Regional vs. Global Financing Strategies for U.S. MNEs

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Abstract

Despite declining in 2001, foreign direct investment (FDI) surged during the 1990s. As a result, current levels of FDI flows are triple their 1990 levels. It is well documented in the literature that FDI occurs in large part among countries that are geographically close. It is also well established that the NAFTA had a significant impact on both U.S. FDI flows and hence FDI stocks. In addition, tax policies and tax treaties have been shown to be important drivers of U.S. FDI. The analysis presented in this paper confirms these earlier results. We extend the analysis, however, to show that tax treaties have a significant impact on *financing patterns* of U.S. MNE activities abroad. Based on these results, we argue that bilateral tax treaties should be an important part of trade agreements between the United States and Latin American partners in anticipation of a Free Trade Agreement of the Americas (FTAA).

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I. Introduction

Since the 1994-1995 peso crisis, a great deal of attention has been given to financial globalization and the destabilizing consequences of unbridled short-term capital flows. In spite of this attention, the process of financial globalization does not depend on the actions of short-term investors. Rather, as argued by Rugman (2000), the correct focus of financial globalization is on the activities of multinational enterprises (MNEs) and the long-term capital flows generated through their foreign direct investment (FDI) activities. Rugman further argues that because the majority of MNE activity is regionally based, true financial globalization has yet to occur. A recent study by the OECD (2003, p. 5) echoed this view, arguing that a significant share of FDI takes place among countries bound by regional trade agreements and among geographically close countries.

The defeat of the Multilateral Agreement on Investment (MAI), the failed Seattle trade round, the sluggish progress of the Doha trade round, and chilled diplomatic relations among the world's economic superpowers signals that if further economic integration is to occur at all, it will result from the actions of MNEs, and therefore proceed on a regional basis rather than a multilateral basis. In other words, further economic integration depends on management decisions on where to engage in FDI and how to finance these FDI flows. Hence, prudent policymaking requires recognition of the regional nature of long-term capital flows and an understanding of their financing patterns. As a result, countries can avoid distortionary policy actions so as to ensure an efficient allocation of productive resources.

The purpose of this paper is to review the patterns of U.S. outward FDI and to highlight differences regionally versus globally. Though these patterns have been discussed elsewhere, little attention has been given to the financing patterns of U.S. MNEs operating abroad, and again making comparisons regionally versus globally. Because further economic integration is likely to be to the south, we consider potential differences between triad FDI activity and North-South FDI activity. We find a stark difference in corporate tax treatment among the triad nations as opposed

to north-south relationships. Specifically, there is a preponderance of long-standing bilateral tax treaties among triad nations and a lack of bilateral tax treaties between the United States and its potential Free Trade Agreement of the Americas (FTAA) partners to the south.

Our contribution is twofold: First, though a number of studies conclude that tax polices affect FDI and that FDI is becoming more sensitive to its tax treatment, we follow the advice of Hines (1997) and test the robustness of these conclusions by controlling for important macroeconomic factors. Second, we extend the analysis of Blonigen and Davies (2000 and 2002) on the impact of tax treaties on FDI in two important ways. First, we extend the period of analysis to cover the entire 1990s, a period in which FDI flows rose dramatically before settling to a level three times that prior to the 1990s (OECD, 2003), and by considering the impact of bilateral treaties on MNE *financing patterns*. We find that total FDI flows are significantly affected by both the 1986 U.S. tax reform and by the existence of a bilateral tax treaty between the United States and the host nation. However, when we decompose total FDI flows into their three forms – those financed by new equity, reinvested earnings, and intercompany debt – we see that both of these tax variables have different effects on equity financing versus retained earnings financing. Further, the impact of recently negotiated or renegotiated treaties affects FDI flows differently than longstanding, not recently renegotiated, treaties. Unfortunately, our model performs poorly in explaining intercompany debt flows.

We conclude that tax policies have important consequences for FDI. Bilateral tax treaties, in particular, present an interesting regional dimension because U.S. bilateral treaties exist primarily with NAFTA and European nations.[1] Attempts to create an FTAA need to include tax treaties in the similar manner that the NAFTA did.

The remainder of the paper is organized as follows. Section two briefly describes the existing microeconomic theory on FDI. Section three describes general trends in U.S. outward FDI stock while section four describes U.S. outward FDI flows and how these flows are financed.

Section five provides empirical evidence on tax treaties and other key determinants of these patterns. Section six offers conclusions.

II. Theoretical Background

In this section, we outline the literature that identifies reasons for the rise of MNEs. In the interest of brevity, we identify only the major themes of the literature, and refer the reader to Hejazi and von der Ruhr (2002) for a summary of specific articles.

The development of *microeconomic* theories to explain FDI are linked by their focus on firms' efforts to reduce both explicit and implicit transactions costs. Early models focus on the explicit costs that may be reduced by internalizing a transaction via FDI as opposed to engaging in an external, market-based transaction. More recent models build upon earlier work by considering the effect of implicit costs, which may arise as a consequence of incomplete contracting.

The additional costs arising from incomplete contracting are important factors that influence how a firm organizes its transactions. For example, the difficulty of generating incentive-compatible contracts with foreign sales agents as a means to serve a foreign market will have a significant influence on the FDI decision. These models often hinge on the role of information and uncertainty about quality. Uncertainty about quality implies that the firm must reveal its competitive advantage to receive its full value in the foreign market. This may lead an agent who deals with the firm at arm's length to behave opportunistically, or for the firm to sacrifice too much of its rents to a local agent.

Dunning (1988,1993a) summarizes the different motives for FDI in a single cohesive theory via his ownership, location, internalization framework (OLI). According to this framework, for a firm to enter a foreign market via FDI rather than other potential options (such as direct exporting or licensing) the firm must have three unique advantages: (1) an ownership advantage, (2) an internalization advantage, and (3) a location advantage. The ownership advantage is the firm's unique assets which confers upon it market power. The internalization

advantage refers to the firm's inability to realize the full value of its ownership advantage through market transactions, thus causing the firm to deliver its product internally through FDI. Finally, the location advantage refers to the firm locating a production process abroad to benefit from that country's comparative advantage, or to locate close to the consumer in order to realize the value of its ownership advantage.

Though the majority of research on FDI has focused on manufacturing FDI, the OLI framework is particularly well suited to explaining the increasing role of service industries in FDI. Services have unique characteristics that deserve attention in examining their contributions to FDI flows. Depending on the immediacy of production and consumption of the service, export may not be feasible. Second, services are used increasingly to coordinate fragmented production processes, and require a local presence where production is located. Third, services are often knowledge-intensive, and therefore replicated at a low cost. Finally, a key determinant of a service provider's long-run success involves its ability to establish a reputation for consistently providing a high-quality service, and is best done through FDI. Evidence suggests that FDI is the leading method by which service providers access a foreign market. For instance, we may consider the ratio of affiliate sales to affiliate sales plus export sales to illustrate how important FDI sales are to services (Dunning 1993b). For accounting services this ratio is 92 percent, and for advertising services it is 85 percent.

The rationale for engaging in FDI as established in the literature helps explain the industrial and geographic distribution of U.S. outward FDI seen in the data. Services are the leading industry of both U.S. outward and inward FDI, and typically originate from or are located in other developed countries. This may be attributed to the demand for services in developed economies as well as the fact that as production processes become increasingly fragmented, service firms are needed (called upon) to coordinate various production processes.

The last issue to consider relates to what method a firm uses to finance its FDI flows: new equity, reinvested earnings, or intercompany debt. Little work has been done in this area. A

notable exception is Lipsey (1993) who compares financing flows across U.S. inward and outward FDI from 1950 through 1991. He finds that U.S. firms tend to finance FDI abroad more consistently through reinvested earnings whereas foreign firms have a more varied pattern of financing.

III. General Data Trends in U.S. Outward FDI *Stock*

Before proceeding, something should be said about the construction of the FDI *stock* data. U.S. FDI stock data are reported on a historical cost basis. Retained earnings and new flows are in current dollars and are simply added to the previous year's FDI stock (which are not in current dollars). This forms the balance of payments definition of FDI. The *market value* of FDI stock at any point in time, however, is defined as the level of FDI in the previous period, plus retained earnings, plus net new flows of FDI, plus price appreciation (or less depreciation). It is this last component which is needed to convert FDI from historical costs to market values. Since these adjustments are unavailable, most FDI stock data are at historical costs as is the data presented here.[2]

Examination of the data clearly indicates that U.S. firms' FDI decisions on where to locate have changed over time. Exhibit 1 illustrates the distribution of the stock of U.S. FDI in five host regions: Europe, Canada, Latin America, Japan, and Australia and New Zealand. The figure illustrates that Europe remains the dominant and increasingly important destination for U.S. outward FDI, accounting for about 52 percent of U.S. outward FDI in 2000. On the other hand, Canada has received less U.S. FDI over time. Canada reached a high of 22 percent of U.S. outward FDI in 1984, and a low of 10 percent by 2000.[3]

Exhibit 1 Here

An interesting fact to draw from this figure refutes a popular belief about developed-country FDI, namely that MNEs are driven to enter foreign markets in order to exploit cheap labor. For world stocks of FDI in 2000, 67 percent of all inward FDI stocks were located in developed countries. Furthermore, 88 percent of these stocks originate in developed countries

(UNCTAD 2001). For the United States specifically, approximately three quarters of its outward FDI stock was located in other developed countries and over 90 percent of its inward stock originates in other developed countries. Therefore, the popular perception that MNEs, American and otherwise, engage in FDI primarily to exploit low-wage labor is clearly mistaken: market access and access to technology are far more important determinants of FDI. It may nevertheless be true that to the extent MNEs undertake FDI in developing countries it is for reasons of factor-price differences. However, this is by no means the prime motivation for MNE activity abroad.

Exhibit 2 illustrates the changing composition of U.S. outward FDI among the following industries: petroleum, manufacturing, and producer services (the sum of wholesale trade, banking, finance, insurance, real estate, and other business services) sectors.[4] This figure reveals an interesting trend regarding the increasing importance of services FDI. The importance of petroleum FDI has fallen dramatically whereas manufacturing has fallen by less. The chart illustrates that services have significantly overtaken manufacturing in its share of U.S. outward FDI. As noted above, these trends can be attributed to several broad factors: restrictions on FDI in services have been liberalized relatively recently, there has been dramatic growth in services in the economies of the world, and the changing nature of international production. These trends are likely to continue given the increased importance of services in the GDP of the U.S. and other developed countries.

The importance of the third factor, namely the changing nature of international production – that is, the increasing fragmentation of production processes – should be highlighted. These sub-production processes require business services to coordinate them. Hence, we see an increasing role for services in FDI. It is also logical that the increase in services FDI followed manufacturing FDI. Manufacturers led the FDI process and as their production is refined, they call on services to be provided in the foreign market (Raff and von der Ruhr 2001).

Exhibit 2 here

The magnitudes of these stocks of services FDI also reflect on the importance of services in international trade. The United States is the world leader in the export of services. It dominated the share of total service exports in 1998, accounting for 18.1 percent of total service exports; with the next highest share, 7.7 percent, coming from Britain (Economist, 1999). Many of these services are not easily traded for a number of reasons. For instance, they may need to be produced and consumed at the same time, be subject to high trade barriers, or simply require frequent contact between the service provider and the consumer. Thus, the majority of trade in these services is actually carried out through FDI rather than exports. In fact, in many industries, foreign markets cannot be serviced without a local presence, and hence FDI. Additional understanding of FDI and trade in these service industries is important for policymakers, as the liberalization of trade in services has received considerable attention in recent trade negotiations.

Our interest in regional FDI prompts consideration of the industrial breakdown of the stock of U.S. FDI in both Canada and Mexico. Though not presented here, the FDI data suggests that some significant changes took place around 1994 in both countries. All industries experienced significant increases in the stock of FDI in each country between 1994 and 2000. Further, in each country, the top three industries experiencing growth were banking, FIRE, and other business services FDI. Perhaps because of market potential for growth, Mexico's growth was lager in each category than Canada's.

Interestingly, the growth in regional manufacturing FDI has lagged behind the growth of manufacturing FDI globally. This may be explained by the NAFTA; as more goods are traded freely, the need for manufacturing FDI to jump tariff and non-tariff trade barriers is decreased. Further, the growth in services FDI has grown more regionally than globally, reflecting the increased amount of trade that must be done "in person" thereby requiring a local presence.

IV. U.S. FDI *Flows* and Financing

To this point, we have focused on U.S. FDI stocks abroad. We now turn our focus to U.S. FDI outflows and how these flows are financed. We break U.S. outward FDI flows into their components: equity capital, reinvested earnings, and intercompany debt. The Bureau of Economic Analysis defines each type of flow as follows. Equity capital outflows occur when a U.S. parent company increases its equity investment in one of its existing foreign affiliates or makes a new equity investment in a foreign business enterprise, either by acquiring an existing business or establishing a new one. Equity capital inflows occur when a U.S. parent company reduces its equity investment in one of its existing foreign affiliates.

Intercompany debt flows are of two types: U.S. parent receivables and U.S. parent payables. U.S. parent receivable represent loans that a U.S. parent extends to its foreign affiliate. An outflow on U.S. parent receivables occurs when the parent extends a new loan to its affiliate; an inflow occurs when an affiliate repays part or all of a loan from its U.S. parent. U.S. parent payables represent loans that a foreign affiliate extends to its U.S. parent. An outflow on U.S. parent payables occurs when the parent repays part or all of its loan from its foreign affiliate. An inflow occurs when an affiliate extends a new loan to the U.S. parent.

Reinvested earnings are the parent's claim on undistributed after-tax earnings of its foreign affiliate. They are computed as the difference between the parent's claim on its affiliate's current earnings and the dividends that the affiliate pays to a parent in a given period. They are positive when a parent has a claim on positive current earnings of its affiliate in excess of the dividends that it receives from its affiliate.

To better understand the general patterns of these flows, we accumulate the data and present it for the entire period, 1982 through 2000, Table 1. The top panel of each table provides the dollar value of the three forms of financing, and the bottom panel provides the share of financing by country or region considered. As expected, there is a great amount of heterogeneity across countries and regions. There are, however, some generalizations. First, reinvested earnings are almost always more important than either new equity financing or intercompany debt. (The

exceptions to this are petroleum FDI in Mexico and Central America, and services investment in Mexico, Australia, and South America.)

Table 1 here

The bottom three rows of Table 1 give the total, regional, and global distributions of U.S. outward FDI, where regional FDI is U.S. FDI located in Canada and Mexico, whereas global FDI is U.S. FDI to the rest of the world. These aggregates are plotted in Exhibit 3. The following patterns clearly emerge. First, reinvested earnings are the most important source of financing for U.S. MNEs operating abroad, and this is true at both the aggregate and industry levels. Furthermore, reinvested earnings are more important regionally than globally, and this is true at the aggregate and industry levels. Although equity finance is less important as a source of finance for U.S. MNEs operating abroad than is reinvested earnings, equity finance is more important than intercompany debt. Furthermore, equity finance is more important globally than regionally for total outward FDI as well as in manufacturing, whereas it is more important regionally than globally in services. Of course, the interesting question that arises is what is one to make of these differences. This is the question to which we now turn.

Exhibit 3 here

Much attention has been paid to the corporate decision as to whether to finance capital internally or externally. It is generally the case that internal financing sources are less costly than are external ones, and hence it is advised that corporations first use internal financing sources. In addition, firms that do not wish to disclose information about their operations to outsiders are also less likely to go to outside sources for funds. Finally, issues relating to asymmetric information often place limits on a company's ability to raise capital in the external capital market. For example, when a company issues new shares, it is can be read as a signal that management believes that shares are overvalued, and hence may result in a reduction in share prices.

We hypothesize that the patterns of financing we have seen bilaterally, by region and globally, should depend on host country characteristics such as the volume of real economic activity, openness to trade, openness to direct investment, distance, financial market development, and adjacency. In addition, it has been shown in the literature that FDI activity is sensitive to changes in tax policies and that this sensitivity has risen over time.[5] For example, the Tax Reform Act of 1986 attempted to address perceived incentives for MNEs to invest abroad as opposed to domestically as created in the former tax code. Specifically, changes in cross crediting, or foreign tax averaging, and changes in tax definitions were designed to balance U.S. tax rules in this regard. The reform act also resulted in different foreign tax credits for different types of activity, such as financial services, creating potential differences in FDI activity across sectors (U.S. Congress, 1987).

Though the Tax Reform Act of 1986 affected income earned in all other nations the same, bilateral tax treaties created the possibility for differential tax treatment. Blonigen and Davies (2000) argue that bilateral tax treaties result in four outcomes; standardization of tax definitions, promotion of the exchange of tax information thereby improving the ability of policymakers to enforce tax laws, prevention of tax arbitrage or "shopping" for the lowest tax treatment, and affecting overall taxation of MNEs by reducing the coincidence of double taxation and taxes on remittances. They show that over time bilateral tax treaties affect U.S. inward and outward FDI activity. Table 2 provides the countries in our sample and dates of their bilateral tax treaties with the United States, if one exists.

Table 2 Here

We consider both the effect of bilateral tax treaties and the changes in foreign taxation brought about by the Tax Reform Act of 1986. We contribute to the findings of Blonigen and Davies–who consider tax treaties in the context of a gravity model–by including more recent data and considering the impact of bilateral tax treaties on methods of financing.[6] We also contribute to the literature on the Tax Reform Act of 1986 by considering the impact of the act in the context

of the main empirical framework of FDI analysis, a gravity model, and by allowing for vintage effects of the tax act. Further, we investigate whether there are differences between the effects of new or newly renegotiated treaties and longstanding, not recently renegotiated, treaties on FDI flows.

To this point we have considered the theory of FDI location and the actual patterns of U.S. outward FDI and patterns of financing. We have also acknowledged the potential impact tax polices can have on FDI flows as well as methods of financing. Together with a reconsideration of the data presented in Table 2 leads us to the following conclusions: U.S. outward FDI is concentrated among nations with whom the United States has longstanding bilateral tax treaties, primarily Western European nations. The exceptions are as follows: Canada, who has the second oldest tax treaty with the United States; Mexico, whose tax treaty coincided with the NAFTA; and the 2000 tax treaty with Venezuela. As argued by Hines (1997), increased magnitudes of FDI mean that costs associated with inefficient tax laws become much greater. If indeed tax policies affect FDI patterns and financing strategies, then greater attention must be paid to tax policies to ensure that the potential benefits of an FTAA are achieved. Given the on-going negotiations with respect to an FTAA and the evidence of the importance of tax policies to the location decisions of MNEs, it is surprising that there has been little or no attempt to harmonize corporate tax treatment between the U.S. and Latin America generally. We argue here that such treaties will serve to stimulate further long-term capital flows and hence contribute to further economic integration between the United States and Latin America. Furthermore, such treaties also impact the methods of financing used by MNEs as they expand their operations abroad.

V. Empirical Results

To examine this issue we extend the standard gravity model to include tax policies and treaties. We examine the impact the 1986 U.S. tax reform as well as the introduction (or existence) of bilateral tax treaties have had on both the patterns of FDI and how these FDI flows are financed.

The model estimated includes host county real GDP, the exchange rate (measured as foreign currency per U.S. dollar), host country openness to trade, host country openness to FDI, an adjacency dummy, a NAFTA dummy, distance measures, host country financial depth, a dummy for Latin American countries not including Mexico, and dummy variables to capture the Tax Reform Act of 1986 and the existence of a bilateral tax treaty.[7]

The Penn world tables provide data on host real GDP, the bilateral exchange rate, and host country openness to trade. We calculate host openness to FDI as the ratio of host stock of inward FDI to host GDP for each year. Host country financial depth is calculated as a ratio of liquid liabilities of the financial system to GDP.[8] All of these factors are expected to have a positive influence on U.S. outward FDI. Distance between the host country and the United States is gathered from the Bali Online Corporation, and may be argued to have either a positive or negative effect on FDI, though the gravity model suggests a negative influence. The adjacency dummy is expected to have a positive influence on attracting U.S. FDI. The NAFTA dummy is also expected to have a positive influence to reflect increased regional economic integration. The Latin America Dummy is included to investigate whether, after accounting for other relevant factors, there remains a tendency for FDI flows to avoid Latin America.

To capture the influence of the 1986 U.S. tax reform and the effect of bilateral tax treaties, we allow for each policy to have an immediate effect on U.S. FDI patterns. Furthermore, following Blonigen and Davies (2000), we acknowledge that the impact of these treaties may change over time, and possibly in a non-linear fashion. To investigate this effect we include a variable reflecting the age of each tax treaty, in years, as well as the square of their ages. Finally, following Blonigen and Davies (2002), we distinguish between new treaties -- those that took effect during our sample period, and old treaties – those that were in effect at the beginning of our sample period. We extend this analysis to also consider new and old treaties' vintage effects.

We investigate the effects of the 1986 U.S. tax reform and bilateral tax treaties on U.S. FDI by examining the effect each has on various measures of FDI. That is, we estimate the

model first with total U.S. outward FDI flows as the dependent variable. These flows are then decomposed in their components: new equity flows, reinvested earnings flows, and intercompany debt flows to see how each type of flow is affected by our control variables.

The estimation results for various specifications are given in Tables 3 through 7. Table 3 provides the results when we account for bilateral tax treaties and the U.S. tax code change using simple intercept dummy variables. Table 4 considers the results when we allow for these policy changes to have non-linear effects (vintage) effects over time. Following Blonigen and Davies (2000), we omit the intercept dummy variables associated with the bilateral tax treaties and the U.S. tax reform and replace each with its age and the square of its age. The coefficient of the age variable may be interpreted to show whether the impact of the policy change on the FDI flow increased or decreased over time. Further, the coefficient of the square of the age variable may be interpreted to show whether the increasing or decreasing impact of the policy change occurred at a rate that increased or decreased over time. Tables 5 through 7 repeat the analysis, but distinguish between old and new treaties.

Our empirical results for the standard gravity model are generally in conformity with the existing literature. As a result, we focus here on the analysis as it relates to the U.S. tax code change and tax treaty variables, and regional implications suggested by the coefficients on the NAFTA and Latin America dummy variables.

The first column of results in Table 3 suggest that the U.S. tax reform of 1986 had a positive and statistically significant impact on U.S. total FDI flows, while the existence of bilateral treaties have no positive effect on U.S. FDI flows. It also illustrates that NAFTA had a positive effect on flows, while Latin American countries receive statistically significantly less U.S. FDI flows than non-Latin American countries. The regression results in the second through fourth columns examine the impact of the control variables on the type of financing flows. We see that the impact of the NAFTA and U.S. tax code change dummy variables alternate across flows. Neither of these dummy variables are statistically significant for equity flows, yet are both

statistically significantly positive for reinvested earnings flows. It is of note to see that other Latin American countries receive statistically significantly less U.S. FDI flows for both equity and reinvested earnings.

Table 4 provides the results when we replace the policy dummy variables with the vintage effect variables. The results indicate that bilateral tax treaties do affect total flows (as well as all the forms of financing), and suggest that the U. S. tax code change of 1986 impact only reinvested earnings. The results for total flows, reinvested earnings, and intercompany debt provide statistically significant vintage effects suggesting that effect of the policy change decreases at an increasing rate over time. The results for equity flows illustrate that the coefficient associated with the square of the age of the tax treaty is positive and significant while the age variable is statistically insignificant. We interpret the combination of a significant squared age variable with an insignificant age variable to suggest that at tax treaty has a (near) linear, rather than quadratic, effect over time

Tables 3 through 7 here

Table 5 reexamines the specification used in Table 3, but separates the bilateral treaties into "old" treaties--those that existed at the beginning of our sample (1982), and "new" treaties—those that were negotiated during our sample period. Blonigen and Davies (2002) suggest that this is important because past studies that represent all bilateral treaties with an intercept dummy variable are reflecting treaties that, for the most part, were in effect when a sample period began. Thus, a positive and significant coefficient associated with such a dummy variable may be the result of the treaty or some other unobserved factor. This problem may be avoided by separating new from old treaties. The results in Table 5 suggest that old treaties have no effect on FDI flows at all. On the other hand, the results for new treaties suggest that there is a statistically significant negative influence on overall flows and reinvested earnings flows. There is no statistically significant influence on equity or intercompany debt flows. It may be argued that the negative influence of new treaties is the result of decreased FDI flows as firms find it more difficult to

avoid taxes. However, we would still expect old treaties to be associated with increased FDI flows, based on previous results.

Table 6 attempts to gain more insight on this issue by allowing both new and old treaties to have non-linear effects over time. The results shown in Table 6 are much the same as those found in Table 4. Of interest is that new treaties have no statistically significant vintage effects on flows. One reason that there is no statistically significant impact associated with new treaties is because there are relatively few observations associated with new treaties. Of the 26 countries in our sample with whom the U.S. has treaties, only 5 are new, and all 5 of these were negotiated in 1991 or later. We do, however, have data on the latest revision of old treaties. If we interpret these revisions as a form of a new treaty, we may be able to comment on different effects of old treaties that have not been renegotiated during our sample period compared to the effects of either new treaties or existing treaties that were renegotiated during the sample period. To test this, we estimate the vintage effects of new and renegotiated versus non-renegotiated treaties. The results are provided in Table 7. With respect to existing treaties that were not renegotiated during our sample, we find results similar to those discussed earlier; their effect decreases at an increasing rate over time. However, with respect to new or renegotiated treaties, the effect of the treaty on total and reinvested earnings FDI flows rises over time. The remaining results are similar to those found earlier.

In general, we find that there are important regional aspects to FDI. This is reflected first by the NAFTA and Latin America variables. Their significance, however, varies by type of FDI flow suggesting that regionalization will impact the form of financing used to engage in FDI. Second, an implication for the negotiation of regional trade agreements is reflected by the impact of the tax treaties on FDI, as the preponderance of U.S. bilateral tax treaties are with European nations, rather than Latin American nations. Given the evidence that tax policies affect FDI flows and financing, policy makers may want to increase the attention paid to tax policies in order to maximize the potential benefits of regional trade agreements such as the FTAA. We suggest

that such policies will help to foster further long-term capital flows and contribute to further economic integration between the United States and Latin America.

VI. Conclusion

The recent trade pact signed between the United States and Chile signals continuing and perhaps renewed interest in creating a Free Trade Agreement of the Americas. Such an agreement is likely to strengthen regional integration vis-à-vis foreign direct investment. The results presented here are consistent with previous literature in that host country characteristics are important determinants of FDI. In addition, we show that tax policies – both aggregate tax changes and bilateral treaties – affect FDI. The latter has an important regional aspect because the 2000 tax treaty with Venezuela is the only existing bilateral treaty between the United States and a Latin American nation. We conclude that bilateral tax treaties with Latin American partners should be an important component of trade agreements. We suggest that additional research continue to focus on regional aspects of FDI. In addition, future research should also focus on explaining the differential effects we document of tax policies on alternative forms of FDI financing.

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EXHIBIT 1: DISTRIBUTION OF FDI STOCK

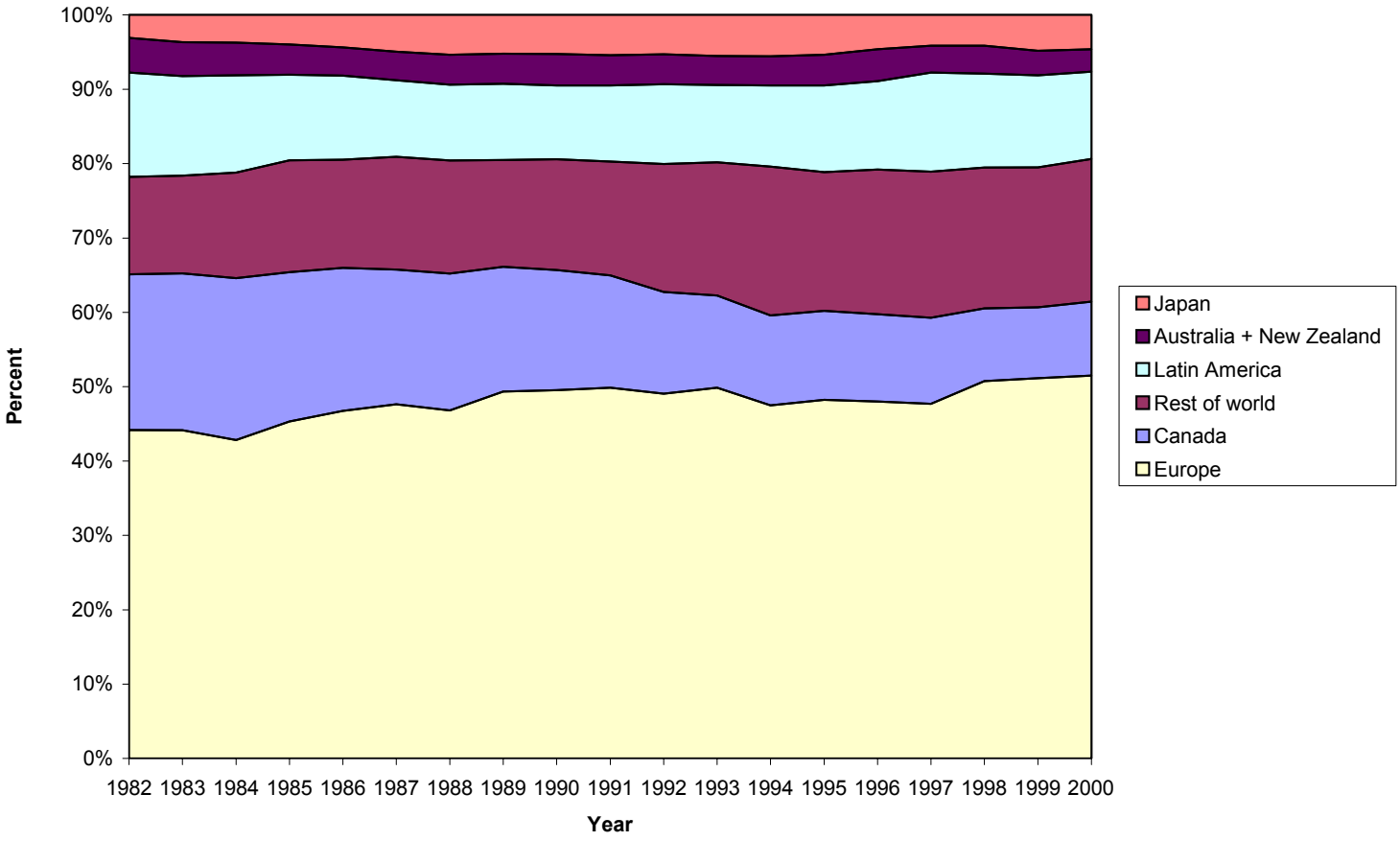


EXHIBIT 2: DISTRIBUTION OF FDI STOCK ACROSS INDUSTRIES

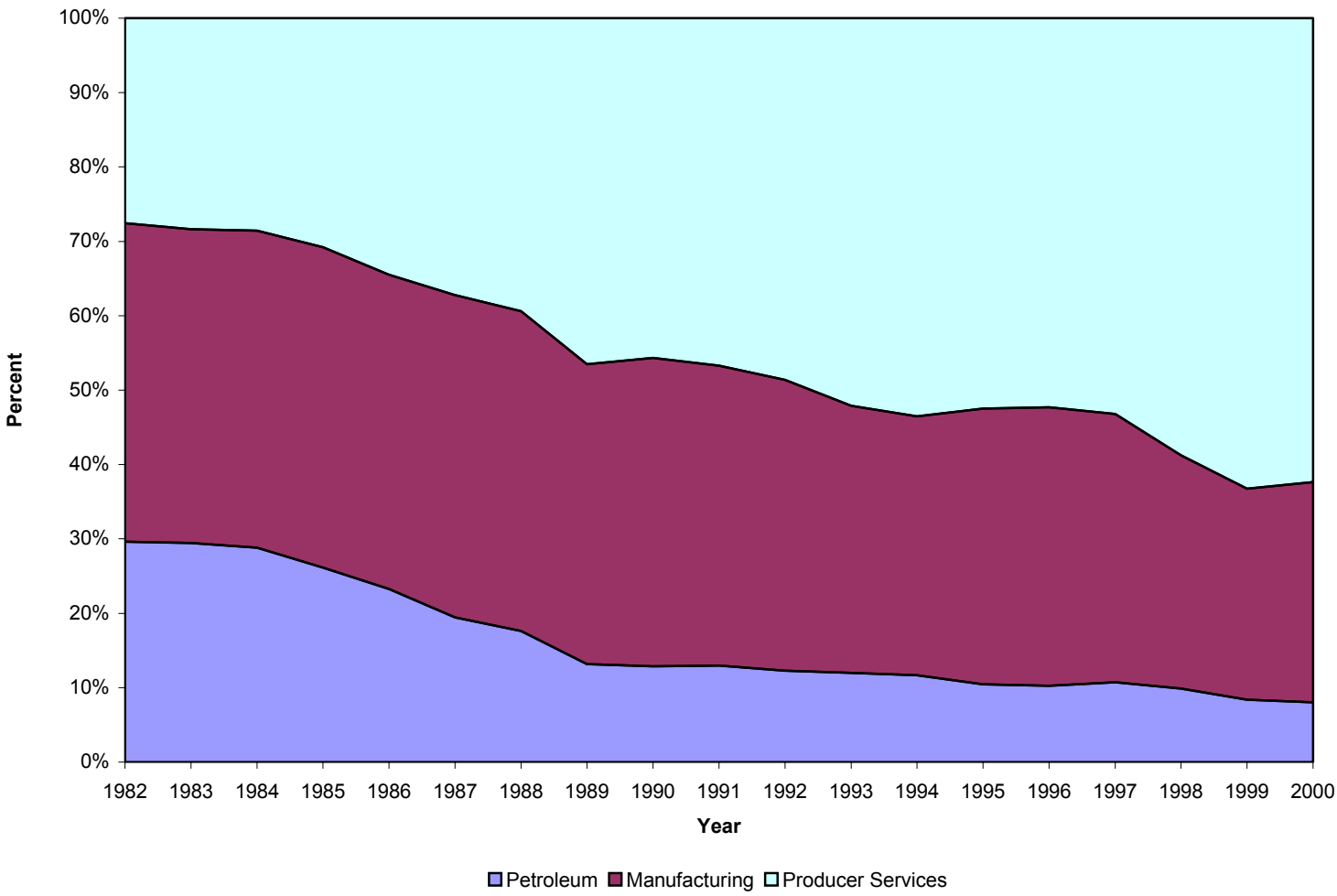
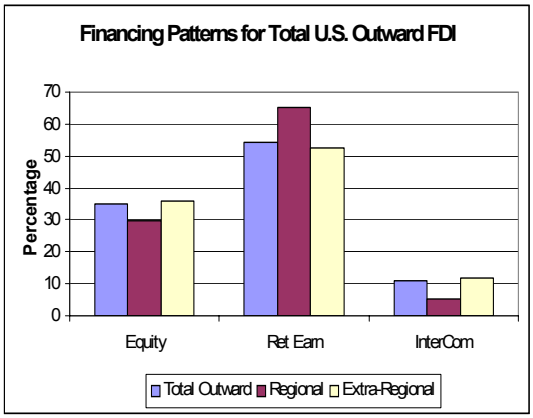
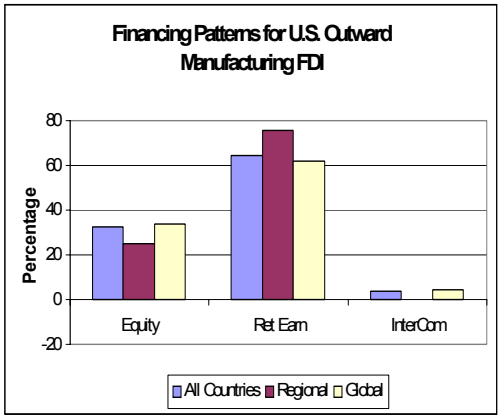
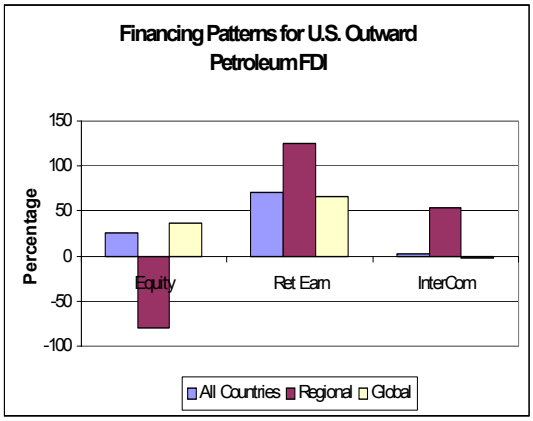


Exhibit 3: Total, Regional, and Global Distribution of FDI







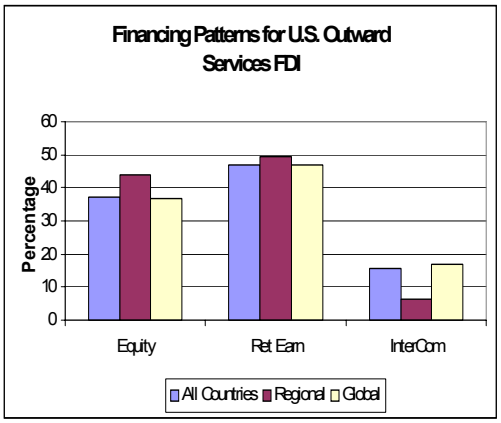


TABLE 1: PATTERN OF ACCUMULATED FDI

	Total Flows	Equity Flows	Reinvested Earnings	Inter Company Debt
	Millions, US dollars			
Canada	98,159	25,894	64,669	7,599
Mexico	34,068	13,330	21,560	-820
Europe	570,190	221,008	275,878	73,298
Japan	30,565	3,605	20,957	6,006
Asia and Pacific	158,580	45,244	102,255	15,001
Australia	30,326	15,220	15,044	-51
New Zealand	3,055	857	1,928	1,220
Other Asia	150,553	43,448	93,766	13,339
Latin America	198,018	70,133	113,435	14,450
South America	75,738	29,096	38,762	7,880
Central America	50,062	15,826	34,202	30
Total Outward	1,051,817	367,795	570,236	113,788
Regional	132,227	39,224	86,229	6,779
Global	919,590	328,571	484,007	107,009
Percentage Distribution				
	Total Flows	Equity Flows	Reinvested Earnings	Inter Company Debt
Canada	100.0	26.4	65.9	7.7
Mexico	100.0	39.1	63.3	-2.4
Europe	100.0	38.8	48.4	12.9
Japan	100.0	11.8	68.6	19.6
Asia and Pacific	100.0	28.5	64.5	9.5
Australia	100.0	50.2	49.6	-0.2
New Zealand	100.0	28.1	63.1	39.9
Other Asia	100.0	28.9	62.3	8.9
Latin America	100.0	35.4	57.3	7.3
South America	100.0	38.4	51.2	10.4
Central America	100.0	31.6	68.3	0.1
Total Outward	**100.0**	**35.0**	**54.2**	**10.8**
Regional	**100.0**	**29.7**	**65.2**	**5.1**
Global	**100.0**	**35.7**	**52.6**	**11.6**

TABLE 2: U.S. BILATERAL TAX AGREMENTS
(Date of last revision in parentheses.)

Country	Date of Tax Treaty	Country	Date of Tax Treaty
Argentina	NA	Israel	1975 (1993)
Australia	1953 (1982)	Italy	1955 (1984)
Austria	1956 (1996)	Japan	1954 (1971)
Belgium	1948 (1970)	Luxembourg	1963
Brazil	NA	Mexico	1994
Canada	1941 (1980)	Netherlands	1949 (1992)
Chile	NA	New Zealand	1948 (1982)
Columbia	NA	Norway	1951 (1971)
Costa Rica	NA	Panama	NA
Denmark	1948	Peru	NA
Ecuador	NA	Portugal	1994
Finland	1940 (1994)	South Africa	1953-1987 (1997)
France	1940 (1994)	Spain	1991
Germany	1954 (1989)	Sweden	1940 (1994)
Greece	1950	Switzerland	1951 (1996)
Guatemala	NA	Turkey	1997
Honduras	NA	United Kingdom	1945 (1975)
Hong Kong	NA	Venezuela	2000
Ireland	1952 (1997)		

Source: Blonigen and Davies (2000), U.S. Internal Revenue Service, www.irs.gov/pub/irs-trty.

Table 3: OLS Results with Policy Intercept Dummy Variables

Dependent Variable:	Total Flows	Equity	Reinvested Earnings	Intercompany Debt
Variable	**Coefficient (standard error)**	**Coefficient (standard error)**	**Coefficient (standard error)**	**Coefficient (standard error)**
Intercept	2390.998* (1298.336)	1410.502* (767.9833)	466.2427 (530.746)	140.3648 (266.975)
Exchange Rate	0.001034 (0.003346)	0.001445 (0.001621)	-0.000197 (0.00154)	-0.000268 (0.001308)
RGDP	0.00000236*** (0.000000486)	0.00000127*** (0.000000283)	0.00000102*** (0.0000002)	0.000000244*** (0.0000000875)
Trade Openness	6.756114 (5.182136)	3.994348 (2.806737)	6.760696*** (2.212877)	-0.883805 (1.076552)
FDI Openness	4806.343*** (1128.854)	1667.887*** (581.656)	2227.474*** (494.2446)	546.4935* (283.6991)
Distance	-0.469187*** (0.115923)	-0.262452*** (0.071689)	-0.18033*** (0.046004)	-0.040792** (0.01902)
Adjacency	-1129.672 (1418.008)	-455.01 (790.4738)	55.5195 (588.3362)	-249.0719 (274.2096)
NAFTA	4015.179*** (1355.872)	48.84597 (689.3674)	2438.061*** (600.2696)	47.57912 (367.8324)
Latin America	-2460.711*** (814.8395)	-1346.902*** (447.4519)	-742.9993** (343.2194)	-96.36033 (180.4096)
Financial Depth	17.06398*** (6.071736)	6.155461** (3.056802)	9.275997*** (2.701323)	2.152411 (1.657041)
Tax Treaty	-258.6206 (541.1791)	17.19638 (278.622)	-101.9192 (236.9608)	30.71368 (134.7974)
US Code	745.316*** (285.5887)	206.2625 (141.4346)	346.4637*** (129.2095)	146.401 (94.05135)
rho	0.734566*** (0.028161)	0.818147*** (0.023582)	0.672684*** (0.031773)	
# of obs	703	703	703	703
R-squared	0.599592	0.647757	0.566743	0.040349
Adjusted R-squared	0.592618	0.641622	0.559197	0.025072
Durbin-Watson stat	2.234882	1.929308	2.192388	2.051686
F-statistic	85.97856	105.5865	75.10666	2.641228
Prob(F-statistic)	0.000000	0.000000	0.000000	0.002577

*** => p<=1%
** => p<=5%
* => p<=10%

Table 4: OLS Results with Policy Vintage Effects

Dependent Variable:	Total Flows	Equity	Reinvested Earnings	Intercompany Debt
Variable	**Coefficient (standard error)**	**Coefficient (standard error)**	**Coefficient (standard error)**	**Coefficient (standard error)**
Intercept	1986.332* (1215.387)	1006.545 (777.4113)	290.2277 (505.6427)	165.5153 (258.2056)
Exchange Rate	0.000736 (0.003358)	0.001822 (0.001683')	-0.000249 (0.001523)	9.07E-05 (0.001337)
RGDP	0.00000154*** (0.000000434)	0.000000937*** (0.000000281)	0.000000659*** (0.00000018)	0.000000239*** (0.0000000881)
Trade Openness	0.237964 (4.82778)	1.62929 (2.885485)	4.071109** (2.044864)	-0.52913 (1.081579)
FDI Openness	3953.587*** (1076.705)	1380.242** (587.728)	1745.852*** (469.1828)	497.247* (285.104)
Distance	-0.319987*** (0.099893)	-0.208677*** (0.06761)	-0.117051*** (0.040952)	-0.033044* (0.019118)
Adjacency	-1033.721 (1276.784)	-290.3642 (774.7494)	224.5633 (536.5636)	-303.4336 (272.051)
NAFTA	3323.259*** (1245.887)	-32.52797 (663.3397)	2050.376*** (549.3714)	13.72388 (363.1192)
Latin America	-1492.026** (765.9256)	-874.8826** (456.3038)	-278.9975 (322.6803)	-81.56623 (170.0483)
Financial Depth	16.88074*** (5.756514)	6.42706** (3.039258)	9.18428*** (2.545483)	2.143535 (1.662606)
Treaty Age	-145.292*** (35.09006)	-28.74515 (20.35175)	-57.66685*** (15.15146)	-22.84597*** (8.86004)
Treaty Age Squared	2.588738*** (0.507272)	0.625386** (0.283191)	1.088599*** (0.221561)	0.394432*** (0.134605)
US Code Age	-116.9781 (128.6951)	8.942824 (74.48041)	-117.9173** (55.30776)	14.47315 (29.73672)
US Code Age Sqrd	11.96157 (9.174592)	0.072694 (5.267248)	10.56986*** (3.949976)	-1.266869 (2.251152)
rho	0.681555*** (0.029422)	0.796108*** (0.025153)	0.634606*** (0.031967)	
# of obs	703	703	703	703
R-squared	0.625679	0.654324	0.602483	0.053816
Adjusted R-squared	0.618051	0.647279	0.594383	0.035963
Durbin-Watson stat	2.219371	1.925813	2.171858	2.079995
F-statistic	82.02301	92.88628	74.37352	3.014473
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000248

*** => p<=1%
** => p<=5%
* => p<=10%

Table 5: OLS Results with Intercept Dummies
Distinguishing between "Old" and "New" Policies

Dependent Variable:	Total Flows	Equity	Reinvested Earnings	Intercompany Debt
Variable	**Coefficient (standard error)**	**Coefficient (standard error)**	**Coefficient (standard error)**	**Coefficient (standard error)**
Intercept	1897.577 (1310.629)	1196.149 (786.7915)	160.0472 (528.3477)	138.2356 (267.1338)
Exchange Rate	0.002912 (0.003545)	0.002152 (0.001722)	0.001332 (0.001622)	-5.22E-06 (0.00139)
RGDP	0.00000233*** (0.000000481)	0.00000127*** (0.000000283)	0.000000983*** (0.000000196)	0.000000241*** (0.0000000877)
Trade Openness	7.324569 (5.161508)	4.414229 (2.828605)	6.94108*** (2.183213)	-0.918487 (1.078843)
FDI Openness	4540.495*** (1132.939)	1560.182*** (588.0278)	2048.849*** (491.0563)	539.6816* (284.0969)
Distance	-0.449318*** (0.114393)	-0.255236*** (0.071832)	-0.168625*** (0.044827)	-0.04112** (0.019038)
Adjacency	-869.2466 (1411.974)	-332.117 (796.5329)	214.5435 (578.9915)	-251.2442 (274.3723)
NAFTA	4426.527*** (1372.711)	182.5853 (697.7931)	2789.174*** (605.3129)	106.0717 (382.3874)
Latin America	-2052.986*** (835.2624)	-1187.64*** (465.251)	-481.0064 (345.3956)	-93.11673 (180.5906)
Financial Depth	16.96255*** (6.048191)	6.070665** (3.056389)	9.303445*** (2.670605)	2.199829 (1.659997)
Old Treaty	151.1781 (593.7633)	201.7496 (317.6082)	176.9668 (252.037)	38.99447 (135.6631)
New Treaty	-1370.124* (841.2151)	-527.9158 (434.3309)	-1059.531*** (366.1925)	-127.4225 (226.239)
US Code	775.3883*** (285.4127)	212.2927 (141.4742)	373.1139*** (128.4705)	151.4346* (94.52132)
rho	0.729231*** (0.028389)	0.818177*** (0.023616)	0.663887*** (0.0321)	
# of obs	703	703	703	703
R-squared	0.601115	0.648513	0.571924	0.04079
Adjusted R-squared	0.593578	0.641871	0.563835	0.024108
Durbin-Watson stat	2.233291	1.930825	2.188877	2.053434
F-statistic	79.75434	97.64585	70.70692	2.290585
Prob(F-statistic)	0.000000	0.000000	0.000000	0.005774

*** => p<=1%
** => p<=5%
* => p<=10%

Table 6: OLS Results with Policy Vintage Effects
Distinguishing between "Old" and "New" Policies

Dependent Variable:	Total Flows	Equity	Reinvested Earnings	Intercompany Debt
Variable	**Coefficient (standard error)**	**Coefficient (standard error)**	**Coefficient (standard error)**	**Coefficient (standard error)**
Intercept	1948.154 (1245.17)	959.9263 (793.8343)	219.1941 (518.2027)	186.2346 (267.4043)
Exchange Rate	0.001187 (0.003704)	0.001635 (0.001885)	-0.000238 (0.001668)	0.000223 (0.001406)
RGDP	0.00000155*** (0.000000434)	0.000000936*** (0.000000283)	0.000000663*** (0.00000018)	0.000000239*** (0.0000000882)
Trade Openness	0.467813 (4.868905)	1.715098 (2.929088)	4.277789** (2.06183)	-0.581508 (1.097087)
FDI Openness	3884.586*** (1091.772)	1353.541** (600.2898)	1680.823*** (474.5537)	506.4508* (287.0878)
Distance	-0.321453*** (0.100672)	-0.206991*** (0.068144)	-0.115564*** (0.041292)	-0.03423* (0.019541)
Adjacency	-910.1582 (1303.952)	-254.0462 (804.0701)	319.7619 (545.552)	-314.2781 (274.6353)
NAFTA	3443.267*** (1266.675)	-33.56252 (667.8072)	2126.397*** (560.7773)	34.80579 (383.32)
Latin America	-1449.302* (800.4534)	-831.8581* (481.808)	-215.6513 (336.2874)	-97.84161 (178.5576)
Financial Depth	16.99309*** (5.774627)	6.491966** (3.051147)	9.336025*** (2.553096)	2.144226 (1.665593)
Old Treaty Age	-140.1881*** (36.36879)	-28.09124 (21.38629)	-54.2885*** (15.62238)	-22.74129** (8.971118)
Old Treaty Age Sqrd	2.499821*** (0.53378)	0.622653** (0.302818)	1.038299*** (0.231948)	0.389111*** (0.138338)
New Treaty Age	-103.9636 (733.914)	106.3811 (384.369)	86.09549 (325.8666)	-73.39968 (235.585)
New Treaty Age Sqrd	-6.962847 (128.5454)	-20.09771 (65.86127)	-32.98757 (57.67962)	13.60902 (48.10536)
US Code Age	-117.6438 (129.0898)	7.37869 (74.75556)	-120.5049** (55.53507)	15.34457 (29.95737)
US Code Age Sqrd	12.4494 (9.224124)	0.140215 (5.29576)	10.95583*** (3.973139)	-1.279819 (2.276102)
rho	0.68071*** (0.029517)	0.796127*** (0.025191)	0.634013*** (0.032147)	
# of obs	703	703	703	703
R-squared	0.625842	0.654371	0.603011	0.05395
Adjusted R-squared	0.617102	0.646298	0.593738	0.033294
Durbin-Watson stat	2.218578	1.925538	2.16934	2.079795
F-statistic	71.61095	81.05581	65.03059	2.611827
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000771

*** => p<=1%
** => p<=5%
* => p<=10%

Table 7: OLS Results with Policy Vintage Effects of Renegotiated and New Treaties

Dependent Variable:	Total Flows	Equity	Reinvested Earnings	Intercompany Debt
Variable	**Coefficient (standard error)**	**Coefficient (standard error)**	**Coefficient (standard error)**	**Coefficient (standard error)**
Intercept	1699.33* (1022.126)	780.3442 (652.3382)	508.9175 (452.2301)	3.075159 (217.5358)
Exchange Rate	-0.000919 (0.003262)	0.001169 (0.001641)	-0.001158 (0.001474)	-0.000124 (0.00131)
RGDP	0.00000136*** (0.000000412)	0.000000711*** (0.000000261)	0.000000672*** (0.000000183)	0.000000222*** (0.0000000871)
Trade Openness	3.339336 (4.698731)	0.78943 (2.755729)	6.00276*** (2.10126)	-0.068679 (1.098735)
FDI Openness	3879.257*** (1038.016)	1118.769** (570.2075)	1983.629*** (465.1022)	354.0545 (278.8756)
Distance	-0.258555*** (0.095122)	-0.138067** (0.062194)	-0.121424*** (0.042109)	-0.016164 (0.019266)
Adjacency	-1905.494 (1177.894)	-624.516 (705.5877)	-419.4268 (525.2503)	-370.172 (259.2946)
NAFTA	2532.564** (1215.349)	-289.1739 (647.7248)	1639.025*** (546.1358)	-252.5523 (364.1454)
Latin America	-1266.431** (614.9313)	-671.8397* (377.0831)	-389.9264 (272.4496)	15.69146 (135.7908)
Financial Depth	9.859731* (5.593073)	4.184614 (2.970044)	6.163633*** (2.514533)	0.909379 (1.661198)
Renegotiated Treaty Age	248.931* (147.3215)	41.75884 (79.74925)	209.3921*** (66.08921)	61.67027 (42.14519)
Renegotiated Treaty Age Sqrd	-2.168854 (9.602233)	-0.928431 (5.08027)	-5.648716 (4.32566)	-2.994339 (2.967591)
Non-Renegotitiated Age	-306.8492*** (42.82285)	-104.8517*** (23.58389)	-146.0534*** (19.61788)	-41.38141*** (11.3188)
Non-Renegotitiated Age Sqrd	5.545694*** (0.708233)	2.032652*** (0.389116)	2.624237*** (0.325763)	0.793502*** (0.188127)
US Code Age	-90.96538 (122.6063)	6.318191 (70.59345)	-117.0661** (55.24108)	17.74644 (29.0932)
US Code Age Sqrd	8.158158 (8.885023)	0.379379 (5.065174)	8.461148** (3.991925)	-1.674457 (2.243413)
rho	0.666505*** (0.029738)	0.76915*** (0.025709)	0.65762*** (0.03192)	
# of obs	703	703	703	703
R-squared	0.642705	0.667761	0.624864	0.07762
Adjusted R-squared	0.63436	0.66	0.616102	0.057481
Durbin-Watson stat	2.221935	1.930416	2.178857	2.145222
F-statistic	77.01162	86.04791	71.31278	3.854161
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000001

*** => p<=1%
** => p<=5%
* => p<=10%

NOTES

[1] The second oldest U.S. bilateral treaty is with Canada. The bilateral tax treaty with Mexico, however, coincided with the NAFTA.

[2] The U.S. Department of Commerce (1995) has published U.S. stock figures on the basis of historical cost, replacement cost, and market values, but the country and sectoral data are available only on a historical (book value) basis. There are a variety of private and semi-official estimates of the different valuations for the U.S. and U.K. stocks of FDI (Bellak and Cantwell, 1996). A straightforward way to adjust stock values is through changes in security prices, as utilized in Gray and Rugman (1994) but this is subject to a number of criticisms as noted in Bellak and Cantwell. We use the unadjusted data.

[3] The reduction in Canada's share of U.S. FDI has been attributed in part to the Canada-U.S. FTA and the NAFTA: the importance of a local presence by U.S. firms in Canada has been significantly reduced as border restrictions have fallen [Safarian and Hejazi (2001), Rugman (1990)].

[4] The role of other business services (the majority of which are business services such as accounting, management consulting, marketing, etc.) has overtaken banking as an outward source of service FDI.

[5] See Hines (1997) for an extensive summary of the literature on taxation and FDI. See Altshuler, Grubert and Newlon (2001) for evidence on the rising sensitivity of FDI to taxation.

[6] Blonigen and Davies examine the period 1966 through 1992. Our data period is more recent, 1982 through 2000, and covers a period when FDI activity increased dramatically.

[7] The adjacency dummy is always unity for Mexico and Canada and zero for all others. The NAFTA dummy is zero for all countries until 1994 and thereafter when it is unity for Mexico and Canada. Both dummies are included so as to discern between the two effects.

[8] See King and Levine (1993) for a discussion of alternative measures of financial market depth.