Babies across Borders: The Political Economy of International Child Adoption[*]

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Abstract

This article sheds light on the determinants of international child adoption: a unique flow of migrants characterized by considerable transaction costs. We argue adoption flows are shaped in part by the prospective adoptive parents' desire to reduce those costs and ensure a successfully completed adoption. Drawing on dyadic panel data over the period 1991-2010, we fit hurdle models to identify the impact of various influences that may make certain sending countries (un)attractive for prospective parents. Our analysis reveals that a nationalist executive deters adoption; so does an international agreement whose safeguards—intended to ensure the integrity of adoption—might increase transaction costs. By contrast, a high regulatory quality, as well as familiarity with the sending country through colonial or migrant ties, increase that country's appeal. Our analysis advances the understanding of the impact of transaction costs on transnational exchange and carries important implications for the study of migration and international law.

1 Introduction

Among the strongest bonds between citizens of different countries are the bonds forged by international child adoption: through adoption, parentless children born in one country find a new home in another. For some adoptive parents, international child adoption is a way to expand their families, while for others it fulfills a humanitarian impulse to care for a child who would otherwise face a harsh and uncertain future in their birth country (Breuning 2013a). International child adoption, however, is emotionally fraught as well as legally complex. Regardless of their motives, all prospective adoptive parents (hereafter: prospective parents) must go through an arduous and often unpredictable bureaucratic process. In the child's country of origin, the prospective parents will have to interact with a bureaucracy that might be slow, inefficient, or even corrupt; and they will have to meet the local adoption requirements—requirements that could be difficult to satisfy and are subject to a sudden change. The emotional as well as financial costs of the process could run high, as the recent experience of prospective parents in Guatemala, Russia, and China attests. The shutdown of international adoption in Guatemala following evidence of irregularities, the enactment of a ban on the adoption of Russian children by U.S. citizens, and the growing stringency of adoption requirements in China have all made adoption from these countries more difficult and uncertain or even impossible (Herszenhorn 2012; Swarns 2012; Voigt and Brown 2013).

When deciding from which country to adopt, how do prospective parents reconcile their decidedly emotional motives with the significant costs and potentially great uncertainty they often face? International adoption patterns do not suggest a clear answer. Figure 1 illustrates bilateral adoption flows into the United States, the world's largest destination for international adoptees. Over the period 1991-2010, Americans adopted 304,156 children from across 165 countries, with the largest numbers coming from China, Russia, and Guatemala. From these aggregate trends we cannot parse the relative importance of transaction costs and uncertainty from prospective parents' affinities to certain countries and from sending-country factors that influence the number of children available for adoption.

In this article, we analyze the role of transaction costs and uncertainty in shaping bilateral patterns of international adoption. We model adoption flows at the national level from the perspective of the prospective parents, who seek to successfully navigate through the uncertain process of international adoption and fulfill their desire to adopt a child. We hypothesize that in selecting a country from which to adopt, the prospective parents will seek to reduce the uncertainty surrounding the adoption process and thus increase their likelihood of success. We identify several indicators that may help prospective parents dispel some of the uncertainty surrounding international adoption and facilitate the process. Lan-
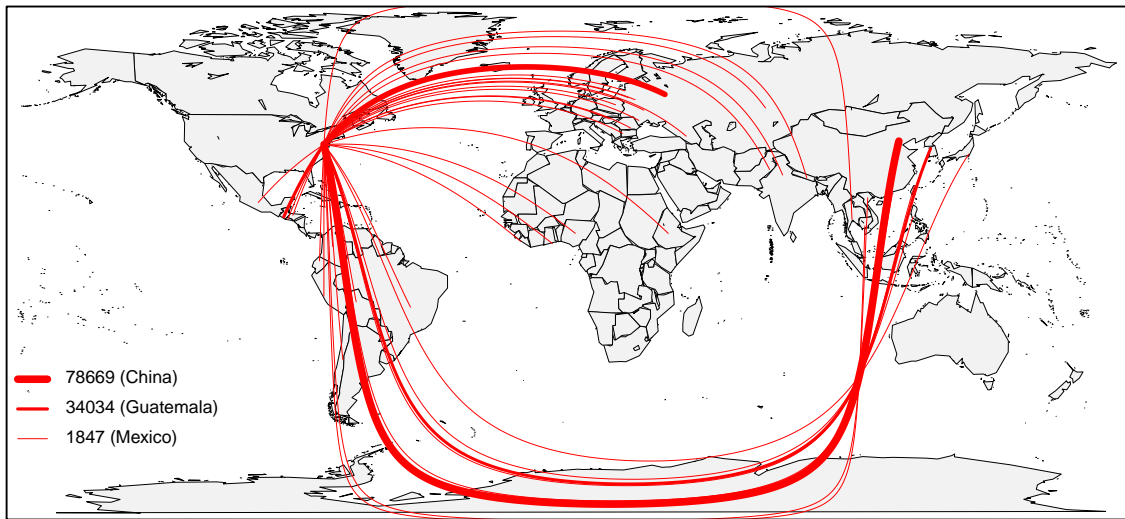
FIG 1. **Number of Adoptees Sent to the United States, 1991-2010.** Lines connect country capitals. Thicker lines indicate a larger number of adoptees. China, Russia, and Guatemala sent the largest number of adoptees to the United States during this period.

guage commonality, colonial ties, and a shorter distance between the sending and receiving countries likely facilitate adoption—as they do other types of migration. In addition, we argue the prospective parents may be looking at several indicators that are unique to international adoption. Weak regulatory quality in the sending country could mean a long and cumbersome adoption process; nationalist sentiments could signal a political environment that is inhospitable to adoption; and a convention governing international adoption could also be seen as imposing costs and creating hurdles. The 1993 Convention on Protection of Children and Cooperation in Respect of Intercountry Adoption, produced by the Hague Conference on Private International Law (hereafter: Hague Convention) was established in order to regulate international adoption, increase its transparency, and reduce the risk of irregularities and abuse. The convention, for example, prohibits the use of adoption to generate improper financial gain; requires that all relevant persons, institutions, and authorities give their free and informed consent to the adoption; and it requires the provision of information on adoption laws and forms and about the child's situation. Such safeguards, however, might have a deterrent effect on the prospective parents, as their unintended consequence could be a longer and more tedious process that is difficult to complete.

We test our claims empirically using data on dyadic adoption flows between over 200 sending countries and entities and 19 receiving countries for the 1993-2010 period.[1] By using hurdle models, we are able to analyze both the probability of any cross-border adoption between two countries in a given year and, conditional on the presence of adoptions, the annual number of adoptions. Our statistical results are robust, as the models include a wide range of controls related to the number or health of children who are potentially available for adoption.

Consistent with our claims, we find that sending countries with nationalist sentiments, or dyads where the Hague Adoption Convention is in force, are less likely to engage in dyadic adoption and have fewer dyadic adoptions. Dyads with an extensive history of dyadic adoptions have a higher probability of continuing to adopt and they also experience more adoptions. Finally, while regulatory quality increases the probability of dyadic adoptions, we find that it decreases the total number of dyadic adoptions, suggesting that better regulations may filter out some of the illegitimate adoptions. The results are robust to the use of different statistical estimators, alternative covariate measures, and various samples of our data.

This study makes three broad scholarly contributions. First, building on existing scholarship we conduct the first comprehensive statistical analysis of worldwide dyadic adoption flows. While there is scholarly interest in international adoption in disciplines like social work, sociology, and anthropology (Briggs 2012; Dubinsky 2010; Kim 2010; Roby and Shaw 2006), political economy scholarship is limited. With few exceptions (Breuning 2013a; McBride 2013a), extant political economy research focuses on cross-country variation in national policies regarding international adoption, rather than patterns in the flows of adopted children across borders. Analyzing the adoption laws of African countries, Breuning and Ishiyama (2009) find that a stronger connection with the global economy increases the openness to international adoption. Studying adoption legislation worldwide, Breuning (2013b) finds that a large orphan population is associated with greater openness to international adoption, whereas women's participation in political decision-making corresponds with less openness. McBride (2013a,b) emphasizes the role of international policy diffusion, among other factors, in shaping national adoption policies.

Our theoretical and empirical analysis incorporates into a bilateral framework some of the factors that Breuning, Ishiyama, and McBride included in their above-referenced studies—factors such as the Hague Convention, Islam, and the size of the adoption-relevant population. Our emphasis on bilateral flows captures a range of salient dyad characteristics (i.e., both the demand and supply of international adoption) that mediate openness to adoption

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[1]The main results are based on this shorter period since the Hague Adoption Convention came into existence only in 1993. We also fit models to the full period 1991-2010 in the robustness checks.

outflows. For instance, as we show, countries with a weak regulatory quality are typically less attractive source countries, since dealing with them involves high transaction costs; yet overseas diasporas may be less deterred by these costs, given their deep familiarity with the source country.

Additionally, we assemble and statistically analyze what is to our knowledge the most comprehensive dataset of dyadic adoption flows. Kane (1993) was the first to collect comparative data, assembling counts of total international adoptees into fourteen Western countries in the 1980s. Selman (2006, 2009) extended these data to cover the late 1990s and 2000s. We follow Kane and Selman's method of using receiving-country data to measure bilateral flows. Yet by constructing an *annual dyadic* dataset covering a long timeframe and all relevant dyads, we provide a more nuanced description of international adoption patterns than previously available, and we are able to draw inferences about the determinants of adoption. Indeed, we use these data to estimate statistical models of annual dyadic adoption flows. Although Kane and Selman provided groundbreaking descriptions of international adoption trends, they draw inferences from descriptive trends. By contrast, we specify and test observable implications of our theory with statistical models from which we infer how international adoption flows correlate with specific sending-county and dyad characteristics, controlling for a broad array of confounding factors.[2]

More generally, this study demonstrates how transaction costs mediate the strength of bilateral, non-governmental relationships. Breuning (2013a) argues that at least some international adoptions into the United States reflect humanitarian motives. Research shows that transaction costs decrease charitable giving, even among those with a strong allegiance to the ultimate objectives (Karlan and List 2007). We identify transaction costs that, if removed, should increase the amount of humanitarian-driven adoption, contributing to greater child welfare worldwide (Sacerdote 2007, 2011). Expedience is of particular importance in countries with large numbers of orphans created by conflict, natural disaster, or disease. This insight applies to all other transnational, nongovernmental charitable giving and humanitarian assistance (Wydick, Glewwe, and Rutledge 2013).

Our second broad contribution is to add to the growing literature on the determinants of international migration. Scholars have typically sought to explain migrant flows through several variables related to geography, economics (wages/income), and social networks of coethnics who reduce migrants' expected risk and the transaction costs of relocation (Grogger and Hanson 2011; Ortega and Peri 2009; Portes 1995). Recent studies, however, have

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[2]Breuning (2013a) reports Pearson correlations between the number of international adoptions into the United States and the age distribution of adoptees. McBride (2013a) models a dichotomous measure of whether any international adoptions occurred within a dyad in the period 2005-2009.

begun to examine how the political environment in countries of origin and destination affects migration patterns (Breunig, Cao, and Luedtke 2012; Fitzgerald, Leblang, and Teets 2014). Our arguments and analyses continue this line of inquiry: they go beyond economic and geographic determinants to show how political attitudes and religion along with membership in international agreements can influence the cross-border movement of people. This approach also complements extant work showing how family and cultural networks furnish information about the costs of migration and local labor-market conditions (Massey et al. 1999). Additionally, we pinpoint how ties between countries globalize the formation of households— a form of globalization that can facilitate deeper economic ties (Leblang 2010; Rauch and Trindade 2002).

Our third broad contribution concerns the study of international law. International relations (IR) analysis of international law has focused on public international law: the set of norms and agreements that govern the relations between states or between states and nonstate actors in the areas of security, economics, the environment, and human rights (Koremenos 2005; Simmons 2010). By studying the Hague Adoption Convention we shed light on private international law: an important branch of international law that addresses cross-border interactions between private parties, such as firms, consumers, or parents. Our analysis thus departs from the traditional, state-focused analysis of public international law (e.g., Morrow 2007; Hill 2010). Rather than examining how international legal rules influence state behavior, we examine their effect on the decisions and lives of private actors: prospective parents.

The remainder of this paper is divided into four parts. Section 2 develops our argument related to the effect of uncertainty and transaction costs on both the likelihood and the number of adoptions across country pairs. Section 3 offers preliminary evidence that indicates the importance of transaction costs in prospective parents' decision-making. Section 4 contains our empirical work—descriptions of our variables, data, methods, findings, and robustness checks. Section 5 concludes.

2   Modeling Cross-Border Adoption Flows: Overcoming the Uncertainty of International Adoption

We model the determinants of international adoption from the point of view of the prospective parents, focusing on their choice of a country from which to adopt. In the United States, the typical adoptive parents are a white, college-educated, financially stable, married heterosexual couple (Hellerstedt et al. 2008). Seeking to adopt a child abroad, the

prospective parents embark on a difficult process that involves significant transaction costs. Indeed, international adoption is not a commercial transaction: adoption regulation—at the national and international levels—seeks to ensure that adoption does not amount to the sale and purchase of children. Nonetheless, noncommercial transactions—such as charitable giving—often involve certain ancillary costs (Knowles and Servátka 2013), and this is also the case with international adoption. Beyond the fees charged by the adoption agency, the prospective parents may have to incur various transaction costs, such as travel, lodging, and transportation expenses; time spent away from work when traveling to the sending country; fees for the issuance, authentication, or translation of documents as well as oral translation services; foreign attorney fee and foreign-court filing fee; and a required donation to the orphanage. These financial costs rise the longer the adoption process drags on, and with them rise the emotional costs of the process: the anxiety and frustration of a continued wait.

At the beginning of the adoption process the prospective parents are uncertain about the magnitude of the transaction costs. While in some countries the process is relatively short and easy to navigate, in others it might be longer and full of hurdles. This variation may have different causes. One possible cause is the bureaucratic nature of adoption, which involves much paperwork and repeated contact with officials (Bartholet 1996:189-190). The authorities of the receiving country and those of the sending country must determine that the prospective parents are suitable for adoption; the sending-country authorities must also determine that the child is without parents and thus adoptable. After matching the prospective parents with the child, the sending-country authorities carry out the procedure that will lead to the termination of the birth parents' rights and the completion of the adoption. The quality of the bureaucracy in the sending country may influence the efficiency of this process. When the bureaucracy is slow or unresponsive, or when the adoption process is poorly regulated, the prospective parents will find it more difficult to understand and satisfy the rules and requirements of adoption, and the process will likely suffer delays. Additional bureaucratic requirements imposed by an international agreement (discussed below) could make the process even more complex. While the prospective parents may wish to ensure a thorough adoption process and a match with the "right" child, they are averse to wasteful costs and unnecessarily long waits.

Beyond bureaucratic-regulatory quality and official requirements, the transaction costs of adoption are shaped by an influence that is less easily observable: the hospitability of the political environment in the sending country, that is, whether the authorities are conducive to international adoption and consider it a legitimate option for children. Certain sending countries, even if officially open to international adoption, may not, in fact, offer the prospective parents a conducive political environment. In those countries, international

adoption may be the subject of criticism, concern, and controversy for various reasons.

First, international adoption is seen as an admission of the country's inability to care for its children (Bartholet 1996:184). Additionally, anti-adoption sentiments may be fueled by concerns over the care that the children receive in their adoptive homes. A recent example is the Russian outrage over the death of a Russian toddler who was forgotten in the car of his Virginian adoptive father (Barry 2009). Yet another cause for concern is rumors and allegations of irregularities, abuse, and fraud in international adoption. These can take various forms, such as "child buying," that is, obtaining a child in exchange for financial rewards to the birth family; obtaining children through pressure or deceit (e.g., promising birth families that the children are going away temporarily); and abducting children placed in orphanages and other institutions. Assessments of the overall magnitude of the problem vary tremendously. Critics of international adoption argue that abuses are pervasive and systemic: many, if not most, internationally adopted children are illegitimately obtained (Graff 2008; Smolin 2006). By contrast, defenders of international adoption claim that there is no hard evidence to support such charges (Bartholet 2010). Yet when cases of fraud and abuse are revealed, adoption critics receive fresh ammunition, and the ensuing scandal could make international adoption more difficult.

From the prospective parents' point of view, an inhospitable political environment, where international adoption meets resistance, is prone to high transaction costs. In such an environment, the authorities might be slow to process the adoption or could impose requirements that will make the adoption more difficult to complete. Furthermore, such an environment poses the risk of an abrupt policy change. In response to public criticism or following an adoption-abuse scandal, governments might heighten their scrutiny of adoptions, impose various restrictions (such as age, marital, income, or residency requirements), suspend international adoption or stop it entirely. For the prospective parents, such changes to adoption laws and policies could mean a longer, more expensive, and more onerous process—or one that cannot be completed. In 2008, amid evidence of adoption irregularities and abuse, Guatemala shut down its international adoption process, leaving some 4000 American Prospective parents in limbo (Swarns 2012).

Yet the transaction costs of adoption are not only shaped by the capacity and attitude of the authorities of the sending country; they are also influenced by the prospective parents' own familiarity with that country. Access to information about the sending country, a good cultural or legal understanding of that country, fluency in the local language, and local contacts—all these can facilitate the prospective parents' interaction with the adoption authorities and intermediaries, reduce the transaction costs of the adoption process, and raise the likelihood of its successful completion. These factors, in fact, are not unique to

adoption and may lower the transaction costs of labor migration as well (e.g., Dustmann and Soest 2002).

In summary, the transaction costs of adoption have far-ranging implications for the prospective parents' ability to realize their wish of adopting a child. As they embark on this uncertain process, the prospective parents will typically try to lessen the degree of uncertainty and do their utmost to ensure a positive outcome. All else equal, they will prefer to adopt from a country where the adoption process likely involves fewer hurdles and lower costs and where the prospects of its successful completion are brighter.

What is the observable implication of the prospective parents' preference? If our argument is correct, we would expect to observe a higher probability of adoption and a higher number of adoptions where the expected transaction costs are lower. We summarize our hypothesis as follows:

Hypothesis 1: *Holding all else equal, lower transaction costs of adoption increases adoptions between country dyads.*

Before operationalizing this hypothesis, we first offer preliminary evidence to support the premise of our model, namely, that concerns about transaction costs indeed influence the prospective parents' decision-making.

3 Transaction Costs and the Prospective Parents' Decision-Making: Preliminary Evidence

The influences that we highlight are only part of a broader array of considerations and motivations that guide the prospective parents. Breuning (2013a) identifies two ideal-types of parents: Samaritans wish to adopt in order to provide a family for a child who lacks one, and thereby ease the child's suffering and allow them to thrive. By contrast, family builders seek to adopt for the purpose of becoming parents and creating a family. These distinct motivations may affect the prospective parents' choice of country. Family builders may be interested in those countries that put up very young children for adoption; they may also try to ensure that the child's race matches their own (Ishizawa et al. 2006; Hogbacka 2008:315). By contrast, Samaritans may be drawn to countries with large populations of vulnerable children (McBride 2013c), such as very poor or war-torn countries. We argue, however, that both types of prospective parents share an important concern: the desire to conclude the process successfully and bring a child back home. Samaritans' religious- or humanitarian-motivated quest to offer a home to an orphan cannot be fulfilled if the transaction costs of

adoption are prohibitively high. Similarly, the goal of family building will not be realized if the adoption process is derailed. In the following paragraphs we present evidence in support of this claim, suggesting that the costs of the adoption and the likelihood of its successful completion are indeed on the prospective parents' mind.

Several studies have examined how prospective parents choose between pursuing domestic or international adoption. An important reason for preferring international adoption is the perception that the overseas adoption pool is larger than the domestic one. Compared with the shortage of children placed through domestic adoption, the wide availability of children internationally reassures prospective parents and gives them the impression of a predictable, positive outcome. A second reason for choosing international adoption is the belief that it is faster and easier to complete than domestic adoption. Based on nationally representative data of American adoptive parents, one study found that the odds of a child being adopted through international—rather than domestic—adoption is 1.9 times higher for parents who placed importance on the speed of the adoption process (Ishizawa and Kubo 2014:644; see also Goldberg 1997:92; Hollingsworth 2003:85-87; Malm and Welti 2010:195; Zhang and Lee 2011; Young 2012:232-233). Overall, these studies reveal that the availability of children and the duration and speed of the adoption process are of concern for prospective parents. Estimated child availability and process duration clearly influence the initial choice of adoption type, motivating many of the prospective parents to choose international adoption. It is thus reasonable to assume that they also influence the following choice, namely, the selection of a specific country from which to adopt. Thus, the distinctive characteristics of prospective parents who pursue cross-border adoption suggest a special attentiveness to transaction costs.

Additional evidence comes from the State Department's publicly available information on international adoption. The primary intended audience for this information is prospective parents who are embarking on the process of adoption. To them, the State Department emphasizes that the process of adopting a child from a foreign country can be lengthy, complex, and expensive. Among the hurdles that State highlights is the foreign country's adoption requirements, the necessity of spending an extended period in the foreign country awaiting the completion of the adoption, the possibility of a sudden change to a country's adoption laws, and the risk of adoption fraud (U.S. Department of State 2014b). To help the prospective parents navigate through the adoption process, the State Department website offers detailed, up-to-date information on each country, including adoption-eligibility requirements for the prospective parents (such as residency or income requirements) and an overview of the adoption process (including required documents and fees and a typical time frame). The information also alerts the prospective parents to specific pitfalls in the process

and even to the unlikelihood of a successful adoption of in certain countries. For example, the State Department notes that "it is unlikely that a U.S. citizen will be able to adopt a healthy, single child under the age of 5 years" in Brazil. Furthermore, the State Department provides adoption statistics for each country: the annual number of children adopted from that country over the past 15 years.[3] This record allows the prospective parents to evaluate the prospects of their own planned adoption. Adoption statistics are also included in the annual Intercountry Adoption Report that the State Department submits to Congress; the report also provides data on the average time required for completing an adoption in different Hague-Convention countries and the median fees that such an adoption entails (U.S. Department of State 2014a). Overall, the State Department's publications recognize that the choice where to adopt is a key decision facing the prospective parents; that the costs, duration, and likelihood of success of the adoption process are major factors in this decision; and that these factors are shrouded with uncertainty. By providing detailed information, the State Department seeks to dispel some of this uncertainty and help the prospective parents make an informed choice.[4] Further evidence suggesting the prominence of costs in the adoption decision is the Adoption Tax Credit offered by the U.S. government since 1997 and made permanent in 2013: a tax credit that adoptive parents may claim for adoption expenses, such as necessary adoption fees, court costs, and traveling expenses. This credit—applicable to both domestic and international adoptions—is based on the premise that adoption entails high administrative costs which might act as a hurdle and a disincentive for adopting a child.[5] The tax credit aims to lower this financial disincentive and make adoption viable for more prospective parents who might not have been able to afford adoption otherwise.

Finally, the importance of efficiency-related considerations is reflected in the many online sources devoted to international adoption, including websites of adoption agencies. These sources often alert prospective parents to the significant waiting time and costs that international adoption involves; they offer information on the availability of children and the timeline to adoption in different countries and provide advice for easing the financial burden of the process.[6]

The evidence above suggests that concerns about the costs and duration of the adoption

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[3]http://adoption.state.gov/index.php. Accessed December 21, 2014.

[4]Some of the information is provided in direct response to prospective parents' queries. For example, the State Department website highlights the difficulty of adopting children from Muslim countries, following "many inquiries from American citizens who wish to adopt orphans from countries in which Shari'a Law is observed."

[5]"Landrieu Introduces Bill to Make Adoption More Affordable," press release issued by Senator Mary Landrieu, September 21, 2012.

[6]See, for example, http://www.adoption.org/adopt/cost-of-international-adoption.php. Accessed December 21, 2014.

process and the likelihood of its successful completion may indeed figure into the prospective parents' choice of country. This does not imply that such concerns are the only or even primary consideration: prospective parents may well have other reasons for choosing a country. We do argue, however, that all else equal, they will prefer to adopt from a country that offers the best prospects of completing an adoption at an affordable cost.

A possible objection to this argument is that the prospective parents' choice of country is not entirely free, but guided and limited by adoption agencies. Indeed, prospective parents almost always rely on adoption agencies as intermediaries that facilitate the adoption. We do recognize the important intermediary role of adoption agencies, including by providing information and mitigating the uncertainty problem that this study highlights. Furthermore, the agencies themselves lower transaction costs through their knowledge, experience, and familiarity with the sending country. Nonetheless, we assume that the prospective parents' choice of country is independent from—and often precedes—their selection of an adoption agency. This is indeed the assumption made by the State Department. The State Department identifies the prospective parents as the actors choosing where to adopt and, as described above, offers information to facilitate their choice. In the State Department's understanding, this choice, in turn, will influence the selection of an adoption agency (U.S. Department of State 2014b). The Department of Health & Human Services holds a similar assumption: it offers prospective parents a list of agencies that provide services in the country from which they wish to adopt.[7] Furthermore, adoption agencies share the prospective parents' interest in ensuring a successful and timely completion of the process. One reason is that the agencies receive part of their payment at the end of the process. Another reason is the agencies' reputation and perceived competence. When choosing an adoption agency, prospective parents may wish to learn about the agency's previous adoption placements and the percentage of those that remained intact. U.S. agencies accredited under the Intercountry Adoption Act must disclose such information upon the prospective parents' request.[8] Adoption agencies thus have their own reasons to ensure a successfully completed adoption; if able to influence the choice of country, they may steer prospective parents toward those countries where such an outcome is more likely.

4   Empirics

In the following sections, we begin with a detailed discussion of adoption-related covariates, operationalization, and data sources. Next, we demonstrate patterns in international adop-

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[7]https://www.childwelfare.gov/pubs/country_resource_lists.cfm. Accessed December 21, 2014.

[8]22 CFR 96.39 - Information Disclosure and Quality Control Practices.

tion flows with the dataset we compile, given that international adoption is a phenomenon unfamiliar to most IR scholars. We then discuss the models and methods used to fit our data and report the empirical findings. Finally, we discuss how robust our results are to alternative models and indicators.

4.1 Adoption's Transaction Costs: Covariate Operationalization and Data Sources

We identify several indicators that prospective parents may be relying on in assessing the transaction costs of adoption. These are divided into two groups: transaction-costs determinants that are unique to international adoption and those that apply to migration broadly.

4.1.1 Influences Unique to Adoption

`Regulatory Quality`. Given the bureaucratic hurdles and pitfalls that international adoption involves and the risk of long delays, the regulatory quality of the bureaucracy in the sending country is of much concern for the prospective parents. We hypothesize that prospective parents would prefer to adopt from a country with a high bureaucratic-regulatory quality, thereby lowering the expected transaction costs of the process. Regulatory quality data rely on the indicator provided by the Worldwide Governance Indicators (WGI) database. This measure captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private-sector activity. Among others, this measure examines whether a legal and regulatory framework for private-sector development exists and the extent to which regulations create burdens or obstacles. Since international adoption is an activity undertaken by private actors—adoptive parents and adoption agencies—this measure captures the bureaucratic challenge that they face. High regulatory quality would mean that adoption laws and regulations are in place and can be navigated through with reasonable ease. By contrast, poor quality would mean that the regulatory framework for adoption is nonexistent, inadequate, or burdensome. Furthermore, the regulatory quality indicator considers countries' bureaucratic treatment of foreigners and the obstacles to their activity in the local environment. This indicator is therefore suited for capturing the experience of prospective parents who go through the bureaucratic process of child adoption in a foreign country.

`Nationalism`. Nationalist sentiments in the sending country might be a warning sign for the prospective parents, indicating a political environment unfavorable to international adoption. Nationalists might subscribe to the view that children "belong" to their countries of birth and are better off growing up there, surrounded by people of similar linguistic,

cultural, ethnic, and religious background. From a nationalist perspective, international adoption also saps the lifeblood of the sending country by taking away its children. Furthermore, international adoption may be seen as an affront to the national pride and reputation, as it implies that the country is unable to care for its children (Saunders 2007; Varnis 2001). In fact, politicians in sending countries often criticize the practice of international adoption, as they seek to stir nationalist emotions and gain popularity. Explaining her sponsoring of a ban on child adoption by American parents, a member of Russia's parliament argued that "No normal, economically developed country gives away their children. I am a patriot of Russia" (Herszenhorn 2012). Overall, nationalism fosters a preference for retaining children in their countries of origin, rather than sending them abroad. For the prospective parents who seek assurances of a successful adoption process, a nationalist influence on policymaking is thus an ominous sign. If the executive has nationalist tendencies, government authorities in charge of adoption might impose formal and informal requirements that will make the process longer and more difficult to complete. In such an environment, there is also a risk of an abrupt policy change that would reduce the outflow of children. We thus expect a nationalist executive to serve as a deterrent for prospective parents, resulting in fewer adoptions. Nationalist executive data rely on the measure provided by the Database of Political Institutions (DPI).

`Hague Adoption Convention`. International adoption is governed by the 1993 Hague Adoption Convention. The primary impetus for establishing the convention was a growing concern about adoption abuses—sale of children by parents and orphanages and child abduction for the purpose of adoption—that thrived in the absence of government involvement and regulation. Accordingly, the convention's primary goals are to ensure that international adoption is in the best interests of the child and to prevent the abduction, sale of, or traffic in children (Hansen and Pollack 2006; Smolin 2010). To that end, the convention puts in place a set of safeguards. The authorities in the receiving country must determine that the prospective adoptive parents are suitable to adopt; and the authorities in the sending country are required to ensure that the child is adoptable, that international adoption is in the child's best interests, and that all relevant consents have been given freely and without financial inducement. The convention also establishes an institutional framework by requiring each country to designate a "central authority"—a government agency—to oversee and facilitate the adoption process and to cooperate with central authorities in other countries. Another key requirement is that adoption agencies must generally receive government accreditation and be subject to supervision (Duncan 2002).

What are the implications of the convention for prospective parents? Various studies have interpreted international agreements as signaling cooperativeness and a credible com-

mitment to comply (e.g., Simmons 2000; Long, Nordstrom, and Baek 2007). When the Hague Convention is in force, the sending country may be signaling its acknowledgment that international adoption is a viable option for children. Indeed, the convention's preamble states that "intercountry adoption may offer the advantage of a permanent family to a child for whom a suitable family cannot be found in his or her State of origin." The convention's being in force thus signals a political environment conducive to the idea of sending children for adoption abroad. The convention's safeguards against abuse may further improve the perception of adoption in the sending country, increase trust, and reduce the risk of adoption scandals. These safeguards may also empower pro-adoption forces and provide them with a cover against the charges of adoption critics. The convention can be used to demonstrate that internationally adopted children will be protected from sale and exploitation and that the international community considers international adoption as a good option for children (Bartholet 2006; McBride 2013a). Compared to non-Hague-Convention countries, Hague-Convention countries may thus offer a more hospitable environment for adoption, where the prospective parents should expect fewer obstacles.

Yet we argue that this reassuring signal is trumped by the higher costs that might stem from the convention's rules and mechanisms. Indeed, the convention does aim to reduce the delays, complications, and costs of adoption (Duncan 2002). For example, the Central Authorities in the sending and receiving countries are required to "facilitate, follow and expedite proceedings with a view to obtaining the adoption." Nevertheless, various observers have expressed concern that the convention would, in fact, have the opposite effect: imposing burdens and increasing costs. It has been suggested, for example, that the additional bureaucratic costs that the Hague process entails would be passed on to the prospective parents, making international adoption less affordable; the added costs and requirements imposed on adoption agencies could have a similar effect. Another concern is that the convention enhances the role of governments in the adoption process while diminishing the role of other facilitators and intermediaries who assist the prospective parents in completing the adoption procedures in the sending country (Hansen and Pollack 2006; Kimball 2005; Varnis 2001). A common perception among prospective parents is that the Hague adoption process is more bureaucratic, time-consuming and difficult than the non-Hague process (Eijsink 2011).

Overall, we argue that the prospective parents will place greater weight on these costs of the Hague Convention than on the positive implications of the convention's being in force. Whereas the costs are tangible and immediate, the beneficial aspects of the convention are less certain and more remote. Therefore, the prospective parents are likely to favor adoption from a non-Hague Convention country to reduce transaction costs. Note that the the prospective parents can make this choice even if their own country—say, the United States—

has the convention in force: members of the Hague Convention may engage in adoption from non-members. Our expectation of a negative impact of the convention follows previous studies that did not identify an adoption-promoting effect of the Hague Convention (Breuning 2013b; McBride 2013a). This expectation also echos the concern expressed by several authors that the convention might ultimately hinder and reduce international adoption (Dillon 2003; Worthington 2009).

Our Hague Convention variable is coded 1 if both the sending country and the receiving country have the convention in force—only then is the convention in effect between them. Entry-into-force data rely on the Hague Conference on Private International Law's official website.

`Cumulative Adoption`. Past behavior is typically seen as a strong indicator of countries' tendencies and a reliable signal of their future conduct (e.g., Tomz 2007). The number of adoptees that a sending country previously sent to the receiving country thus carries information about the number of adoptees it is likely to send in the future. A small number of past adoptees indicates large transaction costs and an environment that is not favorable to adoption; by contrast, a substantial past flow of adoptees indicates that the sending country is open to international adoption and that its adoption process involves reasonable costs. As such, a large flow of adoptees bodes well for the prospective parents and should make them more inclined to adopt from the country in question. We measure cumulative adoption as the cumulative total of directed dyadic adoptions since the first year that receiving-country adoption data are available.

4.1.2 Migration-related Influences

We now identify several dyadic influences on the transaction costs of adoption. These influences are not unique to adoption, but may apply to other flows of migrants.

`Language Commonality`. Language commonality between sending and receiving countries has been shown to benefit migrants (e.g., Dustmann and Soest 2002) and may also be advantageous for international adoption. As part of the adoption process, the prospective parents become acquainted with the sending country and its laws and policies; they typically travel to that country and interact with the individuals and authorities involved in the adoption process. Fluency in the local language may significantly ease the gathering of information and the interaction with the authorities and intermediaries in the sending country. Prospective parents may thus prefer to adopt from a country whose language they speak in order to facilitate the adoption process and reduce transaction costs. We therefore expect language commonality to increase the number of adoptions. Language commonality data are from the CEPII's GeoDist database.

`Migrant Stock`. The stock of migrants from the sending country who reside in the receiving country has been shown to have a positive effect on flows of migrants and investment (Leblang 2010; Fitzgerald, Leblang, and Teets 2014). We expect a similar effect on adoption flows. Migrants may have contacts in their home country as well as a cultural and legal understanding of that country. All this should make it easier for the prospective parents to gather information, understand the adoption process, and navigate through it. In addition, members of the migrant community, like many adoptive parents who are non-migrants, may prefer a child who matches their own race or ethnicity (Ishizawa et al. 2006). Such a preference may motivate migrants to adopt a child from their country of origin. Furthermore, it is possible that the presence of a large migrant community, especially one that is well integrated, may lead nonmembers to adopt from the migrants' home country. The presence of the community may foster a positive image of the home country (Kapur and McHale 2006); it may also reassure prospective parents that the child would be quickly assimilated and would not face racial or ethnic bias. Data on the stock of sending-country migrants in a receiving country are from Fitzgerald, Leblang, and Teets (2014).

`Colonial Ties`. Former colonies and colonial powers often have dense ties that last long after the colonial relations ended. These cultural, economic, and administrative ties facilitate migration from the former colony to the metropole and ease the adjustment and integration of migrants (Hooge et al. 2008; Riley and Emigh 2002). The same ties can make it easier and less costly for the prospective parents to adopt a child from a country that is a former colony. These parents will have access to better information on that country, and the administrative ties will facilitate the process of adopting the child and bringing them to the receiving country. Colonial Ties is a dichotomous variable assigned a value of 1 if the sending and receiving countries had a colonial tie in the past and assigned 0 otherwise. Data are from CEPII's GeoDist database.

`Distance`. The distance between sending and receiving countries has a negative effect on migrant flows: it is more costly to acquire information on remote countries and to travel there (Mayda 2010). Distance may have a similar effect on international adoption, since the process requires the prospective parents to travel to the sending country—in many cases, multiple times—and to gather information on that country. By adopting from a country close to their own, the prospective parents will be able to reduce the transaction costs of adoption. We measure the distance between the sending and receiving country's capitals in kilometers. Data are from CEPII's GeoDist database.

4.1.3   Additional Influences on Adoption Flows

Our analysis looks at international adoption from the point of view of the prospective parents and their desire to reduce the transaction costs of international adoption. Yet adoption flows are shaped by additional factors, which we include in the model as controls.

`Youth Population`. A key factor determining the availability of adoptees in the sending country is the size of that country's adoption-relevant population: the larger the adoption-relevant population, the greater should be the outflow of children. We thus control for youth population: the number of people younger than 14.[9] Data are from the World Bank's World Development Indicators (WDI).

`Real GDP per Capita`. The outflow of adoptees should also increase as the sending country's ability to care for its children decreases. This means that poor countries, unable to provide children's basic needs, are likely to send some of them for adoption abroad. Real GDP per Capita should thus be negatively associated with the outflow of children. The measure is constructed based on data from the Penn World Table.

`Armed conflict` is another cause of demographic pressure that may generate outflows of adoptees. Conflicts leave many orphans who have lost one or both parents. Members of the extended family, who would normally care for parentless children, may also be gone or unable to support additional children (Roby and Shaw 2006). Dysfunctional or overburdened in the aftermath of war, states' social services may also struggle to exercise their responsibility to care for children generally and for orphans specifically. In these conditions, sending children for adoption abroad may relieve some of the burden and offer the children better prospects. We thus control for major armed conflicts in the sending country using data from the Center for Systemic Peace (CSP).

`Islamic law`. The sending country's religion could matter as well. In particular, Islamic law does not recognize the institution of adoption as it is understood in the West, since the Koran emphasizes lineage and blood ties. Muslim countries therefore use other strategies and procedures to meet the needs of orphans, such as a guardianship system known as kafalah (Breuning and Ishiyama 2009; United Nations 2009:23-27; Breuning 2013b). The nonrecognition of adoption also means that Shari'a-observing countries are highly restrictive with regard to international adoption, or do not allow it at all. We thus control for the adoption-reducing effect of Islamic law using data from CIA's World Factbook.

`Rate of Immunization`. Another influence on adoption is the children's health. Many international adoptees experience inadequate prenatal and perinatal care—resulting in consequences such as low birth weight and prematurity—alongside the effects of poverty and

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[9]Due to the high degree of missingness of orphan data for our sample, we do not employ measures of the orphan population. We use the log of the youth population because of the skewness of the data.

environmental toxins. Following birth, many of the children live in orphanages, where they might suffer malnutrition, emotional and physical neglect, and environmental deprivation which could adversely affect brain development during the critical stage of brain maturation (Jacbos, Miller, and Tirella 2010). As a result, internationally adopted children have an elevated risk of infectious diseases and are more likely to suffer developmental delays. Furthermore, the child's background and health information provided to the prospective parents is often incomplete or unreliable (Howard and John 2014; Miller 2005; Welsh et al. 2007). While some prospective parents are willing to adopt special-needs children, and though adoption typically offers the children improved environment and opportunities that allow them to recover from their pre-adoption deprivation, most prospective parents would likely seek a healthy child (Steltzner 2003). Therefore, we control for the rate of immunization for childhood diseases in the sending country as an indicator of healthcare capacity. Prospective parents are more likely to adopt from a country with a high immunization rate, where children are cared for and are less likely to suffer from medical or developmental problems. Measles immunization data are from the WDI database.

Details of all variables, their operationalization, sources, and descriptive statistics are summarized in Appendix B.

4.2   Adoption Data and Patterns

Building on the approach of Kane (1993), Selman (2006), and Selman (2009), we contribute to the literature by compiling a more fine-grained dyad-level international adoption flow dataset that covers 19 receiving countries and up to 209 sending countries/entities, over the period 1991-2010. Table A.1 in the appendix summarizes the adoption-data coverage (years and total sending countries/entities) and data sources for our 19 receiving countries. Table A.2 in the appendix summarizes extant adoption-related datasets. In the following, we break down international adoption flows by main receiving and sending countries to illuminate variations in our outcome variable of interest.

Figure 2 shows that the United States received the most international adoptees and drove global adoption patterns during the 1991-2010 period. Flows to the United States steadily increased over the 1990s, reached their peak in 2004, and have been declining since 2004. Spain and Italy demonstrate a moderate fluctuation, with Spain's pattern being similar to that of the United States.

Figure 3 shows how adoption flows from China, Russia, and Guatemala have seen dramatic increases, yet started decreasing around 2005. Other sending countries such as Ethiopia, South Korea, Romania, Ukraine, and Vietnam have also experienced noticeable fluctuations
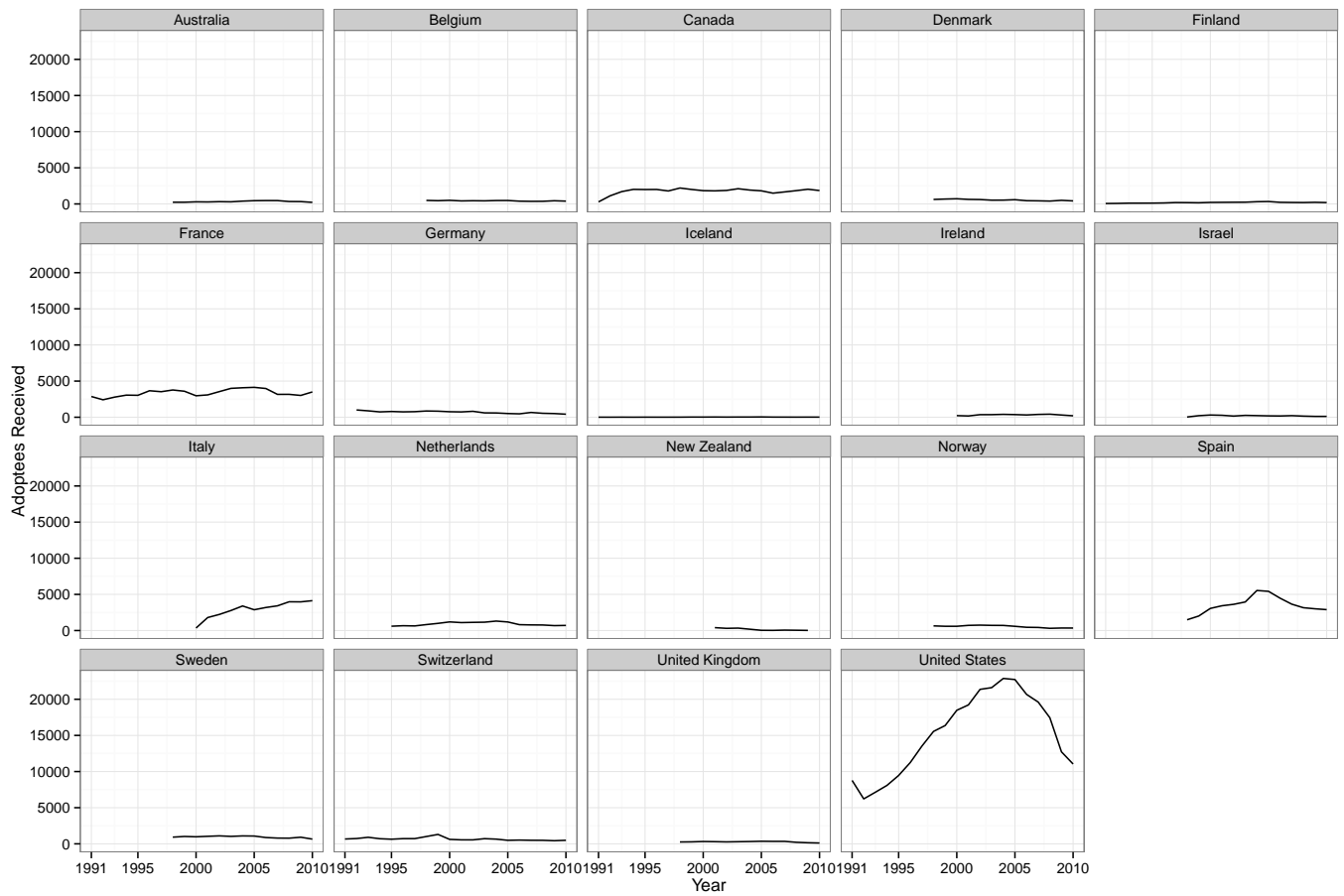
FIG 2. **Number of Adoptees by Receiving Country, 1991-2010.** Note how adoption flows to the United States have seen dramatic growth and decline, which drives global adoption patterns.

in adoption outflows.[10]

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[10]A full figure illustrating adoption panel-data trends for all 209 sending countries/entities is in the online appendix.
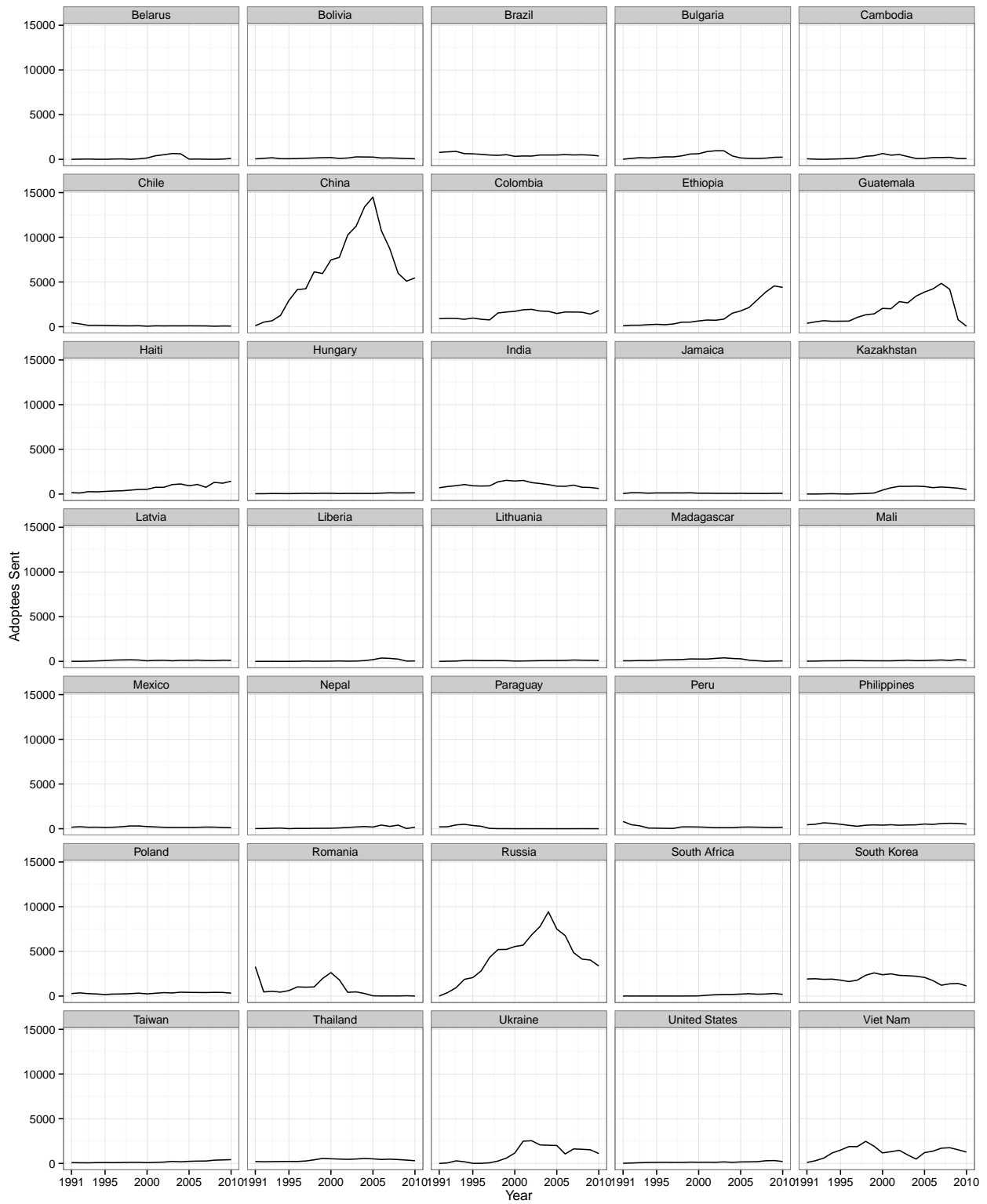
FIG 3. **Number of Adoptees from 35 Select Sending Countries, 1991-2010.** This figure shows adoption panel data for select sending countries that had more than 1500 total adoptions.

Figure 4 illustrates spatially the variation in adoption flows in sending and receiving countries. Overall, adoptees are mostly from Asia, Eastern Europe, and Latin America, and are sent primarily to North America and Western Europe.
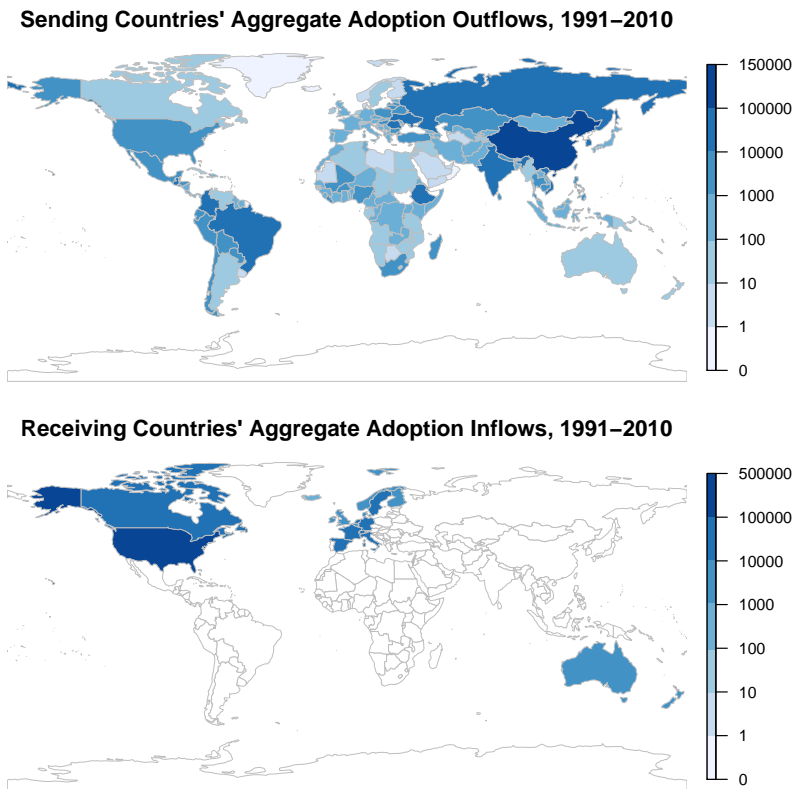
Sending Countries' Aggregate Adoption Outflows, 1991–2010

Receiving Countries' Aggregate Adoption Inflows, 1991–2010

FIG 4. **Total Outflows and Inflows of Adoptees, 1991-2010**

4.3   Model and Methods

To address missing-data concerns, we create ten imputed datasets using the **R** package `Amelia II` (Honaker, King, and Blackwell 2011), fit hurdle models to each of the datasets with the **R** package `pscl` (Zeileis, Kleiber, and Jackman 2008), and combine the results using Rubin's Rules (Rubin 1987).[11]

A hurdle model is more appropriate for our analysis than a normal Poisson model, as we argue that dyadic adoptions are driven by two separate data-generating processes.[12] The first process governs prospective parents' sending-country *selection* based on various prospective

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[11]For details about multiple imputation, please see http://gking.harvard.edu/amelia/. Given the relatively large size of our dataset, we implemented Amelia in parallel on a Linux Cluster in order to create the 10 multiply imputed datasets. The imputation model and code are available in our replication materials. Models fitted with listwise deletion could not converge given the number of covariates and the missingness in some covariates. For missingness details, please see Table B.2 in Appendix B.

[12]For details about the motivation for a hurdle model, see Mullahy (1986) and King (1989).

parents' concerns, including their preferences and perception about the prospects of completing an adoption. Once prospective parents have decided on specific sending countries (i.e. the selection hurdle is overcome), a second process governs the *number* of adoptees that arrive in a receiving country from a sending country. Given the two processes, it is likely that while some sending countries were historically never selected by prospective parents of a certain receiving country, other sending countries have always been chosen. For example, the United States adopted almost eighty thousand children from China in 1991-2010, yet it has not adopted a single child from Yemen over the same time period. Excluding "zero"-adoption sending countries from our empirical analysis would lead to selection effects that may bias our estimates of sending-country covariates. Furthermore, as with all count data, non-zero adoption counts are also likely to cluster across years within a dyad or cluster across dyads with the same receiving or sending country. This leads to problems with overdispersion for Poisson models—a problem we observe in our data: 9064 out of 19112 directed dyad-years (or 47.43%) in the empirical analysis have zero adoptions. Furthermore, 77.98% of all non-zero adoption directed dyad-years have between 1 and 30 adoptions (30 is approximately the mean).[13] Since excess zeros and overdispersion can bias Poisson model estimates, we choose to fit a hurdle model that combines a logit component (right-censored at y = 1) and a negative binomial component (that is left-truncated at y = 1) to address both issues. More formally, the model can be expressed as follows:

$$
f_{hurdle}(y|\mathbf{X},\mathbf{Z},\boldsymbol{\beta}_{logit},\boldsymbol{\beta}_{nb},\boldsymbol{\theta}_{logit},\boldsymbol{\theta}_{nb}) = \begin{cases} f_{logit}(0|\mathbf{X},\mathbf{Z},\boldsymbol{\beta}_{logit},\boldsymbol{\theta}_{logit}) & \text{if } y = 0, \\ (1 - f_{logit}(0|\mathbf{X},\mathbf{Z},\boldsymbol{\beta}_{logit},\boldsymbol{\theta}_{logit})) \cdot \frac{f_{nb}(y|\mathbf{X},\mathbf{Z},\boldsymbol{\beta}_{nb},\boldsymbol{\theta}_{nb})}{1 - f_{nb}(0|\mathbf{X},\mathbf{Z},\boldsymbol{\beta}_{nb},\boldsymbol{\theta}_{nb})} & \text{if } y > 0 \end{cases}
$$
(1)

where f_{logit} and f_{nb} denote statistical models implied by logit and negative binomial models, respectively, and f_{hurdle} denotes the full model that combines the two. y denotes directed dyadic adoption counts in a given year. When $y = 0$, the logit model is employed to model the probability of zero vs. positive counts. When $y > 0$, the negative binomial model is employed to model the positive counts. $\boldsymbol{X}$ is a vector of our key covariates that measure sending country or dyadic characteristics in a given year. $\boldsymbol{Z}$ is a vector including our control covariates, receiving-country fixed effects, and year fixed-effects. Note that we include the same set of key and control covariates in both submodels. $\boldsymbol{\beta_{logit}}$ and $\boldsymbol{\beta_{nb}}$ are vectors of coefficients for covariates in the logit model and negative binomial model, respectively. θ_{logit} and θ_{nb} are vectors of other parameters for each model, such as the dispersion parameter in

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[13]Figure B.2 in Appendix B further illustrates the existence of such problems by plotting the distribution of adoption counts and the variation of adoption counts by receiving countries.

the negative binomial model. The denominator in the second line of equation (1) scales the distribution of positive counts to ensure that overall probability sums to one.

4.4   Results

As a hurdle model contains two components—one modeling the factors associated with dyads having adoptions or not and the other modeling the number of children adopted within dyads—Figure 5 presents two sets of coefficients and associated 95% confidence intervals. Figure 6 presents substantive effects in probabilities for the first-stage logit and substantive effects in expected counts for the second-stage negative binomial model, holding other covariates constant.[14] Since the Hague Convention came into existence only in 1993, the results presented are for the period 1993-2010.[15]

The coefficients and substantive effects for the logit component, summarized respectively in the left panel of Figure 5 and Figure 6, are all statistically significant and are consistent with our hypotheses concerning the effect of transaction costs on international adoption. In terms of influences unique to adoption, countries with a higher regulatory quality or an extensive history of dyadic adoptions have a higher probability of sending international adoptees. This supports our argument that regulatory quality or more cumulative adoption reassures prospective parents by signaling an ability to formulate and implement regulation and a more reliable supply of potential adoptees. In contrast, sending countries with a greater nationalist sentiment are approximately 5% less likely to have children adopted abroad. Furthermore, dyads that have the Hague Adoption Convention in force are 8% less likely to adopt from each other compared to dyads with the convention in force in only one country or none. The former finding supports our argument that nationalist sentiments send a negative signal about adoption prospects by indicating a longer and more difficult process, given that sending governments and citizens see adoption as being harmful to the sending country. The latter finding suggests that while the entry into force of the Hague Adoption Convention may reassure prospective parents by providing better safeguards against adoption abuse, prospective parents are more concerned about the higher costs and burdens that might stem from the convention's rules and mechanisms.

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[14]More technically, our substantive effects are simulated based on first differences, i.e. the change in the expected value (probability or count) when the covariate of interest is changed from zero to one for a dichotomous independent variable, or increased from one standard deviation under the mean to one standard deviation above the mean for a continuous covariate, while holding all other covariates at their mean or mode and setting the receiving country to USA and the year to 2000. As the current version of the **R** package `Zelig` (Imai, King, and Lau 2007) does not offer first-difference simulations for hurdle models, we simulate first differences following King, Tomz, and Wittenberg (2000)'s method with our own code.

[15]See Appendix D for further details about parameter estimates (Table D.1) and simulated effects (Table D.2).
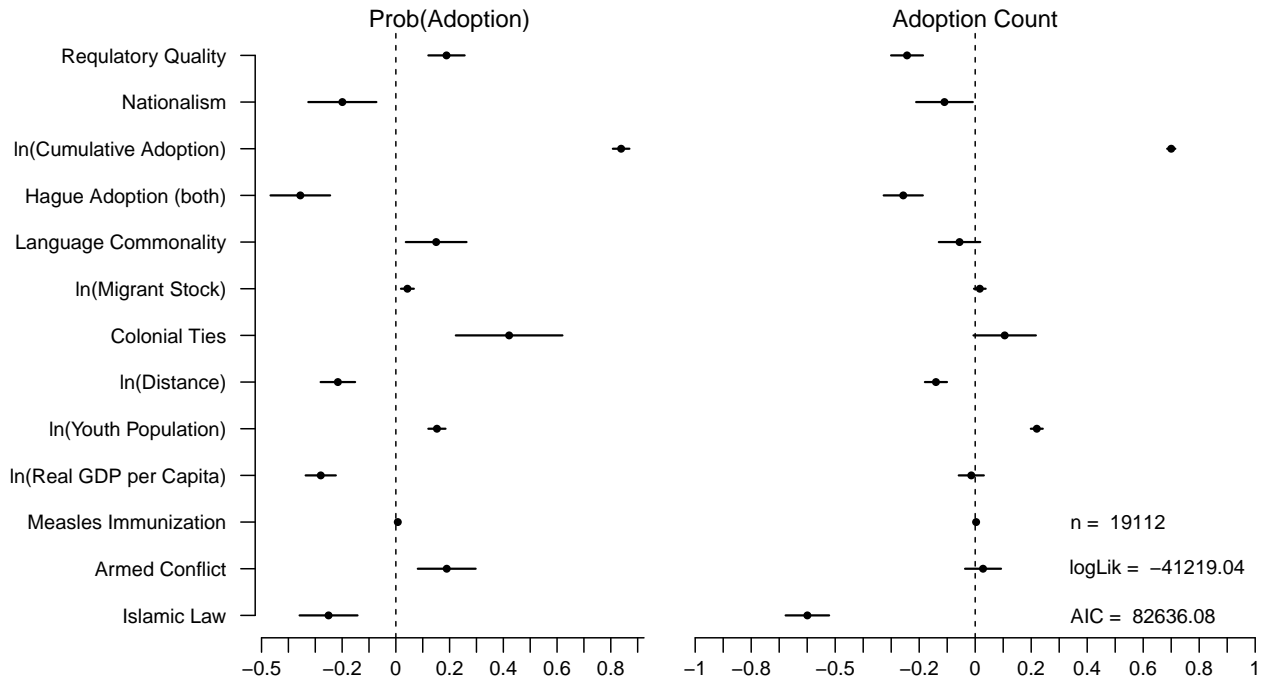
FIG 5. **Hurdle Model of the Determinants of International Adoption.** The figure displays coefficients and associated 95% confidence intervals. Intercepts and coefficients for fixed effects are omitted.

In terms of influences typical of migration, international adoption is more likely when dyads share an official language (3%) or have colonial ties (9%). Furthermore, a receiving country that has a larger community of migrants from a sending country is more likely to also have international adoptions from that sending country. These findings are in line with our argument that closer connections between countries facilitate the adoption process by reducing the transaction costs of searching for, matching, and ultimately adopting a child. Finally, dyads farther from each other in terms of distance are less likely to have any adoption, probably due to the increased transportation costs.

Turning to our controls for child supply and health, sending countries with a higher youth population are more likely to participate in international adoption given their larger pool of potential adoptees. Rich sending countries, as measured by real per capita GDP, are less likely to participate in foreign adoption, since they are able to care for their children. Sending countries with higher measles immunization rates are more likely to participate in international adoption, as prospective parents prefer to adopt healthier children. Sending countries in the midst of major armed conflicts are, all else equal, more inclined to participate in international adoption because such conflicts not only significantly decrease their ability
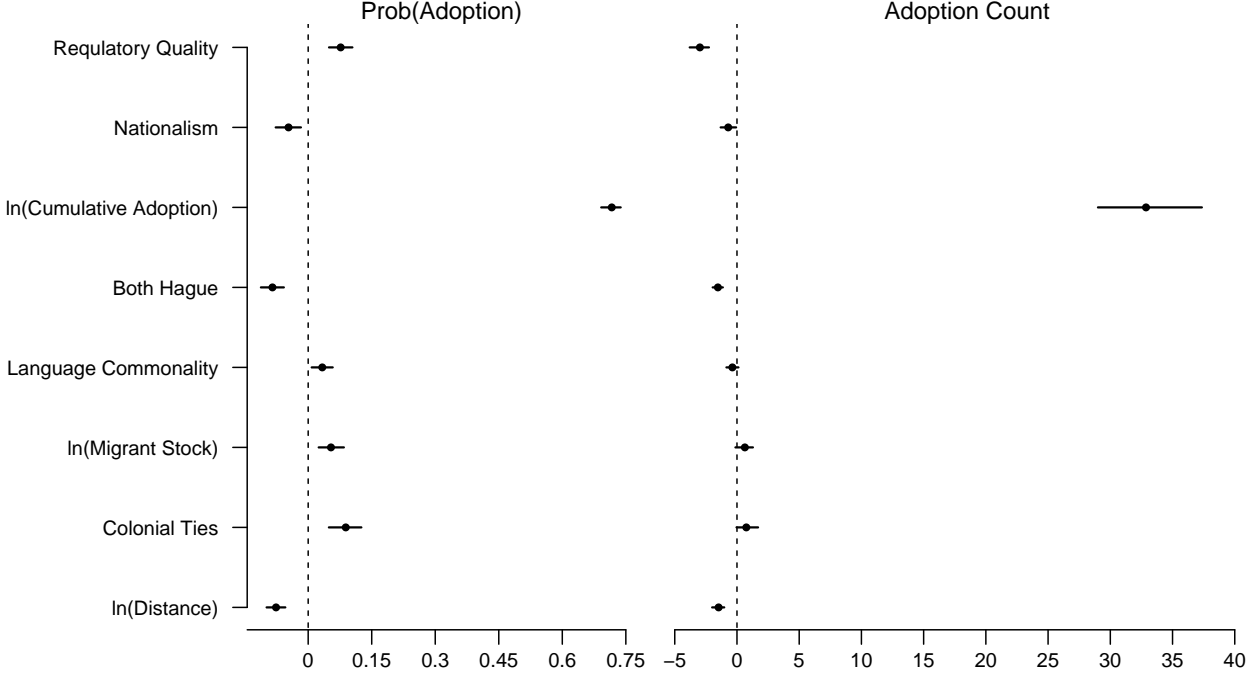
24

FIG 6. **Substantive Effects of Key Covariates on the Predicted Probabilities and Expected Counts of International Adoption.**

to care for children, but the casualties involved may also increase the orphan population. Shari'a-observing sending countries are less likely to participate in international adoption as expected, given the Muslim approach to adoption.

The negative binomial component results, summarized in the right panel of Figure 5 and Figure 6, describe which factors are associated with the number of dyadic adoptions, conditional on having at least one international adoption. In terms of influences unique to adoption, regulatory quality poses a tradeoff for prospective parents. On one hand, a higher regulatory quality can signal better prospects of adoption completion or stability of the local contracting environment, as supported in the logit-component results. On the other hand, once prospective parents decide on a sending country with a high regulatory quality, they may also face stronger and better-enforced regulations, screening, and monitoring regarding the adoption process, which raises the transaction costs for adoption. This is supported in the negative binomial component results, which shows how higher regulatory quality in the sending country is associated with around 3 fewer dyadic adoptions in a given year (or an average 10.35% decrease). Again, sending countries with a greater nationalist sentiment or dyads that have the Hague Adoption Convention in force are on average associated with around 1 and 2 fewer dyadic adoptions in a given year, respectively (or a 2.45% and a 5.32%

decrease, respectively). Meanwhile, dyads with a high level of cumulative adoption have, on average, 32.87 (or 114.13%) more adoptions in a given year than dyads with a low level of cumulative adoption.[16]

Additionally, we find that once prospective parents decide on a sending country, typical measures of bilateral migration costs are no longer systematically related to the scale of dyadic adoptions: a larger community of migrants from the sending country residing in the receiving country, colonial ties, or language commonality are not significantly associated with the scale of dyadic adoptions. The only exception is that dyads geographically farther from each other engage in fewer adoptions. This may be due to the fact that prospective parents who ultimately select to adopt from linguistically or culturally distant countries are either already equipped with sufficient language proficiency and cultural familiarity, or are more determined to overcome such barriers. As a result, the effect of these typical measures of migration costs on the scale of dyadic adoptions is indeterminate once prospective parents select into a sending country.

Finally, the results for the controls in the negative binomial component are all similar to the logit component, with the exception that real GDP per capita and armed conflict are no longer statistically significant.

4.5 Robustness Checks

We fit several alternative models, substitute in different indicators, and fit different samples of our data to examine the robustness of our findings. Robustness results are summarized in the following with details presented in Appendix E.

4.5.1 Alternative Models

For robustness, we fit simple Poisson, negative binomial, or zero-inflated negative binomial models with the same model specification.[17] Note that since the zero component in the zero-inflated negative binomial model models the probability of *zeros*, in contrast to the hurdle model, which models the probability of *ones*, expected coefficient signs here should be opposite of those in the zero component of a hurdle model.

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[16]High (low) levels are set as one standard deviation above (below) the mean for continuous covariates.

[17]See Table E.1 for results. The zero-inflated count model is an alternative class of models to the hurdle count-model for addressing excess zeros in count data. Similar to the hurdle model, the zero-inflated count model is a two-component model that augments the count component with a zero component. However, the difference is that zero-inflated count models model the point mass at zero (probability of outcomes equaling zero), while also allowing zeros in the count component. In other words, zeros can come from both the point mass and the count component. Zeileis, Kleiber, and Jackman (2008) suggest that the substantive results of the hurdle and zero-inflated count models are usually very similar, but the hurdle model allows for a nicer interpretation. We thus choose to present here the hurdle-model results.

Overall, coefficient signs and statistical-significance levels for covariates unique to adoption are consistent with our main hurdle-model results, with the exception of the slightly lower statistical-significance level of nationalism in the negative binomial component of the zero-inflated model (p-value = 0.08). Additionally, we find more support for the relationship between typical measures of migration costs and the scale of dyadic adoption. For example, colonial ties becomes positive and statistically significant in all three models. Migrant stock also becomes statistically significant under the naive Poisson and negative binomial models. However, informal log-likelihood and AIC comparisons suggest that the hurdle model fits the data better than all three alternatives. Specifically, likelihood-ratio tests show that the negative binomial model fits the data better than a simple Poisson model with a p-value at virtually zero. The Vuong test shows that the zero-inflated negative binomial model fits better than a naive negative binomial model with a test statistic of -220.14 and p-value of, again, virtually zero. Finally, model-fit differences between the hurdle and zero-inflated negative binomial model are statistically insignificant. Thus, the foregoing analysis has focused on the hurdle model.

4.5.2 Alternative Indicators

For additional robustness checks, we fit hurdle models with alternative model specifications. First, we replace the sending country's regulatory quality with its control of corruption to examine alternative sources of government-induced adoption costs. The results show that higher control of corruption is statistically significant and is associated with fewer dyadic adoptions while results for all other key covariates are substantively the same.[18] Again, this supports our argument that better control of corruption may lead to stricter enforcement of adoption regulations, which may reduce adoption abuse but may also increase adoption costs. However, control of corruption is not systematically related to the probability of having any dyadic adoption, which suggests that regulatory quality may be a more important concern than control of corruption when prospective parents select sending countries in the first stage.

Second, we replace our original proxy for nationalism (the existence of a nationalist executive) with a dichotomous measure of *jus soli* (Leblang 2014) to examine alternative measures of nationalism. The logic is that countries with high levels of civic nationalism are more likely to define citizenship by *jus soli*, i.e., extending citizenship to anyone born in the territory of a state. Results are consistent: *jus soli* is statistically significant and negatively correlated with both the probability and count of adoptions, while results for all other

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[18]See Column 1-2 of Table E.2 for details.

key covariates are substantively the same.[19] Overall, the findings show that nationalism is associated with lower adoption probabilities and counts regardless of the measures employed.

4.5.3 Alternative Samples of Data

For further robustness checks, we fit hurdle models with alternative samples of the data. First, we fit the same hurdle model as in Table D.1 to our larger sample covering the period 1991-2010. We find that results for all transaction-cost covariates unique to adoption hold under this longer time period. Additionally, we find again some supportive evidence for the relationship between typical measures of migration costs, such as migrant stock and colonial ties, and the scale of dyadic adoption.[20]

Second, we fit the same negative binomial model as in Table E.1 to a subset of the data that excludes all observations with fewer than ten dyadic adoptions. This subsetting of the data is consistent with earlier work on adoption (e.g., Kane 1993). The reasoning is that including observations with very few dyadic adoptions inflates the importance of occasional adoptions (and their determinants) that may be qualitatively different from intercountry adoption commonly understood. For example, occasional adoptions may consist mainly of the adoption of a child by their relative, while common adoptions may tend to be by non-relatives.

Overall, Figure 7 shows that results for transaction-cost covariates unique to adoption (regulatory quality, cumulative adoption, and Hague Convention) are consistent in this subset of the data that excludes nearly 80% of our original observations.[21] The only exception is that nationalism loses statistical significance. Additionally, results for transaction-cost covariates typical of migration are more consistent with the negative binomial model under the main hurdle model than the naive negative binomial that does not account for excess zeros: migrant stock and colonial ties are again not statistically significant. This is understandable, as both the hurdle model and this particular subsetting of the data try to account for excess zeros, albeit taking different approaches.[22] Another interpretation of the results given the different subset is that occasional adoptions may be influenced more by nationalism, migrant stock, and colonial ties. Including these observations yields statistically significant results in the simple negative binomial model, while dropping them reduces statistical significance for these covariates.

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[19]See Column 3-4 of Table E.2 for details.

[20]See Column 1-2 of Table E.3 for details.

[21]See Column 3 of Table E.3 for details.

[22]The former models the expected adoption counts conditional on the occurrence of at least one dyadic adoption. The latter simply drops all observations with fewer than ten dyadic adoptions (including zero-adoption observations), based on assumptions about occasional adoption and appropriate cutpoints.

Finally, results for language commonality, real GDP per capita, and armed conflict gain statistical significance. It may be the case that observations with a considerable number of adoptions (ten or more) are more influenced by these covariates. In other words, the large number of observations with few adoptions in the full sample may have diluted the statistical significance of these covariates. However, it is difficult to empirically verify that observations with few adoptions are qualitatively different from observations with many adoptions. For example, it is also likely that non-relative adoptions appear in observations with fewer than ten adoptions, or that adoptions by relatives appear in observations with more than ten adoptions. Furthermore, since we also lose around 15,000 observations in this subset, the results are likely to suffer from lower statistical power: smaller sample size while fitting the same number of covariates. Therefore, these results should be treated with caution.
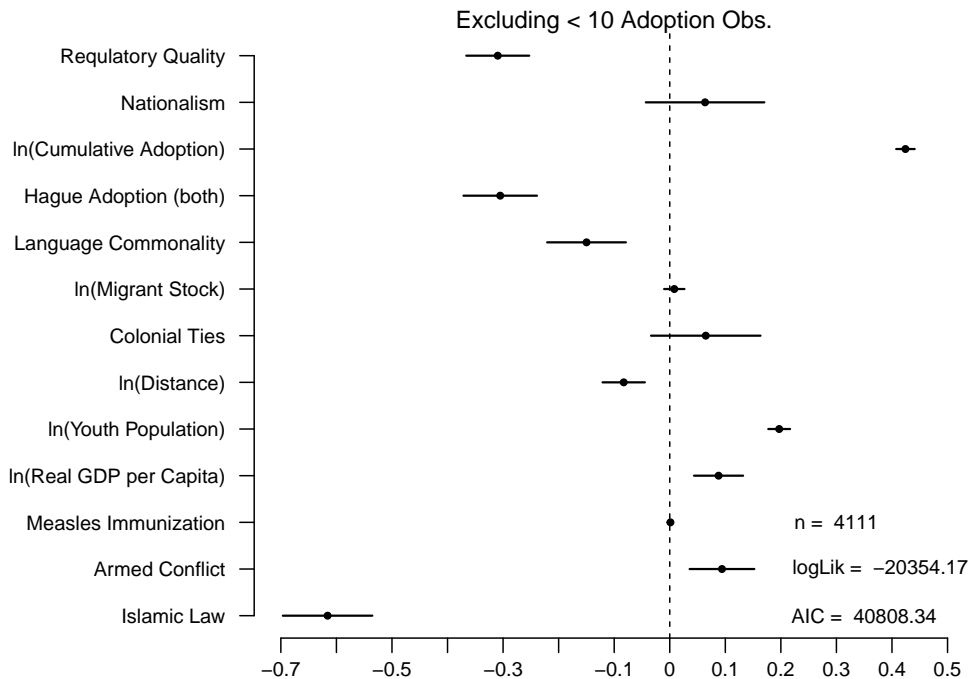
FIG 7. **Negative Binomial Model of International Adoption, Excluding Observations with Fewer than Ten Adoptions.** The figure displays coefficients and associated 95% confidence intervals. Intercepts and coefficients for fixed effects are omitted.

5 Concluding Remarks

Our analysis of the determinants of international adoption contributes to a number of literatures. Most directly, our analysis advances the study of the politics of international adoption.

While building on previous works (Breuning 2013b; McBride 2013a), this article more closely relates adoption to the study of migration, as international adoption is, ultimately, a unique form of migration. The link to migration analysis is both conceptual and methodological. Conceptually, at the center of our analysis are transaction costs, which figure prominently in accounts of migration, but have been underexplored in the context of adoption. In particular, we find that some of the same factors that influence international migration—strong social networks, common colonial and linguistic ties, and distance between sending and recipient country—also influence the movement of children for adoption (Fitzgerald, Leblang, and Teets 2014). Methodologically, we use gravity models to analyze dyadic cross-border flows: a method common in migration studies (e.g., Ortega and Peri 2009; Mayda 2010) that has not yet been applied to the study of international adoption. By applying this method, we identify determinants of international adoption that have received little attention in existing studies, such as the record of cumulative adoptions and the sending country's regulatory quality; and we also estimate the impact of variables that have been suggested in previous studies, such as nationalism, armed conflict, and Islamic law. Through our data and method, we are able to measure these variables' impact on the flow of children with greater certainty and precision than heretofore.

The contribution of our systematic approach can be demonstrated through the recent decline in global international adoptions illustrated in Figure 8. After a surge in adoptions, international adoption has declined significantly in recent years. According to the data we have assembled, 44,836 children were adopted internationally in 2004; in 2010, the number stood at 27,695, i.e. around 38% decline. The data further show that this sharp decline is largely due to three countries—China, Russia, and Guatemala—which have declined as the main sources of potential adoptees (see Selman 2012; Breuning 2013a). Our model sheds light on this trend, as it identifies two important influences that negatively affect the flow of children: nationalism and the Hague Convention. In Russia, the decline is likely the result of the growing nationalism of recent years, whereas the United States suspended adoption from Guatemala in 2008 due to the latter's failure to comply with the Hague Convention. The declining adoption from China is also, at least in part, a result of its Hague Convention membership since 2005. More broadly, U.S. officials contend that the stricter Hague standards create long delays and have become an obstacle to adoption (Swarns 2012; Voigt and Brown 2013). Our systematic analysis supports these assertions.

Beyond the study of adoption, this article contributes to the broader literature on migration. As we have shown, the international movement of children for adoption is shaped by a variety of noneconomic influences, such as nationalism, religion, and an international agreement. These findings speak to the literature that seeks to move beyond the economic
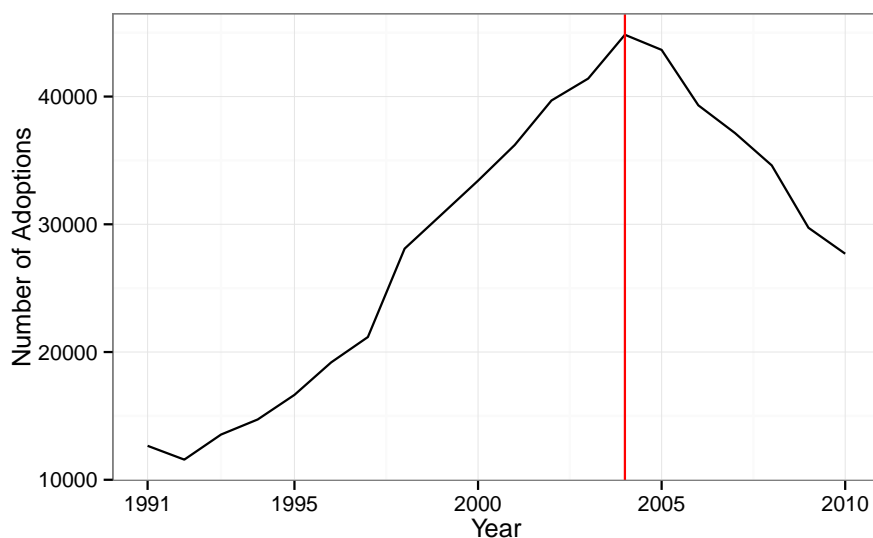
FIG 8. **Global Count of International Adoptions, 1991-2010.**

determinants of migration and identify a broader range of factors that affect the cross-border movement of people, especially factors relating to the political environment in countries of origin or destination (Breunig, Cao, and Luedtke 2012; Fitzgerald, Leblang, and Teets 2014).

This article also makes a twofold contribution to the study of international law. First, our findings concerning the Hague Convention add evidence against the conventional wisdom that international agreements tend to facilitate transnational exchange. According to the literature, states enter preferential trade agreements and bilateral investment treaties in order to reduce transaction costs and encourage crossborder flows (Tobin and Busch 2010). As various studies have shown, these agreements may indeed achieve their intended flow-increasing outcome (Baier and Bergstrand 2007; Kerner 2009). Some studies, however, have found that agreements exert little stimulating effect on the flow of goods or investment capital (Ghosh and Yamarik 2004; Aisbett 2007). Our own analysis is in line with this more skeptical strand of the literature. As we have demonstrated, an agreement designed to ease coordination and information exchange ended up increasing transaction costs—or, at least, is being perceived as such by prospective parents—with an overall negative impact on the flow of children. This finding should encourage a more critical thinking about the unintended consequences of international agreements.

Second, this article contributes to the study of international law by focusing on an instrument of *private* international law. Private international law plays an important role in regulating cross-border exchange between private parties. As such, it is an important mechanism of global governance that mitigates some of the frictions of globalization. Nonetheless,

private international law has been nearly absent from IR scholarship, which has focused, instead, on public international law. Recent studies of international adoption (Breuning 2013b; McBride 2013a)—as well as the current study—begin to fill this void. They explore the influence of international law on the most private of issues: family formation and parenthood. Rather than examining how international law influences state conduct, our analysis has sought to identify the law's impact on the decisions and behavior of private parties. We have theorized that prospective parents take the Hague Convention into account as they seek to adopt a child abroad; and we have shown that the convention might hinder the fulfillment of this goal. International law thus influences not only states: it may have a direct and substantial impact on the decisions and lives of individuals. While the present analysis has looked at the role of law in cross-border family formation, we hope that it will inspire further research on private international law in other realms. Understanding how international law directly affects private actors will give us a fuller picture of the role of law in international affairs.

Should we, then, revise or altogether get rid of the Hague Convention, given its negative influence on adoption flows? Did the convention's drafters get it wrong? It may be possible that the convention's requirements, while burdensome for the prospective parents, indeed eliminate some of the illegitimate, corrupt adoptions. If this is the case, the convention may have achieved its primary goal. However, this is not something that we can confirm with our data. What our data do show is that when the Hague Convention is in force it reduces adoption overall and makes countries less likely to be selected as sending countries in the first place. Overcoming this negative effect may require a rethinking of the convention's mechanisms and requirements. They will need to be reshaped in a way that will reduce the risk of adoption fraud and abuse, while at the same time minimizing the burden and inconvenience for the prospective parents. In addition, prospective parents should receive better information about the merits of the convention. Such information can make the case that the convention's safeguards, while somewhat burdensome, raise the likelihood of a legitimate and ethical adoption—and that such an adoption is in the best interests of the adoptive parents and of the child.

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Appendix A   Adoption Data

We compile a dyadic dataset of international-adoption flows, covering 19 receiving countries, and up to 209 sending countries/entities, over the period 1991-2010. Table A.1 summarizes the data coverage (years and total sending countries/entities) and data sources for our 19 receiving countries. Table A.2 summarizes extant datasets of international adoption.

We exclude from our empirical analyses non-state entities and micro-states as defined by Gleditsch (2004), which brings down the number of sending countries to 170. Note that dyadic adoption data was either unavailable or too sparse to compile for four other receiving countries discussed by Selman (Andorra, Cyprus, Luxembourg, Malta). Finally, our dataset is distinct from datasets that either dichotomize adoption occurrences or code adoption policy restrictiveness. Our dyadic dataset is closer to Breuning (2013a)'s but expanded to cover a total of 19 receiving countries and all corresponding sending countries for which adoption data were available.

The full list of up to 209 sending countries and entities in alphabetical order appears in Table A.3. Countries in bold are sending countries shown in Kane (1993) and Selman (2006, 2009).[23] Again, note that these studies only present *aggregate* adoptions from a given sending country in a year.

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[23]In particular, Table 3 of Kane (1993), Table 9 of Selman (2006), and Table 6, 8, 10 of Selman (2009).

Receiving	Years	Total Sending	Data Source	Notes
Australia	1998-2010	75	Australian Institute of Health and Welfare, Australian Government; augmented with Australian Intercountry Adoption Network (AICAN) data.	
Belgium	1998-2010	41	Peter Selman, Anne-Marie Crine and Beatrice Bernard (2009); Frank Wouters and Belinda Beerens.	
UK	1998-2010	83	UK National Archives; UK Department for Education (DfE), http://webarchive.nationalarchives.gov.uk/tna/+/http://www.dcsf.gov.uk/intercountryadoption/docs/applications.pdf	Less than 5 adoptions were replaced with stars for privacy concerns, imputed 1 for such entries.
Canada	1991-2010	164	Citizenship and Immigration, Canada.	Combining adoption statistics via permanent residency and citizenship. Less than 5 adoptions were replaced with stars for privacy concerns, imputed 1 for such entries. Therefore, under-counting certain years because of the missing cells. Subsetted from 1990-2010.
Denmark	1998-2010	45	EurAdopt, 1998-1999, 2010; Adoptionsnaevnet, 2000-2009, http://www.adoptionsnaevnet.dk/english/statistical-information/	
Finland	1991-2010	92	Statistics Finland, http://193.166.171.75/database/StatFin/vrm/adopt/adopt_en.asp	Subsetted from 1987-2010
France	1991-2010	122	1980-2007, http://adoption-internationale.org/StatsMAI.html; MINISTÈRE DES AFFAIRES ÉTRANGÈRES ET EUROPÉENNES, 2008-2010.	Subsetted from 1980-2010.
Germany	1992-2010	39	Statistisches Bundesamt https://www.destatis.de/DE/Publikationen/Thematisch/Soziales/KinderJugendhilfe/Adoptionen.html	Total adoption combines kin and non-kin.
Iceland	1991-2010	28	Statistics Iceland, http://www.statice.is/Statistics/Population/Family	Subsetted from 1990-2012.
Ireland	2000-2010	28	The Adoption Authority of Ireland, http://www.aai.gov.ie/index.php/publications.html	
Israel	1998-2010	13	Ministry of Social Affairs and Social Services, Israel	
Italy	2000-2010	87	Italy Hague Reports http://www.hcch.net/index_en.php?act=publications.details&pid=5061&dtid=32; augmented with 2010 Report of Commissione per le Adozioni Internazionali statistics http://www.commissioneadozioni.it/it/notizie.aspx?UID=.	
Netherlands	1995-2000	63	Ministerie van Veiligheid en Justitie, 1998-2000, 2002-2010, http://www.adoptie.nl/m/adoptie_cijfers/mn/2/; Statistics Netherlands, 1995-1997, 2001, http://www.cbs.nl/en-GB/menu/themas/veiligheid-recht/cijfers/extra/mappingworld-2-adoptie.htm; Netherlands Hague Reports, 2001 http://www.hcch.net/index_en.php?act=publications.details&pid=5066&dtid=32;	
New Zealand	2001-2009	48	New Zealand Hague report http://www.hcch.net/index_en.php?act=publications.details&pid=5068&dtid=32.	
Norway	1998-2010	26	EurAdopt, 1998-1999, 2008-2010; AICAN, 2000-2007.	
Spain	1998-2010	60	Instituto Nacional de Estadística, http://www.ine.es/jaxi/tabla.do?type=pcaxis&path=/t25/a072/a02/l0/&file=c70004.px, which sources its data from Ministerio de Sanidad, Política Social e Igualdad.	
Sweden	1998-2010	128	Swedish Intercountry Adoptions Authority (MIA), Ministry of Health and Social Affairs.	
Switzerland	1991-2010	186	BEVNAT, Federal Statistical Office http://www.bfs.admin.ch/bfs/portal/en/index/infothek/erhebungen__quellen/blank/blank/bevnat/01.html.	Total adoption combines kin and non-kin. Subsetted from 1979-2010.
US	1991-2010	207	DOS IR-3, IR-4, IH-3, IH-4 visa issued http://travel.state.gov/content/visas/english/law-and-policy/statistics.html; augmented with DHS immigrant orphan admission data (1996-1998) http://www.dhs.gov/yearbook-immigration-statistics.	

TABLE A.1. **Adoption-Data Coverage and Sources.**

Study	Coverage	Analysis
Country-Level Aggregate Adoption Inflow/Outflow Statistics		
Kane (1993)	14 receiving country aggregate adoption inflow statistics from 1980-1989; Korea's aggregate adoption outflow statistics from 1985-1989; 49 sending country aggregate adoption outflow statistics in 1989.	Descriptive statistics.
Selman (2006)	20 receiving country aggregate adoption inflow statistics from 1998-2004; at least 18 sending country aggregate adoption outflow statistics from 1995-2003.	Descriptive statistics.
Selman (2009)	23 receiving country aggregate adoption inflow statistics from 2001-2007; at least 25 sending country aggregate adoption outflow statistics from 2003-2007.	Descriptive statistics.
Menozzi and Mirkin (2007)	Aggregate adoption inflows (outflows) statistics for around 30 (100) receiving (sending) countries within the time period 1994-2005.	Bivariate correlation tests
Adoption Policy Restrictiveness		
Breuning and Ishiyama (2009)	Cross-sectional adoption policy restrictiveness index for 38 sub-Saharan countries in 2007.	Ordinal logistic regression.
Breuning (2013b)	Cross-sectional adoption policy restrictiveness index for 112 countries in 2009.	Ordinal logistic regression.
Dichotomous Measure of Adoption Existence		
McBride (2013a)	Dichotomous measure of whether adoptions exist between dyads; 119 states from 2005-2009.	Social Network Analysis.
McBride (2013b)	Dichotomous measure of whether states allow adoption; 170 states from 1941-2012.	Discrete-time hazard model.
Dyadic Adoptions to the US		
Breuning (2013a)	85 sending country adoptions to the US from 1986-2011.	Bivariate correlations tests.

TABLE A.2. **Extant Datasets of International Adoption.**

Letter	Sending Country/Entity
A	Afghanistan, Albania, Algeria, American Samoa, Angola, Anguilla, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, **Austria**, Azerbaijan.
B	Bahamas, Bahrain, **Bangladesh**, Barbados, **Belarus**, Belgium, **Belize**, Benin, Bermuda, Bhutan, **Bolivia**, Bosnia And Herzegovina, Botswana, **Brazil**, Brunei Darussalam, **Bulgaria**, **Burkina Faso**, Burundi.
C	**Cambodia**, Cameroon, **Canada**, Cape Verde, Cayman Islands, Central African Republic, Chad, **Chile**, **China**, **Colombia**, Comoros, Republic Of Congo, The Democratic Republic Of Congo, Cook Islands, **Costa Rica**, Cote D'ivoire, Croatia, Cuba, Cyprus, Czech Republic.
D	Denmark, **Djibouti**, Dominica, **Dominican Republic**.
E	**Ecuador**, Egypt, **El Salvador**, Equatorial Guinea, Eritrea, Estonia, **Ethiopia**.
F	Falkland Islands, **Fiji**, Finland, France, French Guiana, French Polynesia.
G	Gabon, Gambia, Georgia, Germany, **Ghana**, Gibraltar, **Greece**, Greenland, Grenada, Guadeloupe, **Guatemala**, Guinea, Guinea-bissau, Guyana.
H	**Haiti**, **Honduras**, **Hong Kong**, Hungary.
I	Iceland, **India**, **Indonesia**, **Iran**, Iraq, Ireland, Israel, Italy.
J	**Jamaica**, **Japan**, Jordan.
K	**Kazakhstan**, Kenya, Kiribati, **South Korea**, Kuwait, Kyrgyzstan.
L	Lao People's Democratic Republic, Latvia, **Lebanon**, Lesotho, **Liberia**, Libyan Arab Jamahiriya, Lithuania, Luxembourg.
M	Macao, **The Former Yugoslav Republic Of Macedonia**, **Madagascar**, Malawi, Malaysia, Maldives, **Mali**, Malta, Marshall Islands, Martinique, Mauritania, **Mauritius**, **Mexico**, Federated States Of Micronesia, Republic Of Moldova, Mongolia, Montenegro, Montserrat, Morocco, Mozambique, Myanmar.
N	Namibia, Nauru, **Nepal**, Netherlands, Netherlands Antilles, New Caledonia, New Zealand, **Nicaragua**, Niger, **Nigeria**, Norway.
O	Oman.
P	**Pakistan**, Palau, **Panama**, Papua New Guinea, **Paraguay**, **Peru**, **Philippines**, **Poland**, **Portugal**.
Q	Qatar.
R	Reunion, **Romania**, **Russian Federation**, **Rwanda**.
S	Saint Helena, Saint Kitts and Nevis, Saint Lucia, Saint Pierre and Miquelon, Saint Vincent and The Grenadines, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, Somalia, **South Africa**, Spain, **Sri Lanka**, Sudan, Suriname, Swaziland, Sweden, Switzerland, Syrian Arab Republic.
T	**Taiwan**, Tajikistan, United Republic Of Tanzania, **Thailand**, Timor-leste, Togo, Tonga, Trinidad And Tobago, Tunisia, **Turkey**, Turkmenistan.
U	Uganda, **Ukraine**, United Arab Emirates, United Kingdom, **United States**, Uruguay, Uzbekistan.
V	Vanuatu, Bolivarian Republic of Venezuela, **Vietnam**, Yemen.
Z	Zambia, Zimbabwe.

TABLE A.3. **Full List of 209 Sending Countries and Entities Included in the Dataset.** Countries in bold are sending countries shown in Kane (1993) and Selman (2006, 2009).

Appendix B Variables and Descriptive Statistics

Variable	Operationalization	Source
Adoption	Directed dyad-year total adoptions.	Compiled by authors (see Appendix A for details)
Regulatory Quality	Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	Worldwide Governance Indicator, WGI (2013)
Control of Corruption	Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as capture of the state by elites and private interests.	WGI (2013)
Nationalism	Nationalist chief executive party at t-1? 1 = yes, 0 = no	Beck et al. (2001)
Jus soli	1 = jus soli; 0 = jus sanguinas.	Leblang (2014)
Cumulative Adoption	Cumulative directed dyad adoption count since first year receiving country adoption data available (at t-1 and log).	Constructed by authors
Both Hague	Hague Adoption Convention in force in both countries of a dyad at t-1? 1 = yes, 0 = no.	HCCH (2014)
Language Commonality	Whether a language is spoken by at least 9% of the population in dyads? 1 = yes, 0 = no.	CEPII (2011)
Migrant Stock	Stock of sending country migrants in receiving country at t-1 (log)	Fitzgerald, Leblang, and Teets (2014)
Colonial Ties	Whether dyad ever had a colonial link at t-1? 1 = yes, 0 = no.	CEPII (2011)
Distance	Kilometers between capitals (log).	CEPII (2011)
Youth Population	Population ages 0-14 (total in millions) at t-1 (log).	WDI (2013)
Real GDP per Capita	Sending country expenditure-side real GDP per capita at constant 2005 PPPs and t-1 (log).	Constructed by authors based on PWT 8.0 (2013)
Measles Immunization	Immunization, measles (% of children ages 12-23 months) at t-1.	WDI (2013)
Armed Conflict	Major armed conflicts in sending country at t-1? 1 = yes, 0 = no.	Center for Systemic Peace (2014)
Islamic Law	Does sending country apply Islamic law at t-1? 1 = yes, 0 = no.	CIA (2013)

TABLE B.1. **Variables, Operationalization, and Sources.**

Variable	$\bar{x}$	Min	Max	n	#NA	%NA
Adoption	28.80	0.00	7906.00	19112	0	0
Regulatory Quality	-0.05	-2.68	2.25	16042	3070	16.06
Control of Corruption	-0.18	-1.92	2.59	16030	3082	16.13
Nationalism	0.11	0.00	1.00	18175	937	4.9
Jus Soli	0.33	0.00	1.00	19040	72	0.38
Cumulative Adoption	259.83	0.00	75269.00	19112	0	0
Hague Adoption (both)	0.24	0.00	1.00	19112	0	0
Language Commonality	0.21	0.00	1.00	19112	0	0
Migrant Stock (thousands)	63.23	0.00	11845.29	14456	4656	24.36
Colonial Ties	0.06	0.00	1.00	19112	0	0
Distance (km)	7061.70	80.98	19147.14	19112	0	0
Youth Population	18.46	0.05	363.82	18828	284	1.49
Real GDP per Capita (thousands)	9.00	0.15	116.42	18100	1012	5.30
Measles Immunization	81.84	0.00	99.00	18683	429	2.24
Armed Conflict	0.23	0.00	1.00	19112	0	0
Islamic Law	0.18	0.00	1.00	19112	0	0

TABLE B.2. **Descriptive Statistics.**
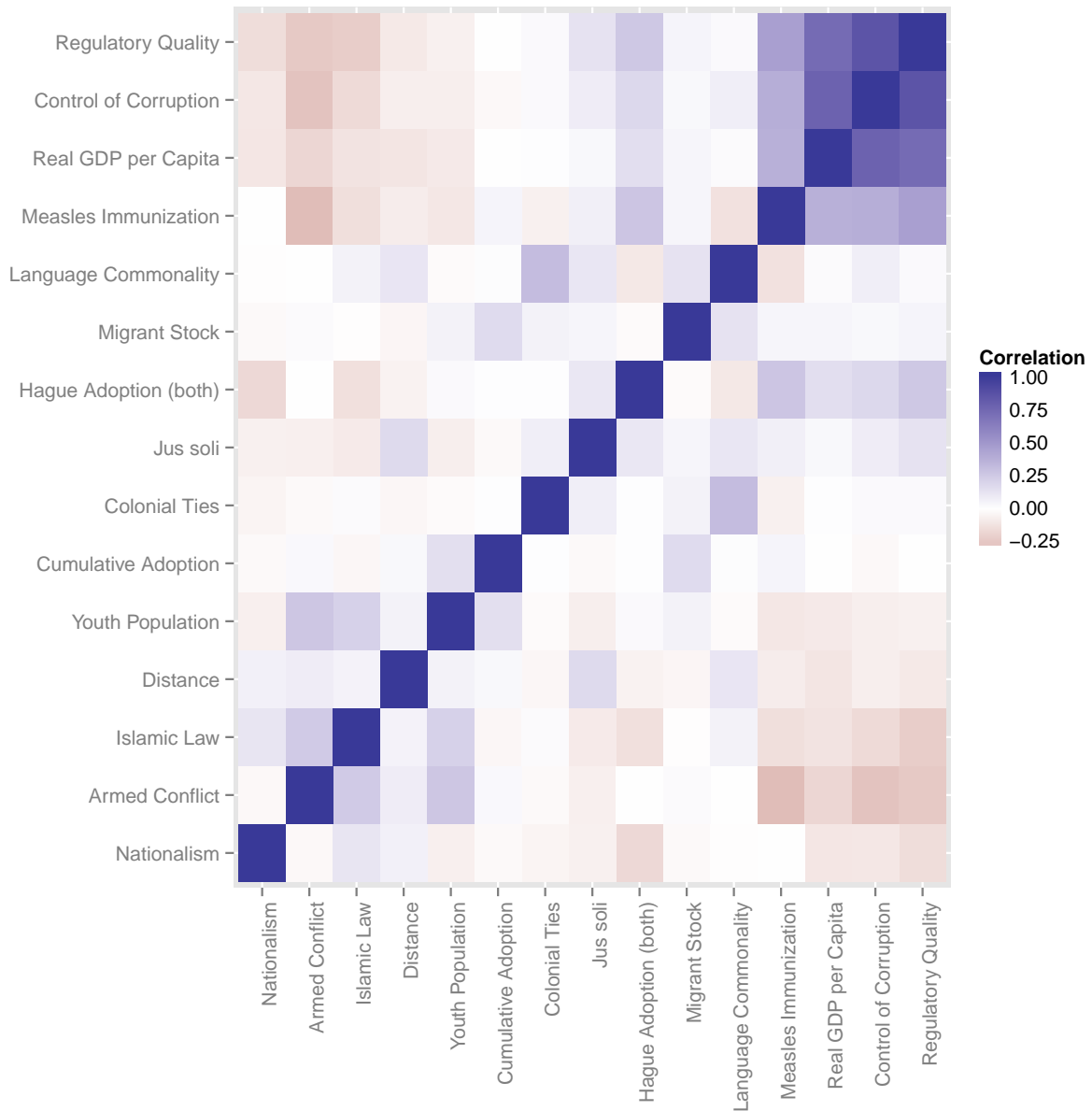
FIG B.1. **Covariate Correlation Matrix.** Correlations between numeric variables are Pearson product-moment correlations, correlations between numeric and ordinal variables are polyserial correlations, and correlations between ordinal variables are polychoric correlations.
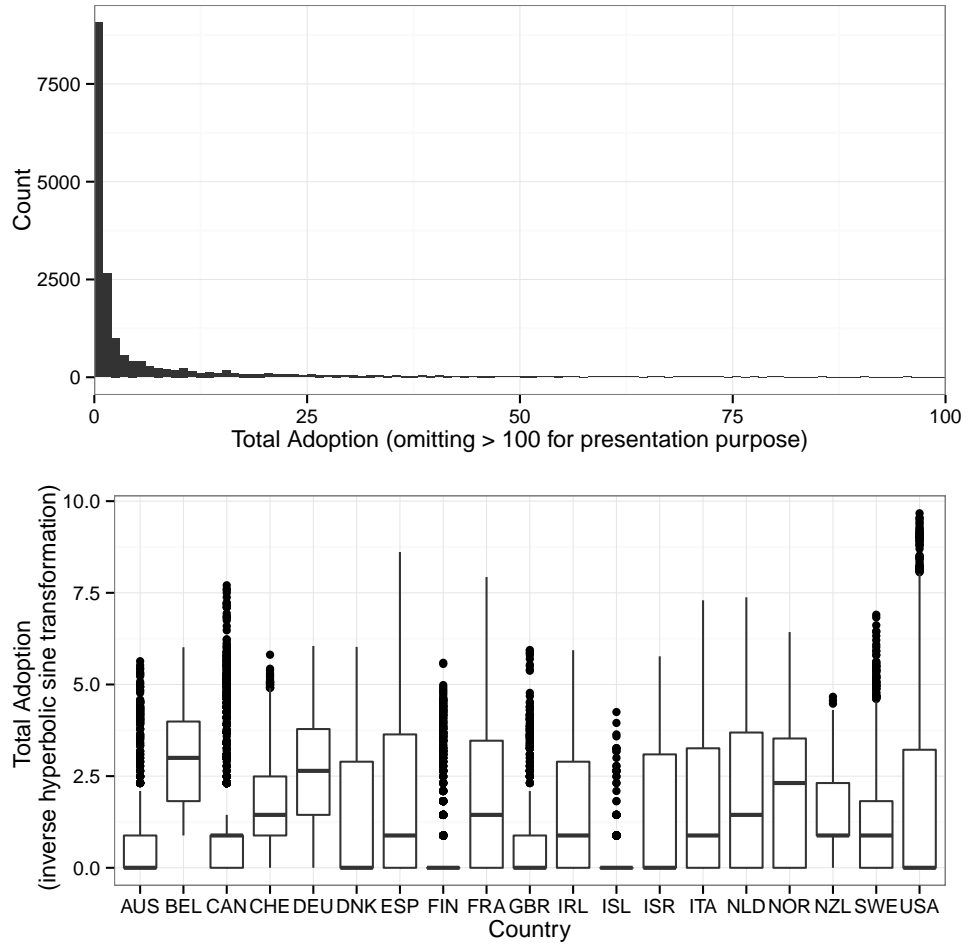
Fɪɢ B.2. **Excess Zeros and Clustering in Directed Dyad Adoption Data.** The top panel shows that 9064 out of 19112 directed dyad-years (or 47.43%) have zero adoptions. Furthermore, 77.98% of all non-zero adoption directed dyad-years have between 1 and 30 adoptions (approximately the mean). The boxplot in the bottom panel shows that dyadic adoption counts further cluster by receiving country. Inverse hyperbolic sine transformation was done for total adoption counts to give clearer picture of clustering.

Appendix C   Imputation Model

Our `Amelia` multiple imputation model includes adoption count as the dependent variable and 55 covariates additional to the ones in Table B.1. Table C.1 summarizes these additional covariates. A codebook with details on all variables in our empirics and the `R` code implementing the imputation model is included in our replication materials.[24]

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[24]Subscript "L1" indicates a variable lagged at t-1, subscript "o" indicates an origin-country characteristic, and subscript "d" indicates a destination-country characteristic.

Variable	Operationalization	Source
adopt_o_allyears	sending country total adoptees sent across all data available years	constructed by authors
contig	whether dyads are contiguous	CEPII (2011)
comlang_off	whether dyads share a common language	CEPII (2011)
evercolony_o	whether sending country ever had a colonial history	CEPII (2011)
dist	kilometers between most important cities/agglomerations in terms of population	CEPII (2011)
commonlegal	common legal system? 1 = yes, 0 = no.	La Porta, Silanes, and Shleifer (2008)
commonreligion	common religion? 1 = yes, 0 = no.	La Porta, Silanes, and Shleifer (2008)
Iflow_L1	migrant flow in dyad-year	Fitzgerald, Leblang, and Teets (2014)
trade_L1	Total dyadic exports and imports in US dollars	IMF DOTS (2010)
creg_muslim_o_L1	percentage of muslims in sending country	CREG (2014)
nat_disasters_o_L1	Number affected by natural disasters in sending country	EM-Dat (2013)
refugees_o_L1	Number of refugees and others in refugee like situations in sending country	UNHCR (2011)
troops_o_L1	total active duty US military personnel in sending country	DMDC (2014)
us_econ_aid_o_L1	US economic aid	USAID (2010)
us_mil_aid_o_L1	US military aid	USAID (2010)
gov_effect_o_L1	Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.	WGI (2013)
rule_law_o_L1	Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	WGI (2013)
rgdpe_o_L1	sending country expenditure-side real GDP at constant 2005 PPPs (in mil. 2005US$)	PWT 8.0 (2013)
rgdpo_o_L1	sending country output-side real GDP at constant 2005 PPPs (in mil. 2005US$)	PWT 8.0 (2013)
pwt_pop_o_L1	sending country population (in millions)	PWT 8.0 (2013)
rgdppc_out_L1	sending country output-side real GDP per capita at constant 2005 PPPs (rgdpo_o_L1/pwt_pop_o_L1)	constructed by authors
Mresidency_o_L1	Number of Years until Citizenship	Leblang (2014)
Mdualcit_o_L1	1 = Dual Citizenship for Immigrants	Leblang (2014)
Mvotingrts_o_L1	1 = Voting Rights for Immigrants	Leblang (2014)
f_pop_L1	Population, female (% of total)	WDI (2013)
f_labor_par_L1	Labor force participation rate, female (% of female population ages 15+) (modeled ILO estimate)	WDI (2013)
f_edu_ratio_L1	Ratio of girls to boys in primary and secondary education (%)	WDI (2013)
f_parli_seats_L1	Proportion of seats held by women in national parliaments (%)	WDI (2013)/IPU
rural_pop_L1	Rural population (% of total population)	WDI (2013)
pop14_per_L1	Population ages 0-14 (% of total)	WDI (2013)
wdi_pop_tot_L1	Population (Total)	WDI (2013)
adol_fertility_rate_L1	Adolescent fertility rate (births per 1,000 women ages 15-19)	WDI (2013)
fertility_rate_L1	Fertility rate, total (births per woman)	WDI (2013)
birth_rate_L1	Birth rate, crude (per 1,000 people)	WDI (2013)
death_rate_L1	Death rate, crude (per 1,000 people)	WDI (2013)
f_pop_hiv_L1	Women's share of population ages 15+ living with HIV (%)	WDI (2013)
immune_dpt_L1	Immunization, DPT (% of children ages 12-23 months)	WDI (2013)
health_expend_L1	Health expenditure, total (% of GDP)	WDI (2013)
urban_pop_L1	Urban population (% of total)	WDI (2013)
islam_law_d	receiving country Islamic law? 1 = yes, 0 = no	CIA (2013)
hague_sign_o_L1	sending country signed Hague Adoption Convention	HCCH (2014)
hague_rat_o_L1	sending country ratified Hague Adoption Convention	HCCH (2014)
hague_entry_o_L1	sending country entered Hague Adoption Convention	HCCH (2014)
hague_sign_d_L1	receiving country signed Hague Adoption Convention	HCCH (2014)
hague_rat_d_L1	receiving country ratified Hague Adoption Convention	HCCH (2014)
hague_entry_d_L1	receiving country entered Hague Adoption Convention	HCCH (2014)
hague_ab_sign_o_L1	sending country signed Hague Abduction Convention	HCCH (2014)
hague_ab_rat_o_L1	sending country ratified Hague Abduction Convention	HCCH (2014)
hague_ab_entry_o_L1	sending country entered Hague Abduction Convention	HCCH (2014)
hague_ab_sign_d_L1	receiving country signed Hague Abduction Convention	HCCH (2014)
hague_ab_rat_d_L1	receiving country ratified Hague Abduction Convention	HCCH (2014)
hague_ab_entry_d_L1	receiving country entered Hague Abduction Convention	HCCH (2014)
hague_adopt_entry_only_o_L1	Only sending country in dyad entered Hague Adoption Convention	constructed by authors
hague_adopt_entry_only_d_L1	Only receiving country in dyad entered Hague Adoption Convention	constructed by authors
hague_abduct_entry_both_L1	Both countries in dyad entered Hague Abduction Convention	constructed by authors

TABLE C.1. **Imputation Model Covariates, Operationalization, and Data Source.**

Appendix D   Fitted Model Parameter Estimates

	Hurdle Model	
	$Prob(Y > 0)$	$E(Y)$
Intercept	2.098***	1.771***
	(0.419)	(0.295)
Regulatory Quality	0.188***	−0.243***
	(0.034)	(0.029)
Nationalism	−0.199**	−0.110*
	(0.065)	(0.052)
ln(Cumulative Adoption)	0.839***	0.700***
	(0.016)	(0.007)
Hague Adoption (both)	−0.356***	−0.257***
	(0.057)	(0.036)
Language Commonality	0.150**	−0.056
	(0.058)	(0.038)
ln(Migrant Stock)	0.043***	0.016
	(0.012)	(0.010)
Colonial Ties	0.422***	0.105^
	(0.101)	(0.057)
ln(Distance)	−0.216***	−0.140***
	(0.033)	(0.020)
ln(Youth Population)	0.153***	0.220***
	(0.016)	(0.011)
ln(Real GDP per Capita)	−0.280***	−0.014
	(0.029)	(0.023)
Measles Immunization	0.007***	0.003**
	(0.001)	(0.001)
Armed Conflict	0.189***	0.028
	(0.055)	(0.033)
Islamic Law	−0.251***	−0.599***
	(0.055)	(0.040)
Num obs.	19112	
Log Likelihood	-41219.041	
AIC	82636.082	

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\wedge}p < 0.1$

TABLE D.1. **Fitted Hurdle Negative Binomial Model Results with Multiple Imputation, 1993-2010.**

Covariates	Prob. Estimates	2.5%	97.5%	Count Estimates	2.5%	97.5%
Regulatory Quality	0.077	0.049	0.104	-2.980	-3.802	-2.251
Nationalism	-0.046	-0.077	-0.017	-0.704	-1.313	-0.067
ln(Cumulative Adoption)	0.717	0.692	0.738	32.869	29.007	37.360
Both Hague	-0.084	-0.112	-0.057	-1.533	-1.955	-1.133
Language Commonality	0.033	0.008	0.058	-0.369	-0.850	0.120
ln(Migrant Stock)	0.054	0.025	0.084	0.632	-0.127	1.283
Colonial Ties	0.089	0.049	0.126	0.750	-0.038	1.696
ln(Distance)	-0.076	-0.098	-0.054	-1.475	-1.997	-1.022

TABLE D.2. Substantive Effect Estimates with Simulated 95% Confidence Intervals

Appendix E   Robustness Checks

E.1   Alternative Models

	Poisson	NegBin	Zero-Inflated Negative Binomial	
			$Prob(Y = 0)$	$E(Y)$
Intercept	1.964***	1.847***	−1.664*	2.097***
	(0.160)	(0.261)	(0.737)	(0.264)
Regulatory Quality	−0.214***	−0.111***	−0.445***	−0.212***
	(0.023)	(0.024)	(0.064)	(0.027)
Nationalism	−0.091***	−0.196***	0.319**	−0.080^
	(0.017)	(0.044)	(0.113)	(0.046)
ln(Cumulative Adoption)	0.789***	0.784***	−0.785***	0.676***
	(0.003)	(0.006)	(0.030)	(0.007)
Hague Adoption (both)	−0.489***	−0.260***	0.299**	−0.268***
	(0.007)	(0.032)	(0.110)	(0.032)
Language Commonality	−0.107***	0.046	−0.280*	−0.049
	(0.008)	(0.034)	(0.111)	(0.033)
ln(Migrant Stock)	0.015*	0.027**	−0.059**	0.015
	(0.006)	(0.009)	(0.020)	(0.009)
Colonial Ties	0.284***	0.236***	−0.615**	0.113*
	(0.013)	(0.054)	(0.216)	(0.051)
ln(Distance)	−0.139***	−0.184***	0.125*	−0.147***
	(0.007)	(0.018)	(0.059)	(0.018)
ln(Youth Population)	0.192***	0.224***	−0.061*	0.207***
	(0.003)	(0.010)	(0.029)	(0.010)
ln(Real GDP per Capita)	−0.081***	−0.112***	0.349***	−0.025
	(0.012)	(0.019)	(0.052)	(0.020)
Measles Immunization	−0.000	0.006***	−0.008**	0.003**
	(0.000)	(0.001)	(0.002)	(0.001)
Armed Conflict	0.150***	0.038	−0.096	0.062*
	(0.004)	(0.030)	(0.094)	(0.029)
Islamic Law	−0.950***	−0.564***	−0.146	−0.571***
	(0.009)	(0.034)	(0.104)	(0.035)
Num obs.	19112	19112	19112	
Log Likelihood	−184318.899	−42391.101	-41418.481	
AIC	368735.797	84882.203	83034.963	

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, ^$p < 0.1$

TABLE E.1. **Robustness Models 1: Poisson, Negative Binomial, Zero-Inflated Negative Binomial Models.**

E.2 Alternative Indicators

	Control of Corruption Hurdle Model		Jus Soli Hurdle Model	
	$Prob(Y > 0)$	$E(Y)$	$Prob(Y > 0)$	$E(Y)$
Intercept	1.264**	1.467***	1.898***	1.537***
	(0.426)	(0.287)	(0.423)	(0.298)
Control of Curruption	−0.001	−0.340***		
	(0.035)	(0.028)		
Nationalism	−0.225***	−0.075		
	(0.064)	(0.052)		
ln(Cumulative Adoption)	0.836***	0.692***	0.843***	0.699***
	(0.016)	(0.007)	(0.016)	(0.007)
Hague Adoption (both)	−0.314***	−0.268***	−0.324***	−0.225***
	(0.056)	(0.035)	(0.056)	(0.035)
Language Commonality	0.193***	0.001	0.166**	−0.013
	(0.058)	(0.038)	(0.058)	(0.038)
ln(Migrant Stock)	0.043***	0.022*	0.041***	0.013
	(0.012)	(0.010)	(0.012)	(0.010)
Colonial Ties	0.430***	0.110^	0.455***	0.108^
	(0.101)	(0.056)	(0.101)	(0.057)
ln(Distance)	−0.214***	−0.136***	−0.192***	−0.114***
	(0.033)	(0.020)	(0.034)	(0.021)
ln(Youth Population)	0.153***	0.228***	0.162***	0.221***
	(0.016)	(0.011)	(0.016)	(0.011)
ln(Real GDP per Capita)	−0.184***	0.012	−0.276***	−0.001
	(0.029)	(0.021)	(0.029)	(0.022)
Measles Immunization	0.007***	0.002^	0.007***	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)
Armed Conflict	0.165**	−0.027	0.169**	0.043
	(0.055)	(0.033)	(0.055)	(0.033)
Islamic Law	−0.281***	−0.607***	−0.281***	−0.615***
	(0.055)	(0.039)	(0.055)	(0.040)
Regulatory Quality			0.207***	−0.229***
			(0.035)	(0.029)
Jus soli			−0.156***	−0.163***
			(0.045)	(0.029)
Num obs.	19112		19112	
Log Likelihood	-41184.589		-41205.235	
AIC	82567.179		82608.471	

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, ^$p < 0.1$

TABLE E.2. **Robustness Models 2: Fitted Hurdle Negative Binomial Models with Alternative Indicators.**

E.3 Alternative Samples of Data

	1991-2010 Obs. Hurdle Model		Exclude < 10 Adoption Obs. Negative Binomial Model
	$Prob(Y > 0)$	$E(Y)$	
Intercept	1.751***	3.850***	2.311***
	(0.412)	(0.338)	(0.289)
Regulatory Quality	0.173***	−0.291***	−0.310***
	(0.034)	(0.033)	(0.029)
Nationalism	−0.237***	−0.173**	0.064
	(0.062)	(0.054)	(0.054)
ln(Cumulative Adoption)	0.846***	0.671***	0.424***
	(0.015)	(0.008)	(0.009)
Hague Adoption (both)	−0.384***	−0.205***	−0.305***
	(0.057)	(0.038)	(0.034)
Language Commonality	0.129*	−0.024	−0.150***
	(0.055)	(0.040)	(0.036)
ln(Migrant Stock)	0.049***	0.027**	0.008
	(0.012)	(0.010)	(0.009)
Colonial Ties	0.442***	0.120*	0.065
	(0.097)	(0.059)	(0.050)
ln(Distance)	−0.221***	−0.146***	−0.083***
	(0.032)	(0.021)	(0.019)
ln(Youth Population)	0.165***	0.256***	0.197***
	(0.016)	(0.011)	(0.010)
ln(Real GDP per Capita)	−0.269***	0.008	0.088***
	(0.028)	(0.024)	(0.023)
Measles Immunization	0.007***	0.004***	0.001
	(0.001)	(0.001)	(0.001)
Armed Conflict	0.158**	0.014	0.094**
	(0.053)	(0.034)	(0.030)
Islamic Law	−0.307***	−0.654***	−0.616***
	(0.054)	(0.041)	(0.041)
Num obs.	20365		4111
Log Likelihood	-43727.763		−20354.171
AIC	87661.525		40808.342

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, ^$p < 0.1$

TABLE E.3. **Robustness Models 3: Fitted Hurdle Negative Binomial Models with Alternative Samples of Data**