkably similar to that of Thailand and Malaysia for both periods. The Singapore-Malaysia SRCC remained high in the two periods, and although the Singapore-Thailand SRCC dropped to 0.62 in the post-Crisis it was still relatively high. A correlation of 0.82 (pre-Asian Crisis) and 0.80 (post-Asian Crisis) in the case of Singapore with Malaysia suggests an almost identical structure, an interesting result if one recalls that Singapore is a city-state and Malaysia is a resource-rich country. The same is also true to a lesser degree for the correlations of Thailand and the Philippines with Singapore before and after the Crisis. These results reflect the importance of electronics and other manufactures in the exports of these countries. In the case of Indonesia, FDI structure was positively correlated with that in Malaysia and the Philippines before 1998, but failed to be significant with any other country after 1998. In the case of newer ASEAN members, Myanmar and Vietnam did not have FDI structures similar to that of Singapore before the Crisis. In our results, Myanmar did not have a statistically significantly positive correlation with any other ASEAN

[14] It is easier to find data on FDI "approvals" rather than actual data, but such an approach is highly problematic: approval data are not good indicators of future FDI, though they may give some indication of the magnitude of sectoral interests with respect to FDI on the part of MNCs.

country in either period. Apart from a surprisingly significant and positive post-1998 correlation with the Philippines, Vietnam did not have a similar FDI structure with any other ASEAN country in either period. There were insufficient data for Brunei, Laos, and Cambodia to compute the relevant SRCCs.

A repeated theme that emerges from international economic data and studies focusing on international economic integration in Asia in general and ASEAN in particular relates to the electronics sector. The above review demonstrates this; FDI in electronics has become a key area in most ASEAN countries, and electronics exports constitute the most important sector in just about all original ASEAN countries and, increasingly, Vietnam. The ASEAN countries have been so focused on developing this sector that, perhaps, it has back-fired; the over-riding importance of electronics in the exports of the ASEAN countries rendered them vulnerable to changes in the global market in electronics, and the collapse in electronics prices, especially DRAMs, in the mid-1990s was no doubt an important impetus to the Asian Crisis (Grilli 2002).

Clearly, there is an important link between trade and FDI in electronics with growth and development in the region, and in this sense it is important to underscore the key role of foreign investors in the process. For example, Tamamura (2002) employs an input-output model to capture the FDI-export link in East Asia and decompose the effect of external demand (by country) on production, using electronics as a case study. He finds that, for 1995 (his latest year), in every country external demand induced more production than domestic demand except in China and (marginally) Indonesia. Most countries followed a similar pattern of internationalization of electronics production. The United States was the most important external source of induced demand in electronics. In fact, in the key cases of Malaysia, the Philippines, and Taiwan, US demand alone was even more important than domestic demand, and in the case of Thailand, they were about the same.

In sum, while data restrictions limit the number of sectors we can include in our analysis, what emerges from this exercise is that all the original ASEAN countries received FDI inflows in essentially the same sectors. We noted above that this would be mainly manufacturing and financial services; however, within manufacturing itself, there is still considerable overlap. In fact, some of the ASEAN Member Countries even had a higher degree of structural correlation of FDI between each other than they did for their own structure of FDI over time.

Table 7: Correlation of the Structure of FDI in ASEAN Countries (Spearman Rank Correlation Coefficients, Pre-1998 and Post-1998)

A. Pre 1998 Country Pair Correlation

		Indon	Malay	Myan	Phil	Sing	Thai	VN
Indonesia	Correlation Observation		0.55* 17	0.37 6	0.53* 17	0.26 16	0.45 17	0.48 15
Malaysia	Correlation Observation			0.43 6	0.53* 17	0.82* 18	0.66* 18	0.33 15
Myanmar	Correlation Observation				0.20 6	0.66 6	0.31 6	0.26 6
Philippines	Correlation Observation					0.58* 16	0.79* 17	0.48 15
Singapore	Correlation Observation						0.84* 20	0.29 14
Thailand	Correlation Observation							0.47 15
Vietnam	Correlation Observation							

B. Post 1998 Country Pair Correlation

		Indon	Malay	Myan	Phil	Sing	Thai	VN
Indonesia	Correlation Observation		-0.04 21	-0,75 6	-0.26 21	-0.17 21	0.02 22	-0.05 18
Malaysia	Correlation Observation			-0.06 6	0.73* 20	0.80* 20	0.62* 21	0.29 18
Myanmar	Correlation Observation				-0.03 6	-0.23 6	-0.29 6	0.46 6
Philippines	Correlation Observation					0.72* 20	0.74* 21	0.80* 17
Singapore	Correlation Observation						0.62* 21	0.25 17
Thailand	Correlation Observation							0.37 18
Vietnam	Correlation Observation							

Notes: (1) Cambodia is not present due to lack of data
(2) "*" statistically significant at the 95% level or greater
(3) Authors calculations

Source: UNCTAD FDI Statistics Database and Japanese FDI Statistics from the Ministry of Finance (viewed October/November 2006).

V. Concluding Remarks

In the above analysis, we were able to show that, with respect to FDI, ASEAN is a dynamic region, constantly reinventing itself. The structure of FDI flowing into the ASEAN Member Countries has changed considerably for most countries over the past decade. Moreover, the structures appear to be converging, that is, FDI these days tends to flow into the same sectors throughout the region. The same is essentially true (but to a lesser extent) with respect to trade flows. Hence, trade and FDI are becoming more symmetric over time (and the literature has shown that this is also true with respect to macroeconomic variables; the business cycles in the original ASEAN countries are becoming increasingly correlated). Our analysis would suggest that this is encouraging for the future of economic cooperation: while ASEAN is one of the most diverse regions in the world, at least with respect to international economic integration key variables are lining up. This bodes well for the alignment of both trade and investment policies, which will be necessary if the goals of the AEC are to be reached in 10 to 15 years' time.

This is the good news. The bad news is that greater symmetry in trade and FDI structure will no doubt lead to greater competitiveness in terms of *policy initiatives*, and in the political realm makes investment cooperation all the more difficult as it will create greater competition for FDI. This problem has manifested itself frequently, from negotiations with the "Dialogue Partners" to positions at the WTO: ASEAN needs to be more cohesive.

Qualitative analysis would suggest that the AIA is an open, liberal framework agreement and is a promising document upon which to build the investment-related pillar of the AEC. Moreover, it is a relatively new agreement that now appears to be picking up steam, with momentum provided by the AEC. Certain aspects of investment cooperation obviously need to be tightened up—as suggested by the numerous BITs that have been negotiated between ASEAN Member Countries—but on the whole the agreement presents an excellent example of an investment accord based on the principles of open regionalism. The trick will be to make sure that the negative lists remain short and that the national treatment commitment in the AIA be respected in practice.

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