

W o r k i n g P a p e r S e r i e s



ASIA PACIFIC
E C O N O M I C C O O P E R A T I O N

**TRADE, INVESTMENT, AND
ECONOMIC CONFLICT BETWEEN
THE US AND ASIA**

Marcus Noland

NUMBER 96-11

**INSTITUTE FOR
INTERNATIONAL
ECONOMICS**

INSTITUTE FOR INTERNATIONAL ECONOMICS
11 Dupont Circle, NW, Washington, DC 20036-1207
(202) 328-9000 Fax: (202) 328-0900

C. Fred Bergsten, *Director*

BOARD OF DIRECTORS

*Peter G. Peterson, *Chairman*
*Anthony M. Solomon, *Chairman,*
Executive Committee

Leszek Balcerowicz
Raymond Barre
W. Michael Blumenthal
Miguel de la Madrid
George David

*Jessica Einhorn
George M. C. Fisher
Maurice R. Greenberg

*Carla A. Hills
W. M. Keck II
Nigel Lawson
Lee Kuan Yew

*Frank E. Loy
Donald F. McHenry
Ruben F. Mettler
Minoru Murofushi
Kaneo Nakamura
Suliman S. Olayan
Paul H. O'Neill

I. G. Patel
Karl Otto Pöhl
Edzard Reuter
David Rockefeller
Stephan Schmidheiny
Paul A. Volcker

*Dennis Weatherstone
Marina v.N. Whitman
Lynn R. Williams
Andrew Young

Ex officio

*C. Fred Bergsten

Honorary Directors

Alan Greenspan
Reginald H. Jones
Akio Morita
George P. Shultz

**Member of the Executive Committee*

ADVISORY COMMITTEE

Robert Baldwin
Barry P. Bosworth
Susan M. Collins
Rimmer de Vries
Wendy Dobson
Juergen B. Donges
Rudiger Dornbusch
Gerhard Fels
Robert J. Flanagan
Isaiah Frank
Jacob A. Frenkel
David D. Hale
Mahbub ul Haq
Dale E. Hathaway
Nurul Islam
Peter B. Kenen
Lawrence R. Klein
Lawrence B. Krause
Anne O. Krueger
Paul R. Krugman
Roger M. Kubarych
Robert Z. Lawrence
Jessica T. Mathews
Rachel McCulloch
Isamu Miyazaki
Michael Mussa
Richard R. Nelson
Sylvia Ostry
Rudolph A. Oswald
Tommaso Padoa-Schioppa
Jacques J. Polak
Dani Rodrik
Jeffrey D. Sachs
Lawrence H. Summers
Alan Wm. Wolff
Robert B. Zoellick

A MESSAGE FOR READERS

In 1994 the Institute launched a series of "Working Papers on Asia Pacific Economic Cooperation." The series is intended to convey the preliminary results of our ongoing research on these issues to the policy, business, and scholarly communities. The research described in these papers is preliminary and has not gone through the usual review process for Institute publications. The views expressed in these papers are those of the authors and do not necessarily reflect the views of the individual members of the Institute's Board or Advisory Committee. We welcome feedback from readers and encourage you to convey your comments and criticisms directly to the authors.

C. FRED BERGSTEN
Director

Copyright © 1996 by the Institute for International Economics. All rights reserved. No part of this working paper may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, or by information storage or retrieval system, without permission from the Institute.

**TRADE, INVESTMENT, AND ECONOMIC CONFLICT
BETWEEN THE US AND ASIA**

Marcus Noland

Institute for International Economics

ABSTRACT

Trade and investment flows represent mutually beneficial exchanges which clearly enrich both the United States and Asia in a variety of ways. Nevertheless, considerable controversy surrounds the American economic relationship with Asia.

This paper models US trade and investment and then this work is then imbedded in a model of conflictual relations between the US and Asia. A simple counterfactual is used to sketch possible developments in economic relations between the US and Asia.

The key result of this paper is that US investment and exports are complementary. This is important because bilateral trade deficits are the prime cause of bilateral trade conflict between the US and its trade partners. The implication of this analysis is that increases in Asian inward FDI would only not raise welfare for the conventional reasons, but would also bring about a reduction in trade tensions with the US.

Forthcoming, *Journal of Asian Economics*. I would like to thank Chi Zhang for research assistance, and Kim Elliott, Kazumasa Iwata, Dave Richardson, Jeff Schott, and John Williamson for helpful comments on an earlier draft of this paper. © Institute for International Economics 1996. 11 Dupont Cir., NW, Washington, DC 20036, (202)-328-9000, (202)-328-5432 (fax), mnoland@iie.com

INTRODUCTION

Economic exchange between the United States and Asia is large and growing rapidly. In 1994 Asia accounted for 30 percent of US exports, and 42 percent of US imports (Table 1). According to recent projections, within a decade US trade with Asia will be twice that of trade with Europe (Noland, 1994). The largest bilateral trade flows were with Japan and China with total trade turnover of \$173 billion and \$48 billion, respectively. Trade with China is expected to increase rapidly fueled by Chinese economic growth.¹ Trade with the rest of Asia was \$258 billion, and is expected to grow rapidly as well.²

Investment relations between the US and Asia were similarly robust. Asia accounted for \$108 billion in US direct investment flows in 1994, or 18 percent of America's total outward investment flows of \$612 billion. The most prominent destinations were Japan (\$31 billion), Australia (\$18 billion), and Hong Kong (\$10 billion). Inward flows from Asia were also substantial, reaching \$118 billion or 23 percent of foreign direct investment into the US, with Japan accounting for the lion's share at \$103 billion, or more than 20 percent of total US inward FDI. Much of the trade between the US and Asia is generated by intrafirm trade arising from these investment flows.

The commodity composition of US trade with Asia is reported in Table 2. Most of US trade with Asia is concentrated in SITC category 7, machinery and transport equipment, which accounted for 47 percent of exports and 57 percent of imports. Other areas of concentrations were SITC 5, chemicals (11 percent of total exports), and SITC 8, miscellaneous manufactures (including apparel), which accounted for 26 percent of imports. These overall shares mask considerable variation across Asian countries, reflecting the underlying diversity of these economies. For example, 81 percent of US imports from Singapore are in machinery and transportation equipment, while 66 percent of imports from China are in the miscellaneous manufactures category, and 63 percent of US imports from New Zealand are in SITC 0, food. Although Asia may be a useful geographic categorization, it is heterogenous economically.

These trade and investment flows represent mutually beneficial exchanges which clearly enrich both the United States and Asia in a variety of ways. The gains from interindustry trade are most

¹ For an overview of Chinese international economic relations and discussion of how these may develop, see Noland (1995a).

² These figures refer to merchandise trade. Unfortunately, the data on services trade are far more fragmentary. In 1994 the US ran a surplus in services trade with Japan of \$15 billion, a surplus with Australia of \$2 billion, and a surplus with "the rest of Asia and Africa" of \$15 billion.

obvious, but welfare may be enhanced additionally through intraindustry trade, and intertemporal trade, all of which are evident in the data, as well as the benefits accruing from diffusion of unique proprietary assets through direct investment, technological spillovers, and the disciplining through trade of the anticompetitive tendencies of local firms. Nevertheless, in the US, considerable controversy surrounds the American economic relationship with Asia. The US runs trade deficits with most of the countries in the region, and substantial deficits with the largest. In 1994 the US merchandise trade deficit with Japan was \$66 billion, while the deficit with China reached \$29 billion and was climbing rapidly.³ Put most crudely in popular discussion the trade imbalance is interpreted as an Asian theft of US jobs. Asia is viewed as protectionist and Asian industrial policies are seen as predatory (e.g. Hejazi and Trefler, 1995). In policy terms these views have manifested themselves in US attempts to tear down Asian barriers to trade and investment, limit trade imbalances, and to constrain Asian trade and industrial policies.

This paper reviews the data on US trade and investment ties with Asia, and these relations are modeled econometrically. This work is then imbedded in a model of conflictual relations between the US and Asia. Some simple counterfactuals are used to sketch possible developments in economic relations between the US and Asia.

The key result of this paper is that US investment and exports are complementary. This is important because bilateral trade deficits are the prime cause of bilateral trade conflict between the US and its trade partners. This is particularly salient with respect to US relations with Asia, where the US runs deficits with the two largest countries, Japan and China. The implication of this analysis is that increases in Asian inward FDI would not only raise welfare for the conventional reasons, but would also bring about a reduction in trade tensions with the US.

US DIRECT INVESTMENT IN ASIA

As shown in Table 3, US firms have \$419.5 billion invested in Asia, and employ more than 1.5

³ Two points are worth mentioning. First, as noted above, the US merchandise trade deficit with Japan is partly offset by a surplus on services.

Second, The trade deficit figure between the US and China is subject to substantial controversy, largely due to the mistreatment of Hong Kong's entrepot trade by reporting authorities in both countries. However, when appropriate adjustments are made, the US still runs a large bilateral merchandise trade deficit with China. See Fung (1996) and Noland (1996a) for further elaboration.

million workers.⁴ Sales by these US foreign affiliates were \$370 billion in 1993, on which they earned a net income of \$16 billion. Majority-owned foreign affiliates accounted for 70 percent of these assets, 58 percent of employment, 63 percent of sales, and 79 percent of net income, indicating that the majority-owned affiliates were on average more profitable than the minority stake businesses.

The pattern of investment varied considerably from country to country most obviously reflecting local restrictions on foreign investment, but also local characteristics (such as the composition of output) which would effect the desirability to particular locations as hosts for US investments. So, for example, nearly all US investments in Hong Kong, Singapore, Indonesia, and Malaysia take the form of majority ownership, this is true in only about one-third of the cases in Korea and India.

The largest single host of US investment is Japan, where US firms have \$221 billion invested and employ 441,000 workers. These operations accounted for \$176 billion in sales in 1993, on which they earned a paltry \$3 billion in net income. After Japan, the next largest host of US direct investment is Australia, where US firms have invested a far smaller amount (\$61 billion) and generate far smaller sales (\$58 billion), but employ nearly as many workers (372,000), and earn the same amount of net income (\$3 billion).⁵

Table 4 reports the sectoral composition of US investments in Asia. The largest share of US investment (and the majority of employment) is in manufacturing (\$143 billion), followed by finance (\$134 billion). Within manufacturing, chemicals, non-electrical machinery, transportation equipment, and the "other manufacturing" category have roughly equal shares, although the share represented by majority-owned affiliates vary enormously, from 79 percent in the case of chemicals, to less than 8 percent for transportation equipment. With respect to sales, manufacturing also contributes the largest total (\$169 billion), with transportation equipment accounting for the greatest component (\$41 billion) (though if the majority-ownership definition is used, the biggest piece would be non-electrical machinery (\$28 billion)). Manufacturing also generates the greatest part of net income, though the implicit rate of return is higher in finance, the "other industries" category, and petroleum.

Again, these regionwide figures mask considerable differences across countries. The profiles of

⁴ These figures refer to US affiliates, where an affiliate is defined as a foreign firm with more than 10 percent ownership stake by a US parent. Throughout this paper, figures are also given for more narrowly defined "majority-owned" foreign affiliates, where the combined stakes of all US parents exceed 50 percent.

⁵ The net income figures are after tax. Some of the dramatic differences in after-tax rates of return across different countries presumably relate to local tax regimes and US firms' tax avoidance strategies.

the two largest hosts, Japan and Australia, are quite different, as one might expect. Nearly a quarter of US affiliate assets in Australia are in the "other industries" category which includes mining, while for Japan this share is de minimis. Similar divergences can be observed for other variables of interest.

Table 5 reports the destination of sales by majority-owned affiliates. The shares for Asia look similar to those for the rest of the world: the local market accounts for around two-thirds of sales, approximately 11 percent is shipped back to the US, and the remainder is sold in third markets. The figures for individual Asian countries exhibit considerable variation, however. More than a quarter of sales from Singapore and Malaysia are exported back to the US, reflecting the predominance of electronic assembly operations in those countries. In contrast, in New Zealand, the local market accounts for more than 90 percent of sales, and less than 2 percent of US majority-owned affiliate output is shipped back to the US. The local market accounts for more than 90 percent of sales in India as well. Indonesia appears to be the biggest export platform for the US, with 59 percent of sales going to third countries, but this may be a bit misleading since the vast majority of these sales are in the petroleum sector.

In summary, Asia hosts a significant share of US investment, with Japan and Australia the largest hosts. The investment mostly takes the form of majority-owned affiliates, though for some countries, notably Korea and India, majority ownership is the exception rather than the rule. The investment is concentrated in the manufacturing sector, though again there is considerable cross-country variation reflecting local conditions such as the existence of major extractive industries in Australia and Indonesia, and the existence of large financial markets in Hong Kong and Japan. Most of the output from these operations is sold locally, with much of the rest going to third markets. Only around 11 percent is shipped back to the US. In this respect the pattern of US investment in Asia is similar to that in the rest of the world. Taken together the picture that emerges is one of US FDI undertaken more to service high income markets than to exploit locally cheap labor. The flow data for 1994 reported in Table 1 reinforce this view rather suggesting emergent new trends.

MODELING TRADE AND INVESTMENT

It would be desirable to analyze more precisely the relationship between trade and investment. There is a well-developed literature that uses gravity models to econometrically estimate the volume of trade between trade partners (e.g., Kawai and Urata 1995; Hejazi and Trefler, 1995; Frankel, 1996). One problem with this approach is that the influence of investment is typically ignored, although one would expect trade to arise out of a decision by firms of whether to export from home facilities or to invest and

produce locally in the host country.⁶ Moreover, a growing body of literature points to the quantitative importance of intra-firm trade (which is a product of investment) (e.g. Lawrence, 1991, Encarnation 1992).

In response, the approach undertaken here is to estimate exports and imports (both total and intra-firm) and investment as a simultaneous system. The regressions were estimated using generalized instrumental variables estimator: the endogenous variables were regressed on the instruments (log population, log distance, an English language dummy, and a common border dummy), and the regressions estimated using the constructed values of the endogenous variables and corrected for heteroscedasticity. The three equations were then jointly re-estimated. For reasons of parsimony regressors which were not significant were deleted and the system was re-estimated.⁷ The sample for these regressions (and the subsequent analysis) consists of the United States' 50 largest trade partners, less oil-exporting countries, leaving a sample of 37 countries, accounting for approximately 90 percent of US trade and investment.⁸

The results for the total trade regressions are reported in Table 6. As shown in the first column, imports and investment both enter the export equation (with positive signs). Exports, though not investment, is significant in the import regression. Both exports and imports are significant in the investment regression, with exports taking a positive, and imports a negative, sign, implying that exports are a complement to investment, while imports are a substitute. Surprisingly, the adjacency and free trade area dummies, and the partner country income variables are generally insignificant in these regressions.

The results refer to total trade. The primary channel through which the simultaneity between trade and investment is felt is through intra-firm trade and investment decisions. In Table 7 the regressions are re-estimated with intra-firm exports and imports replacing total exports and imports. As

⁶ One exception is Kawai and Urata (1995) who estimate OLS regressions of trade (FDI) on the previous period's FDI (trade). Another is Graham (1996) who in a two step procedure regresses FDI variables on the residuals from a gravity model.

⁷ These regressions could be described as arising from a "pseudo-gravity" model. The prefix "pseudo-" is attached because in actuality the logarithmic distance proxy for transaction costs (or distance squared, or its square root) was never statistically significant once common borders and the existence of free trade agreements were taken into account.

⁸ These countries are Argentina, Australia, Austria, Brazil, Canada, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Egypt, European Union, Finland, Guatemala, Hong Kong, India, Indonesia, Israel, Jamaica, Japan, Korea, Malaysia, Mexico, New Zealand, Norway, Philippines, Poland, Russia, Singapore, South Africa, Sweden, Switzerland, Taiwan, Thailand, Turkey, and Venezuela. When intra-firm trade is analyzed Austria, China, Egypt, Finland, Indonesia, Jamaica, Poland, and Russia are dropped from the sample due to missing data.

might be expected, these results appear more convincing than those in the previous table. Investment and intra-firm imports contribute positively to intra-firm exports. Intra-firm exports (but surprisingly not investment) contribute to intra-firm imports. Intra-firm exports enter the investment regression positively and significantly, reinforcing the notion that exports and investment are complements, but unlike the previous regressions on total trade, in the case of intra-firm trade, imports have an insignificant impact on investment. In the case of intra-firm trade, the variables relating to partner country income are generally significant.⁹

These results imply that the usual gravity model approach is inadequate as it does not take the simultaneity between trade and investment into account. This is particularly acute in the case of intra-firm trade. This suggests that attempts to discern regional policy biases from the residuals from typical gravity model regressions as is done in Frankel (1996) may be misleading.

ECONOMIC CONFLICT

Since the mid-1980s the emphasis in US trade policy has shifted from import protection to removal of foreign barriers to trade and investment, and the enforcement of intellectual property rights in foreign markets. Although the US has pursued this policy in multilateral settings such as the GATT/WTO, and regional fora such as NAFTA and APEC, much of US trade policy remains bilateral in its orientation. The domestic legal basis for bilateralism include Section 301 of the 1974 Trade Act regarding unfair foreign trade practices, section 182 (the so-called "Special 301") on intellectual property rights, Sections 1377-1881 of the 1988 Trade Act regarding foreign trade practices in the telecommunications sector, Title VII on foreign government procurement practices, and the infamous Super 301, originally a provision of the 1988 Trade Act, which expired and was revived by the Clinton Administration as an executive order.

Table 8 lists all formal unilateral actions completed by the US government to achieve enhanced

⁹ It has been suggested that FDI into the US could also affect trade flows. Regressions analogous to those reported in Tables 6 and 7 with inward FDI added to the explanatory variables are reported in Appendix Tables 1 and 2. The inward FDI variable is statistically insignificant in these regressions, except in the intra-firm export regression where it is significant at the 10 percent level. Inclusion of the inward FDI variable in the regressions had no effect on the analysis reported in following sections and these additional regressions are not reported for the sake of brevity.

Likewise, interactive dummy ("spline") variables were included to test whether Asian trade and investment were uniquely complementary. This hypothesis did not receive much support as shown in Appendix Tables 3 and 4.

foreign market access between 1990-1994. The list is striking in its brevity. Contrary to its popular image, the US government pursues few formal unilateral actions. In 1994 it undertook only one -- the citation under section 1377 of Japan for its policies in the cellular telephone market.

However Table 8 alone gives a misleading impression of US trade policy. For every case in which the US government takes formal action, there are tens if not hundreds of cases that never reach this stage, either because the US government is able to reach some resolution with foreign governments that avoids the necessity of formal designation and action, or, alternatively, because policy makers dismiss industry petitions or they dissuade industry from filing petitions. (The latter might occur if the policy makers convince industry that redress could be more easily achieved through alternative channels such as multilateral negotiation or that the industry's case is weak and unlikely to succeed.)¹⁰ Yet another possibility is that industry may convince policy makers to self-initiate in an attempt to distance themselves from the US government action in the eyes of the foreign government. Like the proverbial tip of the iceberg, the observable actions of Table 1 only hint at the volume of unobservable activity beneath the surface.

It might be useful then to distinguish between *attention* and *action*. While the latter can be observed directly, the former can be usefully proxied through the USTR's *National Trade Estimate Report on Foreign Trade Barriers*. This annual report mandated by the 1974 Trade Act provides "an inventory of the most important foreign barriers affecting U.S. exports of goods and services, foreign direct investment by U.S. persons, and protection of intellectual property rights. Such an inventory may facilitate negotiations aimed at reducing or eliminating these barriers...Information is also included on actions being taken to eliminate any act policy or practice identified in the report" (USTR, 1994, p.1).¹¹ It is drafted by USTR and prior to publication circulated among government agencies for comment and can thus be regarded as an accurate indication of the revealed attitudes and interests of the interagency trade policy groups under the leadership of USTR. For purposes of analysis, the number of pages in this report devoted to individual partner countries will be used as a proxy for the government's unobservable

¹⁰ An example of the former would be when the Bush Administration successfully dissuaded the US Rice Millers Association from filing a Section 301 complaint against Japanese rice barriers pending the conclusion of the Uruguay Round of multilateral trade negotiations. USTR officials frequently discourage industries with weak cases from pressing their cases formally, and occasionally decline to accept formal petitions.

¹¹ It should be noted however, that this compendium of barriers is not based on any quantitative analysis of the possible impact of these barriers. Instead it is based on the subjective appraisal of government bureaucrats, submissions by industry lobbyists etc.

level of attention to bilateral trade problems. For expositional purposes *attention* and *action* taken together will be described as *conflict*.

Table 9 reports data on attention paid to Asian countries in the *National Trade Estimates*. Asian countries account for more than half again as many pages in the *National Trade Estimates* than their share of US exports. Only in the case of Hong Kong and Singapore is the ratio of pages less than unity. India has the highest pages to exports ratio at 6.5, followed by Indonesia at 4.2, China and New Zealand at 3.4, and the Philippines at 3.0. Australia, China, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Pakistan, the Philippines, and Taiwan are all cited as maintaining barriers to investment as well as trade.

Given the apparent overrepresentation of the Asian countries on the US government's trade policy agenda, it would seem worthwhile to examine the underlying determinants of bilateral trade conflict. A perusal of the political economy literature yields a number of suggestive hypotheses:

1) *Trade barriers*. The most obvious hypothesis is that the degree of trade conflict is positively related to barriers to trade. Operationally barriers to trade will be measured in two ways. The first is through the trade-weighted tariff level (TARIFF).¹² A related hypothesis is that conflict may be related to the existence of particularly high tariffs in some sectors or the variability of tariffs across sectors. To investigate this possibility the standard deviation of tariffs (STNDTAR) was calculated.¹³

These measures relate to explicit tariff barriers. As successive GATT rounds have constrained countries' use of tariffs, non-tariff barriers have become relatively more important. These pose a variety of problems for researchers attempting to estimate their impact.¹⁴ The usual procedure is to estimate econometrically a model of international trade, and then to ascribe to trade policy the differences between

¹² Data on tariffs were provided by the USTR. Data on exports, investment, the trade balance, and attention are from USTR, *National Trade Estimate Report on Foreign Trade Barriers*, various issues. Data on GDP, GDP per capita, and GDP growth are from the World Bank, *World Development Report*, various issues. Data on trade actions were compiled from USTR, *Trade Policy Agenda and Annual Report*, various issues. The trade data used to compute the intraindustry trade index are from the U.S. Department of Commerce, International Trade Administration, *U.S. Foreign Trade Highlights*, various issues.

¹³ All of the subsequent analysis was also carried out using simple, instead of trade-weighted, tariffs. The use of this alternative made no qualitative difference (and scarcely any quantitative difference).

¹⁴ It would be useful to have actual data on non-tariff barriers. UNCTAD began to compile such data on developed countries for use by developing countries in the Uruguay Round of trade negotiations. Unfortunately, this data applies only to a limited number of countries and to pre-Uruguay Round barriers and as such is not useful in the work at hand.

actual and predicted trade flows.¹⁵ The regressions in Tables 6 and 7 naturally lend themselves to this use, and the residuals from the Table 6 regressions on total trade have been used to construct XRESID and INVRESID, measures of the implicit trade and investment barriers facing US firms.¹⁶ An equivalent measure based on intra-firm exports, INFXRESID, has been constructed from the Table 7 regression.

One would expect a positive partial correlation between the explicit trade barriers and trade conflict, holding market size constant. The relation between the implicit barrier measures and trade conflict should be a simple positive relationship since the implicit barriers are naturally scaled.

2) *Market size.* Trade conflict may be positively associated with market size for two reasons. First, aggregate market size (measured as gross domestic product, GDP) is presumably correlated with market power and countries with market power could be expected to bargain strategically generating conflict. A second reason is that the payoff to removing a barrier is greater the larger the market is and should attract the attention of trade policy makers. Note that the first argument provides a justification for a positive correlation between conflict and country size, and the second provides a justification for a positive partial correlation between conflict and size, holding trade barriers constant.

3) *Market growth.* If policy makers are maximizing the present discounted value of benefits, as a corollary to the arguments regarding market size, there will be a positive correlation between market growth and conflict (policy makers heading off emerging problems), and a positive partial correlation between growth and conflict, holding the level of trade barriers constant. (The latter effect would be particularly pronounced if the barriers took the form of quantitative restrictions which would become more binding as the economies grew.) The growth of national income over the previous decade (GDPGROWTH) is taken as a proxy for policy makers' expectations of future growth.

4) *Imports and the Trade Balance.* Innumerable observers have pointed to the inverse relationship between bilateral trade balances (TBAL) and trade conflict, although in strictly economic terms there is only a very limited case to be made for linking national welfare to *bilateral* balances *per se*. By extension if policymakers are targeting trade balances, then imports may be positively related to conflict.

5) *Exports and Investment.* Although it might seem logical that if exports and investment is high, there should not be much trade conflict, some argue that greater exports or investment may enlarge the

¹⁵ See Noland (1996b) for an example and additional references.

¹⁶ These residuals take both positive and negative values. The statistical analysis was also done setting residuals with positive values equal to zero. Truncating the series in this way reduced the correlations to insignificance in all applications.

potential number of domestic firms which may demand further opening. As a consequence, the expected sign is ambiguous.

6) *Intraindustry trade*. Analysts at least as far back as Balassa (1967) have argued that intraindustry trade (IIT, measured by the Grubel-Lloyd index adjusted for trade imbalances) will ameliorate trade conflict by facilitating adjustment to increased trade volumes. Consequently, for a given level of trade, there should be fewer trade conflicts the greater the share of intraindustry trade. This implies a negative partial correlation between IIT and trade conflict, holding the volume of trade constant.

MODELING ECONOMIC CONFLICT

Correlation coefficients between the number of pages devoted to a country in the *National Trade Estimate Report on Foreign Trade Barriers* (ATTENTION) and a binary variable based on Table 8 (ACTION) and the variables discussed above for 1993 are reported in Table 10.¹⁷

Clearly, the variable most highly correlated with trade conflict is the bilateral trade balance which is strongly associated with both attention and action. That is to say, the larger a country's bilateral surplus is, the greater the trade conflict. After the trade balance variable, market size, imports, exports, investment, and intra-firm exports had the highest (and uniformly positive) correlations with attention. The results for imports, investment, and the export variables could reflect scaling effects, and in the case of imports, trade balance effects. The investment residual and the tariff level is positively correlated with action, but given that only one country (Japan) had a positive outcome for action in 1994, the specific results for the action variable should not be taken too seriously. As expected, intraindustry shows little direct correlation with trade conflict. It was hypothesized that this variable would only show a positive partial correlation once the level of trade was taken into account.

To disentangle these cross-correlations ATTENTION was regressed against the explanatory variables in combination. Two specifications are reported. In the first, ATTENTION was regressed against the explicit trade barrier variables (TARIFF and STNDTAR), market size (GDP) and growth (GDPGROWTH), the trade balance (TBAL), intraindustry trade (IIT), and the levels of exports (EXPORT) and intra-firm exports (INFEXP) and foreign direct investment (FDI). In the second regression the explicit trade barrier variables were replaced with the implicit trade barrier indicators

¹⁷ The year 1993 was selected as the most recent for which intra-firm trade data is available. The results reported here are similar to those (excluding intra-firm trade variables) reported for 1990-1994 in Noland (1995b).

(XRESID, INVRESID, and FXRESID).¹⁸

The results reported in Table 11 indicate that ATTENTION is robustly correlated with the trade balance and intra-industry trade, and less robustly correlated with partner country GDP, the growth rate of partner country GDP, level of US exports to the partner, the level of intra-firm exports to the partner, and flows of US FDI to the partner country.¹⁹ These results appear to reinforce the results obtained in Table 10: ATTENTION is only weakly (if at all) correlated with trade barriers, explicit or implicit.²⁰ It is strongly correlated with the trade balance and intra-industry trade.²¹

IMPLICATIONS FOR US-ASIA ECONOMIC RELATIONS

Increasing attention has focused of late on the importance of foreign direct investment in fostering trade and development. The results in Table 11 indicate that trade balances and intra-industry trade are

¹⁸ The regressions were also estimated with various regional and country-specific dummy variables included. These typically were insignificant, and when significant were not robust across various specifications and are not reported.

¹⁹ Oddly, total exports are positively correlated with ATTENTION, while intra-firm exports take a negative sign. FDI takes the expected negative sign. The result for total exports cannot be interpreted as a scale effect: exports are positively correlated with ATTENTION, holding partner size constant. In the second specification support is also obtained for the notion that ATTENTION is positively correlated with partner income growth, and negatively correlated with the trade balance as expected. In neither regression are the trade barrier variables statistically significant.

²⁰ In theory, the coefficients GDP, GDPGROWTH, EXPORTS, and FDI in the regression with the implicit trade barrier variables represent only the direct partial though not total impact of these variables on ATTENTION, since the trade and investment residual variables XRESID, INVRESID, and INFXRESID implicitly contain elements of partner GDP, GDPGROWTH, EXPORTS, and FDI. Algebraically one can derive the total impact of these variables by back-substituting the estimates into the Table 6 and Table 7 specifications. In practice, since the coefficients on XRESID, INVRESID, and INFXRESID are statistically not different from zero these indirect effects can safely be ignored.

²¹ Noland (1995b) replicates these results using panel data and tests two additional hypotheses: that there was a regime shift associated with the change between the Bush and Clinton Administrations, and that trade conflict in one period reduces implicit trade barriers in later periods. With respect to the first hypothesis, the null hypothesis on no regime change cannot be rejected: the Bush and Clinton Administrations' behavior was statistically indistinguishable. Regarding the second hypothesis, no evidence was obtained that trade conflict in one period reduces implicit trade barriers in subsequent periods.

the most robust correlates with economic conflict between the United States and its trade partners. What are the prospective implications for US-Asia economic relations?

To examine this issue consider the following counterfactual: what would happen if US foreign direct investment to Asia was doubled? As shown in Table 11, the direct impact would be to reduce trade conflict. However, the increase in FDI would also affect exports, intra-firm exports, and the trade balance through the relationships shown in Tables 6 and 7.²² The total effect would be to reduce trade attention and conflict as shown in Table 12. If US FDI were doubled, according to these estimates, the pages devoted to Asia in the *National Trade Estimates* would fall by 72 percent from 129 pages to 36 pages. All countries except India and China would experience declines in attention, and indeed only India, China, and the Philippines would receive any attention. Obviously these results should not be taken literally -- USTR is not about to put itself out of business -- but the general point should be clear: increases in FDI would serve to increase both the volume of trade and the political resiliency of trade relations between the US and its partners in Asia. The relationship between the US and the EU, while involving trade conflict is no where near as fragile or contentious as the US relationship with some countries in Asia. As someone who has worked in trade policymaking in the US government, I cannot help but believe that this is strongly related to the much bigger stakes US firms have in European markets.

CONCLUSIONS

The US economic relationship with Asia is large, mutually beneficial, and growing rapidly. It is not without controversy, however, due to widespread public perceptions that Asian countries practice essentially predatory policies as evidenced by the large US bilateral trade deficits with most countries in the region.

The key result of this paper is that US investment and exports are complementary. As US

²² With respect to intra-industry trade, among other things, the extent of intra-industry trade tends to rise with country size, trade partner size similarity, per capita income, trade partner per capita income similarity, and falls with foreign direct investment (Balassa and Bauwens, 1987). The projections reported in Noland (1994) suggest that on the whole Asian countries will grow more rapidly than the US over the coming decade and that their per capita incomes will rise more rapidly than those in the US. This means changes in size, size similarity, per capita income, and per capita income similarity will all be moving in the direction of increased intraindustry trade and less trade conflict. However the Balassa and Bauwens estimate indicates that FDI actually reduces IIT thereby increasing trade conflict. Unfortunately the form that the variables enter into the Balassa and Bauwens regressions precludes their inclusion in this simulation exercise.

investment increases so do US exports. This is important because the primary sources of conflict between the US and its trade partners are the bilateral trade deficits that the US runs with many of these countries. This is particularly acute in Asia where the US runs deficits with most countries and runs large deficits with the region's two largest countries, Japan and China.

From a policy perspective this suggests that the US should concentrate on raising national savings, including reducing public dissaving through the reduction of government budget deficits. At the same time Asian countries should re-evaluate policies that discourage inward foreign direct investment.²³ The message of this paper is that increases in inward FDI would not only have the conventional welfare benefits, but would also bring about a reduction in trade tensions with the US.

²³ See Mason (1995) for a summary of these issues.

References

Balassa, Bela. 1967. *Trade Liberalization Among Industrial Countries*. New York: McGraw-Hill.

Balassa, Bela and Luc Bauwens. 1987. "Intra-Industry Trade Specialization in a Multi-Country and Multi-Industry Framework," *Economic Journal*, 97 923-939.

Encarnation, Dennis. 1992. *Rivals Beyond Trade*. Ithaca: Cornell University Press.

Frankel, Jeffrey A. 1996. *Regionalism and Globalism in the World Economic System*, Washington: Institute for International Economics, forthcoming.

Fung, K.C. 1996. "Accounting for Chinese Trade: Some National and Regional Considerations," in Robert E. Baldwin, Robert Lipsey, and J. David Richardson, editors, *Geography and Ownership as Bases for Economic Accounting*, Chicago: University of Chicago Press, forthcoming.

Graham, Edward M. 1996. "On the Relationships Among Direct Investment Exports in the Manufacturing Sector: Empirical Results for the United States and Japan," Washington: Institute for International Economics, unpublished paper.

Hejazi, Walid and Daniel Trefler. 1995. "Canada and the Asian Pacific: Views from the Gravity, Monopolistic Competition, and Heckscher-Ohlin Models," paper presented at the conference on "The Growing Importance of the Asia-Pacific Region in the World Economy: Implications for Canada," Vancouver, 1-2 December.

Kawai, Masahiro and Shujiro Urata. 1995. "Are Trade and Direct Investment Substitutes or Complements? An Analysis of Japanese Industry," paper presented at the International Conference on Economic Development and Cooperation in the Pacific Basin, Berkeley, CA, 30 June-1 July.

Lawrence, Robert Z. 1991. "How Open is Japan?," in Paul R. Krugman editor, *Trade With Japan*, Chicago: University of Chicago Press.

Mason, Mark. 1995. "Foreign Direct Investment in East Asia: Trends and Critical US Policy Issues," New York: Council on Foreign Relations.

Noland, Marcus. 1994. "Implications of Asian Economic Growth," *Working Papers in Asia-Pacific Economic Cooperation*, 94-5, Washington: Institute for International Economics.

Noland, Marcus. 1995a. "China and the International Economic System," *Working Papers in Asia-Pacific Economic Cooperation*, 95-6, Washington: Institute for International Economics.

Noland, Marcus. 1995b. "Chasing Phantoms: The Political Economy of USTR," Washington: Institute for International Economics, unpublished paper.

Noland, Marcus. 1996a. "Comment," in Robert E. Baldwin, Robert Lipsey, and J. David Richardson, editors, *Geography and Ownership as Bases for Economic Accounting*, Chicago: University of Chicago Press, forthcoming.

Noland, Marcus. 1996b. "Public Policy, Private Preferences, and the Japanese Trade Pattern," *Review of Economics and Statistics*, forthcoming.

Table 1
US-Asia Economic Relations, 1994

(US \$ million)

| | Exports | Imports | Trade Balances | U.S. Direct Investment Abroad | Foreign Direct Investment in U.S. |
|-------------|-------------------|-------------------|----------------|-------------------------------|-----------------------------------|
| Australia | 9781 (2.03) | 3200 (0.51) | 6581 | 20504 (3.35) | 7884 (1.56) |
| China | 9287 (1.93) | 38781 (6.18) | -29494 | 1699 (0.28) | 325 (0.06) |
| Hong Kong | 11445 (2.37) | 9698 (1.54) | 1747 | 11986 (1.96) | 1723 (0.34) |
| India | 2296 (0.48) | 5301 (0.84) | -3005 | 818 (0.13) | (*) |
| Indonesia | 2811 (0.58) | 6523 (1.04) | -3712 | 5015 (0.82) | 55 (0.01) |
| Japan | 53481 (11.10) | 119150 (18.97) | -65669 | 37027 (6.05) | 103120 (20.44) |
| Korea | 18028 (3.74) | 19657 (3.13) | -1629 | 3612 (0.59) | 1158 (0.23) |
| Malaysia | 6965 (1.45) | 13977 (2.23) | -7012 | 2382 (0.39) | 451 (0.09) |
| New Zealand | 1508 (0.31) | 1421 (0.23) | 87 | 3577 (0.58) | 158 (0.03) |
| Philippines | 3888 (0.81) | 5720 (0.91) | -1832 | 2374 (0.39) | 86 (0.02) |
| Singapore | 13022 (2.70) | 15361 (2.45) | -2339 | 10972 (1.79) | 1135 (0.23) |
| Taiwan | 17078 (3.54) | 26711 (4.25) | -9633 | 3882 (0.63) | 1438 (0.29) |
| Thailand | 4861 (1.01) | 10307 (1.64) | -5446 | 3762 (0.61) | 173 (0.03) |
| Memorandum: | | | | | |
| Asia, Total | 154451 (30.14) | 275807 (41.55) | -121356 | 107610 (17.58) | 117706 (23.34) |

Note: * Less than \$500,000.

Percentage of total U.S. exports, imports, U.S. direct investment abroad and foreign direct investment in the U.S. are in parentheses.

Source: U.S. Department of Commerce: National Trade Data Bank.

Table 2
Commodity Composition of Trade, 1993

| EXPORT SHARES | SITC0 | SITC1 | SITC2 | SITC3 | SITC4 | SITC5 | SITC6 | SITC7 | SITC8 | SITC9 |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Australia | 3.20 | 0.63 | 2.50 | 1.52 | 0.03 | 14.92 | 7.52 | 50.27 | 13.66 | 5.75 |
| China | 4.03 | 0.15 | 4.85 | 2.84 | 0.02 | 9.60 | 4.75 | 66.32 | 6.34 | 1.11 |
| Hong Kong | 7.11 | 2.61 | 3.38 | 0.40 | 0.11 | 8.23 | 13.35 | 49.14 | 9.99 | 5.68 |
| India | 5.81 | 0.01 | 4.56 | 2.95 | 1.42 | 14.80 | 5.61 | 56.46 | 6.09 | 2.31 |
| Indonesia | 2.87 | 0.98 | 15.32 | 2.43 | 0.07 | 16.36 | 4.19 | 53.40 | 3.20 | 1.17 |
| Japan | 17.68 | 3.82 | 12.83 | 2.37 | 0.18 | 10.52 | 6.06 | 31.74 | 12.89 | 1.91 |
| Korea | 5.67 | 0.84 | 16.32 | 4.27 | 0.33 | 11.54 | 5.82 | 45.03 | 8.54 | 1.64 |
| Malaysia | 1.89 | 0.55 | 2.85 | 0.15 | 0.04 | 4.60 | 3.93 | 78.43 | 5.36 | 2.21 |
| New Zealand | 5.35 | 0.74 | 2.11 | 1.18 | 0.11 | 18.02 | 7.67 | 46.39 | 9.16 | 9.28 |
| Philippines | 11.45 | 0.44 | 3.93 | 2.69 | 0.11 | 7.46 | 6.42 | 58.55 | 5.76 | 3.20 |
| Singapore | 1.60 | 0.99 | 0.64 | 2.81 | 0.08 | 8.44 | 4.43 | 64.33 | 12.51 | 4.17 |
| Taiwan | 7.76 | 0.80 | 7.86 | 2.76 | 0.06 | 12.38 | 5.72 | 50.12 | 8.09 | 4.46 |
| Thailand | 4.93 | 2.24 | 4.49 | 1.05 | 0.02 | 10.43 | 8.15 | 55.51 | 10.84 | 2.34 |
| Memorandum: | | | | | | | | | | |
| Asia, total | 9.51 | 1.96 | 8.67 | 2.37 | 0.16 | 10.64 | 6.32 | 47.12 | 10.31 | 2.94 |

Table 2
(Continued)

| IMPORT SHARES | SITC0 | SITC1 | SITC2 | SITC3 | SITC4 | SITC5 | SITC6 | SITC7 | SITC8 | SITC9 |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Australia | 28.60 | 1.36 | 21.86 | 5.15 | 0.03 | 5.46 | 10.13 | 14.36 | 5.03 | 8.04 |
| China | 1.80 | 0.12 | 0.66 | 0.73 | 0.01 | 1.85 | 8.66 | 19.24 | 66.10 | 0.83 |
| Hong Kong | 1.10 | 0.07 | 0.23 | 0.00 | 0.01 | 0.33 | 5.56 | 24.52 | 63.72 | 4.45 |
| India | 7.50 | 0.11 | 2.64 | 0.90 | 0.49 | 3.60 | 46.95 | 3.66 | 33.61 | 0.55 |
| Indonesia | 7.65 | 0.34 | 10.65 | 10.21 | 0.59 | 0.74 | 14.77 | 11.06 | 43.69 | 0.29 |
| Japan | 0.27 | 0.03 | 0.18 | 0.15 | 0.02 | 3.36 | 5.89 | 78.11 | 10.27 | 1.72 |
| Korea | 0.90 | 0.04 | 0.63 | 0.72 | 0.01 | 1.77 | 10.99 | 52.17 | 31.73 | 1.04 |
| Malaysia | 0.77 | 0.00 | 1.84 | 0.46 | 1.12 | 1.12 | 3.53 | 73.82 | 16.15 | 1.18 |
| New Zealand | 63.08 | 0.59 | 8.69 | 1.60 | 0.00 | 10.20 | 5.07 | 5.55 | 2.59 | 2.63 |
| Philippines | 7.12 | 0.14 | 0.59 | 0.07 | 3.32 | 0.55 | 3.11 | 40.04 | 43.64 | 1.40 |
| Singapore | 0.71 | 0.01 | 0.14 | 1.30 | 0.04 | 4.19 | 0.76 | 81.26 | 8.93 | 2.65 |
| Taiwan | 1.13 | 0.02 | 0.41 | 0.00 | 0.01 | 1.59 | 13.87 | 48.75 | 32.83 | 1.38 |
| Thailand | 16.96 | 0.47 | 2.34 | 0.52 | 0.01 | 0.38 | 9.15 | 37.19 | 32.01 | 0.99 |
| Memorandum: | | | | | | | | | | |
| Asia, total | 2.41 | 0.09 | 1.08 | 0.65 | 0.15 | 2.54 | 8.14 | 57.06 | 26.23 | 1.66 |

Source: Department of Commerce, *US Foreign Trade Highlights, 1993*.

Table 3
Summary Data for Foreign Affiliates of U.S. Firms, 1993

| | Assets (US\$bil) | Sales (US\$bil) | Net Income (US\$bil) | Employees (thousands) |
|--------------------|---------------------|--------------------|-------------------------|--------------------------|
| All Countries | 2053.5 (84.9) | 1573.9 (81.3) | 78.10 (86.0) | 6731.1 (78.1) |
| Canada | 205.8 (93.9) | 192.9 (94.6) | 2.96 (102.4) | 874.9 (94.9) |
| Europe | 1129.2 (91.5) | 810.4 (88.4) | 38.33 (96.1) | 2733.1 (88.5) |
| Latin America | 242.5 (76.6) | 160.9 (74.9) | 17.57 (69.9) | 1420.3 (70.9) |
| Africa | 18.2 (87.9) | 16.5 (82.4) | 1.15 (90.4) | 106.9 (66.4) |
| Middle East | 24.6 (44.3) | 16.2 (48.8) | 1.49 (46.3) | 53.6 (62.7) |
| Asia and Pacific | 419.5 (69.5) | 370.0 (62.8) | 16.06 (79.4) | 1518.0 (57.8) |
| Australia | 61.3 (72.6) | 58.0 (62.8) | 3.14 (74.8) | 371.5 (51.1) |
| China | 3.7 (67.6) | 2.9 (62.1) | 0.12 (66.7) | 37.4 (53.5) |
| Hong Kong | 31.5 (92.7) | 26.0 (92.3) | 2.01 (93.5) | 89.2 (74.4) |
| India | 1.5 (33.3) | 1.6 (31.3) | 0.04 (25.0) | 36.7 (33.5) |
| Indonesia | 11.8 (94.1) | 8.3 (94.0) | 1.49 (100.7) | 52.3 (80.9) |
| Japan | 221.0 (62.3) | 176.3 (46.5) | 3.17 (61.2) | 411.3 (38.3) |
| Korea, Republic of | 12.3 (34.1) | 12.9 (32.6) | 0.27 (-3.7) | 58.8 (45.7) |
| Malaysia | 10.2 (94.1) | 9.9 (96.8) | 0.94 (93.6) | 86.8 (94.5) |
| New Zealand | 10.5 (36.2) | 6.6 (54.5) | 0.43 (16.3) | 42.3 (43.7) |

(Continued)

Table 3 -- Continued

| | Assets (US\$bil) | Sales (US\$bil) | Net Income (US\$bil) | Employees (thousands) |
|-------------|---------------------|--------------------|-------------------------|--------------------------|
| Philippines | 4.8 (77.1) | 5.7 (77.2) | 0.52 (76.9) | 85.2 (71.6) |
| Singapore | 26.1 (96.6) | 39.0 (98.2) | 2.55 (96.9) | 100.7 (92.9) |
| Taiwan | 11.9 (82.4) | 11.9 (86.6) | 0.65 (81.5) | 59.6 (79.7) |
| Thailand | 10.7 (73.8) | 9.4 (87.2) | 0.64 (85.9) | 74.9 (65.7) |
| Other | 2.2 (81.8) | 1.5 (100.0) | 0.10 (100.0) | 11.1 (91.0) |

Note: Figures in parentheses are the percentages accounted for by majority-owned firms.

Source: US Direct Investment Abroad: Operations of U.S. Parent Companies and their Affiliates, US Department of Commerce, June 1995.

Table 4
Summary Data for Asian Affiliates of U.S. Firms, 1993

| | Assets (US\$bil) | Sales (US\$bil) | Net Income (US\$bil) | Employees (thousands) |
|---|---------------------|--------------------|-------------------------|--------------------------|
| All industries | 419.5 (69.5) | 370.0 (62.8) | 16.1 (79.5) | 1518.0 (57.8) |
| Petroleum | 62.5 (59.0) | 81.3 (64.5) | 4.3 (81.4) | 64.1 (68.5) |
| Manufacturing | 143.4 (53.2) | 168.9 (55.2) | 6.4 (79.7) | 867.7 (64.0) |
| Food and kindred products | 11.2 (76.8) | 14.4 (70.1) | 1.1 (81.8) | 114.8 (55.2) |
| Chemicals and allied products | 27.9 (55.2) | 26.3 (62.0) | 1.3 (76.9) | 109.6 (69.0) |
| Primary and fabricated metals | 3.7 (43.2) | 3.7 (48.7) | 0.1 (100.0) | 24.7 (64.8) |
| Machinery except electrical | 30.2 (78.8) | 35.4 (80.0) | 1.4 (85.7) | 141.4 (78.8) |
| Electric and electronic equipment | 16.0 (83.8) | 21.6 (89.8) | 1.1 (90.9) | 191.8 (85.6) |
| Transportation equipment | 27.3 (7.7) | 41.4 (10.9) | 0.3 (33.3) | 105.8 (15.9) |
| Other manufacturing | 27.2 (41.9) | 26.2 (48.1) | 1.2 (58.3) | 179.6 (60.0) |
| Wholesale trade | 36.7 (83.4) | 62.0 (86.5) | 1.7 (100.0) | 123.3 (82.7) |
| Finance (except banking), insurance and real estate | 133.9 (93.8) | 20.0 (91.0) | 1.9 (94.7) | 37.6 (86.7) |
| Services | 9.2 (75.0) | 10.3 (68.9) | 0.3 (66.7) | 75.2 (72.1) |
| Other industries | 33.8 (44.7) | 27.5 (29.1) | 1.4 (35.7) | 350.1 (25.5) |

Note: Figures in parentheses are the percentages accounted for by majority-owned firms.

Source: *US Direct Investment Abroad: Operations of U.S. Parent Companies and their Affiliates*, US Department of Commerce, June 1995.

Table 5
Majority Owned Affiliate Sales by Destination (percentages)

| | Sales to US | Sales to local | Sales to other foreign countries |
|--------------------|----------------|-------------------|-------------------------------------|
| All Countries | 10.80 | 66.05 | 23.15 |
| Canada | 27.63 | 69.63 | 2.74 |
| Europe | 4.33 | 64.16 | 31.49 |
| Latin America | 17.84 | 67.14 | 15.02 |
| Africa | 28.80 | 58.45 | 12.74 |
| Middle East | 11.39 | 59.49 | 29.11 |
| Asia and Pacific | 11.48 | 69.81 | 18.71 |
| Australia | 2.47 | 83.79 | 13.74 |
| China | (D) | (D) | 16.67 |
| Hong Kong | 19.58 | 48.75 | 31.67 |
| India | 4.44 | 93.33 | 2.67 |
| Indonesia | 19.23 | 21.79 | 58.97 |
| Japan | 4.88 | 89.02 | 6.10 |
| Korea, Republic of | 14.29 | 78.57 | 7.14 |
| Malaysia | 28.54 | 44.91 | 26.56 |
| New Zealand | 1.77 | 90.55 | 7.68 |
| Philippines | 9.94 | 73.98 | 16.08 |
| Singapore | 25.33 | 38.38 | 36.29 |
| Taiwan | 10.76 | 75.38 | 13.85 |
| Thailand | 10.98 | 73.17 | 15.85 |
| Other | (D) | (D) | 20.00 |

Note: (D) indicates that the data have been suppressed to avoid disclosure of data of individual companies.

Source: US Direct Investment Abroad: Operations of U.S. Parent Companies and their Affiliates, US Department of Commerce, June 1995.

TABLE 6
Export, Import and Investment Regressions

| INDEPENDENT VARIABLES | DEPENDENT VARIABLES | | |
|-----------------------|------------------------------|------------------------------|-------------------------------|
| | LEXP | LIMP | LINV |
| CONSTANT | 2.26 (2.71) ^a | -0.65 (-0.56) | -7.46 (-4.47) ^a |
| LGDPPC | -0.15 (-1.55) | -0.04 (-0.35) | 0.71 (3.73) ^a |
| LGDP | | | 0.14 (1.45) |
| LGDPGROWTH | | 0.11 (1.42) | |
| LEXP | | 1.12 (14.81) ^a | 1.38 (5.97) ^a |
| LIMP | 0.66 (13.79) ^a | | -0.51 (-2.50) ^b |
| LINV | 0.24 (7.02) ^a | | |
| BORDER | 0.16 (0.92) | | |
| FTA | 0.10 (0.39) | -0.16 (-0.39) | |
| \bar{R}^2 | 0.87 | 0.83 | 0.71 |

Note: Superscript a indicates significance at the 1 percent level; b at the 5 percent level; c at the 10 percent level

LEGEND: LEXP = log exports

LIMP = log imports

LINV = log foreign direct investment

LGDP = log gross domestic product

LGDPPC = log gross domestic product per capita

LGDPGROWTH = log gross domestic product growth rate

FTA = dummy variable for free trade areas

BORDER = dummy variable for border

TABLE 7
Intra-firm Trade and Investment Regressions

| INDEPENDENT VARIABLES | DEPENDENT VARIABLES | | |
|-----------------------|-------------------------------|-------------------------------|-----------------------------|
| | LINFEXP | LINFIMP | LINV |
| CONSTANT | -3.20 (-2.24) ^b | 4.14 (1.67) ^c | -1.82 (-1.10) |
| LGDP | 0.35 (1.83) ^c | -0.67 (-2.10) ^b | 0.27 (1.43) |
| LGDPGROWTH | | 0.35 (1.80) ^c | 0.31 (3.62) ^a |
| LINFEXP | | 1.14 (10.14) ^a | 0.61 (4.65) ^a |
| LINFIMP | 0.47 (6.87) ^a | | -0.03 (-0.31) |
| LINV | 0.47 (5.37) ^a | | |
| BORDER | 0.76 (1.98) ^b | | |
| FTA | -1.09 (-2.62) ^a | 1.55 (2.23) ^b | |
| \bar{R}^2 | 0.88 | 0.77 | 0.86 |

Note: Superscript a indicates significance at the 1 percent level; b at the 5 percent level; c at the 10 percent level

LEGEND: LINFEXP = log intra-firm exports
 LINFIMP = log intra-firm imports
 LINV = log foreign direct investment
 LGDP = log gross domestic product
 LGDPPC = log gross domestic product per capita
 LGDPGROWTH = log gross domestic product growth rate
 FTA = dummy variable for free trade areas
 BORDER = dummy variable for border

Table 8
Unilateral Trade Actions, 1990-1994

| YEAR | STATUTE | TARGET | SELF-INITIATED |
|------|--------------|---------------------------------------|----------------|
| 1990 | Section 301 | Canada beer | |
| 1990 | Section 301 | European Community enlargement | x |
| 1990 | Section 301 | Thailand intellectual property rights | |
| 1991 | Section 301 | European Community meat | |
| 1991 | Section 301 | Thailand intellectual property rights | |
| 1991 | Section 301 | India intellectual property rights | x |
| 1991 | Section 301 | China intellectual property rights | x |
| 1991 | Section 301 | Canada softwood lumber | x |
| 1991 | Section 301 | China market access | x |
| 1991 | Title VII | Norway government procurement | x |
| 1992 | Section 301 | Taiwan intellectual property rights | x |
| 1992 | Section 301 | Indonesia pencil slats | |
| 1992 | Title VII | European Community telecoms | x |
| 1993 | Section 301 | Brazil intellectual property rights | x |
| 1993 | Title VII | Japan construction | x |
| 1994 | Section 1377 | Japan cellular telephones | |

Source: USTR, *Trade Policy Agenda and Annual Report*, various issues.

Table 9
USTR Scrutiny of Foreign Trade and Investment Barriers

| | Pages in Foreign Trade Barriers | Share of Total Pages | Ratio of Page Shares to Export Share |
|-------------|------------------------------------|-------------------------|---|
| Australia | 9 | 3.1 | 1.5 |
| China | 19 | 6.6 | 3.4 |
| Hong Kong | 0 | 0.0 | 0.0 |
| India | 9 | 3.1 | 6.5 |
| Indonesia | 7 | 2.4 | 4.2 |
| Japan | 41 | 14.2 | 1.3 |
| Korea | 14 | 4.9 | 1.3 |
| Malaysia | 5 | 1.7 | 1.2 |
| New Zealand | 3 | 1.0 | 3.4 |
| Philippines | 7 | 2.4 | 3.0 |
| Singapore | 3 | 1.0 | 0.4 |
| Taiwan | 13 | 4.5 | 1.3 |
| Thailand | 7 | 2.4 | 2.4 |
| Memorandum: | | | |
| Asia, total | 137 | 47.6 | 1.6 |

Source: United States Trade Representative, *1995 National Trade Estimate Report on Foreign Trade Barriers*.

TABLE 10
Correlations, 1993

| | ATTENTION | ACTION |
|------------|--------------------|--------------------|
| TARIFF | -0.25 | 0.02 |
| STNDTAR | -0.26 | 0.02 |
| XRESID | 0.24 | -0.06 |
| INFXRESID | 0.16 | 0.01 |
| IRESID | 0.34 | 0.33 |
| INVRESID | -0.13 | 0.39 ^c |
| GDP | 0.81 ^a | 0.32 |
| GDPGROWTH | 0.07 | -0.06 |
| TBAL | -0.91 ^a | -0.65 ^a |
| EXPORTS | 0.57 ^a | 0.12 |
| IMPORTS | 0.78 ^a | 0.33 |
| INFEXPORTS | 0.41 ^c | -0.02 |
| INFIMPORTS | 0.20 | -0.08 |
| FDI | 0.49 ^b | 0.01 |
| IIT | 0.20 | -0.03 |

Note: Superscript a indicates significance at 1 percent level; b at 5 percent level and c at 10 percent level.

TABLE 11
Cross-section Regressions, 1993

| INDEPENDENT VARIABLES | DEPENDENT VARIABLE | |
|-----------------------|----------------------------------|----------------------------------|
| | (11.1) | (11.2) |
| | ATTENTION | ATTENTION |
| CONSTANT | 5.63 (2.46) ^b | 3.75 (1.59) |
| GDP | 3.44E-6 (1.38) | 4.88E-6 (4.13) ^a |
| GDPGROWTH | 0.32 (1.42) | 0.31 (1.87) ^c |
| TBAL | -2.71E-4 (-1.89) ^c | -2.80E-4 (-3.41) ^a |
| IIT | -6.99 (-1.98) ^b | -5.89 (-2.79) ^a |
| EXPORT | 3.92E-4 (2.52) ^b | 2.01E-4 (1.44) |
| INFEXP | -7.41E-4 (-1.84) ^c | -2.19E-4 (-0.66) |
| FDI | -2.31E-5 (-0.27) | -8.32E-5 (-1.92) ^c |
| TWTAR | -0.08 (-0.64) | |
| STNDTWTAR | 2.15 (0.62) | |
| XRESIDS | | 1.35 (1.19) |
| FXRESIDS | | -0.34 (-0.85) |
| VRESIDS | | 0.37 (1.55) |
| \bar{R}^2 | 0.90 | 0.92 |

Note: Superscript a indicates significance at 1 percent level; b at 5 percent level; c at 10 percent level

Legend: GDP = Gross domestic product (millions of dollars)

GDPGROWTH = Growth rate of GDP

TBAL = Trade balances (millions of dollars)

IIT = Index of intra-industry trade

EXPORT = U.S. exports (millions of dollars)

INFEXP = U.S. intra-firm exports (millions of dollars)

FDI = Foreign direct investment (millions of dollars)

TWTAR = Trade-weighted tariff rate

STNDTWTAR = Standard deviation of TWTAR

XRESIDS = Residuals obtained from export regression (millions of dollars)

FXRESIDS = Residuals obtained from intra-firm export regressions (millions of dollars)

VRESIDS = Residuals obtained from foreign direct investment regression (millions of dollars).

Table 12
Simulated Attention

| | Attention | Simulated Attention |
|----------------------------|-----------|------------------------|
| Australia | 9 | 0 |
| China | 15 | 20 |
| Hong Kong | 0 | 0 |
| India | 9 | 11 |
| Indonesia | 7 | 0 |
| Japan | 44 | 0 |
| Korea | 12 | 0 |
| Malaysia | 4 | 0 |
| New Zealand | 3 | 0 |
| Philippines | 7 | 5 |
| Singapore | 3 | 0 |
| Taiwan | 10 | 0 |
| Thailand | 6 | 0 |
| Memorandum: Asia, total | 129 | 36 |

Appendix Table 1
Export, Import and Investment Regressions with Inward FDI Added

| INDEPENDENT VARIABLES | DEPENDENT VARIABLES | | |
|-----------------------|-----------------------------|-----------------------------|-------------------------------|
| | LEXP | LIMP | LINV |
| CONSTANT | 1.17 (0.68) | 1.39 (0.60) | -1.06 (-0.24) |
| LGDP | -0.05 (-0.26) | -0.23 (-0.96) | 0.20 (0.52) |
| LGDPGROWTH | | | -0.27E-2 (-0.02) |
| LEXP | | 0.22 (1.99) ^b | |
| LIMP | 0.69 (9.55) ^a | 0.98 (8.60) ^a | 1.31 (5.23) ^a |
| LINV | 0.28 (5.14) ^a | | -0.62 (-2.76) ^a |
| LINWV | -0.06 (-0.98) | 0.10 (1.33) | 0.22 (1.49) |
| BORDER | 0.31 (1.20) | | |
| FTA | 0.06 (0.19) | -0.10 (-0.24) | |
| \bar{R}^2 | 0.85 | 0.83 | 0.67 |

Note: Superscript a indicates significance at the 1 percent level; b at the 5 percent level; c at the 10 percent level.

LEGEND: LEXP = log exports

LIMP = log imports

LINV = log foreign direct investment

LINWV = log inward foreign direct investment

LGDP = log gross domestic product

LGDPGROWTH = log gross domestic product growth rate

FTA = dummy variable for free trade areas

BORDER = dummy variable for border

Appendix Table 2
Intra-firm Trade and Investment Regressions with Inward FDI Added

| INDEPENDENT VARIABLES | DEPENDENT VARIABLES | | |
|-----------------------|-------------------------------|-----------------------------|-----------------------------|
| | LINFEXP | LINFIMP | LINV |
| CONSTANT | 0.34 (0.13) | 0.58 (0.12) | 1.31 (0.30) |
| LGDP | -0.03 (-0.11) | -0.27 (-0.48) | 0.10 (0.27) |
| LGDPGROWTH | | 0.51 (2.13) ^b | |
| LINFEXP | | 1.31 (7.58) ^a | 0.52 (3.49) ^a |
| LINFIMP | 0.42 (6.09) ^a | | -0.02 (-0.23) |
| LINV | 0.37 (2.78) ^a | | |
| LINWV | 0.16 (1.81) ^c | -0.23 (-1.47) | 0.13 (0.93) |
| BORDER | 0.99 (2.44) ^b | | |
| FTA | -1.25 (-2.92) ^a | 1.73 (2.36) ^b | |
| \bar{R}^2 | 0.86 | 0.69 | 0.81 |

Note: Superscript a indicates significance at the 1 percent level; b at the 5 percent level; c at the 10 percent level

LEGEND: LINFEXP = log intra-firm exports
LINFIMP = log intra-firm imports
LINV = log foreign direct investment
LINWV = log inward foreign direct investment
LGDP = log gross domestic product
LGDPGROWTH = log gross domestic product growth rate
FTA = dummy variable for free trade areas
BORDER = dummy variable for border

Appendix Table 3
Export, Import and Investment Regressions with Asian Splines Added

| INDEPENDENT VARIABLES | DEPENDENT VARIABLES | | |
|-----------------------|------------------------------|------------------------------|-------------------------------|
| | LEXP | LIMP | LINV |
| CONSTANT | 2.18 (2.59) ^a | -0.48 (-0.42) | -6.78 (-3.87) ^a |
| LGDPPC | -0.16 (-1.60) | -0.03 (-0.21) | 0.61 (2.85) ^a |
| LGDP | | | 0.16 (1.56) |
| LGDPGROWTH | | 0.08 (0.88) | |
| LEXP | | 1.07 (13.58) ^a | 1.20 (4.44) ^a |
| LIMP | 0.68 (13.04) ^a | | -0.32 (-1.25) |
| LINV | 0.25 (6.89) ^a | | |
| BORDER | 0.14 (0.76) | | |
| FTA | 0.01 (0.05) | 0.04 (0.08) | |
| ASIALINV | -0.02 (-1.30) | | |
| ASIALEXP | | 0.04 (1.66) ^b | 0.48 (0.99) |
| ASIALIMP | | | -0.48 (-1.0) |
| \bar{R}^2 | 0.89 | 0.86 | 0.75 |

Note: Superscript a indicates significance at the 1 percent level; b at the 5 percent level.

LEGEND: LEXP = log exports
log imports

LINV = log foreign direct investment

LGDP = log gross domestic product

BORDER = dummy variable for border

LGDPPC = log gross domestic product per capita

LGDPGROWTH = log gross domestic product growth rate

ASIALINV=Asia investment spline variable.

ASIALEXP=Asia export spline variable

ASIALIMP=Asia import spline variable

FTA = dummy variable for free trade areas

LIMP =

Appendix Table 4
Intra-firm Trade and Investment Regressions with Asian Splines Added

| INDEPENDENT VARIABLES | DEPENDENT VARIABLES | | |
|-----------------------|-------------------------------|------------------------------|-------------------------------|
| | LINFEXP | LINFIMP | LINV |
| CONSTANT | -3.47 (-2.42) ^b | 4.28 (1.76) ^c | -1.99 (-1.28) |
| LGDP | 0.40 (2.07) ^b | -0.68 (-2.18) | 0.23 (1.28) |
| LGDPGROWTH | | 0.26 (1.13) | 0.39 (4.52) |
| LINFEXP | | 1.12 (10.06) ^a | 0.48 (3.82) ^a |
| LINFIMP | 0.50 (6.85) ^a | | 0.07 (0.72) |
| LINV | 0.44 (4.86) ^a | | |
| BORDER | 0.67 (1.64) ^c | | |
| FTA | -1.31 (2.97) ^a | 1.84 (2.57) ^a | |
| ASIALINV | -0.03 (-0.90) | | |
| ASIALEXP | | 0.05 (1.17) | 0.54 (1.59) |
| ASIALIMP | | | -0.55 (-1.67) ^c |
| \bar{R}^2 | 0.90 | 0.81 | 0.90 |

Note: Superscript a indicates significance at the 1 percent level; b at the 5 percent level; c at the 10 percent level

LEGEND: LINFEXP = log intra-firm exports
LINFIMP = log intra-firm imports
LINV = log foreign direct investment
LGDP = log gross domestic product
LGDPGROWTH = log gross domestic product growth rate
FTA = dummy variable for free trade areas
BORDER = dummy variable for border

ASIALINV=Asia investment spline variable
ASIALEXP=Asia export spline variable
ASIALIMP=Asia import spline variable