The Politics of Foreign Direct Investment into Developing Countries: Increasing FDI through International Trade Agreements?

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The flow of foreign direct investment into developing countries varies greatly across countries and over time. The political factors that affect these flows are not well understood. Focusing on the relationship between trade and investment, we argue that international trade agreements—GATT/WTO and preferential trade agreements (PTAs)—provide mechanisms for making commitments to foreign investors about the treatment of their assets, thus reassuring investors and increasing investment. These international commitments are more credible than domestic policy choices, because reneging on them is more costly. Statistical analyses for 122 developing countries from 1970 to 2000 support this argument. Developing countries that belong to the WTO and participate in more PTAs experience greater FDI inflows than otherwise, controlling for many factors including domestic policy preferences and taking into account possible endogeneity. Joining international trade agreements allows developing countries to attract more FDI and thus increase economic growth.

Foreign direct investment (FDI) by multinational corporations (MNCs) has grown rapidly in recent decades,[1] and developing countries have attracted an increasing share of it: $334 billion in 2005, or more than 36% of all inward FDI flows (UNCTAD 2006, xvii). Its importance for developing countries' economies also has increased, from an average of barely 1% of GDP in the 1970s to about 2.5% of GDP on average by 2000. Yet, the magnitude and especially the timing of increases in FDI into developing countries have varied greatly. What explains this variation?

To answer this question, we develop a theoretical argument emphasizing political factors and empirically examine FDI flows into 122 developing countries. Since governments can alter the policy environment faced by investors, those who seek to attract FDI must find ways to assure private investors that their investments can prosper. Based on the early post-WWII years, the literature traditionally identified the threat of expropriation as the key concern of foreign investors regarding developing countries. Yet, while recent expropriations of foreign assets in extractive industries show that such direct threats to property rights remain a possibility, they have become rare in recent decades, as the nature of FDI has changed. Instead, more subtle government interventions that reduce the profitability of investments have become the key political concern of investors. Hence, policies that imply limited government intervention in the economy, such

[1]FDI is defined as "an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy ([the] foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor . . ." (UNCTAD 2003, 231).

FIGURE 1   PTAs and FDI Flows into Developing Countries
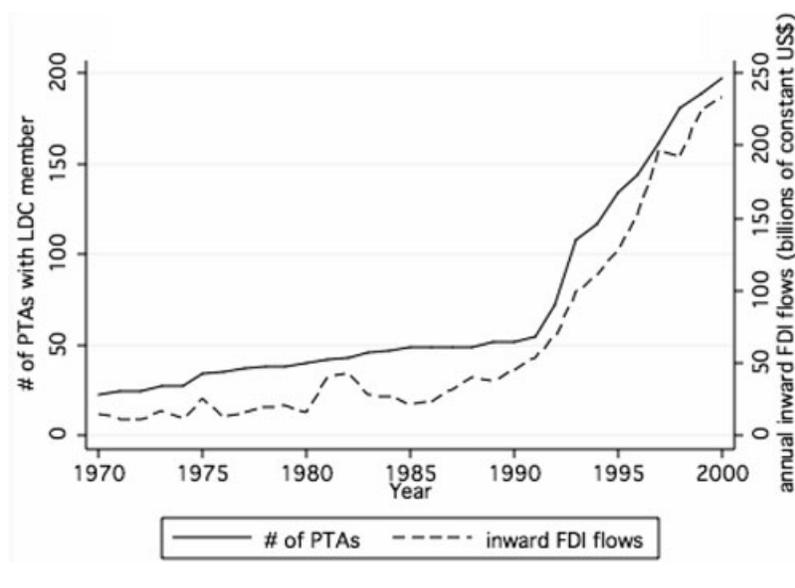
as trade and financial openness, should be attractive to foreign investors. How credible, however, is a promise to maintain such economically liberal policies? Unilateral, domestic policy choices can often be easily changed, especially if the change is at the expense of foreign private actors. We argue that a government can make a more credible commitment regarding present and future economic policies by entering into international agreements that commit its country to the liberal economic policies that are seen as desirable by foreign investors.

We concentrate on trade agreements. A plot of the involvement of developing countries in preferential trade agreements (PTAs) and the annual FDI flows into developing countries since 1970 (Figure 1) shows a remarkable similarity: both PTAs in force and FDI flows increased slowly throughout the 1970s and 1980s, then took off in the early 1990s. Such visual inspection of aggregate data is, of course, only suggestive. Since it does not capture cross-national differences and does not control for other factors that might explain the annual changes and the overall increase in FDI, Figure 1 does not allow us to attribute causal influence to trade agreements, but it strongly suggests that a systematic analysis of the relationship between such international institutions and inward FDI flows into developing countries is warranted. In this article, we present such an analysis of FDI flows over time for a panel of 122 developing countries from 1970 to 2000.

Specifically, we examine the effects of the multilateral trade agreement known until 1994 as the GATT and now as the World Trade Organization (WTO), as well as PTAs that guarantee greater access to a smaller number

of foreign markets. These international institutions may have purely economic effects on FDI by giving foreign investors access to markets for inputs and outputs. But importantly, they may also have political and informational effects, assuring foreign investors that host governments will not change their policies in ways that reduce the value of the investments. We show that such political and informational effects of international trade institutions are important. Controlling for a wide variety of factors including the domestic policy orientation of the government and controlling for possible endogeneity, our data reveal that international trade agreements substantially increase flows of FDI into developing countries.

Our research contributes to several current debates. First, we hope to advance the debate over foreign direct investment, which Frieden and Martin's recent survey of the field of IPE (2002) identified as a key aspect of economic globalization most in need of *political* analysis. We show that a significant amount of the variation in FDI can be explained by political variables neglected in previous research. Second, we contribute to the literature on the relationship between trade and investment. While it is well known that trade and investment flows are tightly linked, there are few if any comprehensive analyses of the relationship between participation in trade agreements and FDI flows. This issue seems important because some recent research suggests that bilateral trade flows experience no significant increases when countries join the GATT/WTO (Rose 2004; though cf. Goldstein, Rivers, and Tomz 2007; Tomz, Goldstein, and Rivers 2007). We show that there are incentives for GATT and especially

WTO membership even if such agreements do not increase trade significantly. Third, our research contributes to the broader literature on international institutions and how they matter in world politics. Here, our findings lend further support to the argument that international institutions enable governments to make more credible commitments (e.g., Simmons 2000a, 2000b; see also Büthe 2008, esp. 234f). Moreover, we show that international institutions can also increase the credibility of government commitments vis-à-vis private actors and thus can facilitate *trans*national cooperation. Finally, recent research has begun to examine whether the effects of trade agreements go beyond trade itself, focusing on human rights enforcement, environmental policy, and military conflict (Brooks 2006, 129ff; Hafner-Burton 2005; Limâo 2005; Mansfield and Pevehouse 2000). We show that trade agreements can also influence FDI.

Existing Research on FDI in Economics and Political Science

Most existing research on the motivations for FDI has focused on economic factors. Economists have examined the size and various other characteristics of the host market, as well as the nature of the MNC or the investment to explain individual decisions to invest abroad.[2] Their research suggests that the size of the market in the potential host country, levels of economic development, and economic growth matter for FDI.[3]

While scholars have examined the economic factors affecting FDI at length, they have explored political factors much less. At the domestic level, only political instability and political institutions have been examined systematically, mostly in very recent research. Political instability and violence should make a country less attractive for FDI, since they render the economic and political context less predictable (Brunetti, Kisunko, and Weder 1997; Jun and Singh 1996; Schneider and Frey 1985). Regarding domestic political institutions, Henisz has argued that institutions with multiple veto players constrain policy change and hence attract more FDI because these institutions increase the predictability of policy (e.g., Henisz 2000). Other recent research has focused on regime type and found that democracies in fact attract more foreign direct investment (e.g., Feng 2001; Jensen 2003, 2006), with some important caveats (e.g., Li and

Resnick 2003; though cf. Choi and Samy 2008; Jakobsen and Soysa 2006). These findings are in contrast to the early literature on FDI, which had suggested that MNCs were attracted to autocracies by autocrats' ability to suppress labor demands and by the absence of election-induced policy uncertainty (Bornschier and Chase-Dunn 1985; O'Donnell [1973] 1979). Other scholars have found no consistent/significant effects for regime type (e.g., Harms and Ursprung 2002; Oneal 1994). While domestic political institutions are not the main focus of our analysis, we control for domestic institutional veto players from the start and examine measures of democracy in the first extension of our main analysis below.

Domestic political instability and institutions have thus been the focus of some prior research; international political factors much less so. Only bilateral investment treaties (BITs, discussed below) have attracted sustained attention and only recently. We therefore focus on international factors and in particular on trade agreements.

FDI and Policy Commitments via International Trade Agreements

FDI involves the acquisition or creation of productive capacity, which implies a long-term perspective and involves some assets that cannot be moved without considerable loss. This (variable but always positive) specificity of the investment has long given rise to concerns about the "obsolescing bargain" (Vernon 1971): once a firm undertakes a foreign direct investment, some bargaining power shifts to the host country government, which has an incentive to change the terms of the investment to reap a greater share of the benefits. This problem is exacerbated by the time-inconsistency problem faced by governments. Even governments that want to attract further FDI—and therefore have a long-run economic incentive not to violate the trust of current foreign investors—have in the short run incentives to change the terms of existing foreign investments when the short-run benefits exceed the long-term costs (Tomz 1997, 3f). And resource-strapped developing country governments may have an even greater incentive than governments in advanced industrialized countries to discount the long term.

Until the 1970s, outright expropriation was the primary risk arising from the obsolescing bargain (e.g., Bergsten, Horst, and Moran 1978; Piper 1979; Truitt 1970). In recent decades, the changing structure of FDI has rendered such direct threats to property rights largely ineffective. For both manufacturing FDI and the increasingly important services FDI (UNCTAD 2004, esp. 147ff),

[2]See also the discussion of horizontal and vertical FDI, below.

[3]In addition, low corporate tax rates and high natural resource endowments attract FDI according to some studies.

investments into developing countries are now largely vertical. These types of investments are much less specific than investments in natural resources. And investments that are part of a firm's global production chain leave an expropriating government with essentially worthless assets. Consequently, outright expropriation is now an extremely rare event (Li 2006; Minor 1994).

However, since these investments are not perfectly mobile, governments may be tempted to extract a greater share of the benefits through more subtle measures, such as changes in regulation, taxation, tariffs, and fees, or selective law enforcement. For instance, trade restrictions may force MNCs to buy inputs from particular domestic suppliers; regulatory measures may force them to borrow capital from noncompetitive domestic lenders. Given the myriad mechanisms for changing the terms of an investment and thus reducing its profitability, potential foreign investors are likely to be wary about committing significant resources to a developing country. They should prefer countries where liberal economic policies exist and can be expected to prevail, that is, where government intervention in the market is limited. Thus the central political problem for LDC host governments that want to attract FDI is how to assure foreign investors of their commitment to liberal economic policies.

How might governments reassure foreign investors and thus attract FDI? When an international agreement or international organization enshrines its members' commitment to a certain set of policies, a change in those policies has not only domestic ramifications, but also constitutes a breach of international commitments, which should make those commitments more costly to break (see, e.g., Keohane 1989, 5f, passim; Simmons 2000a, 821f).

We focus on a particular type of international institution: trade agreements. Our primary interest is in the multilateral trade agreement now known as the WTO (previously GATT) and preferential trade agreements (PTAs) among smaller groups of countries. The relationship between participation in such trade agreements and FDI flows has been explored very little so far. The existing literature focuses almost exclusively on the distinction between two types of FDI: horizontal and vertical. This distinction matters for theorizing the FDI effect of trade agreements because lowering trade barriers reduces the economic incentives for horizontal FDI but increases the incentives for vertical FDI.[4] As clear as the distinction is conceptually, categorizing actual investments (or even

specific shares of a particular investment project) as horizontal or vertical turns out to be in practice very difficult, and no aggregate data exist that distinguishes between the types. Empirical research has therefore tended to focus on net effects, which are then usually hypothesized to depend on characteristics of the host economy that make it more attractive for one type of FDI or another, such as market size, level of economic development (specifically quality and cost of labor), location, etc.[5]

A few scholars have noted that a PTA, by increasing the size of the quasi-domestic market of each participant in such an agreement, may also attract FDI from third parties, i.e., countries that are not parties to the PTA, in a possible case of "investment diversion" (Dee and Gali 2003, 8f; Ethier 2001, 170; Levy Yeyati, Stein, and Daude 2003, 10; Tuman and Emmert 2004, 12f). Levy Yeyati et al. find some evidence for such "extended market size" boosting FDI stocks in a gravity model of FDI from 20 OECD countries into 60 FDI host countries from 1982 until 1999, along with generally a significant positive effect of PTAs on bilateral FDI stock (2003, esp. 16f), whereas Dee and Gali (2003, esp. 33ff) find little evidence for an extended market size effect in their gravity models of the stock of FDI owned by investors from OECD countries in "about 77" (2003, 21) countries from 1988 to 1997 (based on the provisions in nine PTAs).

Discussing potential "nontraditional gains from regional trade agreements," Fernández and Portes (1998, 208f) speculate that PTAs might help developing countries attract investors because they may signal the international competitiveness of certain sectors of the economy, a liberal policy orientation of the government, or

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[4]Horizontal FDI refers to an arrangement where a firm maintains production facilities in multiple countries, and each facility transforms raw or intermediate inputs into more finished products, often for sale in the local (domestic) market where the investment

is located. Transport costs, tariffs, and nontariff barriers are classic motivations for horizontal FDI (e.g., Caves 1996; Markusen 1984). Vertical FDI refers to an arrangement where at least two stages of production exist and can be geographically separated to take advantage of location-specific differences in factor endowments. Differences in wage and skill levels, or the availability of natural resources and other inputs that are more efficiently used locally than transported elsewhere, are classic motivations for vertical FDI. This FDI is part of a firm's global production chain, and the goods produced by a given local subsidiary are usually intended as inputs into other production facilities, often after export to other countries (e.g., Gereffi and Korzeniewicz 1994; Helpman and Krugman 1985; Markusen and Maskus 2001). Theory suggests that FDI inflows into the developing world should be more of the vertical type (e.g., Blonigen and Wang 2005).

[5]Di Mauro (2000) goes further and examines three specific measures of economic integration: tariffs, nontariff barriers, and exchange rate volatility. Her gravity models of FDI (stock) from eight FDI home countries into 33 host countries, including up to 11 developing countries, yield mixed results. Tariffs and exchange rate volatility (as two direct economic measures of the effect of PTAs) have no significant effect, but a lower rate of NTBs (the third measure of trade integration) is correlated with significantly higher bilateral FDI in host countries.

a commitment to lasting peaceful relations among the signatories—but they do not conduct empirical analyses. Finally, a recent World Bank working paper (Medvedev 2006, esp. 2–10) examines a number of specific economic mechanisms through which PTAs might affect FDI (discussed in greater detail below). Medvedev finds empirical support for PTAs increasing FDI through several of these mechanisms, in panel analyses of aggregate (monadic) inward FDI flows into 87 developing and developed countries from 1980 to 2004, considering 196 bilateral and minilateral PTAs, whereas Tuman and Emmert (2004) find no statistically significant effect of regional trade associations in analyses of U.S. FDI flows (measured as a percentage of GDP of the recipient country) into 15 Latin American countries from 1979 to 1996.[6]

None of these studies theorize or empirically examine the political dimension of trade agreements. We argue that trade agreements may boost FDI precisely because they have not just economic but also political effects, most importantly because these international institutions enshrine commitments to open markets and liberal economic policies. By joining the WTO, a country commits not only to reduced tariffs but also more generally to liberal economic policies in the sense of refraining from a range of interventions in the market that might affect foreign direct investors. Each member state makes this commitment to all other member states, which could therefore punish the country if it reneged on its commitment (Bagwell and Staiger 2002; Maggi 1999). PTAs often involve only a few partner countries but a commitment to a level of liberalization that usually goes beyond the level in GATT/WTO. Even though most trade agreements contain no specific provisions regarding the treatment of FDI as such,[7] they suggest to potential investors that a more receptive investment climate exists, since a commitment to a liberal policy on trade increases the likelihood that the government will maintain or strengthen economically liberal policies domestically to maximize the benefit from these international agreements.[8] Notwithstanding important differences, PTAs may thus for analytical purposes be considered a less extensive but more intensive version of

GATT/WTO. In sum, trade agreements institutionalize commitments to liberal economic policies. Governments can use them to make these commitments more credible and thus boost FDI for two reasons.

First, the international institutionalization of commitments provides information, which facilitates identifying and punishing those who renege on their commitments. This information provision occurs in various ways. Initially, formal agreements such as treaties and international organizations (IOs) make commitments more "visible" and are in part established for that reason (Lipson 1991, 501). Joining the WTO or signing a PTA is a very public act; it is an easily observable measure of a country's international engagement.

Beyond the initial informational effect, some IOs gather and disseminate information about member states' policies and their compliance (Morrow 1994). Under the WTO, for instance, governments commit to regular scrutiny of their economic policies in "Trade Policy Reviews," written by WTO secretariat staff and published inter alia on the WTO's website. While the primary focus is on trade policies, such reports in fact begin with a chapter on the "Economic Environment," which provides an overview of the macroeconomic situation, including a critical review of the government's *domestic* economic policies. Only then do reports turn to a discussion of "Trade and Investment Policies."[9] Similarly, the WTO's "Committee on Trade-Related Investment Measures" monitors the implementation of each member state's commitments under the treaty—and it publicly disseminates information about WTO conflicts related to these obligations. Moreover, a government's compliance with institutionalized obligations is often monitored by the other governments that are parties to the agreement—more closely and continually than policy commitments that a government may undertake domestically.

Finally, domestic and transnational actors who benefit from the policies to which a government commits, and who therefore monitor the government's compliance for self-interested reasons, have greater incentives to make government violations of these commitments public if doing so is legitimated by an international agreement that enshrines the commitments (see Cortell and Davis 1996). In short, participation in international treaties and organizations that institutionalize a country's commitment to open markets increases the likelihood that reneging on those commitments will be revealed. This informational effect should make it more likely that reneging will be punished and therefore make a commitment to such

[6]See also Rose's (2003) research note, discussed in the conclusion.

[7]The WTO treaty includes the TRIMS Agreements. Some PTAs, such as NAFTA, include general provisions regarding the treatment of FDI.

[8]Economically liberal foreign and domestic policies do not automatically go together, but there are strong economic incentives to maintain (more) market-oriented policies and reduce redistributive intervention in the domestic market when economies are (more) open, so as to be able to reap the full benefits from liberalization in trade and finance (see, e.g., Chang, Kaltani, and Loayza 2005; Frieden and Rogowski 1996).

[9]See, e.g., the Nov/Dec 2004 Report for Brazil; http://www.wto.org/english/tratop_e/tpr_e/tpr_e.htm (10/23/05).

liberal economic policies more credible. Consequently, participation in trade agreements should boost the inflow of FDI into the developing country.

The second reason why international institutions may make commitments more credible is that international institutions lead to the establishment of mechanisms that make it easier to bring costly pressure on governments if they do not carry through on those promises. Many trade agreements result in the creation of mechanisms that make it easier for private economic actors to solicit assistance from their "home" government to bring diplomatic pressure to bear on "a government that is considering or engaging in rule violation" (Simmons 2000a, 821). The European Union, for instance, monitors each of the EU's external trade agreements (mostly with developing countries), and for each trading partner there is a publicly identified official in the EU Commission's Directorate General for Trade, designated to hear and investigate complaints about violations of commitments under the agreement.[10] Similar arrangements exist at the domestic level in many member states. In addition, trade agreements often establish international dispute settlement mechanisms that make violating one's commitments more costly. The dispute settlement procedures of the WTO illustrate such mechanisms for multilateral trade agreements. Its panels (or its Appellate Body, if the panel decision is appealed) authorize economic sanctions against a government that violates its WTO commitments, if the charge is found to have merit— and they publicly render final decisions about the merits within a reasonably short amount of time. The WTO thus provides a powerful tool to bring about a return to compliant behavior by governments that violate their WTO commitments. Many PTAs contain dispute settlement mechanisms that work similarly.

Reneging or *ex post* rejection of an international agreement also generates costs by affecting interactions with governments and private actors who are not a party to that particular agreement, because reneging constitutes a violation of the broader social norms affirmed through the agreement (Snidal and Thompson 2003, 200). Violating an institutionalized commitment—or not making amends to correct a violation that has occurred— damages a country's reputation for keeping commitments, making future cooperation on the same and other issues more difficult and maybe impossible to achieve (Abbott and Snidal 2000, 427; Simmons 2000b, 594; see also Tomz 2007). Relatedly, because international institutions often operate on the principle of reciprocity, policy

commitments undertaken via international agreements may increase the domestic constituency for maintaining those policies (see also Dai 2005): those who benefit from other countries' compliance with an international agreement will want their own country to comply with its obligations, even if they are otherwise indifferent about the specific domestic policy in question, thus again raising the political costs of reneging on institutionalized commitments.

An interesting illustration of a trade agreement boosting FDI is the recent U.S.-Vietnam Bilateral Trade Agreement. Beginning in late 2001, it extended most favored nation status to Vietnam and lowered average U.S. tariffs on Vietnamese goods from 40% to 4%. But it also required Vietnam to liberalize many laws, policies, regulations, and administrative procedures over the course of 10 years. As the Vietnamese government noted in a 2005 report, "the comprehensive set of obligations in the [treaty] was expected to stimulate not only bilateral trade between the two countries, but also to increase the attractiveness of Vietnam for U.S. and many other foreign investors" (FIA 2005, 2). The agreement not only committed the Vietnamese government to liberal policies, but it also provided mechanisms for foreign investors to monitor and report on the host government's behavior. As envisaged by the trade agreement, several reports have been published on Vietnam's progress in fulfilling its commitments under the treaty, based in part on surveys of multinationals in Vietnam (FIA 2005; USVF 2004). Foreign investors thus monitor and provide information on the Vietnamese government's progress toward adopting the liberal economic policies to which it committed in the PTA. The treaty seems to have had the desired effect on FDI. The survey showed that the assessment of the business and investment climate in Vietnam improved among both U.S. and non-U.S. multinationals after the signing of the PTA, and FDI flows into Vietnam accelerated greatly. The greatest increase was recorded for FDI from U.S. multinationals via their Asian headquarters, which grew by an average of 27% a year from 2002 through 2004 compared to just around 3% a year from 1996 to 2001.[11] Yet, consistent with our argument about the general rather than just bilateral informational and reputational effects, 43% of non-U.S. multinationals also cited the U.S.-Vietnam PTA as a reason for their "decision to make or expand their investment in Vietnam" (FIA 2005, 4).[12]

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[10]See http://ec.europa.eu/trade/issues/bilateral/mgtbil_en.htm and . . ./bilateral/index_en.htm (10/29/06).

[11]Dyadic data miss or misattribute such FDI: investments by a U.S. multinational into Vietnam via, for instance, its South Korean subsidiary, is recorded in FDI statistics as Korean FDI into Vietnam, not U.S. FDI into Vietnam.

[12]The corresponding percentage for U.S. multinationals was 53%.

In short, international institutions can lead to increased monitoring as well as gathering and dissemination of information about noncompliance with institutionalized commitments, which facilitates punishment by foreign governments and private actors. In addition, violating one's internationally institutionalized commitments might inflict reputational damage on a country, which adds to the long-term cost of changing policy in directions that are inconsistent with those commitments. And foreign governments and domestic political opposition can impose costs on such governments who renege on their policy commitments, and they can do so more quickly than foreign direct investors who may decide to exit or not even enter. The prospect of increased and more rapidly incurred costs reduces the time-inconsistency problem faced by host governments, making it less likely that they will renege on the commitments if they are embodied in international agreements, which in turn should make these commitments more credible. These arguments yield two testable hypotheses regarding flows of foreign direct investment:

H1: If a country is a member of GATT/WTO, it will experience higher inward FDI.

H2: The greater the number of PTAs to which a country is a party, the greater will be the inward FDI that it experiences.

Statistical Analysis: The Politics and Economics of FDI

Sample and Estimation Methods

To test the above hypotheses, we conduct statistical analyses of inward foreign direct investment for a large panel of developing countries. We restrict our sample to non-OECD countries.[13] Our sampling frame thus consists of all independent non-OECD countries with a population of more than 1 million.[14] There have been 129 such countries in existence at some point in time between 1970 and 2000. Missing data have led many scholars to analyze only a subset of these countries, often as few as 50 or 60

of them, which may lead to biased findings if data are missing in nonrandom fashion. We have therefore sought to maximize our sample size (we consider sample restrictions subsequently). While we still have missing data on some of our variables, we analyze data for 122 of these 129 countries in our main panel analysis.[15]

The length of the time series varies across countries, but the maximum length is 31 years. Such time series are too short to conduct separate analyses within each country, given the usual assumptions about asymptotics required for inference. We therefore pool our data. Preliminary tests show, however, that neither simple OLS on the pooled sample nor random effects estimation is appropriate. Since our main theoretical interest is whether joining trade agreements affects a given country's attractiveness to foreign direct investors, we conduct "within" estimations (OLS with country fixed effects; for a more detailed discussion, see, e.g., Hsiao 2003; Wooldridge 2002)—as well as instrumental variable estimations for PTAs, the key independent variable for which we are able to identify suitable instruments.

Two further statistical issues require attention in this pooled estimation of time series. As in all time-series analyses, the risk of spurious correlation arises when regressing a dependent variable with a trend on any independent variable with a trend (e.g., Davidson and MacKinnon 1993, 670–73). FDI clearly shows an upward trend over the time period examined here, so panel models of FDI must be attentive to the potential for trend-induced spurious correlation. We deal with this estimation problem by detrending the variables as appropriate.[16] Finally, to deal with potential heteroskedasticity and/or autocorrelation in the errors, we use the standard errors for within

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[13]There are strong theoretical reasons to believe that FDI into developing countries (LDCs) is a function of a different set of factors than FDI into advanced industrialized countries, and Blonigen and Wang (2005) show empirically that pooling data from OECD countries and LDCs is problematic.

[14]We restrict our sample to countries with a population of more than 1 million—in keeping with the custom in much of the literature—to safeguard against different structural relationships for very small countries biasing our analysis.

[15]As virtually all economic analyses, we have no data for Afghanistan, Cuba, Iraq, Libya, Myanmar/Burma, North Korea, and Somalia. There are 3,053 possible country-years after the above exclusions (and after excluding years during which a given political entity was not an independent country). We analyze 2,524, i.e., more than 82% of those 3,053 possible observations.

[16]If we are willing to assume a common relationship between the variables across the cross-sectional units of the panel (as we must when estimating panel models, see Beck and Katz 1995), then testing for trend by regressing each variable on a trend term (e.g., Chatfield 1996) generalizes from standard time series to panel data. Since allowing for country-specific intercepts is warranted, we implement the tests for trends in the panel setting with fixed effects. If we find evidence of a trend for a variable (i.e., if the trend term is significant at the .05 level), we use the detrended variable (for all countries). By design, these transformed variables have country-mean zero. Multicollinearity is not a serious problem with these transformed variables: absolute values of bivariate correlation coefficients are below 0.2 for most variables and below 0.36 at the maximum. Descriptive statistics for all of the variables used in the analysis can be found in an appendix posted on our respective websites, http://www.buthe.info and http://www.princeton.edu/~hmilner.

estimators proposed by Arellano (1987), which are robust to both heteroskedasticity and autocorrelation and yield the most conservative inferences (see Kézdi 2004).[17]

Operationalization of the Key Variables and Hypotheses

Our dependent variable, annual inward FDI flows, is the sum of the year's new direct investments in a given "host" country by capital owners that are foreign to that country (net of direct investments withdrawn by foreign capital owners), calculated as a percentage of GDP.[18] The quality of cross-national FDI data is generally not very good, due to differences in definitions, reporting requirements, and missing data (see, e.g., OECD 1996); conclusions from any analysis of FDI flows or stocks must therefore be drawn with caution. We seek to minimize the susceptibility of our findings to such problems by using data from the online version of UNCTAD's *Handbook of Statistics* (see UNCTAD 2003, 231f for details). Since developing countries generally look favorably upon UNCTAD, these data should be least affected by intentional nonreporting (which might explain why UNCTAD is the source of the most comprehensive data on FDI). We use inward FDI *as a percentage of GDP* to eliminate the need to deflate our dependent variable and to make it comparable across countries and across time. This measure of FDI captures in the design of the dependent variable the near-universal finding that FDI is a function of GDP—a key rationale for the gravity models that have become so popular in economic analyses but require dyadic analyses—and has been used in a number of studies (e.g., Ahlquist 2006; Biglaiser and DeRouen 2006; Blanton and Blanton 2007; Choi and Samy 2008; Gastanaga, Nugent, and Pashamova 1998; Jensen 2006; Jun and Singh 1996; Neumayer and Spess 2005, 1579ff; Tuman and Emmert 2004; Vandevelde, Aranda, and Zimny 1998).[19]

To assess the effect of international trade institutions, we first consider formal membership in GATT and WTO, using the dichotomous measure GATT/WTO MEMBERSHIP, coded 1 for every year in which a country is a member of GATT or WTO. Our other key independent variable is CUMULATIVE PTAs from Jon Pevehouse, which records the number of trade agreements (other than GATT/WTO) to which a country is a party by the end of the given year. For the LDCs in our sample, the number of PTAs ranges from 0 to 12. Since we have argued that trade agreements constitute a costly commitment to liberal economic policies, we expect positive coefficients for GATT/WTO, and PTAs.[20]

Findings

We start our analysis with a model of three purely economic controls (all from the World Bank's *World Development Indicators*). We control for host MARKET SIZE by including in our model the log of the country's population. To control for the level of ECONOMIC DEVELOPMENT, we include the log of per capita GDP in constant (1995) dollars. To control for economic growth, we use the percentage change in the country's real GDP from the previous year, GDP GROWTH. Since a change in any independent variable may take some time to affect FDI, we lag all independent variables by 1 year. Our initial economic control model (model 1 in Table 1) therefore is:

$$
\begin{aligned}
\text{FDI}_{it} = {} & \alpha + \gamma_1 \, (\text{Market Size})_{i(t-1)} \\
& + \gamma_2 \, (\text{Econ. Development})_{i(t-1)} \\
& + \gamma_3 \, (\text{GDP Growth})_{i(t-1)} + \delta_i + \varepsilon_{it}
\end{aligned}
$$

where δ_i indicates country fixed effects implemented via a set of $n-1$ country dummies.

We find that these economic variables explain 2.3% of the variance in FDI that remains after country fixed effects and the trend term have explained 39.2% of the variance.[21]

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[17] We consider alternative estimation techniques among the robustness tests below.

[18] "FDI inflows" in our text always refers to the net flow of *inward* FDI (*not* the net of inward minus outward FDI).

[19] Some economic studies (e.g., Busse and Hefeker 2007) use FDI per capita instead, based on the same market size rationale. Jensen and McGillivray argue that FDI as a share or percentage of GDP "is the best available measure of a country's success in attracting FDI inflows" (2005, 134), and Choi (2008) suggests that it is less susceptible to outliers in regression analyses than FDI in current or constant dollars.

[20] Each PTA should increase the informational effects and thus the costliness of breaking the commitment. CUMULATIVE PTAs is therefore linear; we also tried alternative measures to allow for the possibility of nonlinear effects; doing so did not significantly improve model fit and yielded substantively the same results. We therefore prefer the simpler linear measure.

[21] Note that our measure of FDI is FDI as a percentage of GDP, which arguably already controls for market size and level of economic development. We estimate a negative relationship between FDI/GDP inflows and MARKET SIZE in the previous year, consistent with the bivariate correlation; ECONOMIC DEVELOPMENT is not statistically significant once we control for economic growth and country fixed effects. Note that more than 90% of the variance in these two variables is cross-sectional and thus captured by the country fixed effects rather than the coefficients shown in Table 1. GDP GROWTH is estimated to have a strongly statistically significant positive coefficient, confirming earlier findings that foreign direct investors are more likely to invest in a country when economic growth rates are high.

In model 2 (Table 1), we add to this economic baseline model three variables to control for the political factors that previous research has found to be significant determinants of FDI inflows. We include POLITICAL INSTABILITY, the composite measure from Arthur Banks's dataset of political events that indicate political violence and instability (Banks 1999), and DOMESTIC POLITICAL CONSTRAINTS, Henisz's (2002, 363) preference-weighted measure of the number of veto players in a national political system (we consider other measures of domestic political institutions, especially measures of democracy, in the first extension to the model below). We also control for *BITs,* the number of bilateral investment treaties to which a country is a signatory (from UNCTAD 2000), since BITs contain specific provisions regarding the treatment of foreign investors. Most countries are now involved in at least one BIT, but there is considerable variation in the number of BITs not just across countries, but also over time (Elkins, Guzman, and Simmons 2006). The number of studies of the effect of BITs on FDI has recently rapidly increased, though the results have been mixed (e.g., Burkhardt 1986; Büthe and Milner 2009; Grosse and Trevino 2005; Hallward-Driemeier 2003; Neumayer and Spess 2005; Salacuse and Sullivan 2005; Tobin and Rose-Ackerman 2005; Vandevelde, Aranda, and Zimny 1998).

The estimated coefficients for the first two domestic political variables confirm previous findings. POLITICAL INSTABILITY is estimated to reduce FDI, though the effect is in model 2 not quite significant at conventional levels. POLITICAL CONSTRAINTS, which should increase the predictability of politics by reducing the risk of policy change, are estimated to boost inward FDI to a statistically significant extent. And the statistically significant positive coefficient estimated for BITs supports previous research that has found BITs to make a country more attractive for foreign direct investors (e.g., Büthe and Milner 2009; Neumayer and Spess 2005). The addition of the political variables also notably improves the fit of the model.

Turning to trade agreements, we add GATT/WTO MEMBERSHIP in model 3. The statistically significant positive coefficient indicates that participation in these multilateral trade institutions indeed boosts a country's net FDI inflows, as we had hypothesized. In model 4, we add CUMULATIVE PTAS. The highly statistically significant positive coefficient suggests that foreign direct investors indeed see PTAs as a costly commitment to a liberal economic policy, which boosts a country's FDI inflow. The addition of the PTA variable slightly reduces the substantive and statistical significance of GATT /WTO MEMBERSHIP. This effect is consistent with the logic of our argument, which implies that these international institutions are partial substitutes

with respect to FDI. The variance explained increases successively with the addition of our international political variables.[22]

To convey a sense of the substantive effects estimated for model 4, Table 2 reports the changes in the dependent variable (detrended inward FDI as a percentage of GDP) estimated for a one standard deviation increase in each of the independent variables, while holding the others constant. These estimates suggest that a one standard deviation increase in our two measures of international trade institutions (PTAs, GATT/WTO) boosts inward FDI by 9% and 10% of a standard deviation in FDI, respectively.

Dealing with Possible Endogeneity

Our statistical analyses show that developing countries that are signatories or members of trade agreements experience statistically and substantively significantly higher FDI inflows. These findings accord with our argument that developing country governments can use these international institutions to make credible commitments to foreign investors and that trade agreements therefore cause an increase in FDI. However, it may be the case that causality runs the other way, i.e., that increasing FDI flows induce countries to sign PTAs. Specifically, if multinational corporations are using their subsidiaries in a host country as part of their global production networks, then they may try to press the host and home governments to secure that network by signing a trade agreement.[23]

Instrumental variables provide a means for testing whether there is such an endogeneity problem: if an exogenous instrument for PTAs can be identified and PTAs retain a significant coefficient when instrumented in the second stage of the instrumental variable estimation (where FDI is the dependent variable), we can conclude that PTAs indeed affect FDI, rather than vice versa. A good instrument is often hard to find in social science analyses, since it must have two qualities: it must be a good predictor of the endogenous explanatory variable in question, PTAs, but must not be correlated with the error term and

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[22]In the last column, we reestimate model 4 with bootstrapped errors, given that we use previously detrended values. This reestimation slightly reduces the statistical significance of PTAs (p-value now 0.011) and slightly further increases the statistical significance of political instability. It otherwise causes no noteworthy changes.

[23]See also Malesky's (2008) study of FDI driving politics in Vietnam. The potential for endogeneity concerning GATT/WTO should be much less since the institution is multilateral and any given country joins only once.

TABLE 1   From Economic Baseline Model to Full Political–Economic Model

	Model 1	Model 2	Model 3	Model 4	Model 4 with Bootstrapped Errors
Cumulative PTAs				0.217***	0.217**
				(.0797)	(.0855)
GATT/WTO membership			1.22***	1.08***	1.08***
			(.411)	(.411)	(.381)
Bilateral Investment Treaties (BITs)		0.0496***	0.0502***	0.0411***	0.0411***
		(.0131)	(.0127)	(.0129)	(.0147)
Domestic Political Constraints		1.75**	1.44**	1.15*	1.15*
		(.680)	(.655)	(.638)	(.684)
Political Instability		−0.0129	−0.0144*	−0.0153*	−0.0153**
		(.00842)	(.00802)	(.00785)	(.00732)
Market Size	−3.85***	−1.89	−1.94	−1.64	−1.64
	(1.43)	(1.29)	(1.30)	(1.23)	(1.28)
Economic Development	−0.0739	−0.503	−0.595	−0.406	−0.406
	(.552)	(.541)	(.518)	(.511)	(.496)
GDP growth	0.0395***	0.0344***	0.0331***	0.0302***	0.0302***
	(.0109)	(.0102)	(.00994)	(.00981)	(.00995)
Constant	$-8.90e^{-10}$	$-8.15e^{-10}$	$-1.02e^{-9}$	$-1.12e^{-9}$	$-1.12e^{-9}$
	$(1.13e^{-9})$	$(1.16e^{-9})$	$(1.19e^{-9})$	$(1.18e^{-9})$	$(1.10e^{-9})$
R^2	+0.0231	+0.0491	+0.0625	+0.0691	+0.0691

OLS within estimates with Arellano (1987) robust (clustered) standard errors in parentheses; all estimates rounded to three significant figures. $^*p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$; two-tailed tests. $N = 2{,}524$; $n = 122$; analysis covers $1970-2000$, subject to data availability. All variables detrended, except Political Instability, which exhibited no significant trend. Country fixed effects implemented in advance via "areg" command, with "absorb(country)" in Stata 9.2. R^2 information indicates *additional* variance explained by the variables shown, after country fixed effects and trend have explained 39.2% of the variance in the raw FDI data.

TABLE 2   Estimated Substantive Effects, Model 4

	Change in FDI as a % of GDP Resulting from a One Std Deviation Change in Each of the Regressors	. . . Which Amounts to__% of a Standard Deviation of FDI
Cumulative PTAs	0.207***	8.9%
GATT/WTO membership	0.241***	10.4%
BITs	0.258***	11.1%
Dom. Political Constraints	0.128*	5.5%
Political Instability	−0.0605*	2.6%
Market Size	−0.101	4.4%
Economic Development	−0.0777	3.3%
GDP growth	0.177***	7.6%

$^*p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$; two-tailed tests. Estimated effects rounded to three significant figures; percentage rounded to first decimal.

hence with the dependent variable, FDI (it should exert its effects through the endogenous variable only). Based on the literature on PTAs, we are able to identify two instruments that fit these criteria. First, Mansfield (1998) suggests that the number of PTAs signed by countries other than country i but in the same geographic region is a good predictor of country i's PTAs. We therefore calculate for each country-year the number of PTAs to which

TABLE 3 **Instrumental Variable Estimates for PTAs**

	Model 4	Model 4′	Instrumental Variable Estimates (2nd Stage)	i-v Estimates with Bootstrapped Errors
Cumulative PTAs	0.217***	0.283***	0.727**	0.727***
	(.0797)	(.0947)	(.288)	(.280)
GATT/WTO	1.08***	1.02**	0.772**	0.772*
membership	(.411)	(.452)	(.390)	(.413)
Cumulative BITs	0.0411***	0.0612***	0.0419**	0.0419*
	(.0129)	(.0117)	(.0185)	(.0241)
Domestic Political	1.15*	0.592	0.134	0.134
Constraints	(.638)	(.586)	(.772)	(.779)
Political Instability	−0.0153*	−0.0109*	−0.0151**	−0.0151**
	(.00785)	(.00642)	(.00722)	(.00749)
Market Size	−1.64	−1.99	−1.45	−1.45
	(1.23)	(1.57)	(1.61)	(1.69)
Economic	−0.406	−0.539	−0.188	−0.188
Development	(.511)	(.656)	(.674)	(.584)
GDP growth	0.0302***	0.0314**	0.0238*	0.0238**
	(.00981)	(.0131)	(.0132)	(.0119)
Constant	$-1.12e^{-9}$	$9.96e^{-11}$	$-4.14e^{-10}$	$-4.14e^{-10}$
	$(1.18e^{-9})$	$(1.14e^{-9})$	$(1.23e^{-9})$	$(1.30e^{-9})$
R^2	+0.0691	+0.0860	+0.0605	+0.0605
n	122	100	100	100
N	2524	2006	2006	2006

Arellano (1987) robust (clustered) standard errors in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$; two-tailed tests. Analysis covers 1970–2000, subject to data availability. All variables detrended, except Political Instability. Country fixed effects implemented in advance via "areg" command, with "absorb(country)" in Stata 9.2.

the other countries in country i's region are a party.[24] The resulting measure is highly correlated with the number of PTAs signed by the country itself (r = 0.49), but not highly correlated with inflows of FDI into the country (r = 0.09). Second, we develop a new instrument from the dyadic dataset of PTAs. Based on Mansfield, Milner, and Rosendorff (2002, 499), we first calculate for each dyad-year the probability that the two countries in the dyad will become members of a PTA in that year. We then add up the predicted probabilities for each country and year and divide that (monadic) sum by the number of possible PTA partners the country could have had for the given year. This calculation yields a measure of the average probability that a country signs a trade agreement with all other countries in the world in the given year. This measure is a good predictor of the country's PTAs (r = 0.30), but a poor predictor of its FDI inflows for that year (r = 0.04). When we add these two variables

directly to the full model 4 (i.e., as regular regressors, not in an instrumental variable setting), they are not significant, indicating that they have no direct effect on FDI, independent of PTAs.

Through listwise exclusion, the instruments restrict our sample to 100 countries and 2006 observations. The second column of Table 3 shows the result of reestimating model 4 for this smaller sample; the statistical and substantive significance of the estimated coefficients for our key variables of interest, GATT/WTO MEMBERSHIP and CUMULATIVE PTAS, differ only marginally from those estimated for the full sample (model 4′ vs. model 4). Next, we employ the two variables as exogenous instruments for PTAs to predict FDI. Column 3 of Table 3 reports the second-stage results of the instrumental variables regression: we still find a strong positive relationship between PTAs and FDI, which persist with bootstrapped errors in the final column of Table 3. Tests for the utility of these instruments suggest that they are quite good.[25] In sum, endogeneity does not appear to be a major issue in our

[24]We use the OECD's definition of geographic regions, but include OECD DAC countries in their respective geographic regions and treat North America, Central America, and the Caribbean as one region.

[25]We conduct numerous tests for the validity of these instruments, using ivreg2 in Stata 9.2. The partial R^2 or Shea's R^2 shows a value of

empirical analysis of the effect of trade agreements on foreign direct investment. The instrumental variable estimates suggest that the strong correlation between PTAs and FDI is indeed indicative of PTAs boosting FDI, rather than vice versa.

Robustness Checks: Alternative Estimation Techniques

As noted above, under most conditions of within estimation, OLS with clustered standard errors as proposed by Arellano (1987) yields the most conservative inferences regarding hypothesized effects (Kézdi 2004; see also Wawro and Kristensen 2007). Yet, since this approach is still only rarely used in political science and may lead to type II errors (false rejection of correct hypotheses), we reestimate model 4 using several alternative estimation techniques. We first estimate the model with basic (fixed effects) OLS with regular standard errors.[26] To take account of the autoregressive process generating the error term, we then reestimate the model using feasible generalized least squares (GLS), once allowing for an AR(1) process that is common across all units (countries), and once allowing for a country-specific AR(1) process. The results are reported in the second and third columns of Table 4. Finally, in a series of papers based on Monte Carlo simulations, Beck and Katz (e.g., 1995; Beck 2001) have argued for the use of OLS with "panel corrected standard errors" (PCSE) instead of GLS for panel data. We therefore reestimate the model with PCSE (using Prais-Winsten to take into account the AR(1) process). These estimates are reported in the last column of Table 4.

0.12 with an F-statistic of 43. These values suggest that the instruments are relatively strong in the sense that they are good predictors of the endogenous variable, CUMULATIVE PTAs. The Anderson canonical correlation likelihood ratio test rejects the null hypothesis ($p = 0.000$) that the model is unidentified. The Cragg-Donald statistic rejects the null hypothesis ($p = 0.000$) that the instruments are weak. The Anderson-Rubin test rejects the null hypothesis that the instruments are not jointly significant. Finally, the Hansen J test is unable to reject the null hypothesis ($p = 0.87$) that there is no relationship between the instruments and the residuals, meaning that we can conclude that the instruments are valid. The Pagan Hall test of heteroskedasticity in IV regressions shows that we cannot reject the null hypothesis ($p = 0.19$) that the disturbances are homoskedastic. All of these tests show the instruments are strong and valid.

[26]The Breusch-Godfrey test for autocorrelation in the errors (which generalizes from standard time series analysis) indicates first (but no higher) order serial correlation of the error terms. This finding suggests that OLS with regular standard errors is not appropriate for our data; we only report it in the first column of Table 4 to allow readers to see the results.

The key finding from these alternative estimations is that our results are not an artifact of the use of any particular estimation technique. The substantive findings for measures of trade agreements are robust to the use of these alternative estimation methods: The estimated effects are very similar to the previously estimated ones for GATT/WTO; they become substantively weaker for PTAs in some of the estimations but remain strongly statistically significant. In fact, the statistical significance of the estimated coefficients for our measures of trade agreements increases with the use of *any* of these estimation techniques, compared to the use of OLS with Arellano's (1987) heteroskedasticity- and serial-correlation-robust standard errors.[27]

Extensions of the Analysis I: Veto Players or Democracy?

We have so far used Henisz's measure of POLITICAL CONSTRAINTS as our measure of domestic political institutions, since previous research employing this measure in models of FDI has consistently found it to have a significant effect. Much of the recent literature on the politics of FDI, however, has focused instead on regime type (democracy), often finding that democracy boosts inward FDI (e.g., Feng 2001; Jakobsen and Soysa 2006; Jensen 2003, 2006), consistent with the broader literature in IR and IPE suggesting that democracy can be conducive to international cooperation (Mansfield, Milner, and Rosendorff 2002; Martin 2000; Milner and Kubota 2005). Cautioning against such a sanguine view of democracy, Li and Resnick (2003) have argued that electoral democracy should be expected to have both positive and negative effects from the point of view of foreign investors. Democratic regimes tend to have, for instance, greater freedom of the press, which ensures greater scrutiny and independent information about government policies. Similarly, property rights protection is on average much higher in democracies than in nondemocracies (though it varies considerably among democracies and is not exclusive to them). For these reasons, democracy might boost FDI. However, electoral democracy also creates opportunistic incentives for populist politicians to exploit the fact that foreign investors do not have a vote, and our theoretical models of the effect of regime type on FDI are not sufficiently precise to clearly predict what the net effect of democracy should be.

[27]The statistical significance of the estimated effect of PTAs (only) slightly declines with PCSE.

TABLE 4   **Alternative Estimations of Model 4**

	Basic OLS (w | Fixed Effects)	GLS (Common AR(1))	GLS (Country-Spec. AR(1))	PCSE (Common AR(1))
Cumulative PTAs	0.217***	0.124***	0.133***	0.134**
	(.0516)	(.0219)	(.0177)	(.0686)
GATT/WTO membership	1.08***	0.898***	0.890***	0.910***
	(.206)	(.111)	(.104)	(.292)
Cumulative BITs	0.0411***	0.0373***	0.0432***	0.0439***
	(.00838)	(.00430)	(.00414)	(.0102)
Domestic Political Constraints	1.15***	0.220	0.326**	0.888**
	(.426)	(.178)	(.144)	(.406)
Political Instability	−0.0153	−0.00475*	−0.00157	−0.00865
	(.0115)	(.00286)	(.00178)	(.00634)
Market Size	−1.64**	−0.749*	−1.83***	−2.26**
	(.806)	(.431)	(.436)	(1.02)
Economic Development	−0.406	−0.508***	−0.163	−0.627*
	(.261)	(.134)	(.146)	(.347)
GDP growth	0.0302***	0.00606**	0.00552***	0.0147**
	(.00782)	(.00247)	(.00201)	(.00750)
Constant	$-1.12*e^{-9}$	0.00396	−0.00369	−0.0177
	(.0447)	(.0200)	(.00836)	(.0974)
n	122	118	118	122
N	2524	2520	2520	2524

Standard errors in parentheses. *p < 0.1; **p < 0.05; ***p < 0.01; two-tailed tests. Analysis covers 1970–2000, subject to data availability. All variables detrended, except Political Instability. Country fixed effects implemented in advance via "areg" command, with "absorb(country)" in Stata 9.2.

Our primary focus is on international rather than domestic institutions, but given the debate over the effect of democracy on FDI in the recent literature, it is important to control for domestic regime type and examine whether doing so changes any of the results for trade agreements. To do so, we consider first Alvarez, Cheibub, Limongi, and Przeworski's dichotomous measure of democracy (ACLP DEMOCRACY), then, second, POLITY SCORE, the widely employed 21-point summary measure of regime type from the Polity IV dataset, and Freedom House's three-point "FREEDOM" SCORE.[28] None of these measures is perfect (Elkins 2000; Munck and Verkuilen 2002), but they provide a reasonable and broadly comparable indicator of *electoral* democracy—as opposed to constraints in the sense of veto points.

While veto points and regime type are analytically distinct (the number of veto players varies among both democracies and nondemocracies as well as across them), the measures of democracy are all highly correlated with POLITICAL CONSTRAINTS (and with each other). Including more than one of them in any one regression would therefore create multicollinearity problems. In models 5 through 7, we therefore replace POLITICAL CONSTRAINTS with each of the measures of democracy in turn.

The results, reported in Table 5, are very consistent insofar as none of the measures of electoral democracy performs well. While the signs on the estimated coefficients suggest that more democracy is correlated with higher subsequent FDI (except for ACLP), none of the measures comes close to statistical significance. The most statistically significant effect is estimated for the FREEDOM SCORE, which incorporates some measure of constraints along with electoral democracy. Even in that case, however, the estimated standard error is larger than the estimated coefficient, and none of these findings change when adding any of the variables discussed below to the model.[29] Most importantly for our analysis, the substantively and statistically significant estimated effects for GATT/WTO

[28]For details, see Alvarez et al. (1996); Przeworski et al. (2000); http://www.cidcm.umd.edu/inscr/polity/index.htm; and http://www.freedomhouse.com/, respectively.

[29]Neither do they change when using nondetrended measures of electoral democracy.

TABLE 5 Domestic Political Constraints or Electoral Democracy?

	Model 4	Model 5	Model 6	Model 7
Cumulative PTAs	0.217***	0.242***	0.241***	0.232***
	(.0797)	(.0811)	(.0822)	(.0846)
GATT/WTO	1.08***	1.14***	1.13***	0.952**
membership	(.411)	(.409)	(.408)	(.429)
Cumulative BITs	0.0411***	0.0437***	0.0441***	0.0367***
	(.0129)	(.0127)	(.0129)	(.0127)
Domestic Political	1.15*			
Constraints	(.638)			
ACLP Dichotomous		−0.00743		
Democracy		(.226)		
Polity Score			0.00307	
			(.0188)	
FH "Freedom" Score				−.118
				(.146)
Political Instability	−0.0153*	−0.0190**	−0.0176**	−0.0197*
	(.00785)	(.00847)	(.00847)	(.0100)
Market Size	−1.64	−1.91	−1.85	−2.65*
	(1.23)	(1.27)	(1.27)	(1.38)
Economic	−0.406	−0.451	−0.534	−0.269
Development	(.511)	(.522)	(.552)	(.525)
GDP growth	0.0302***	0.0284***	0.0331***	0.0252**
	(.00981)	(.00974)	(.0102)	(.00978)
Constant	$-1.12e^{-9}$	$1.54e^{-9}$	$5.33e^{-10}$	$1.08e^{-9}$
	$(1.18e^{-9})$	$(1.19e^{-9})$	$(1.08e^{-9})$	$(1.06e^{-9})$
R^2	+0.0691	+0.0662	+0.0674	+0.0617
n	122	122	121	120
N	2524	2536	2513	2357

Note: Higher values indicate country is more democratic, except for "Freedom" where higher values indicate less democracy. OLS estimates with Arellano (1987) heteroskedasticity- and serial-correlation-robust (clustered) standard errors in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$; two-tailed tests. R^2 not fully comparable across models due to changes in sample size. Analysis covers 1970–2000, subject to data availability. All variables detrended, except Political Instability. Country fixed effects implemented in advance via "areg" command, with "absorb(country)" in Stata 9.2.

and PTAs persist with any of the measures of domestic institutions.[30]

Extensions of the Analysis II: Differentiating between GATT and WTO

Our analysis so far has treated GATT and its successor organization, the WTO, as a single institution. In many respects that treatment is warranted. Yet, GATT and WTO

[30]We have treated domestic political institutions or regime type only as a factor to be controlled for. There are good reasons to think, however, that domestic and international institutions may interact. Such interactive effects are beyond this article but constitute a promising avenue for future research.

might differ in their effects: the WTO has stronger information dissemination provisions and a dispute settlement procedure that—unlike under GATT—renders binding decisions that do not require *ex post* unanimity, i.e., consent by the "losing" states (Jackson 1997; Trachtman 1999; see also Goldstein, Kahler, Keohane, and Slaughter 2001). And even developing countries that had long been part of the GATT differed in how quickly they took up membership in the WTO after it came into existence in 1994. Consequently, although estimated coefficients should be positive for both institutions, WTO MEMBERSHIP might be expected to have a stronger effect on inward FDI.

In model 8, we examine this issue by replacing the joint indicator of GATT/WTO of model 4 with separate dichotomous measures. Surprisingly, the estimated effect for WTO is only statistically but not substantively

TABLE 6 GATT/WTO Differentiation and Robustness to Inclusion of Policy Variables

	Model 8	Model 9	Model 10	Model 11	Model 8′	Model 12	Model 13
Cumulative	0.168**	0.190**	0.160**	0.176**	0.217**	0.194**	0.199**
PTAs	(.0773)	(.0775)	(.0745)	(.0760)	(.0961)	(.0892)	(.0887)
GATT	0.938**	0.793*	0.751**	0.662*	0.580	0.375	0.305
membership	(.430)	(.408)	(.372)	(.379)	(.363)	(.397)	(.394)
WTO	0.700***	0.643***	0.532**	0.520**	0.562**	0.472**	0.417*
membership	(.255)	(.241)	(.239)	(.235)	(.217)	(.216)	(.216)
Trade		0.0185***		0.0142**			0.0201***
Openness		(.00632)		(.00552)			(.00573)
Financial			0.116**	0.0968*			
Openness			(.0562)	(.0515)			
Good Policy						0.269***	0.246***
Index						(.0968)	(.0852)
BITs	0.0374***	0.0338**	0.0344**	0.0321**	0.0344**	0.0298*	0.0294*
	(.0138)	(.0141)	(.0143)	(.0143)	(.0167)	(.0169)	(.0163)
Dom. Political	0.975	1.04	1.09	1.14*	0.701	0.849	0.850
Constraints	(.674)	(.680)	(.684)	(.689)	(.588)	(.601)	(.590)
Political	−0.0150*	−0.0154*	−0.0138*	−0.0144*	−0.0147	−0.0145	−0.0152*
Instability	(.00836)	(.00828)	(.00806)	(.00803)	(.00904)	(.00892)	(.00888)
Market Size	−1.61	−1.65	−0.956	−1.05	−2.56	−2.25	−2.53
	(1.26)	(1.34)	(1.26)	(1.32)	(1.86)	(1.79)	(1.69)
Economic	−0.351	−0.640	−0.212	−0.445	−0.594	−0.553	−1.05*
Development	(.510)	(.501)	(.484)	(.478)	(.629)	(.648)	(.602)
GDP growth	0.0296***	0.0299***	0.0301***	0.0299***	0.0350***	0.0299***	0.0308***
	(.00975)	(.0100)	(.0103)	(.0104)	(.00993)	(.00962)	(.00932)
Constant	-1.03^*e^{-9}	1.02^*e^{-9}	-3.47^*e^{-10}	-2.12^*e^{-10}	-7.20^*e^{-10}	-6.97^*e^{-10}	-8.30^*e^{-10}
	(1.16^*e^{-9})	(1.15^*e^{-9})	(1.47^*e^{-9})	(1.50^*e^{-9})	(1.08^*e^{-9})	(1.08^*e^{-9})	$(1.12)^*e^{-9}$
n	122	122	121	121	82	82	82
N	2524	2524	2499	2499	1790	1790	1790
R^2	+0.0726	+0.0853	+0.0747	+0.0820	+0.0921	+0.1017	+0.1221

OLS within estimates with Arellano (1987) type robust (clustered) standard errors in parentheses. $*p < 0.1$; $**p < 0.05$; $***p < 0.01$; two-tailed tests. Analysis covers 1970–2000. All variables detrended, except Political Instability. Country fixed effects implemented in advance via "areg" command, with "absorb(country)" in Stata 9.2. R^2 information is not fully comparable across models due to changes in sample size.

stronger. Both measures, however, remain unambiguously significant, as does our measure of PTAs (first column of Table 6).

Extensions of the Analysis III: Domestic Preferences/Policy as Alternative Explanations?

A possible challenge to our findings is spuriousness. Downs, Rocke, and Barsoom (1996) argue that governments tend to sign only those international agreements that oblige them to do what they are already doing (or want to do) anyway. Compliance with international agreements is then purely a function of *ex ante* government preferences, not a function of the international institutions per se or the costliness of reneging (von Stein 2005; though cf. Simmons and Hopkins 2005; Grieco, Gelpi, and Warren 2007). For FDI, this suggests that governments make domestic policy decisions to keep markets

open and to pursue the liberal economic policies that foreign investors like; *then* they also join international treaties and organizations that oblige them to do so. Foreign investors, according to this argument, respond to the change in domestic policy, not whether or not the country joins international trade agreements. Any correlation between FDI and PTAs or GATT/WTO would thus be spurious.[31]

We test this alternative explanation by considering several measures of such domestic policy choices.[32] Since

[31]Our results contradict the strong form of this argument, namely that international agreements merely ratify existing domestic policy practices. If this were true, there should be no change in FDI inflows once a country actually becomes a party to the agreement, because signing such an agreement would then provide no new information to investors. Nonetheless, as a recent UN study notes: "national policies are key for attracting FDI, increasing benefits from it and assuaging the concerns about it" (UNCTAD 2003, 85). Well-informed investors should indeed respond to domestic policy choices.

[32]These measures all have defects, but they are the best available for a broad sample of countries over time.

international trade agreements require domestic policy changes such as lowering tariffs, controlling for these policies should reduce the estimated effect of international institutions, as what we have called the purely economic effects of these institutions are now captured in large part by the control variables. But even if trade flows freely and a government's economic policies are sound from a neoliberal perspective, the government's stated commitment to maintaining these policies may not be very credible if it can change such domestic policies easily. International institutions should therefore continue to have an effect even when domestic policy measures are taken into account.

In model 9 (Table 6), we add TRADE OPENNESS, a measure based on actual trade flows: it is the sum of exports and imports as a percentage of GDP (from WDI).[33] The significant positive coefficient suggests that trade is a complement to FDI and that greater trade openness on balance boosts inward FDI. The inclusion of this policy variable in the model reduces the estimated effect of GATT and WTO as expected, but actually increases the estimated effect of PTAs. The changes, however, are substantively small, and all of our measures of international trade agreements remain statistically significant, though GATT just misses the 0.05 level in model 9.

In model 10, we add to model 8 the index of FINANCIAL OPENNESS, encoded by Brune, which measures the degree to which a country restricts capital account transactions (higher values indicate greater openness, see Brune 2007; Johnston et al. 1999). The estimated coefficient for this ordinal index is positive and statistically significant (it just misses the .05 level in model 11, when trade openness is also included). The magnitude of the coefficients for our measures of international trade agreements is reduced, as expected, but the estimated effects remain both substantively and statistically significant.

We next considered a broader measure of domestic policy choice: the Sachs-Warner "index of economic openness," which is a measure of liberal foreign economic policy and orientation of the government. Dichotomous by design, this measure is necessarily somewhat crude;[34]

it did not come close to statistical significance in any of our regressions.

More fine-grained and detailed is Burnside and Dollar's (2000) index of GOOD POLICY, as updated by Easterly, Levine, and Roodman (2003). GOOD POLICY is designed as a composite index of *domestic and foreign* economic policy, where higher values indicate more economically liberal policies, so that we expect a positive coefficient. It thus captures most comprehensively the policies that foreign investors should want to see[35] and therefore allows us the most direct test of whether our main results suffer from omitted variable bias (i.e., spurious correlation due to the omission of measures of domestic policy preferences).

Unfortunately, data availability for the GOOD POLICY index is limited to 82 of our original 122 countries (resulting in a loss of 29% of our observations), and there are strong reasons to suspect that reliable data on economic policy are missing in a nonrandom fashion, so we are less confident about the estimates for these models than for the prior models. We report the main findings in the last three columns of Table 6: Model 8′ is model 8 reestimated for this more limited sample; a substantively and statistically weaker estimated effect for GATT and WTO membership is the most notable difference. When we add the GOOD POLICY INDEX, for which we estimate a highly significant positive coefficient (model 12), the estimated coefficients for international trade institutions decline, but they retain statistical significance, with the exception of GATT. These results hold even when trade openness is also included in model 13.[36]

In sum, domestic policy matters for FDI. Including measures of domestic policy in our regressions reduces the estimated effect of trade agreements and organizations, as should be expected. Taking into account domestic policy, however, does not render these international institutions unimportant. Across the different models that include measures of domestic policy, CUMULATIVE PTAs remain significant at least at the 0.05 level throughout. WTO MEMBERSHIP remains significant at that level in all but one model.

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[33]Since the distinction between GATT and WTO appeared warranted, we retain it for the subsequent models, though we also conducted these additional analyses with the single variable for GATT/WTO membership.

[34]For a country to be categorized as "open," it must have a black market exchange rate premium of <20%, no obligatory export marketing for major export product(s), no socialist state, import tariffs <40%, *and* NTB restrictions for imports equivalent to <40% tariff.

[35]The index combines the foreign economic policy components of the Sachs-Warner index of economic openness with measures of domestic macroeconomic policy (outcomes) that are considered desirable from a liberal economic perspective: budget surplus and low inflation.

[36]The index of financial openness is statistically insignificant when it is added to models 12 or 13, possibly due to the comprehensiveness of the Burnside and Dollar index.

Extensions of the Analysis IV: Alternative Economic Explanations

In a recent paper, Medvedev examines three economic mechanisms through which PTAs might increase inward FDI; they might be considered alternative explanations for our findings: specific investment provisions in the PTAs, the trade-boosting effect of the PTAs, and the effective increase in the size of the market to which foreign investors have unimpeded access due to the PTAs (2006, esp. 2–8, 42f).[37] It seems indeed likely that investment provisions in PTAs would boost FDI, given our strong and persistent finding for BITs. However, only some (mostly quite recent) PTAs have specific provisions concerning the treatment of foreign investments; they do not seem suited to explain the general effect that we have found. We also agree that an increase in trade openness due to a PTA should boost FDI. In fact, we control for such an effect and find much support for it. Our measure of trade openness (in models 9, 11, and 13) controls for levels of actual trade. In addition, import-weighted measures of tariffs (and nontariff barriers to trade) are among the components of the GOOD POLICY INDEX. Including this variable in models 12 and 13 therefore allows us to control for most of the trade-related economic effects of GATT, WTO, and PTAs. Although we remain cautious about the findings due to the reduction in sample size, the persistence of a strongly positive effect of PTAs on inward FDI (and a statistically weaker one for the WTO)—even when this policy measure is included—suggests that PTAs have a strong informational effect and WTO membership has a notable one, above and beyond the purely economic effects of these institutions.

Finally, to get at the question of whether PTAs increase FDI only through market size, we created two alternative measures of "weighted" PTAs. The first measure, PTA_{GDPw}, records for each country-year the number of PTAs weighted by the size of the additional market created for country i by each PTA. The second measure, $PTA_{relGDPw}$, makes these market-size weights conditional on (host) country i's domestic market size.[38] If market size were driving the effect, these measures should exhibit a positive and significant coefficient. However, when they are used in lieu of our original PTA measure, neither measure turns out significant, regardless of whether each is included by itself or both jointly. Most importantly, when either weighted measure is included simultaneously with our original "cumulative PTAs" measure, the original, unweighted measure is significant, while the weighted measure is not.[39] These findings provide little support for the hypothesis that the logic of market size is driving our findings.[40]

In sum, PTAs surely have direct economic effects, but participation in these international institutions also has political and informational consequences, which may in fact be substantively more important. Joining a PTA leads to substantial increases in FDI even after controlling for direct economic effects, because these international agreements commit governments more credibly to liberal economic policies and thus reassure foreign investors.

Additional Robustness Checks

To probe the soundness of the findings further, we conducted a series of additional robustness checks. First, we reestimated models 8–13 using the alternative estimation techniques discussed above (see Table 4 and accompanying discussion). WTO membership and PTAs remained significant predictors of FDI, as did GATT membership, albeit less strongly. As a second robustness check, we considered alternative measures of market size and economic development (and omitted these control variables altogether since our measure of FDI arguably already accounts for them). None of these changes to the model specification changed our main results. Finally, we considered various sample restrictions. Here, we focused on whether our findings are unduly driven by FDI into the East Asian economies, since they arguably have experienced highly unusual levels of FDI inflows, and (separately) whether excluding the relatively highly industrialized post-Communist countries of Eastern Europe from the analysis might change the results. We find that our key findings are robust to omitting these countries individually or in groups.

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[37]We thank one of the anonymous reviewers for bringing this November 2006 working paper to our attention. Medvedev also discusses (1) a general improvement in the investment climate due to various provisions in "third wave" trade agreements, but rejects the link to FDI on theoretical and empirical grounds (2006, 5), and (2) the possibility that PTAs may affect FDI in an indirect dynamic way by generating increased growth, which is theoretically intriguing but difficult to establish empirically (2006, 9f) and does not constitute an alternative explanation for our findings.

[38]The logic underpinning this measure is that gaining access to, for instance, Canada's market might have a lesser economic effect for Brazil than for the Dominican Republic (to take two countries in the same region with fairly similar per capita GDP but vastly different population sizes, resulting in very different national GDP figures).

[39]The correlations between the weighted measures and the unweighted measure are below 0.35.

[40]The detailed results—omitted here due to space constraints—are available on the authors' websites.

Conclusion

This article has examined how international political institutions affect FDI flows into developing countries. We hypothesized that developing country governments that seek to attract FDI can use trade agreements—GATT/WTO and PTAs—to commit to liberal foreign economic policies (in particular: trade openness) as well as more generally to an economically liberal policy regime, which creates a favorable environment for FDI. These commitments are more credible, we argued, because these international institutions also have what we have called informational effects. The international institutions themselves, foreign governments that are parties to the international political agreements, and domestic groups that gain from them, are more likely to monitor government behavior and sound an alarm if a government reneges. This informational effect opens governments that renege to swifter, broader punishment. It makes it easier for governments and private actors to use various means to bring costly economic pressure on governments that renege, for instance through dispute settlement mechanisms such as the WTO's. International institutions thus make commitments to liberal economic policies more credible and consequently reassure foreign investors, allowing governments to increase inward FDI.

Our statistical analyses provide strong empirical support for our central hypotheses about the effect of international institutionalized commitments on FDI flows. Belonging to the WTO increases inward FDI, and the greater the number of PTAs to which a country is a party, the higher is the inward FDI that it experiences, holding many other factors constant. These findings are remarkably robust to changes in the model specification and estimation techniques, and instrumental variable estimates show that the effect is not driven by endogeneity. When we include domestic policy measures in our models, which capture the economic effects as well as safeguard against potentially spurious correlation, we still find that PTAs and WTO (though not GATT) have a significant positive effect on inward FDI flows. This finding suggests that the informational effects of international institutions are important.

This research has broader implications for both theory and policy. First, our findings suggest that it is fruitful for the literature on the political determinants of FDI to look beyond purely domestic political factors. The interaction between domestic and international institutions may be a particularly promising avenue for future research in IPE (see, e.g., Mattli and Büthe 2003). Second, our research shows that governments can use interna-

tional institutions to make more credible commitments not just vis-à-vis other governments (as previous research has shown) but also vis-à-vis private actors in the international political economy. This finding suggests that theories of private transnational authority—which often entail arguments about the relative decline of the share or importance of governments in the governance of the world economy—may need to be embedded more systematically in the literature on international institutions. Third, we find that participation in institutions in one issue area can have effects in another. Our finding that international trade institutions boost inward FDI into developing countries calls into question Rose's claim that membership in the GATT and WTO has no measurable impact on FDI flows. We show instead that his tentative finding of a statistically significant positive effect for PTAs holds more generally for trade agreements (Rose 2003),[41] and we suggest specific causal mechanisms for such an effect. This effect might also explain why developing countries have been eager lately to join the WTO, even if (arguably) membership has not promoted trade for them. Moreover, our emphasis on trade agreements as commitments to more broadly economically liberal policies can explain why case studies of some individual PTAs have found them to stimulate investment inflows from countries other than the signatories of the agreements (FIA 2005; Lall 2005). The broader insight is that international institutions, such as GATT/WTO and PTAs, may matter in the international political economy in ways that go beyond their official mission or originally intended economic effects.

Fourth, one of the long-standing debates in the literature on FDI is whether FDI and trade are substitutes or complements. This matters for policymakers because, if they were substitutes, policymakers would pay for trade liberalization with a loss in FDI. It also matters for scholars because it affects our understanding of how different parts of the economy are connected. Our finding of a consistent, substantively and statistically significant positive coefficient for measures of trade flows and trade policy strongly suggests that FDI and trade are complements, at least for developing countries—and it indirectly supports our expectation that FDI into developing countries is largely vertical, part of multinational production chains.

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[41]Rose's data are quite different from ours: he considers only dyadic data, i.e., data of bilateral FDI flows from each OECD member country to any other country from 1985 to 1999 (308 country pairs, apparently including both developing and advanced industrialized FDI recipients).

Finally, our research has important implications for scholars and practitioners interested in the politics of economic development. After years of apprehension, many developing countries have become interested in attracting FDI. Policymakers—not just at the World Bank and IMF, but also now in most developing country governments—consider FDI desirable because it provides much-needed capital and brings new technology as well as training for workers and managers to the country, and thus may contribute to economic growth (e.g., Farrell et al. 2003).[42] Yet, multinational corporations are often wary of investing in developing countries. We show that developing countries—if they want to attract more FDI—can make commitments to liberal economic policies more credible via international institutions, thus reassuring foreign investors and thereby increasing inward FDI. If FDI indeed boosts economic growth, international trade institutions may indirectly help developing countries in ways that have not previously been discussed. At the same time, our findings also suggest that governments pay for this increased inward FDI with a loss in policy autonomy.

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[42]A large literature exists on the costs and benefits of FDI from the perspective of the recipient country, or host (e.g. Moran, Graham, and Blomström 2005).

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