Easing the Pain of Adjustment? Preferential Trading Agreements, Foreign Aid, and Credible Commitment to Economic Reform

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Abstract

In this article, we propose that wealthy donors give foreign aid to developing countries to facilitate political adjustment, such as compensation for losers and side payments to influential elite constituencies, towards mutually profitable economic reform. Only democratic developing countries can credibly commit to using fungible revenue in ways that benefit the donor, so the adjustment effect only applies to democracies. A quantitative test against data on preferential trading agreements lends strong support to the theory. Strikingly, fully democratic developing countries that form a preferential trading agreement obtain a threefold increase in foreign aid in the short run. Additional tests show that this increase is not driven by macroeconomic difficulties and that the beneficial effect on foreign aid is temporary. Both findings are consistent with the theory. An important implication of these results is that if foreign aid facilitates economic reform through preferential trading agreements, previous research could have underestimated the benefits thereof.

1 Introduction

International political economists have recently investigated why wealthy countries give foreign aid. Previous research has shown that strategic interests, such as direct support to military allies or important trading partners, dominate over altruistic considerations (Alesina and Dollar 2000; Lancaster 2007). Accordingly, donors use foreign aid either to support loyal regimes or to buy policy concessions from governments that are willing to implement the same in exchange for fungible resources (Bueno de Mesquita and Smith 2009; Dunning 2004; Thacker 1999).

In this article, we show that donors also use foreign aid to facilitate mutually profitable international cooperation, such as economic reform in recipient countries. Specifically, we propose that major powers can use foreign aid to help developing countries survive the politically and economically costly adjustments that inevitably accompany liberalization (Geddes 1994; Haggard and Webb 1994; Nsouli, Rached, and Funke 2005; Rodrik 1992, 1996; Weyland 2002). However, we depart from previous research by emphasizing the ability of the recipient to credibly commit to using foreign aid to ease the pain of adjustment. Building on international relations theory and the political economy of foreign aid, we predict that only democratic developing countries can credibly commit to using foreign aid in ways that also benefit the donor (Bueno de Mesquita and Smith 2009; Burnside and Dollar 2000; Lipson 2003; Remmer 1998; Svolik 2006). Democratic governments have access to a host of domestic monitoring and enforcement mechanisms, so they can credibly promise to donors that they will use foreign aid to push through additional reforms.

Our empirical analysis provides strong support for this theory. Analyzing preferential trading agreements (PTAs) between a developing country and the United States (US) or the European Union (EU), we find that only developing countries with robust democratic institutions obtain an increase in foreign aid upon initiating international trade cooperation. Strikingly, for fully democratic countries a PTA results in a threefold increase in foreign aid in the short run. By contrast, international trade cooperation has no observable effect on foreign aid flows to autocratic and anocratic developing countries. While all developing countries appear to potentially benefit from adjustment assistance, only some of them can credibly commit to using fungible resources for that purpose.

In this article, we also conduct an extensive array of additional tests. We compare our political argument with alternative economic explanations, demonstrate that the effect of PTA formation is a short-run phenomenon, reject democratization as an alternative causal mechanism, investigate commitment capacity among democratic developing countries, examine the sectoral allocation of foreign aid, characterize the association between PTA formation and economic reform, summarize a high number of robustness tests, and address endogeneity concerns both theoretically and by using instrumental variables. All these additional tests offer evidence in support of our theory.

These results have several important implications for international cooperation and political economy. First, if foreign aid can facilitate reform, previous research may have underestimated the benefits of foreign aid (Burnside and Dollar 2000; Easterly 2002). Even if foreign aid had no direct effect on economic growth or democratization whatsoever, it still could play an important role by reducing the probability that liberalization will fail. Some of the sizeable benefits that are usually associated with political and economic reform in developing countries might be unattainable without foreign aid (Dornbusch 1992; Fernandez and Portes 1998; Milner and Kubota 2005).

Second, our finding shows that even if the allocation of foreign aid is driven by self interest (Bueno de Mesquita and Smith 2009; Burnside and Dollar 2000; Dunning 2004; Stone 2008; Thacker 1999), foreign aid need not be harmful to the recipient. If foreign aid can help developing countries commit to international cooperation that benefits both the donor and the recipient, there is no reason to believe that altruism is a necessary condition for effective foreign aid. This insight is particularly important because it is generalizable. While our analysis focuses on international trade cooperation, we believe our theory can illuminate collaboration across a wide range of issue areas, such as environmental protection or democratization (Hicks et al. 2008; Wright 2009).

Finally, our analysis is of particular importance to scholars of international cooperation because it offers strong and direct evidence in support of the recent emphasis on commitment problems and time inconsistency in international cooperation (Dai 2006; Dunning 2004; Leeds 1999; Lipson 2003; Martin 2000; Svolik 2006). We do not find evidence that developing countries obtain foreign aid simply because they need it, yet donors seem to be willing to offer fungible resources to governments that can credibly promise to abide by contractual obligations regarding the allocation of these resources.

We have organized the article as follows. First, we review the literature and develop a theory of the relationship between foreign aid and PTA formation. We then present our research design and empirical analysis. Next, we provide additional evidence and summarize our robustness tests. In the concluding section, we summarize and discuss the main findings. Due to space constraints, we have relegated much of our empirical evidence to a supplementary appendix.

2 Why Foreign Aid?

Recent research on foreign aid has investigated both the *effect* of and the *motivation* for giving foreign aid. These questions are related because the reason why donors give foreign aid influences allocation (Bueno de Mesquita and Smith 2009). If donors were completely altruistic, they would allocate foreign aid to maximize the beneficial effect on development, such as economic growth or democratization. But if donors are motivated by self interest, they could allocate foreign aid so that it has at best a limited effect on development and at worst harms the citizens of the recipient country.

Most political economists believe donors do not give foreign aid for altruistic reasons. Alesina and Dollar (2000) show that donors give bilateral foreign aid to politically or economically important countries. For example, the US clearly prioritizes strategically central countries, such as Israel and Egypt. Lancaster (2007) examines the history of foreign aid in five donor countries. She finds that the decision to give foreign aid is ultimately strategic and serves important foreign policy goals. Bueno de Mesquita and Smith (2009) show that donors give foreign aid to countries that are willing to offer valuable policy concessions at a low price. According to Dunning (2004) and Thacker (1999), bilateral and multilateral foreign aid during the Cold War was motivated by the geopolitical conflict between the US and the Soviet Union. Schraeder, Hook, and Taylor (1998) show that even countries with few direct strategic interests, such as Sweden, pursue ideological goals through foreign aid.

Even if donors behave strategically, it is not clear how this influences the effect of foreign aid. On the one hand, Bueno de Mesquita and Smith (2009, 311) argue that foreign aid is used to purchase harmful policy concessions: "[w]hen aid is given in return for policy concessions, it is a winning proposition for donor political elites, donor constituents, and recipient political elites but it is often a bane for the citizenry in most recipient countries." In their view, the strategic allocation of foreign aid has such a dramatic effect on the impact of foreign aid that it often directly harms the citizens of the recipient country. It is not only that foreign aid is being wasted, but the policy concessions that generate inflows of foreign aid reduce the provision of important public goods.

On the other hand, Burnside and Dollar (2000) find that although domestic institutions for "good governance" do not influence the allocation of foreign aid, a high quality of domestic institutions generates a positive relationship between foreign aid and economic growth. One reason why this might be true is that, regardless of the motivation behind giving foreign aid, good domestic institutions ensure that it is not used in wasteful ways. Additionally, good domestic institutions presumably constrain the government so that it cannot sell harmful policy concessions to donors.

Another reason why the effect of strategically allocated foreign aid on development need not be negative is that it could help donor and recipients exploit mutually profitable opportunities for international cooperation. Foreign aid could provide the recipient country with resources that facilitate the implementation of policies that are mutually profitable. Indeed, an extensive literature on international politics emphasizes the importance of democracy, transparency, and other elements of good governance in international cooperation (Chayes and Chayes 1995; Lipson 2003; Svolik 2006; Tallberg 2002). If foreign aid can help a developing country continue political and economic reforms that increase economic growth and societal stability, both the donor and the recipient could benefit from trading some foreign aid for reforms that increase social welfare. For example, Stone (2008) argues that conditional IMF lending can stabilize and strengthen developing countries, but only if major powers such as the US do not intervene to prevent the enforcement of conditionality. To cite another example, Wright (2009) claims that the promise of future foreign aid can induce dictators to democratize if they can expect to remain in power.

Political economists have largely ignored adjustment as a strategic rationale for giving foreign aid. If foreign aid is used to seal the deal on harmful policy concessions, we should see foreign aid in conjunction with bad public policies. If foreign aid is used for adjustment assistance, we should see foreign aid in conjunction with good public policies that can be implemented only if the donor provides additional resources for implementation.

3 Theory

To investigate the use of foreign aid for adjustment assistance, we study the relationship between foreign aid and PTA formation. PTAs are ideal for our purposes because international trade cooperation is mutually profitable even if the contractual terms are biased towards donor interests. Additionally, PTAs require policy reform and prompt costly adjustment in recipient countries, so foreign aid could potentially facilitate international cooperation. To capture this effect, we identify those developing countries that are able to credibly commit to not squandering the windfall revenue.

PTA formation. Why are PTAs mutually profitable? The first building block is constituted by the traditional gains from trade, such as the improvements in allocative efficiency from reciprocal market access (Dornbusch 1992; Milner 1999). This is particularly important for developing countries that have substantial comparative advantages in such sectors as agriculture and textiles. Yet traditional gains from trade are only a subset of myriad rationales for PTA formation. Mansfield and Reinhardt (2008) emphasize the beneficial effect of reducing the volatility of trade flows. Büthe and Milner (2008) show that PTAs can also increase foreign direct investment because international rules allow the government of a developing country to credibly commit to liberalization. Mansfield and Reinhardt (2003) argue that PTAs are useful as bargaining tactics in multilateral trade negotiations.

As Fernandez and Portes (1998) argue, another possible rationale for PTA formation is credible commitment to broader domestic economic reform. Accordingly, we also emphasize the importance of credible commitments to liberalization. Although PTAs are nominally international trade agreements, they often also contain provisions for economic liberalization more generally, such as national treatment of foreign investors and financial or service deregulation (Büthe and Milner 2008; Manger 2009). Indeed, the International Trade Administration at the US Department of Commerce explicitly states that "[t]rade agreements are also a tool for promoting fair competition and encouraging foreign governments to adopt open and transparent rulemaking procedures as well as non-discriminatory laws and regulations. Trade agreements can strengthen the business climate by including commitments on issues of concern along with the reduction and elimination of tariffs."[1] Similarly, the Europe Agreements that the union formed with future membership candidates were an important first step towards democratization and marketization in Central and Eastern Europe (Vassiliou 2007).

Since we are interested in broader reform, as opposed to narrow trade reforms that are not necessarily difficult to implement (Milner and Kubota, 2005; Weyland, 2002), we only investigate EU and US PTAs. Our theory does not apply to shallow or narrow PTAs, commonly formed by South-South pairs, that achieve limited trade liberalization. EU and US PTAs, however, require broad economic reforms, from service and finance to intellectual property rights (World Bank 2005), so we argue that a commitment to reform is a key benefit thereof.

Foreign aid. If a deep PTA enables a mutually profitable credible commitment to reform, why increase foreign aid? Although there is compelling empirical evidence that reforms increase social welfare in the long term, they are accompanied by costly adjustments that are harmful to many segments of the society in the short run (Little, Scitovsky, and Scott 1970; Milner and Kubota 2005; Nsouli, Rached, and Funke 2005; Przeworski 1991). As companies and industries lose protection, transitional unemployment and production standstills follow. Those who stand to lose from liberalization enact pressure on the government, so if the government is not in a position of strength, it might have to reverse the reforms (Dewatripont and Roland 1995; Geddes 1994; Haggard and Kaufman 1997; Przeworski 1991). These problems are particularly severe in developing countries because they lack the administrative and institutional capabilities that help developed countries adjust to changes (Rauch and Evans 2000).

[1] "U.S. Free Trade Agreements" [http://www.export.gov/fta/]. Accessed March 1, 2010.

Examples abound. A volume edited by Haggard and Webb (1994) presents eight case studies of structural adjustment in developing countries. They find that coalition formation for reform is fraught with difficulties and depends both on the right constellation of institutions and interests as well as the design of the reform package. Geddes (1994) reviews reform experiences in eleven developing countries and shows that reversals and failures are ubiquitous. In many developing countries, such as Turkey or Mexico, trade liberalization and other economic reforms have failed on multiple occasions over timespans that extend several decades (Demir 2004; Revenga 1997). In light of these experiences, the ability of many developing countries to actually achieve significant reductions in the level of protection is all the more impressive (Milner and Kubota 2005).

Most importantly, the empirical record of trade liberalization and other economic reforms in developing countries suggests that the problem of costly adjustment is a fundamentally *political* one. Given that reforms improve the performance of the economy, it is not clear that the economic cost of adjustment is prohibitive even in the short run; yet all reforms have distributional consequences that engender political opposition (Rodrik 1992, 1996). If a government is to succeed in reform, it must therefore form a powerful "winning coalition" in support of the reform. This problem is present in all developing countries that undergo reform, even if the total economic and social cost of adjustment is not prohibitive.

Notably, we do *not* believe that the political problem of costly adjustment is specific to democracies. While citizens have better access to the government in democracies, Geddes (1994) and Milner and Kubota (2005) correctly argue that the median voter actually *benefits* from many economic reforms because they generate economic growth and reduce consumer prices. Thus, the demand for compensation, and thus resistance to reform, may be equally high, or even higher, in autocracies. Similarly, the fact that democracies have larger winning coalitions than autocracies does not imply that the demand for compensation must be higher: if reforms improve economic performance, they are public goods that, at least according to Bueno de Mesquita et al. (2003), are more valuable for democracies than for autocracies. Thus, the effect of regime type on the demand for compensation is again indeterminate. Brooks and Kurtz (2007, 704) concur: "While initial research on this topic suggested that authoritarian governments might be privileged in imposing such painful reforms, subsequent empirical work found such regimes to have no particular advantage."

We argue foreign aid can help a government solve the problem. If liberalization is beneficial in the long term, but difficult to implement in the short term, a temporary increase in fungible resources could prove helpful. For example, the government could compensate those who stand to lose from economic reform, thus reducing political resistance (Fernandez and Rodrik 1991). For another example, the government could allocate additional resources to improve the implementation of public policies that promote trade liberalization (Prowse 2002). Finally, the government could artificially boost the rewards that winners reap from reform, so as to mobilize supporters (Haggard and Webb 1994).

Experiences with trade liberalization and policy reform are supportive of this contention. According to Haggard and Webb (1994, 24), compensation to those who stand to lose from liberalization "is crucial to securing support for stabilization and adjustment programs. In the more successful cases – Chile, Mexico, Spain, and Thailand – compensation came in the form of complementary measures that provided effective compensation while enhancing welfare and economic opportunity over the longer term and minimizing rent-seeking opportunities." Equally important is the problem of administrative capacity. Developing countries can perhaps easily cut spending or reduce tariffs, but such policy reforms as privatization or regulatory overhaul require concentrated investment in implementation. As Nelson (1989, 10) writes in his introduction to an edited volume on coalition formation for reform, "it has become increasingly evident that resumed and sustainable growth also requires increased state capabilities – not so much a less powerful state as one that plays different roles and does so more effectively."

Is there a role for foreign aid in all this? Summarizing the role of international actors in eight cases across the world, Haggard and Webb (1994, 25) write that while "conditional external support is unlikely to tip the domestic political balance in favor of reform when opposition is strong ... its presence (or absence) can bolster (weaken) the standing of reforms within the government." Similarly, Ancharaz (2003, 423) notes that in Sub-Saharan Africa, "virtually all trade reforms ...

have been undertaken as an integral component of structural adjustment programmes under the supervision of the IMF and/or the World Bank. The programmes were ... supported by foreign assistance ... conditional on satisfactory progress." We will provide a systematic quantitative analysis of the determinants of foreign aid for costly adjustment in the context of international trade cooperation.

In this article, we follow Wright (2009) and refrain from investigating exactly how donors coordinate aid allocation upon PTA formation. Since the officials and politicians deciding on PTA formation are different than the officials deciding on aid allocation, some domestic coordination is necessary, and this may result in failures and inefficiencies, especially in presidential systems under divided government (Prowse, 2002). But as we demonstrate below, both the EU and the US *explicitly* coordinate aid allocation and PTA formation.

Credible commitment. If foreign aid can potentially facilitate international trade cooperation by mitigating the problem of political resistance, should we expect that all developing countries experience an enormous increase in foreign aid if they form a PTA? This reasoning fails because the developing country must also credibly commit to using the foreign aid for adjustment assistance. Even if all developing countries could potentially benefit from foreign aid, only some of them can credibly commit to using it in ways that also benefit the donor. Indeed, according to Heckelman and Knack (2008, 526), while "[a]id can, in effect, purchase the acquiescence to liberalizing reforms ... aid can also help non-reforming governments survive, by reducing the cost of not reforming" (see also Rodrik 1996). Thus, a developing country should only obtain foreign aid for costly adjustment if it can credibly commit to using it for that purpose.

We argue regime type is the central determinant of commitment capacity. If the donor gives adjustment assistance to a democratic government, it understands that the democratic government really needs to use this adjustment assistance to bribe opponents or suppress domestic political resistance. If the donor gives adjustment assistance to an autocracy, the donor might fear that the ruler will divert the resources to a small winning coalition without conditioning the transfer on reform (Bueno de Mesquita et al. 2003). Indeed, there is extensive evidence that the use of foreign aid is particularly wasteful in autocracies (Burnside and Dollar 2000). Even if the recipient needs foreign aid for costly adjustments that accompany the implementation of a PTA, there is no guarantee whatsoever that the ruler will not find ways to use fungible resources more suited to his own needs. Inded, the way such dictators as Ferdinand Marcos and Papa Doc Duvalier of Haiti have squandered foreign aid accords with this expectation (Bueno de Mesquita and Smith 2009; Easterly 2002). By contrast, Burnside and Dollar (2000) show that developing countries with domestic institutions capable of good governance have made better use of foreign aid.

This argument is fully in line with the literature on international politics that emphasizes the democratic advantage in international cooperation. As Lipson (2003) argues, democracies are "reliable partners" that enjoy greater contracting opportunities in the international realm. Martin (2000) emphasizes the ability of the legislature to constrain the executive while Remmer (1998) and Svolik (2006) find transparency the most important advantage of being democratic. Applied to the dilemma of costly adjustment, domestic institutional constraints and transparent decision making should therefore help developing countries credibly commit to using foreign aid for adjustment assistance. Indeed, since reform is a domestic political problem, we believe that the importance of domestic commitment capabilities is unusually large.

These advantages could be particularly important for the allocation of foreign aid. Consider findings in the Open Budget Survey of 2008.[2] This survey was conducted by the International Budget Partnership and focuses on the transparency and accountability of budgeting in different countries. It concludes that "on average, countries surveyed provide minimal information on their central government's budget and financial activities" while "[i]n the majority of countries surveyed, legislatures have very limited powers, time, and capacity to review the Executive's Budget Proposal and monitor its implementation." Equally significant, "in many countries the supreme audit institutions do not have sufficient independence or funding to fulfill their mandate, and often there are no mechanisms in place to track whether the executive follows up on audit recommendations." Excessive secrecy "encourages inappropriate, wasteful, and corrupt spending and – because

[2] Available at [http://openbudgetindex.org]. The quotations are from "Key Findings."

it shuts the public out of decision making – reduces the legitimacy and impact of anti-poverty initiatives." What is more, "[t]he worst performers tend to be low-income countries and often depend heavily on revenues from foreign aid or oil and gas exports.

Empirical implications. Democratic developing countries are in a better position to receive adjustment assistance because they can commit to using it in ways that facilitate cooperation, which benefits the donor.

Hypothesis. If a democratic developing country forms a PTA, it obtains additional foreign aid to facilitate the costly adjustment.

Notably, we are not arguing that donors necessarily reduce foreign aid to autocratic developing countries with whom they form a PTA. Instead, it is equally plausible that PTA formation will not have any effect on foreign aid to autocracies. Even if they were to potentially benefit from adjustment assistance, dictators cannot credibly commit to using it for purposes that also benefit the donor in the long run.

We are also agnostic as to the exact features of democratic governance that are most important. Consequently, we do not disaggregate our hypothesis into the effect of such factors as veto players, winning coalitions, and the judicial system. We are aware of the fact that democracy has many dimensions, and for many theoretical and empirical questions it is important to specify exactly how democracy should influence behavior (Bueno de Mesquita et al. 2003; Przeworski 1991; Cheibub, Gandhi, and Vreeland 2010). However, for our purposes, it is the total effect of democratic institutions, from constraints on the executive to free elections and civil rights, that is relevant. To be sure, we verify that our findings are fully robust to alternative operationalizations of democracy and examine the effect of credible commitment structures among democratic developing countries. Similarly, we verify that our findings are driven by democracy, as opposed to democratization.

Our main hypothesis has two other notable features. First, economic indicators of demand, such as growth or unemployment, are largely irrelevant or at the very least dominated by the supply side. Even if a developing country urgently needs adjustment assistance, it should not obtain any unless it is sufficiently democratic so as to establish a credible commitment (Lipson 2003; Martin 2000; Svolik 2006). Second, the effect is temporary. Once a democratic developing country has undergone the costly reform, on average it should not obtain additional foreign aid from wealthy industrialized countries. Successful reform critically weakens protectionist special interests, so the demand for fungible resources decreases (Hathaway 1998).

4 Research Design

Our main statistical model can be written as

$$\begin{aligned} ln(Aid_{ij,t}) &= \alpha + \beta_1 PTA_{ij,t} + \beta_2 Regime_{j,t-1} + \beta_3 PTA_{ij,t} \times Regime_{j,t-1} \\ &\quad + \beta_4 X_{ij,t-1} + \beta_5 Z_{j,t-1} + \gamma_j + \varepsilon_{ij,t}. \end{aligned} \tag{1}$$

The dependent variable $ln(Aid_{ij,t})$ is the natural logarithm of foreign aid given to developing country j by donor i at time t. The data are from the 2008 World Development Indicators (WDI) from the World Bank.

An alternative would be to use the comprehensive AidData (2010) series on foreign aid at the project level.[3] Unfortunately, we were unable to do this because AidData is missing some data for aid given by the European Commission for the first couple of years in our dataset. For example, according to AidData, total aid given to Poland by the European Commission before 1995 was 442 dollars (one project in 1992). By contrast, the WDI data indicate millions of dollars on an annual basis.

Since we focus on PTA formation, the only donors that we consider are the US and the EU. This is appropriate for our purposes because these two economic and political giants are by far the most important donors that strategically allocate foreign aid to developing countries (Bueno de Mesquita and Smith 2009; Dunning 2004; Lancaster 2007; Thacker 1999). Additionally, PTAs with these two major powers are far more demanding than others, so they are ideal for investigating

[3] http://www.aiddata.org.

the importance of adjustment assistance (World Bank 2005).

We treat the EU as a single actor because it has a common external trade policy. To obtain a figure for the total foreign aid given by the EU, we sum over bilateral foreign aid given by member states and add this to the total aid given by the European Commission. Our dataset covers 125 developing countries and spans years 1990 to 2007.

The main independent variables are $PTA_{ij,t}$ and $Regime_{j,t-1}$. The variable $PTA_{ij,t}$ is an indicator that equals 1 if recipient i and donor j have signed a PTA between years $t-4$ and t. This formulation captures the short-term effect that we are investigating. We do not lag this variable because the donors often demand reforms at the time of signature (Whalley 1996). A lagged variable would not capture the instant effect of PTA formation on foreign aid. Nonetheless, our results do not change if we lag the variable *PTA*.

We consider 39 PTAs notified by the WTO, the Tuck Trade Agreements Database, and the McGill Faculty of Law Preferential Trade Agreements Database. In line with previous research, we use the year of signature as a proxy for formation, as opposed to the year of ratification (Mansfield, Milner, and Rosendorff 2002). This distinction is practically irrelevant, however, because the time from signature to ratification averages only one year. Additionally, signature is a reliable predictor of ratification in our dataset, so it appears plausible that anticipatory adjustment begins already prior to ratification. For maximal transparency, the PTAs that we consider can be found in Table A2 in the supplementary appendix. Note in particular that our dataset includes PTAs between the US and major foreign aid recipients, such as Egypt and Jordan, that are also stable autocracies. This stacks the deck against our theory, as it is well known that these autocratic countries receive substantial amounts of foreign for security reasons (Alesina and Dollar 2000).

In general, democracy may predict PTA formation (Mansfield, Milner, and Rosendorff, 2002). This presents a challenge to statistical inference, as it may be that the PTA is simply a medium for the fundamental effects of democracy. Fortunately, in our case, this problem is of limited concern: democracy is not a predictor of PTA formation with the EU or the US. We demonstrate this in the supplementary appendix by instrumenting for PTA formation and noting that the coefficient for democracy is not statistically significant.

The variable $Regime_{j,t-1}$ is the democracy score of the recipient j at time $t-1$ from Polity IV. It combines the competitiveness and openness of executive selection, institutional constraints on executive authority, the competitiveness of political participation, and the rules that regulate political participation. We rescale the index so that 0 denotes full autocracy and 20 denotes full democracy. The interaction term between $PTA_{ij,t}$ and $Regime_{j,t-1}$ allows us to test our main hypothesis.

As control variables, we include *per capita* GDP and the logarithm of aggregate GDP. They measure the poverty and salience of a developing country, respectively. These data are collected by the IMF (2008). As in Bueno de Mesquita and Smith (2009), we also include the logarithm of the imports and exports between each donor and recipient, $Trade$, as well as government expenditures as a proportion of GDP to capture the amount of resources available to the government, $GovShare$. Data for these two variables are from the WDI (2008) and the IMF (2008).

We also control for $Democratization$ (Gleditsch and Ward 2000). It scores -1 if the total change in the level of democracy in developing country j in the past five years is negative. It scores 1 if the total change in the level of democracy in developing country j in the past five years is positive. It scores 0 if there has been no change in the past five years. Importantly, the correlation between $Regime$ and $Democratization$ in our data is only $.12$, so these two variables are not collinear. As a robustness check, we also use alternative measures of democracy and democratization.

We also add $PoliticalStability$ and $Conflict$. The former variable is derived from the 2008 Quality of Governance Dataset (Kaufmann, Kraay, and Mastruzzi 2008). It combines several indicators of the probability that the government is overthrown by constitutional or violent means. The latter variable is from the 2009 Armed Conflict Dataset built by the UNDP and the International Peace Research Institute. It scores 1 if there is an ongoing conflict in the a developing country and 0 otherwise. To capture strategic interests, we include $Alliance$ and $Colony$ from the Correlates of War Dataset. Each scores 1 if the donor and recipient are allies or colonies, respectively.

Given the importance of EU accession, we include a dummy variable $EU Applicant$ that scores 1 if a developing country has sought accession. The prospect of future accession could influence the allocation of EU foreign aid. Finally, we include $Distance$ and $Population$ to measure other dimensions of the salience of recipient i to donor j. The data for $EU Applicant$ and $Distance$ are from the 2005 CEPII Dataset while the data for population are from 2008 WDI.

Finally, variable WTO scores 1 if a developing country is a GATT/WTO member and 0 otherwise. We include it to separate the effect of a specific PTA from membership in the multilateral trade regime. Variable $RegQuality$ is from the 2008 Quality of Governance dataset (Kaufmann, Kraay, and Mastruzzi 2008). Since regulatory quality, notably corruption, could mediate the allocation of foreign aid, we include it in the main model. Table A3 in the appendix provides descriptive statistics.

A Breusch-Pagan test indicates cross-panel heteroskedasticity. Although this does not bias the results, it influences the standard errors and thus complicates hypothesis testing. In line with most panel studies, we use the Huber-White sandwich method for robust standard errors to obtain a consistent estimate of the variance-covariance matrix. A Hausman test confirms that we need to use fixed effects instead of random effects to account for heterogeneity across countries in our longitudinal data, so our main statistical model has fixed effects for each developing country.

A Wooldridge test for autocorrelation rejects the null hypothesis that there is no first-order serial correlation. Thus, we need a statistical model that can account for an AR(1) process while including recipient fixed effects. In the main text, we therefore compute Driscoll-Kraay standard errors. This technique is appropriate when the number of countries large relative to the number of years in the dataset. In other words, Driscoll and Kraay's approach eliminates the deficiencies of other large *T*-consistent covariance matrix estimators, such as the PCSE, which are usually inappropriate when the cross-sectional dimension *N* of an econometric panel us large. In addition to serial correlation, it allows for cross-sectional dependence. In the robustness section, we verify that our results hold for alternate methods to address serial correlation.

5 Results

Table 1 below shows the estimation results for two specifications of our model. The first column summarizes the baseline model, which only includes our main covariates. The second column summarizes the expanded model with all control variables introduced above.

[Table 1 about here.]

Consider the first column. Our main hypothesis pertains to the conditional effect of forming a PTA as a function of regime type. Inserting $PTA_{ij,t} = 1$ and $PTA_{ij,t} = 0$ in our main model, the conditional effect is given by

$$\frac{\Delta ln(Aid)}{\Delta PTA} = \beta_1 + \beta_3 Regime. \tag{2}$$

For completely autocratic countries, $Regime = 0$, so the expected effect of a PTA on aid is $\beta_1 < 0$. For completely democratic countries, $Regime = 20$, so the expected effect of a PTA on aid is $\beta_1 + 20\beta_3 > 0$. The threshold for a positive expected effect is approximately $Regime = 6.5$.

The statistical significance of the estimated interaction effect cannot be evaluated using the t-statistic, so we now graph the marginal effect in the upper panel of Figure 1. It shows that for $Regime = 14$ and higher, the positive effect is statistically significant at the conventional $p = .05$ level. In summary, these results offer evidence in support of our hypothesis that developing countries forming a PTA experience an increase in the inflow of foreign aid in the short term.

[Figure 1 about here.]

The second column introduces the full model. As can be seen from this table, the coefficients are similar to those in the first column. This suggests that our finding is robust. To verify that this robustness extends to the interaction term, we graph the marginal effect in the lower panel of Figure 1. This figure is almost identical to that above, so it provides additional evidence in support of our prediction.

The substantive magnitude of these effects is strikingly large, as shown in Table A4 in the supplementary appendix. Since our measure of foreign aid is logarithmized, the graph gives the proportional effect of PTA formation on foreign aid. Concretely, if a fully democratic developing country received $exp(X)$ dollars of foreign aid before forming a PTA, the increase in aid is approximately $\frac{exp(X+1)}{exp(X)} = exp(1) \approx 2.71$. In other words, PTA formation increases the amount of foreign aid by a factor of nearly three, regardless of the previous level of foreign aid. This result indicates that PTA formation trumps all other determinants of foreign aid in the short run, so any empirical analysis of foreign aid that fails to incorporate PTA formation is bound to produce biased results.

Does the empirical reality match our predictions? Figure 2 shows the impact of the EU-Croatia PTA (2001) on total foreign aid from the EU to Croatia and the impact of the North American Free Trade Agreement (1992) on total US foreign aid to Mexico. These examples accord with our predictions. Croatia was a highly democratic country in 2001, with a rescaled Polity score of 18, and it enjoyed a large increase in foreign aid. Specifically, aid to Croatia increased from 26.7 million dollars in 2000 to 74.8 million dollars in 2006. In those five years, the average annual increase was 9.6 million dollars. Conversely, Mexico had a rescaled Polity score of 10, and did not obtain an increase in the following years. It received 24.9 million dollars in 1991, but the sum decreased to 11 million dollars in 1992. In 1994 and 1995, it only received one and three million dollars, respectively. In 1996, foreign aid increased to 1991 levels.[4]

[Figure 2 about here.]

The control variables do not contain any surprises. The predicted effects are largely in line with previous literature. Colonial relationships and distance to a donor remain consistent predictors of foreign aid, as do population and the status of an EU applicant. It is therefore improbable that our statistical model suffers from omitted-variable biases that are also not present in previous models, further strengthening the plausibility of our findings. Finally, democratization appears not

[4]In 1994, Mexico fell into a severe economic crisis that threatened the interests of several US commercial banks. Since the multibillion loans given by the US and the IMF came with strings attached and accumulated interest, they do not present commitment problems to the degree that foreign aid does.

to have a consistent effect on foreign aid. This is important because it alleviates concerns regarding endogeneity between foreign aid and regime type.

6 Additional Evidence

In this section, we provide additional evidence to reject alternative explanations and address other possible concerns. We analyze the role of economic demand for adjustment assistance, the role of democracy versus democratization, effects of PTA formation on foreign in the short and long term, commitment capacity within democratic developing countries, reform as a rational for foreign aid, and the association between PTA formation and economic reform. We also summarize our robustness tests and address endogeneity concerns.

6.1 Economic Need as an Alternative Explanation

Our theory of the contingent effect of PTA formation leans heavily to the supply side. Consequently, we have largely downplayed the possibility that democratic developing countries obtain adjustment assistance simply because they need it for *economic* reasons. Since this prediction is an important element of the conventional wisdom on economic reform and the altruistic view of foreign aid allocation, we now turn to test this ancillary hypothesis. Our theory predicts that economic need should not be an important determinant of the contingent effect of a PTA on foreign aid.

According to the economic need story, the EU and the US should allocate aid to a democratic developing country especially if the latter is under exceptional economic hardship. If economic need drives the increase in foreign aid that follows PTA formation, we would expect the extra inflow of foreign aid to increase with objective measures of economic hardship, because the donor would have an interest in reducing the short-term economic cost of adjustment.

To test this hypothesis, we divide the original sample into two subsamples. The first subsample contains autocratic and anocratic developing countries, $Regime < 17$. The second subsample contains democratic developing countries, $Regime > 16$. For each subsample, we include an interaction term between a recent PTA and economic growth. We also include another interaction term between a PTA and the unemployment rate. The results are reported in Table A5 in the supplementary appendix.

The focus is now on the four interaction terms. The marginal effects are graphed in Figure 3. Perhaps surprisingly, we note that the interaction term between PTAs and economic growth in the democratic subsample has a positive sign, but it is not statistically significant for any growth rates. The interactive effect is negative for autocracies, but it is not statistically significant except for around zero growth. These findings show that economic need is largely irrelevant for the effect of PTA formation on foreign aid.

Similarly, the graph for the interaction between PTAs and unemployment only shows a negative slope for autocracies, but the effect is not statistically significant for either regime type. As was the case with economic growth, the effect of the macroeconomic demand side appears to be trumped by factors on the supply side.

[Figure 3 about here.]

These findings show that while factors on the demand side might not be irrelevant, they are certainly not powerful and consistent predictors of the contingent effect. In our view, these findings are largely consistent with the "revisionist" view on economic reform that downplays the importance of macroeconomic conditions while emphasizing the importance of fundamentally political elements of the puzzle, such as coalition formation (Geddes 1994; Haggard and Webb 1994; Milner and Kubota 2005; Rodrik 1992, 1996). Combined with our results on the importance of the supply side, they inspire confidence in the relevance of international relations theories that emphasize commitment problems and time inconsistency (Büthe and Milner 2008; Lipson 2003; Svolik 2006).

Another important reason why the demand side might not play a role is that the demand story is somewhat incoherent to begin with. On the one hand, if the economy is thriving, the government might have fewer reasons to compensate losers. This argument leads one to expect that poor economic conditions increase adjustment assistance. On the other hand, and in contrast, if the economy is doing poorly, it is possible that constituencies cannot credibly threaten to reject reforms unless the government offers compensation. This reasoning leads to the opposite prediction that poor economic conditions could decrease adjustment assistance. In light of this inconsistency, the absence of an economic demand effect does not compromise our results.

6.2 Democracy or Democratization?

A potential threat to the validity of our results is the relationship between democracy and democratization. To verify that our results are not driven by democratization, we now interact PTA with $Democratization$ in the last five years for a developing country. If our theory is correct, we should not see a consistent positive effect on foreign aid. This robustness test is particularly important because many political economists have found that young and fragile democracies are not as reliable as established democracies (Clague et al. 1996; Keefer 2007; Przeworski 1991).

The estimation results are shown in Table A6 in the supplementary appendix. Regardless of the specification that we use, democratization does *not* condition the effect of PTA formation on foreign aid. As our theory predicts, if we control for the level of democracy, PTA formation does not increase foreign aid simply because a developing country has recently undergone a democratic transition. This result also contradicts the idea that the effect of PTA formation on foreign aid can be explained with reference to factors on the demand side.

The fact that democratization does not have a clear negative effect on the ability of PTA formation to increase foreign aid is also consistent with our theory. While one might argue that some autocracies are capable of credible commitment to economic reform, this reasoning cannot be applied to foreign aid. As our literature review and empirical examples have shown, autocrats are particularly prone to using foreign aid to supply elite supporters with private goods. It is thus easy to understand why democratization seems to have no relationship to the marginal effect of PTA formation on foreign aid.

As a robustness test, we replaced the $Democratization$ variable with an indicator for a positive change in the Przeworski binary variable for democracy. As another robustness test, we only consider changes in $Regime$ that exceed the threshold 3 often used in Polity IV as a threshold for democratization (as opposed to political instability). For these measures, the marginal effects are actually *negative* and never statistically significant at conventional levels, exactly as expected. Tables and figures are available from the authors upon request.

6.3 Time Horizons

According to our theory, the donor gives foreign aid to facilitate adjustment; hence, we specifically predict an increase in the short term only. As an additional test of our theory, we now evaluate the effect of PTA formation on foreign aid in the long term. To do this, we estimate our main specifications but replace the short-term variable PTA with a variable recording the existence of a PTA that was formed at least five years ago.

These results are reported in Table A7 in the appendix. In both models, the sign of the interaction term is negative, but the total effect remains negative throughout. For the main model, we graph the marginal effect in the upper panel of Figure 4 and find that developing countries actually receive *less* foreign aid after five years since signing a PTA with the EU or the US.[5] Equally important, this negative effect is stronger for democracies. This finding strongly supports our theory that foreign aid increases due to adjustment costs.

[Figure 4 about here.]

In addition to providing evidence in support of our theory, this finding also shows that our empirical analysis is consistent with previous theories that emphasize bargaining in the allocation of foreign aid (Bueno de Mesquita and Smith 2009; Dunning 2004; Stone 2008). Since a PTA is beneficial for the donor and the recipient, but bargaining power is unevenly distributed, it appears plausible that donors could reduce foreign aid upon forming a PTA. Our findings for the long time horizon support this interpretation, highlighting the strong connection between our theory and previous research by international political economists.

6.4 Credible Commitment Among Democracies

Even if we successfully reject economic need as an alternative explanation, democracies may have other unobserved features, unrelated to credible commitment, that drive our results. To verify that

[5] We omit the baseline model because the graph is almost identical.

this is not the case, we conduct an additional test. First, we use the binary Przeworski measure of democracy to obtain a set of formally democratic developing countries, with competitive elections. Within that set of countries, we then investigate the impact of changes in executive constraints from the Polity score on foreign aid. Since the Przeworski score is arguably a minimal indicator of democracy, and not that strongly correlated with executive constraints, it allows us to identify the effect of executive constraints on foreign. Many scholars believe that executive constraints are a key indicator of commitment capacity, so this test allows us to differentiate credible commitment from other features of democracy.

To save space, we only show the marginal effect graphs.[6] In the lower panel of Figure 4, the effect of executive constraints among democratic developing countries is shown. As expected, the slope is increasing and statistically significant for sufficiently high values. This shows that even among formally democratic developing countries, credible commitment is a key covariate of the increase of foreign aid upon PTA formation. For robustness, we also verified that the marginal effects are similar and statistically significant if we use the Polity score and apply the standard threshold 17 for a coherent democracy.

As yet another test, we compared the effect of PTA formation on foreign aid among Przeworski democracies, distinguishing between those that are established and those that had recently democratized. We found that PTA formation has a statistically significant positive effect on foreign aid only among established Przeworski democracies. Tables and figures are available from the authors upon request.

6.5 Foreign Aid and Costly Adjustment

So far, our quantitative tests have focused on the effect of PTA formation on foreign aid in different countries. Ideally, we would also quantitatively investigate how this foreign aid is used. Unfortunately, a systematic empirical investigation is fraught with difficulties. First, if major donors use foreign aid to 'seal the deal' on PTAs that are otherwise impossible, it may be that PTAs associated with large increases in foreign aid actually lead to less reform than other PTAs; but if major donors

[6] For the estimation results, see Table A8 in the supplementary appendix.

use foreign aid to improve the reform efficacy of a PTA, exactly the opposite would be true. Thus, the theoretical expectation is unclear. Second, the temporal sequencing of foreign aid is not clear. Is it given to consolidate reforms initiated in the previous years, or is it given to prepare for future reforms? Finally, given the broad scope of PTAs, reforms could be spread across a high number of sectors. For these reasons, we focus on showing that (i) major donors give foreign aid specifically to facilitate costly adjustment and (ii) the sums given are substantial and explicitly tied to PTA formation.

There is ample anecdotal evidence that the major donors themselves recognize the beneficial effect of foreign aid on reform, especially in democratic developing countries. In the Western Balkans, the EU Community Assistance for Reconstruction, Development and Stabilisation provides aid to reinforce "democracy and the rule of law" and "promote social development and structural reform," so as to "implement the obligations in the Stabilisation and Association Agreements" that the EU has formed with democratic market economies, and indeed potential membership candidates, such as Croatia, in the area.[7] Similarly, in 1995, as Israel and Tunisia signed the first Association Agreements in the Mediterranean area, the EU established a Euro-Mediterranean partnership program. Formed on the basis of Association Agreements between the EU and individual Mediterranean countries, the program has allocated approximately EUR20 billion in "financial and technical assistance for implementation of the Association Agreements and key social and economic reforms."[8]

The US has invested particularly large sums to facilitate economic reform in Latin American democracies under a PTA. According to Congressional Research Service (2007, 9), the US Trade Representative coordinates with aid agencies and the recipient country government already during PTA negotiations to ensure that external assistance will be available to support the implementation of the anticipated PTA. In the case of the Dominican Republic – Central America Free Trade Agreement (DR-CAFTA), for instance, Congressional Research Service (2005) notes that the US

[7] "The Western Balkan Countries on the Road to the European Union." *European Commission*. [http://ec.europa.eu/enlargement]. Accessed April 1, 2010.

[8] "Regions: Euromed." *European Commission*. [http://ec.europa.eu/trade/creating-opportunities/bilateral-relations]. Accessed April 2, 2010.

has used foreign aid to promote the implementation of environmental and labor standards. Additionally, Congressional Research Service (2005) writes that recipient governments have used the promise of external assistance in response to domestic critics who worry about the effect of reforms on democratic accountability. Indeed, Congressional Research Service (2007, 15) anticipates that "[a]s the United States enters into more FTA negotiations with developing countries, USAID will likely respond to greater demand for assistance with participation in trade negotiations and implementation of trade agreements." Since 1999, the US has provided more than $10 billion dollars in trade-related assistance as "a critical part of the ... strategy to enable developing countries to negotiate and implement market-opening and reform-oriented trade agreements and to improve their capacity to benefit from increased trade."[9]

Finally, we investigated the effect of PTA formation on foreign aid in different economic sectors. Since some aid sectors, such as privatization or trade adjustment, facilitate economic reform, one expects that if our theory is correct, donors increase foreign aid to democratic developing countries especially in these sectors. Others, such as fishing and forestry, should not experience such increases.

We use our main statistical model, but we investigate aid allocation sector-by-sector. Since the WDI data are not given sector-by-sector, we use AidData (2010) to aggregate annual foreign aid flows in different sectors.[10] We found that the European Commission does not usually report the sectoral allocation of multilateral aid, so we could only conduct the analysis for the US. We used CRS codes provided by the OECD to find different sectors. The details of the sectoral analyses are given in the supplementary appendix.

We found robust support to the importance of adjustment, as an in-depth analysis of the following eleven particularly important sectors illustrates. The marginal effect of PTA formation on foreign aid increased substantially with democracy for governance support; industrial development; trade adjustment; unemployment reduction and social services; privatization; and agriculture. Each

[9]"Trade Capacity Building." *United States Trade Representative*. [http://www.ustr.gov/trade-topics/trade-development]. Accessed April 2, 2010.

[10]http://www.aiddata.org.

sector is directly relevant for economic reform, perhaps notwithstanding agriculture in some cases, and consistent with our theory, the effect was strongest for these sectors. The effect was small or did not exist for fishing; forestry; mining; tourism; and banking. Of these, only banking could plausibly be directly related to economic reform.

6.6 Reform Effects

Our argument depends on the assumption that PTAs induce painful reforms in developing countries. This is not necessarily true of all PTAs, as they may achieve trade liberalization in relatively uncontroversial sectors, thus excluding the most contentious trade policies. In this section, we demonstrate that PTAs with the EU and the US induce broad and deep reforms beyond trade liberalization: capital account liberalization; intellectual property rights protection; and privatization. We also provide anecdotal evidence that PTAs have given trouble to industries in developing countries, showing that there is indeed demand for adjustment assistance.

To examine these reforms, we constructed a time series for all three indicators and every developing country that formed a PTA with the EU or the US (subject to data availability). For capital account liberalization, we used the KA measure developed by Chinn and Ito (2008). For intellectual property rights, we used data provided by the World Intellectual Property Organization on the number of legislative bills that each country had passed for protection. For privatization, we used the total value of revenue from privatization of state enterprises provided in the World Economic Freedom dataset. The details of the data are provided in the separate appendix.

We obviously cannot conduct a full causal investigation of the effect of PTA formation on economic reform within the confines of this article. Since our dataset covers only 18 years, we were also unable to conduct a sophisticated analysis of structural breaks in the data. Instead, we used the following simple procedure. First, for every five-year period in the data beginning at time t and ending at time $t + 4$, we computed the total change in the reform indicator of interest (first differences, three indicators in total). Second, we compared the total five-year change beginning in any year t during PTA negotiations or in the five years following signature with the the five-year changes beginning in preceding years. Thus, we were able to identify developing countries that implemented deeper economic reforms during and after PTA formation than before that in the dataset. Finally, we replicated this procedure using a one-year window to identify unprecedented jumps in the data.

We found strong suggestive evidence that PTA formation is associated with economic reform in developing countries.[11] For capital account liberalization, we found unusually deep reforms in 12 out of 29 developing countries that formed a PTA in our dataset (subject to data availability). For intellectual property rights, we found evidence of unusually deep reforms for 24 out of 36 countries. For privatization, we found such evidence for 23 out of 36 countries. Only two countries in the dataset, Bahrain and Panama, appear not to have implemented any unusually deep reforms as a result of PTA formation. Five countries – Chile, Egypt, Croatia, Jordan, and Morocco – had implemented all three different reforms.

This evidence is suggestive, and we obviously cannot claim that we have identified the effect of PTA formation on economic reform. However, it does support our premise that a PTA can facilitate economic reforms in developing countries. But do these reforms induce costly adjustment in developing countries? To illustrate this possibility, let us consider two examples. In Mexico, the economic reforms implemented by President Salinas that culminated with the signing of NAFTA in 1992 had a devastating effect on the automobile industry. According to Thun (2006, 217-221), trade and foreign direct investment "liberalization fundamentally transformed the nature of Mexican supply networks ... the local Mexican supply firms were replaced with large global suppliers." In Algeria, the PTA signed with the EU in 2004 put many small businesses in a very difficult position. According to an Algerian newspaper, in 2008 – four years after signature – "300,000 small Algerian firms currently at risk from the competition of European commodities are lobbying protectionist trade policy to their own government."[12]

[11] If a developing country formed a PTA with both the EU and the US, we included only the former treaty. Thus, we only have 36 not 39 observations.

[12] *Maghrebia* January 23, 2008.

6.7 Robustness

We conducted a battery of robustness checks on the dependent and independent variables, model specification, and serial correlation. The results of these extensive robustness checks, none of which compromise our main result, are reported in the supplementary appendix.

6.8 Endogeneity

Our statistical results show that democratic developing countries that sign a PTA with the EU or the US secure substantially larger inflows of foreign aid than autocratic developing countries in that situation. However, it may be argued that reverse causality biases our results. Could it be that the EU and the US form PTAs with developing countries that enjoy abundant foreign aid for other reasons? Similarly, it may be argued that developing countries democratize because they are given foreign aid. In the supplementary appendix, we discuss the endogeneity problem in detail from theoretical perspective and complement our analytical argument with an empirical strategy that uses instrumental variables. A good instrument should be a good predictor of the endogenous explanatory variable, but it should not be correlated with the dependent variable. We identify powerful instrumental variables both for PTAs and democracy to capture the possible effect of foreign aid thereupon. We then use these instruments separately, finding that our main result continues to hold if we instrument for PTA and democracy. These results are fully characterized in the supplementary appendix.

7 Conclusion

Donors and recipients can form a PTA to facilitate economic reforms that are mutually profitable, and foreign aid can facilitate the costly adjustment in developing countries. However, foreign aid is a fungible resource that can be diverted to other uses unless the recipient government can credibly commit to contractual obligations. Since democracy is a robust and strong predictor of commitment capacity, we have hypothesized that it should be accompanied by a connection between foreign aid and PTA formation. Our empirical analysis offers quantitative evidence in support of the theory and allows us to exclude many plausible alternative hypotheses.

Although our story has a happy ending, the theory is perfectly consistent with previous research on donor-recipient bargaining. Developing countries depend on access to large markets in industrialized countries for export revenue much more than developed countries depend on access to the small markets of developing countries, particularly in the case of the least developed countries (Shadlen 2008). Consequently, PTAs are biased towards the interests of wealthy industrialized countries. Our empirical results show that while developing countries enjoy an increase in foreign aid in the short run, the effect in the long run is negative. According to our theory, this is because donors must offer adjustment assistance only until a successful reform is completed, so the bargaining effect identified by Bueno de Mesquita and Smith (2009) grows in importance over time. Our theory is an important refinement on previous research that has largely failed to acknowledge the indirect beneficial effect of foreign aid.

Our explanation for the rationale for giving foreign aid is both theoretically new and empirically salient. The theoretical and empirical analysis provides a basis for future research on the use of foreign aid in North-South international cooperation in general. In recent years, a variety of essential international cooperation problems from human rights to environmental protection and foreign direct investment have proven to be dependent upon collaboration between wealthy industrialized countries and poor developing countries (Barrett 2003; Hafner-Burton 2005; Kerner 2009). Since our theory does not depend on some of the more idiosyncratic features of international trade policy, we believe it can be fruitfully applied to investigate a variety of important strategic interactions between the global North and the global South.

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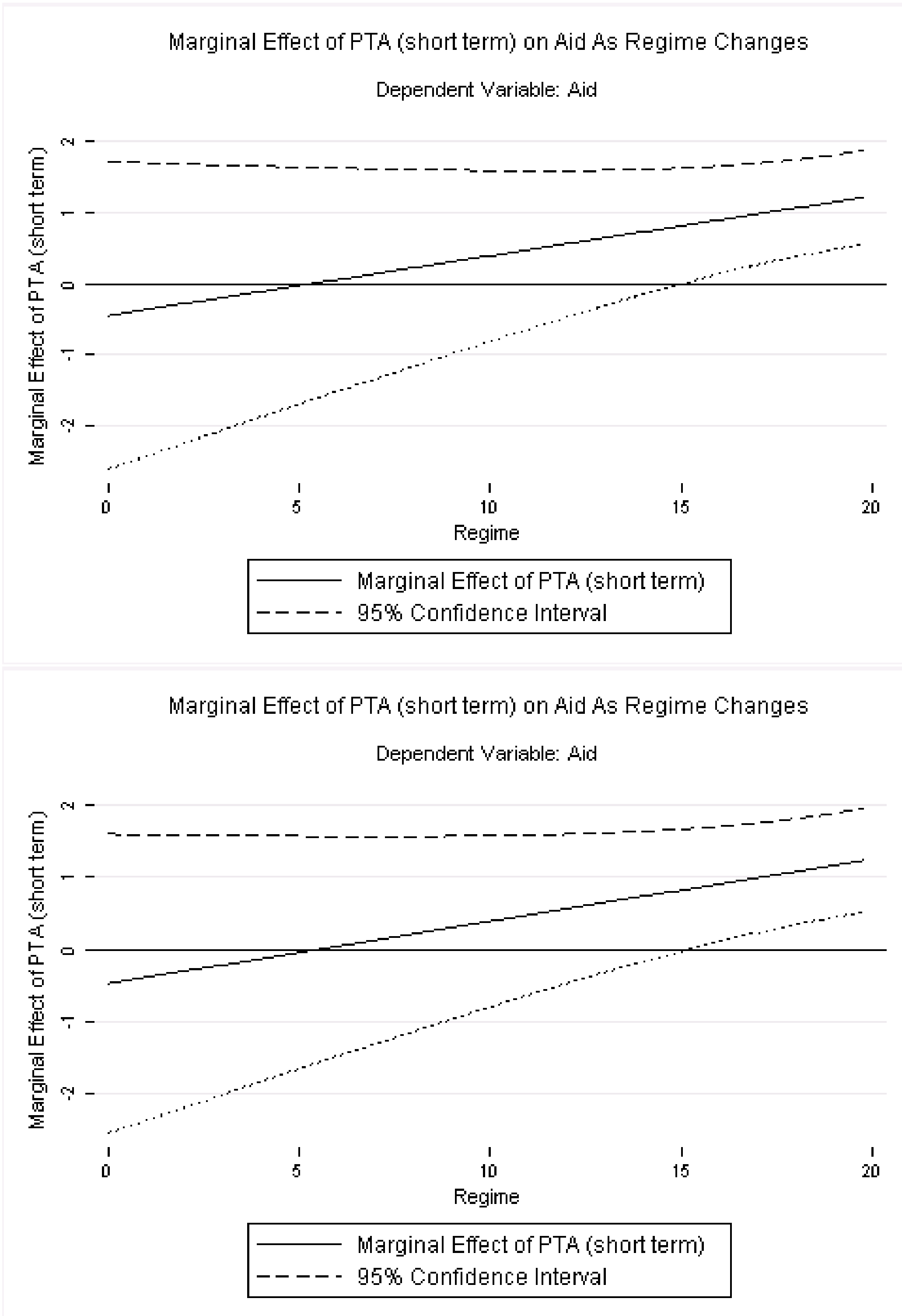

Figure 1: Baseline and main model: Impact of PTA formation on aid at different values of variable *Regime*.

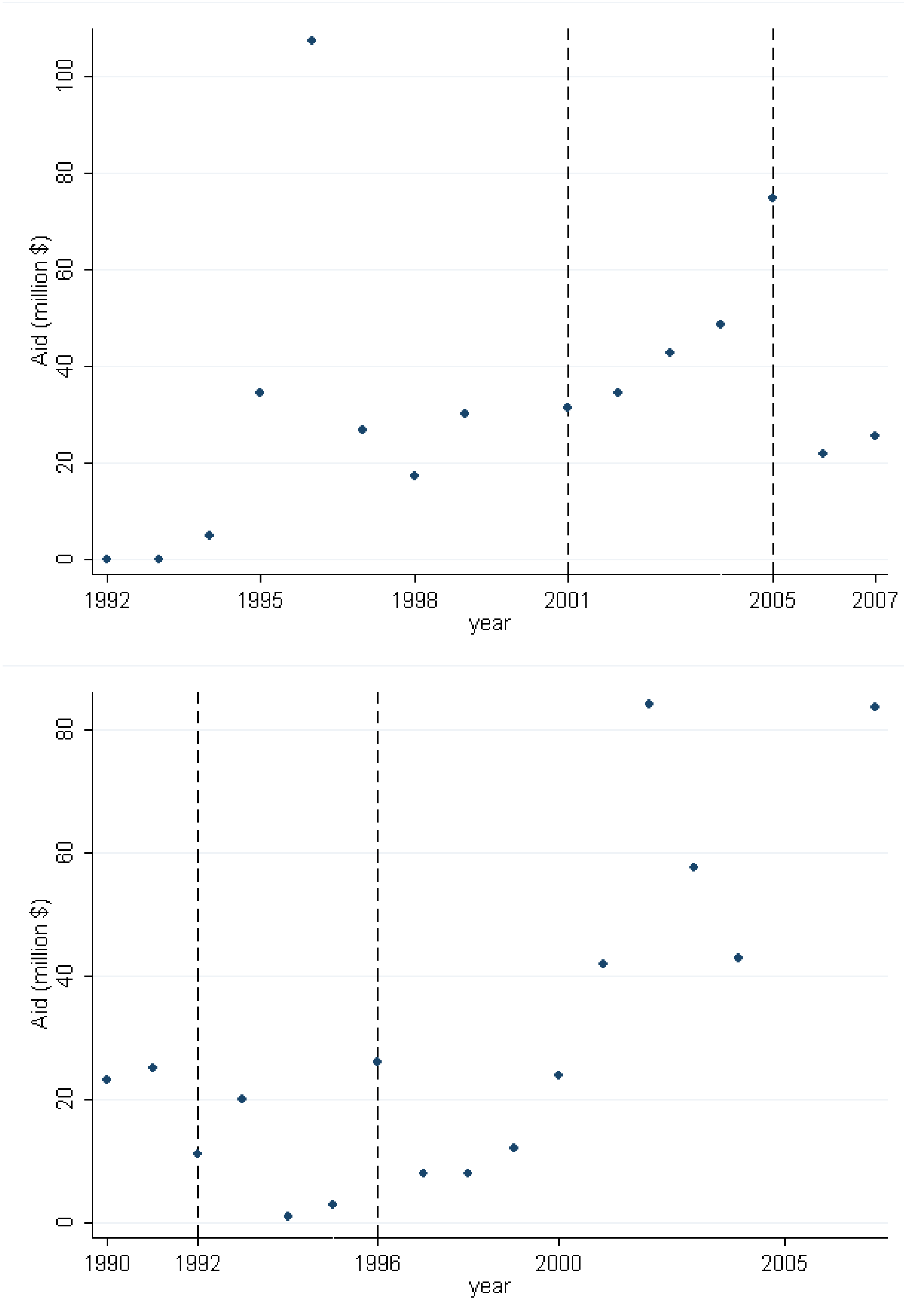

Figure 2: The observed effect of PTA formation on aid to Croatia (upper) and Mexico (lower).

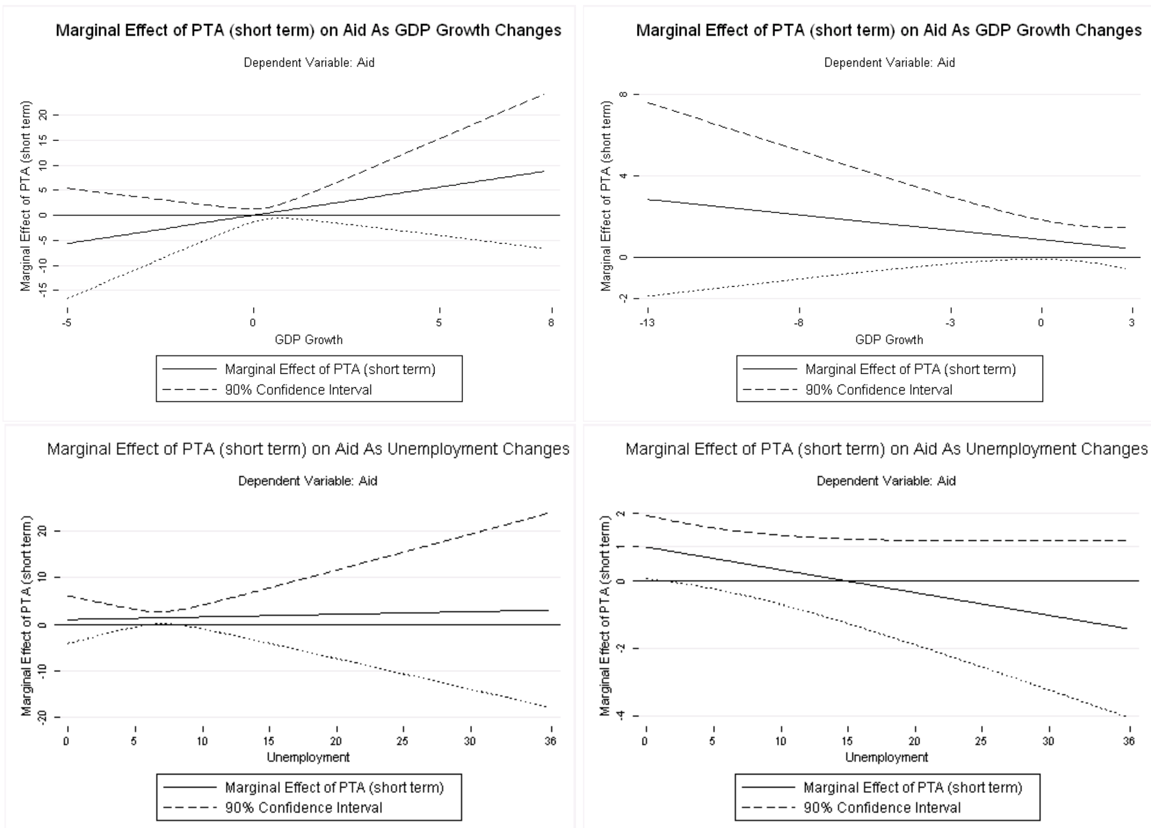

Figure 3: Democracy vs. autocracy: Impact of PTA formation on aid at different levels of economic growth and unemployment.

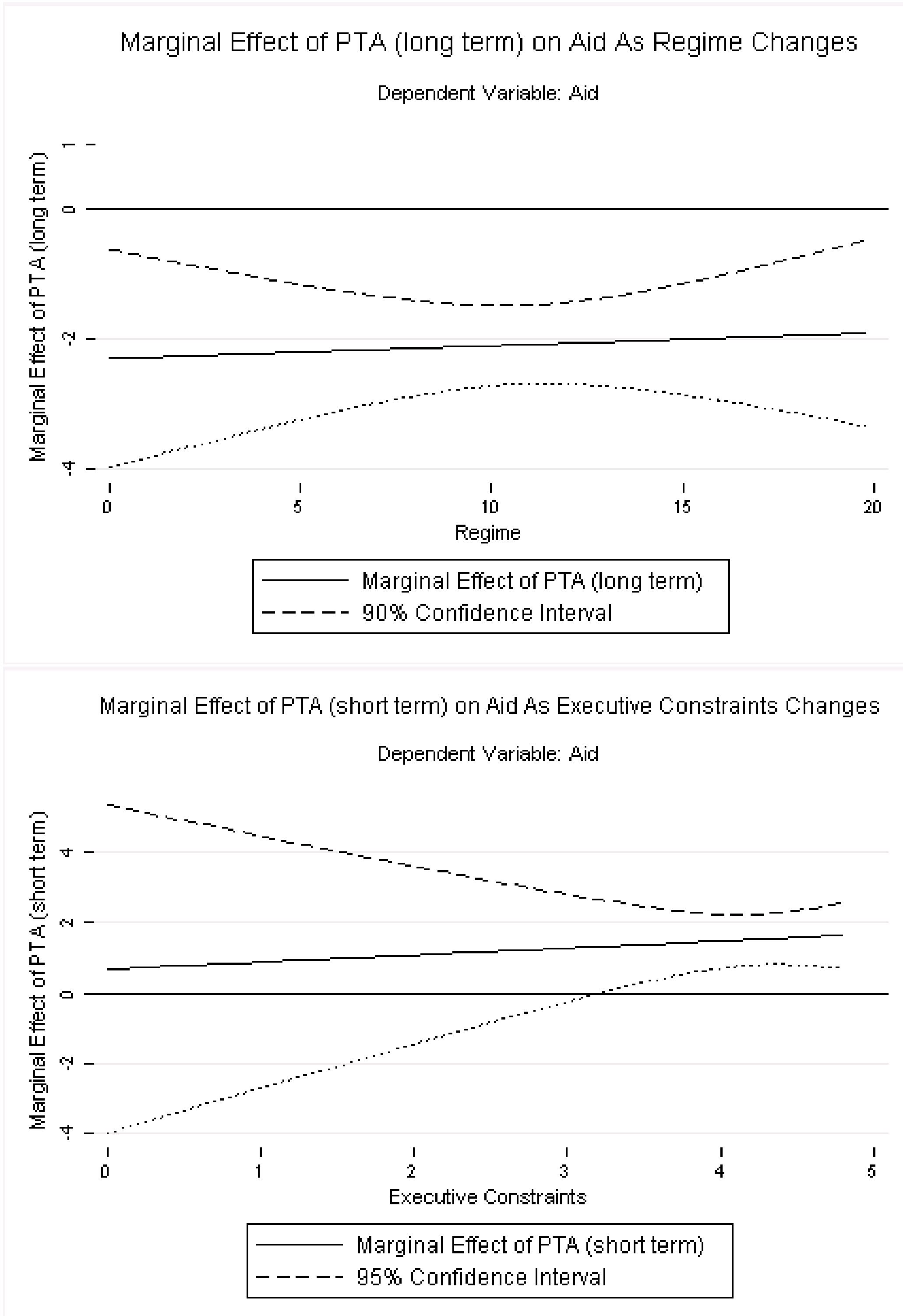

Figure 4: Main model: Long-term impact of PTA formation on aid at different values of variable $Regime$ (upper). The impact of PTA formation on foreign aid for executive constraints among democratic developing countries (lower).

VARIABLES	(1) Aid	(2) Aid
PTA	-0.466	-0.483
	(1.089)	(1.085)
Regime	0.0360	0.0231
	(0.0248)	(0.0273)
PTARegime	0.0849	0.0867
	(0.0631)	(0.0629)
GDP	1.096**	1.333**
	(0.552)	(0.622)
GDPpc	-1.735*	-2.463**
	(1.003)	(1.140)
Distance	-1.103***	-0.971***
	(0.200)	(0.239)
Colony	2.297***	2.104***
	(0.158)	(0.242)
Population	2.978***	2.907***
	(0.856)	(1.030)
Trade		0.0143
		(0.0214)
Alliance		0.442*
		(0.262)
Conflict		0.212
		(0.286)
EUapplicant		0.596
		(0.630)
GovernExpend		0.00309
		(0.00778)
PoliticStab		-0.230
		(0.207)
GDPgrowth		0.0167
		(0.0114)
Democratization		0.156
		(0.133)
WTO		0.108
		(0.238)
RegQualit		0.0114
		(0.198)
Constant	-23.99*	-24.62
	(13.47)	(15.93)
Observations	3343	3164
R-squared	0.461	0.476

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 1: Explaining aid allocation in the short term. Baseline and main model: OLS estimation with fixed effects by recipient and Driscoll-Kraay standard errors (AR1).