

# Do International Treaties Promote Development?

## The Convention on the Rights of the Child and Basic Immunization

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## Abstract

Little evidence is available on whether changing global rules so as to promote human rights can enhance development outcomes. The Convention on the Rights of the Child was almost universally ratified by the mid-1990s, but it is unclear whether treaty ratification was associated with better or wider protection of children's rights. This paper uses an instrumental variable approach to investigate whether treaty ratification was associated

with stronger effort at the country level on child survival, and particularly with higher rates of immunization coverage. The paper finds that ratification of the Convention on the Rights of the Child was correlated with a subsequent increase in immunization rates, but only in upper middle and high-income countries. Treaties can promote development outcomes, but require institutional support to do so.

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## **Do International Treaties Promote Development?**

### **The Convention on the Rights of the Child and Basic Immunization**

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Do international treaties in general, and human rights treaties in particular, promote development?

A large number of studies have questioned the effectiveness of development assistance. A recent paper reviews the literature and, using the political motivation for aid as an instrument in an aid-growth analysis, concludes that there is “little robust evidence of a positive (or negative) relationship between aid inflows into a country and its economic growth.” (Prasad, Rajan and Subramanian 2007 ). As a result of these problems, a number of analysts advocate changes in global rules of interaction in a manner so as to assist developing countries. Perhaps the best known and most studied of these are new rules for the global trade regime and for carbon emissions, but there have also been proposals to promote development by changing rules regarding “odious” debt, extractive industries, banking secrecy, technological standardization, budget transparency, property, and military intervention. Collier notes that the “generation of international norms” would benefit the poorest people in the world, and are relatively cheap when compared to traditional development assistance (Collier 2007 ).

A related approach, long advocated by currents in global civil society, entails a “rights-based approach” to development. Although the use of the term is varied, a rights-based approach often includes some form of legal or quasi-legal accountability for development outcomes, service delivery, development policy formulation, and/or stakeholder participation. Ratification and support of the international human rights regime, especially those treaties related to social and economic rights, is often an element of this approach.

But do explicit attempts to generate new international norms succeed? There is as yet little evidence on the impact of mechanisms such as the Extractive Industries Transparency Initiative, the Kimberly Process for diamonds, or newly available public data on carbon emissions among power plants. One place to look for evidence of the impact of new global norms on development outcomes is the effect of international human rights treaties, particularly those relating to economic and social rights.

This paper addresses the impact of the 1989 Convention on the Rights of the Child (CRC) on childhood immunization rates. The paper also speaks to this broader debate on state motivation for ratifying and complying with international human rights instruments. It advances on existing analyses of

the impact of human rights treaties in three significant ways. First, it utilizes immunization coverage rates as the dependent variable. Immunization coverage is one of the most widely and reliably measured indicators of international well-being now available. As a result, this paper uses a far more precise outcome indicator than other papers, which have typically studied reported killings or incidents of torture, repression of civil and political liberties, and restrictions on speech. Because of the relatively good quality of the immunization data, the paper arguably offers a stronger test of the direct impact of human rights treaties. Second, the paper studies a key indicator related to the rights to survival and health, whereas the majority of existing analyses focus primarily on civil and political rights. Third, the paper investigates heterogeneity of ratification effects, according the level of development of the ratifying country, not just the average effect of treaty ratification.

The next section below forwards three hypotheses regarding ratification of the CRC, and in the process, very briefly reviews the literature on the impact of complying with international human rights treaties. After that the succeeding sections address the reasons why countries ratified the CRC; the data used in the estimations of this paper; the analytical approach; and the key findings.

## **Theoretical expectations**

### *Nonsense upon stilts*

Bentham called natural rights “simple nonsense” and natural and imprescriptible rights “nonsense upon stilts.”(Bentham 2002) Since then, many commentators have similarly argued that natural rights, human rights, and basic rights are unenforceable, meaningless, and ineffectual. In more contemporary guise, these arguments have appeared in the work of international relations realists, who have contended that considerations of state power, rather than international law, will always dominate action in the international realm. Hathaway summarizes the views of realists this way: “if compliance with international law occurs, it is not because the law is effective, but merely because compliance is coincident with the path dictated by self-interest in a world governed by anarchy and relative state power” (Hathaway 2002: 1945-6). Analysts adopting an institutionalist perspective, on the other hand, believe

that international rules can be consequential when they form part of a dominant long-term strategy for state actors. Institutionalism resembles realism, however, in its largely pessimistic view of the likely effects of human rights treaties, which are unlike trade and environmental treaties, in which states that comply can expect reciprocal behavior from other countries. States have no long-term interest in complying with human rights regimes, apart from possible reputational effects.

Some empirical work on the impact of human rights treaties is consistent with these perspectives. Hathaway, using data from State Department country reports, Freedom House data, and the Inter-Parliamentary Union, finds that ratifying countries have the same or lower ratings for genocide, torture, fair trial, civil liberty, or women's political participation (Hathaway 2002). Hafner-Burton and Tsutsui (2004) regress the level of government repression (scaled 1 to 5) on a lagged dependent variable, treaty ratification, and some control variables and find that treaty ratification does not reduce rates of torture or repression, particularly in the worst offenders. Neumayer (2005) similarly estimates civil and personal integrity rights as a function of treaty ratification (European Convention for the Protection of Human Rights, European Convention for the Prevention of Torture, American Convention on Human Rights, Inter-American Convention to Prevent Torture, and the African Charter on Human and Peoples' Rights), and finds that "rarely does treaty ratification human rights." Although some of these papers recognize the endogeneity of treaty ratification, none uses an instrumental variable approach. Simmons (forthcoming 2009) does use an IV approach to estimate the impact of ratifying the CRC on measles and DPT immunization rates and finds that treaty ratification may have had some small effect on measles but not on DPT coverage rates (her approach is described in more detail below).

There are certainly reasons for skeptics to expect that the CRC likewise has little real world impact. The treaty is not enforceable in any powerful sense of the word. In a parallel fashion with other human rights conventions, the CRC did establish a Committee on the Rights of the Child to oversee implementation on the part of signatories and to encourage international cooperation. State parties are required to develop National Plans of Action and periodically report to the Committee. NGOs and civil society actors occasionally alternative reports to the committee, and participate in the review (and

sometimes even the development) of national plans. As an instrument of coercive power, however, the CRC is not a strong instrument.

### *Flypaper and backlash*

Some argue that human rights treaties can even have a deleterious effect on well-being. This can occur in two ways. First, they can distract reformers and activists from mobilizing for real political change. As Rosenberg puts in his account of the impact of domestic legal change, a court's contribution "is akin to officially recognizing the evolving state of affairs, more like the cutting of the ribbon on a new project than its construction." (Rosenberg 1991) Rosenberg goes on to refer to legalization as a kind of "flypaper" that wastes the resources of reformers and that necessarily mobilizes opponents as well. This style of argument can be traced to Marx, who believed that rights were epiphenomenal bourgeois constructs designed to mask real power. Second, human rights treaties can lead to backlash. Helfer documents how the "overlegalization" of the human rights regime led Caribbean governments to opt out of treaty agreements and resulted, in some cases, in worse human rights outcomes. Hathaway's finds that "state expressions of commitment to human rights through treaty ratification may sometimes relieve pressure on states to pursue real changes in their policies and thereby undermine the instrumental aims of those very same treaties." Simmons (forthcoming 2009) argues that some states ratify human rights treaties despite, and in some cases because of, their disagreement with the aims of the treaties. She calls these cases "false positives" and argues that states can use treaty ratification to send a costless and crude signal of their supposed support for human rights to the international community. All of these concerns may well apply to the CRC, in which, as the empirical work below will suggest, states may well have felt pressured to ratify the treaty even if they did not agree with its provisions.

### *Conditional impact*

On the other hand, it is possible that human rights treaties affect well-being directly, but that this impact is conditional. There are at least three ways in which the impact could be conditional. First, it

might depend on the relative strength of domestic political actors (political parties, NGOs, and others) in liberal democratic regimes who support the treaty's goals. In this perspective, in those polities where liberalism and democracy are strong, courts, political actors, and others believe that treaties should be complied with, and ratification strengthens the hand of those political actors who favor the treaty's aims, and who then mobilize more effectively to shape the preferences of the state. There may be some trouble, though, in applying this model to social and economic rights in general and immunization in particular. Social and economic rights treaties are commonly, though not universally, considered to be aspirational claims in many liberal democratic states, rather than law-like instruments. And there is generally very little mobilization for preventive health care and immunization, so the domestic interest groups who could take advantage of the CRC may be extremely small in number. There are, for instance, no well-known global NGOs who make immunization their primary aim, even though immunization is estimated to save some 3 million lives per year (Ehreth, 2003).

Second, the impact of human rights treaties might be conditional on the incorporation of the treaties into domestic law, which is then enforced by independent courts. While this does appear to occur from time to time, courts in many states (Nigeria is an example) take the view that domestic law supersedes international law, and many courts are reluctant to enter into social and economic areas on which they have little expertise and over which other branches of government have traditionally held control. A review of social and economic rights cases in five countries – Brazil, India, Indonesia, South Africa, and Nigeria – found that domestic courts “rarely relied on or even cited international or regional treaty instruments in their written opinions.” (Gauri and Brinks, 2008)

Third, treaties might affect well-being by changing normative views and empowering the bureaucratic elites whose ministries, portfolios, and projects stand the most to gain from the treaty's objectives. On this view, treaties are statements of expressive preferences, but the state's capacity to implement those preferences might be conditional on resources and bureaucratic capacity. This might well apply to immunization, where previous studies have found that immunization rates at the national level are strongly correlated with indicators of national bureaucratic quality.



## **The Ratification of the Convention on the Rights of the Child**

The CRC originated from a proposal of the Polish government to the UN Commission on Human Rights in 1978. Although the US, Swedish, Canadian, and UK representatives to the Commission questioned the need for the convention, Eastern European representatives prevailed on the commission to at least study the issue. Many of the skeptics, including many of the NGOs consulted were, expressed concern about the consistency of the proposed convention with existing international human rights instruments and about the timing of the proposal. An open working group, which included the participation of member states and NGOs, was established in 1979. It met regularly until its work was completed exactly ten years later. Western and Eastern European states were most involved in the working group, with much lower rates of participation on the part of African, Asian, and Latin America states. The convention was adopted by the UN General Assembly on November 20, 1989.

The CRC contains provisions obligating state parties to “respect and ensure” children’s rights relating to, among other goods, life, identity and nationality, family of belonging, privacy, freedom of expression and thought, education, health, social security, standard of living, protection from torture and from sexual and commercial exploitation, and due process and legal assistance. In a fashion parallel to other human rights conventions, the CRC established a Committee (of state-appointed experts) to oversee implementation on the part of signatories and to encourage international cooperation. An amendment to the CRC raised the membership of the committee from ten to 18 people. Optional protocols on the involvement of children in armed conflict and on the abolition of the death penalty were adopted in May 25, 2000. (Optional protocols are additional legal instruments that complement or supplement a treaty).

For the purposes of the present analysis, it is important to point out that the provisions on the right to the “highest attainable standard of health” (Article 24) include an emphasis on primary health care and the encouragement of a “basic knowledge of child health.” Article 6, moreover, establishes an obligation on the part of State Parties to “ensure to the maximum extent possible” child survival. The terms “child survival,” “primary health care,” and “basic knowledge of child health” had, by the time of

the adoption of the treaty in 1989, become closely associated with UNICEF's efforts to reduce infant and child mortality. Throughout the 1980s, UNICEF had been supporting the efforts of countries to encourage breastfeeding, widen access to ante- and post-natal care, conduct growth monitoring, use oral rehydration to reduce morbidity and mortality associated with childhood diarrhea, encourage child spacing, and make the basic six vaccines for childhood diseases (diphtheria, pertussis, tetanus, measles, polio, and tuberculosis) more widely available, in conjunction with WHO's Expanded Program on Immunization (EPI). UNICEF's Universal Childhood Immunization campaign (UCI) ran from 1985-1990, and was a crucial element of the prevailing approach to child survival. In ratifying the treaty, state parties indicated their commitment to, among other elements, the prevailing and widely accepted approach to child health.

Ratification of the treaty was rapid: by September 1990, some twenty states had ratified the convention; by December 1992, 127 countries had ratified it, and 27 others had signed it, making it one of the most quickly adopted instruments in the "international bill of rights." (LeBlanc 1995 ) Figure 1 below illustrates this phenomenon: by 1995 ratification of the treaty was nearly universal.

## **Data and models**

Data on immunization coverage from 1988-2007 were obtained from WHO and UNICEF. These measure the proportion of children who have received the DTP3 and measles vaccine at one year of age and are obtained from either service delivery records or, where available, from cluster surveys carried out under the auspices of the WHO's Expanded Programme on Immunization. Although several studies have voiced concern over the disparity between coverage rates reported from service delivery records and "actual" coverage rates measured by sample surveys (Boerma et al. 1990 , UNICEF 1996 , WHO 1999 ), one study compared these data with household-level DHS data from 82 countries and found that, in general, using reported rates as a dependent variable is reasonable, and did not exhibit any significant evidence for systematic bias. Correlations between measles and DTP3 rates at the national level are quite high (Gauri and Khaleghian 2002).

Most studies use household surveys and explain variance in childhood immunization “uptake” or “demand” with characteristics of children’s mothers and their households, often but not always including community-level fixed effects. These studies invariably find maternal education and household socioeconomic to be correlated with the probability of childhood immunization, but there are disparate findings concerning the extent to which these are causally related to immunization status, and whether measurable maternal and household characteristics might be proxies for other underlying factors or for characteristics of the communities of residence. (Desai and Alva 1998 ; Streatfield , Singarimbun, and Diamond 1990; Gage, Sommerfelt, and Piani 1997; Pebley , Goldman, and Rodriguez 1996; Steele , Diamond, and Amin 1996). National literacy rates or other education variables are not included in the estimations below, however, because they do not appear significant in studies of national-level determinants of immunization outcomes (Gauri and Khaleghian 2002). In addition, education and literacy data were not available for a large number of country-years in the period studied, meaning that the sample sizes would be some 80% smaller unless the large majority of data points for education and literacy were interpolated – an approach not taken in this paper.

Data on the dates of ratification were taken directly from online information provided by the United Nations. Other control variables were extracted from the World Bank’s Development Data Platform (GDP, population, population density), the Polity IV database (the polity variable, which ranges from -10 for the most autocratic to +10 for the most democratic), the International Country Risk Guide (bureaucratic quality). The variables chosen are similar to those used in a paper on the political and institutional determinants of immunization (Gauri and Khaleghian 2002). That study, which used data from 1980-1997, found that immunization rates were positively related bureaucratic quality, democracy (at low and high levels of income), population density, and national income, and negatively related to population size. The present paper uses data from 1989, the year the CRC became available for ratification, to 2007.

The decision to ratify the CRC may be endogenous to policies related to children’s rights. Put more plainly, countries that are already compliant with, or intend to comply with, a treaty’s requirements

might be more likely to sign it; in other words, treaties function as a vehicle for expressing preferences that states already have – treaties are window dressing. Or, at the other end of the spectrum, states that have no intention of complying with human rights treaties might sign them just to get international pressure groups, including other states, off their backs – treaties as fig leaves. As a result, the basic regression models for the impact of ratifying the CRC on immunization rates estimate two-staged least squares equations of the form:

$$\mathbf{X}_{it} = a_0 + a_1 \mathbf{Z}_{it} + \mathbf{W}_{it} + \mathbf{v}_{it}$$

$$\mathbf{Y}_{it} = b_0 + b_1 \mathbf{X}_{it} + \mathbf{c}_i + \mathbf{d}_t + \mathbf{u}_{it}$$

$\mathbf{X}$  is the ratification status of the CRC for country  $i$  in year  $t$ ;  $\mathbf{Z}$  is a matrix of instruments for ratification status, including the average regional ratification for country  $i$  in year  $t$  and whether or not the country has a common law legal origin;  $\mathbf{W}$  is a set of control variables;  $\mathbf{Y}$  is the immunization rate for country  $i$  at time  $t$  (DTP or measles);  $\mathbf{c}$  is a matrix of country fixed effects;  $\mathbf{d}$  is a simple linear time trend; and  $\mathbf{v}$  and  $\mathbf{u}$  are error terms. Some of the robustness checks described below modify this basic specification.

What would be a useful instrument for treaty ratification? Because so many countries ratified the CRC so quickly, the identification of an instrument is not easy. It is useful to review the theoretical arguments that might explain human rights treaty adoption. Goodliffe and Hawkins (2008) argue that, *ceteris paribus*, common law countries will be more reluctant to ratify international human rights treaties because they typically have stronger and more activist judges whose power generates uncertainty regarding how treaties might be interpreted in the future. It may also be the case that countries with socialist legal traditions were more likely to ratify the CRC because of ideological affinities and Cold War legacies. Chau and Kanbur (2001) argue that states are more likely to adopt social rights standards when their peers have done so, though this seems to hold for certain labor rights standards and not for others. Finally, Hathaway (2002) argues that democracies are more likely to ratify international human rights treaties because their normative outlooks overlap substantially with the objectives enumerated in the treaties. Since most treaties entail some reporting processes, ratification is not entirely costless; and it may be the case that richer countries are more likely to ratify human rights treaties.

For the purposes of this paper, the instruments to be used are the ratification decisions of peers, and common law legal origin. “The ratification decisions of peers” is operationalized as the average ratification rate of all countries except country *i* in the region in a given year. The regions used are geographic: Latin America, North America, Sub-Saharan Africa, Middle East and North Africa, Western Europe, Eastern Europe, former Soviet Union, East Asia, and South Asia. Data on common law origin are taken from La Porta (1997). Although democracy and GDP per capita are correlated with CRC ratification, they are not used as an instrument because it is known to be associated with immunization rates. Similarly, socialist countries reported relatively high immunization rates, given their income levels (Gauri and Khaleghian 2002).

Empirical support for these instruments is found in Table 1, which reports results from a Cox proportional hazards models in which the censoring events are ratification of the CRC, ratification of the optional protocol on children in armed conflict (OPAC), and ratification of the optional protocol on the sale and trafficking of children (OPST). The table shows that the average regional ratification rate predicts a country’s CRC ratification at a level of just over  $p=0.05$ , though it does not predict ratification of the optional protocols as strongly. Countries with lower GDP per capita were less likely to ratify the CRC and the optional protocols in any given year. Common law countries were less likely to ratify the CRC and the optional protocols, as theory would expect. The predictive power of the common law origin variable is stronger for the protocols than for the treaty itself, perhaps because those protocols address topics that already have substantial existing statutory and case law in several law countries (e.g., pornography and conscription); and concerns related to the future actions of courts are likely to weigh more heavily on ratification decisions. The table shows that immunization rates do not predict ratification, which supports the use of the average regional ratification rate as an instrumental variable. Table 2 presents linear correlations, which show that neither the average regional ratification rates nor common law legal origin are strongly correlated with the dependent variables. In the estimations of impact below, then, regional ratification rates and common law legal heritage will be used as instrumental variables to control for the endogeneity of ratification decision.

## Findings

Table 3 shows OLS estimation results for the basic OLS model for both DPT and measles. In the basic model without CRC status, the control variables for the most part take the expected sign – national income, bureaucratic quality, democracy, population density, and the linear trend variable (year) are all positive in columns one for DPT. In column seven for measles, GDP is negative (though not significant), and democracy has no effect. The key variable of interest, CRC ratification, is negative and significant at  $p=0.05$  for DPT (column 2) and negative and significant at  $p=0.10$  for measles (column 8). This suggests that ratification is correlated with lower than expected immunization rates in subsequent years, all other things being equal. But the data reveal an interesting pattern if the sample is split by income level. For both DPT and measles, CRC has a negative coefficient in the case of low and lower middle-income countries, but positive coefficients for upper middle and high-income countries. Only the coefficient for lower middle-income countries is significant at  $p=0.05$  for DPT, but three of the four income level subsamples are significant at that level for measles. Note that country fixed effects and a year trend are included in these models, so the significance of ratification variable is not merely a reflection of a global trend.

Table 4 subjects these results to IV estimations, controlling for the endogeneity of the ratification decision with average regional ratification rate in a given year and legal origin as instruments. Again, the CRC variable is dichotomous for each country-year: it is 0 if a country has not ratified in a given year and 1 if it has; and the estimations include country fixed effects and a simple annual trend variable. The key finding from this table is that the IV estimations replicate the finding from OLS regressions: although the overall effect of CRC ratification is negative (though not significant, see columns 1 and 6), the effect of ratification is negative for low and lower middle-income countries but positive for upper middle and high-income countries. This time, the coefficient on CRC ratification is significant at  $p=0.05$  for both the upper middle and high-income countries for DPT and measles. It appears that the effect of CRC ratification is

not constant, and is mediated by a country's income level, or with some other institutional characteristic correlated with income level.

Tables 5 and 6 test the robustness of this finding for both DPT and measles, respectively, for upper middle-income countries; and tables 7 and 8 test the robustness of the finding for DPT and measles, respectively, for high-income countries. Column 1 in each of these tables replaces the democracy measure with a measure of democracy that removes political competition from the construction of the democracy-autocracy measures, leaving only the components related to executive recruitment and executive constraints. The concern is that political competition might incorporate civil conflict, which conceptually is independent of regime type (see Vreeland, 2008). CRC remains significant in column 1 three of the four tables (and is nearly significant in Table 7). Column 2 removes common law legal origin as an instrumental variable, on the concern that common law legal heritage is arguably associated with better governance and therefore higher immunization rates (Engerman and Sokoloff 1999). CRC remains significant both for upper middle and high-income countries, for DPT and measles. Column 3 uses a random effects rather than a fixed effects specification. The CRC variable remains significant in both estimations for upper middle-income countries, and for measles in high-income countries. Column 4 uses explanatory variables lagged one year rather than contemporaneous explanatory variables, including ratification status in year  $t-1$ , to explain immunization in year  $t$ . CRC remains significant in the measles estimation for high-income countries, falls to a significance level of  $p=0.07$  for DPT in both upper and middle and high-income countries, and loses significance in the measles estimation for upper middle-income countries. Column 5 substitutes two (upper middle income) or three (high income) splines for the linear year trend. The coefficient on the CRC variable remains significant in both upper middle-income country estimations and the measles regression for high-income countries, and falls to a significance level of  $p=0.07$  for DPT in high-income countries.

Finally, column 6 includes a lagged dependent variable. Simmons (forthcoming 2009), who estimates the impact of ratifying the CRC on measles and DPT immunization rates and finds that treaty ratification may have had some small effect on measles but not on DPT coverage rates, uses a lagged

dependent variable in her estimation. Lagged dependent variables typically bias estimates of other regressors known to affect the dependent variable. GDP per capita, for example, which is uniformly correlated with immunization coverage in the literature, is not significant in Simmons' specifications. Lagged dependent variables also entail theoretical commitments to a dynamic account that may or may not hold. In this case, the introduction of a lagged immunization rates on the right hand side would suggest that the ratification of the CRC acts independently of other explanatory variables; in other words, there are no interaction effects between CRC and, say, GDP per capita – an assumption that the split sample estimations in Tables 5-8 show does not hold. It is impossible for a model with a lagged dependent variable to capture those interaction effects because the coefficients on the other explanatory variables are estimated with bias. As expected, most of the explanatory variables loses significance when including a lagged dependent variable (implausibly, GDP is not significantly related to immunization rates in these estimations), and CRC remains significant only in the estimation for measles in upper middle-income countries, consistent with Simmons finding of a stronger effect for measles than for DPT.

Columns 7 and 8 in Tables 7 and 8 attempt to examine whether correlates of GDP per capita, rather than national income per se, are driving the results. Column 7 restricts the sample to the quartile of countries with the highest democracy scores. This estimation finds that CRC is significant for the case of measles but not for DPT. The results are essentially the same when the sample is restricted to the quartile with the highest score on Vreeland's (2008) modified democracy rating that extracts political competition (not shown). Column 8 restricts the sample to the quartile of countries with the highest rating for bureaucratic quality, and finds that CRC remains significant for both measles and DPT. This brief investigation into the drivers of the differential impact of CRC ratification for high income countries is, then, inconclusive. The effect may be driven by democracy, or by bureaucratic quality, or both. Another approach would be to insert interaction term between CRC ratification and these correlates of national income, rather than splitting the sample. But this would require an instrumental variable valid for the interaction term, which is difficult to identify.



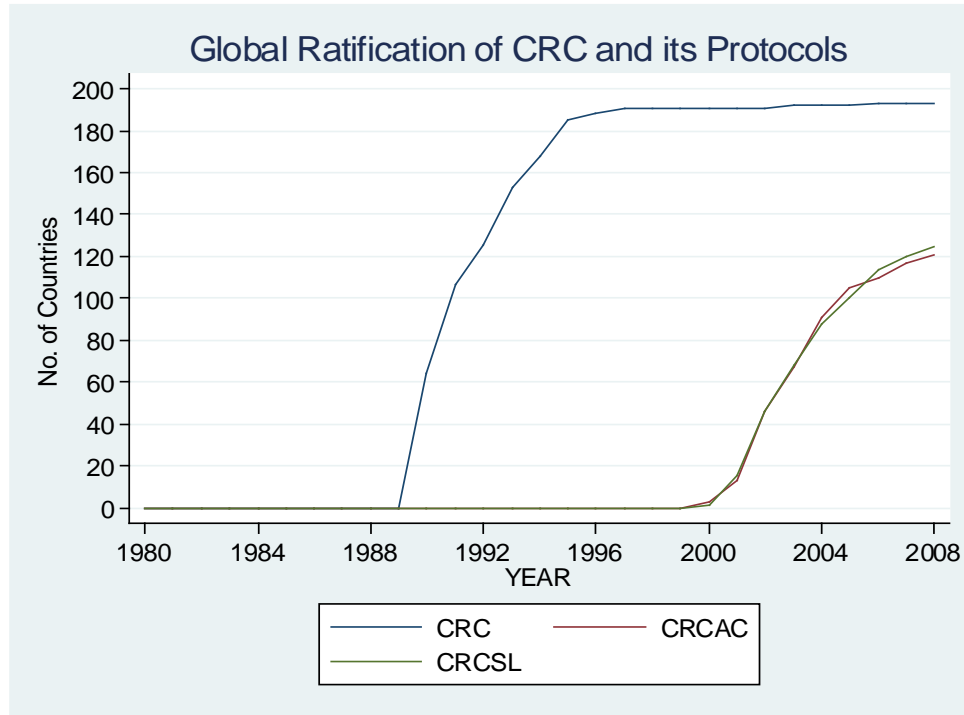
In summary, the estimations in the tables show that while CRC ratification was associated with lower subsequent immunization rates for the average country, ratification had the effect of raising immunization coverage rates in upper middle and high income countries. This was probably related to the institutional characteristics of upper middle and high income countries, rather than the effect of income per se because immunization materials and delivery for the basic childhood vaccines are relatively inexpensive.

## **Conclusion**

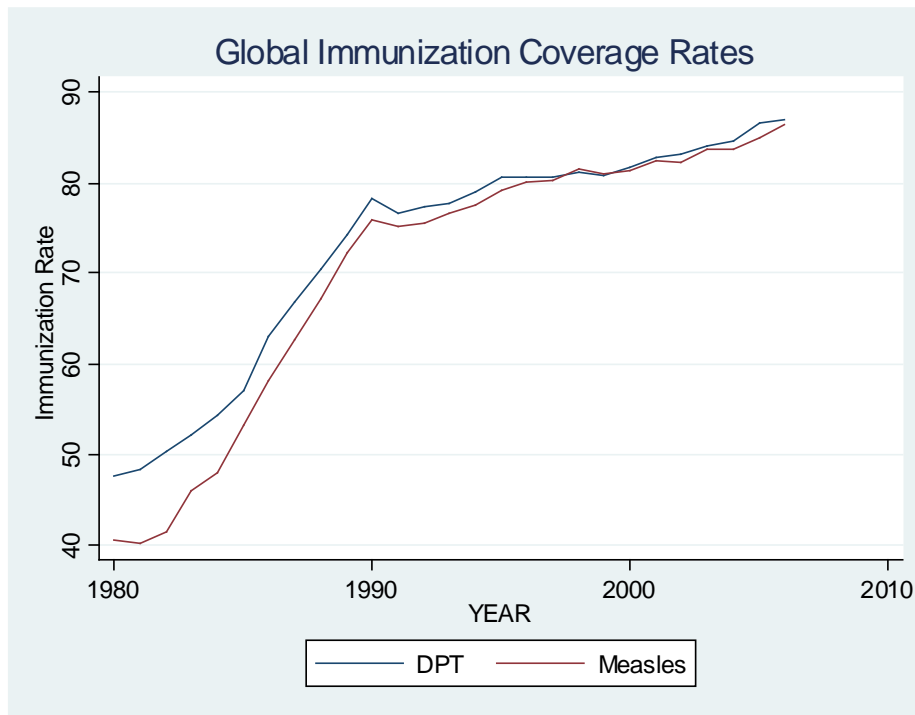
The findings in this paper offer mixed results for the prospects of using treaties to promote development outcomes. Ratification of the CRC does appear to raise immunization rates modestly, but only for countries at higher levels of income. Although immunization is itself not an expensive public health intervention – the total cost of the basic six EPI childhood vaccines has widely been estimated at \$5 to \$15 per child (Mahoney et al 2000) – building a primary health care delivery system, setting up and maintaining appropriate incentives, and monitoring performance require substantial bureaucratic capacity. The upshot of the paper, then, is that treaties can promote development outcomes, but that they cannot circumvent problems associated with low bureaucratic capacity, clientelism, and other shortcomings in governance.

The main theoretical finding is that studies of the impact of human rights treaties need to disaggregate the effect of ratification on different kinds of countries, an approach that to date has been missing in the literature.

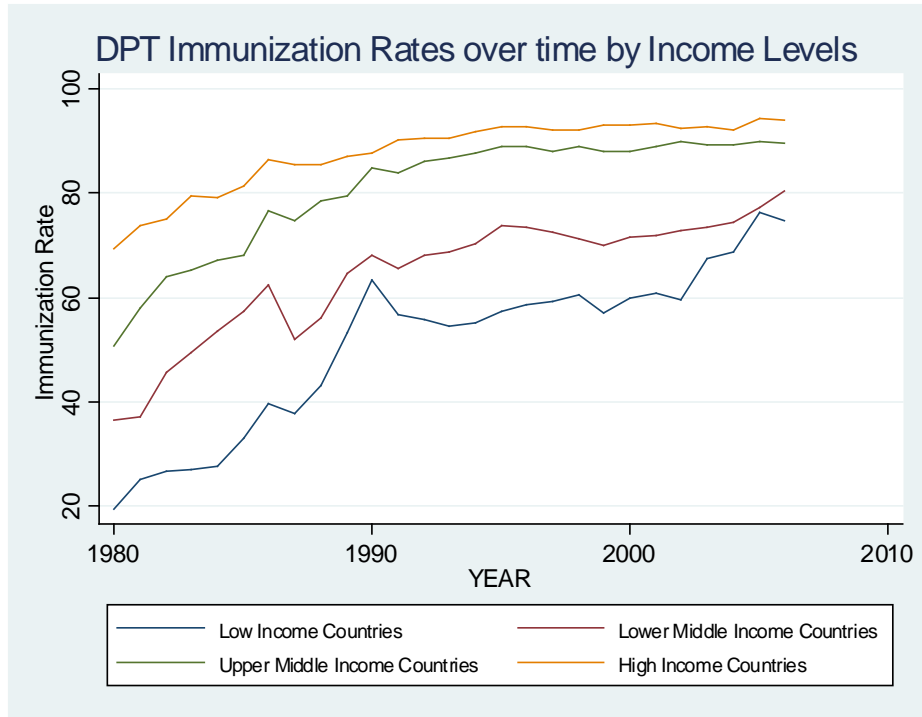
## **Figure 1: Global Ratification of CRC and its Protocols**



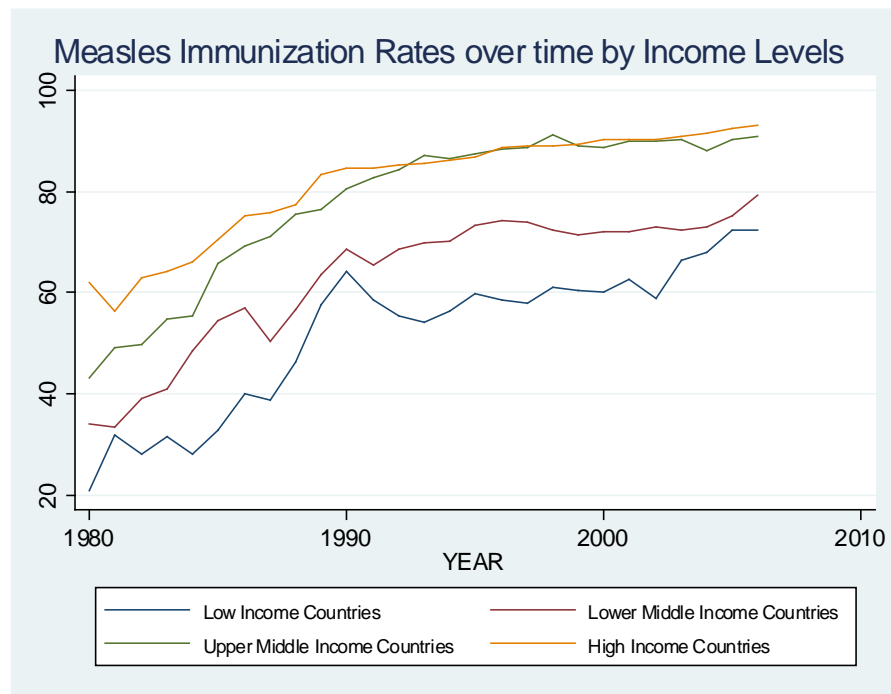
**Figure 2: Global Immunization Coverage Rates**



**Figure 3: DPT Immunization Rates Over Time by Income Levels**



**Figure 4: Measles Immunization Rates over time by Income Levels**



**Table 1: Predicting Ratification**

	1988-2007		
	CRC	OPAC	OPST
Average ratification rate in the <b>region</b>	0.908 (1.95)	0.628 (1.29)	0.604 (1.24)
Common law legal origin	-0.287 (1.73)	-0.358 (2.06)*	-0.381 (2.20)*
GDP per capita (in constant 2000 US dollars, log)	-0.129 (2.38)*	-0.137 (2.14)*	-0.148 (2.42)*
DPT Immunization Rates (log)		-0.015 (0.05)	
Measles Immunization Rates (log)			0.068 (0.23)
Observations	606	551	549

Absolute value of z statistics in parentheses \* significant at 5%; \*\* significant at 1%

**Table 2: Correlations**

	Average CRC ratification rate in the <b>region</b>	Common law legal origin
DPT Immunization Rate (log)	0.079	0.069
Measles Immunization Rate (log)	0.112	0.047

**Table 3: Impact of Ratification, OLS**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)	Measles rate (log)	Measles rate (log)	Measles rate (log)	Measles rate (log)	Measles rate (log)	Measles rate (log)
	All Countries	All Countries	Low Income	Lower Middle Income	Upper Middle Income	High Income	All Countries	All Countries	Low Income	Lower Middle Income	Upper Middle Income	High Income
Convention on the Rights of the Child- yes/no (CRC)	---	-0.038 (3.28)**	-0.002 (0.03)	-0.086 (3.03)**	0.011 (0.8)	0.013 (1.27)	---	-0.019 (1.71)	-0.061 (0.9)	-0.067 (2.58)*	0.037 (2.37)*	0.021 (1.97)*
GDP per capita (in constant 2000 US dollars, log)	0.047 (1.52)	0.085 (2.78)**	0.341 (2.40)*	0.12 (1.55)	-0.11 (2.76)**	0.264 (6.59)**	-0.041 (1.42)	-0.016 (0.55)	0.179 (1.35)	-0.076 (1.06)	-0.068 (1.5)	-0.073 (1.72)
ICRG-Bureaucratic Quality	0.007 (1.05)	0.01 (1.49)	-0.017 (0.52)	-0.014 (1.07)	0.017 (2.54)*	0.088 (8.38)**	0.005 (0.78)	0.006 (1.03)	-0.021 (0.69)	-0.008 (0.66)	0.033 (4.43)**	-0.018 (1.6)
Democracy Score	0.002 (1.6)	0.002 (1.83)	-0.002 (0.32)	-0.001 (0.3)	-0.003 (1.57)	-0.019 (3.12)**	0 (0.35)	0 (0.38)	-0.004 (0.75)	-0.002 (0.89)	-0.006 (2.55)*	-0.026 (3.86)**
Population Density (log)	4.353 (6.41)**	4.301 (6.63)**	7.237 (5.01)**	-2.79 (1.5)	0.691 (0.25)	0.43 (0.42)	4.928 (7.66)**	4.909 (8.01)**	8.524 (6.30)**	-1.329 (0.78)	0.627 (0.2)	-1.002 (0.91)
Total Population (log)	-3.899 (5.72)**	-3.839 (5.90)**	-4.946 (3.50)**	3.059 (1.64)	-0.308 (0.11)	-0.522 (0.51)	-4.67 (7.24)**	-4.65 (7.57)**	-6.127 (4.63)**	0.998 (0.58)	-0.317 (0.1)	0.878 (0.81)
YEAR	0.001 (0.81)	0.001 (0.77)	-0.043 (1.77)	0.007 (1.32)	0.005 (3.13)**	-0.001 (1.16)	0.007 (4.99)**	0.007 (4.86)**	-0.044 (1.95)	0.021 (4.24)**	0.006 (3.05)**	0.009 (6.22)**
Constant	48.402 (5.52)**	47.391 (5.63)**	140.374 (3.15)**	-50.8 (2.03)*	-2.522 (0.07)	11.364 (0.9)	48.292 (5.82)**	48.127 (6.06)**	158.44 (3.80)**	-49.352 (2.14)*	-3.628 (0.09)	-21.555 (1.6)
Observations	2074	2056	209	572	614	635	2074	2056	209	572	614	635
Number of group(countryc)	127	126	19	44	52	48	127	126	19	44	52	48
R-squared	0.16	0.17	0.35	0.13	0.26	0.25	0.17	0.18	0.38	0.12	0.26	0.2

Absolute value of t statistics in parentheses \* significant at 5%; \*\* significant at 1%. Country fixed effects are included but not reported.

**Table 4: Impact of Ratifying the CRC on Immunization, IV Regressions**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)	Measles rate (log)	Measles rate (log)	Measles rate (log)	Measles rate (log)	Measles rate (log)
	All	Low Income	Lower Middle Income	Upper Middle Income	High Income	All	Low Income	Lower Middle Income	Upper Middle Income	High Income
Convention on the Rights of the Child- yes/no (CRC)	-0.028 (1.53)	-0.132 (1.19)	-0.077 (1.78)	0.056 (2.90)**	0.048 (2.41)*	-0.001 (0.07)	-0.15 (1.46)	-0.033 (0.82)	0.091 (4.18)**	0.067 (3.19)**
GDP per capita (in constant 2000 US dollars, log)	0.087 (2.83)**	0.362 (2.52)*	0.123 (1.58)	-0.121 (3.00)**	0.289 (6.84)**	-0.013 (0.45)	0.193 (1.44)	-0.065 (0.91)	-0.082 (1.78)	-0.041 (0.9)
ICRG-Bureaucratic Quality	0.009 (1.48)	-0.02 (0.6)	-0.015 (1.09)	0.019 (2.80)**	0.083 (7.60)**	0.006 (1.02)	-0.023 (0.75)	-0.009 (0.74)	0.035 (4.68)**	-0.025 (2.12)*
Democracy Score	0.002 (1.73)	0.002 (0.38)	-0.001 (0.31)	-0.004 (2.12)*	-0.021 (3.29)**	-0.001 (0.53)	-0.001 (0.18)	-0.002 (1)	-0.007 (3.11)**	-0.027 (4.05)**
Population Density (log)	4.314 (6.64)**	7.646 (5.16)**	-2.778 (1.5)	0.741 (0.27)	0.801 (0.76)	4.931 (8.04)**	8.805 (6.37)**	-1.29 (0.75)	0.688 (0.22)	-0.509 (0.45)
Total Population (log)	-3.855 (5.92)**	-5.309 (3.68)**	3.046 (1.63)	-0.386 (0.14)	-0.915 (0.87)	-4.676 (7.61)**	-6.377 (4.74)**	0.953 (0.55)	-0.412 (0.13)	0.357 (0.32)
YEAR	0.001 (0.51)	-0.043 (1.76)	0.007 (1.24)	0.004 (2.62)**	-0.003 (2.08)*	0.006 (4.27)**	-0.044 (1.95)	0.02 (3.96)**	0.005 (2.51)*	0.006 (3.75)**
Constant	48.278 (5.68)**	145.125 (3.22)**	-50.125 (1.99)*	0.134 0	19.356 (1.45)	49.562 (6.18)**	161.713 (3.85)**	-46.731 (2.01)*	-0.411 (0.01)	-10.955 (0.77)
Observations	2054	209	570	614	635	2054	209	570	614	635
Number of group(countryc)	125	19	43	52	48	125	19	43	52	48

Absolute value of t statistics in parentheses: \* significant at 5%; \*\* significant at 1%. Country fixed effects included but not reported.

**Table 5: Sensitivity Analysis for DPT, Upper Middle Income Countries, IV with country fixed effects**

	(1)	(2)	(3)	(4)	(5)	(6)
	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)
Convention on the Rights of the Child-yes/no (CRC)	0.052 (2.79)**	0.056 (2.90)**	0.058 (2.95)**	0.006 (0.16)	0.087 (3.98)**	0.026 (1.51)
GDP per capita (in constant 2000 US dollars, log)	-0.12 (2.92)**	-0.121 (3.00)**	-0.049 (1.91)		-0.118 (2.88)**	-0.067 (1.78)
ICRG-Bureaucratic Quality	0.018 (2.62)**	0.019 (2.80)**	0.02 (3.00)**		0.021 (3.07)**	0.008 (1.24)
Polity2x	-0.008 (2.28)*					
Population Density (log)	0.533 (0.19)	0.741 (0.27)	0.046 (3.22)**		1.644 (0.59)	0.02 (0.01)
Total Population (log)	-0.172 (0.06)	-0.386 (0.14)	0.011 (0.92)		-1.21 (0.43)	0.168 (0.07)
YEAR	0.004 (2.59)**	0.004 (2.62)**	0.007 (6.32)**	0.005 (3.19)**		0.003 -1.86
Democracy		-0.004 (2.12)*	-0.003 (1.69)		-0.004 (1.94)	-0.003 (1.55)
GDP per capita (in constant 2000 US dollars, log) (Lag)				-0.106 (2.62)**		
Log DPT Immunization Rate (Lag)						0.372 (10.05)**
B-spline on [1989,1995)					-0.044 -1.87	
B-spline on [1995,2000)					-0.048 (2.45)*	
B-spline on [2000,2006)					-0.029 -1.8	
ICRG-Bureaucratic Quality (Lag)				0.001 (0.11)		
Democracy (lag)				-0.002 (0.91)		
Log Population Density (Lag)				0.63 (0.19)		
Log Total Population (Lag)				-0.332 (0.1)		
Constant	-2.482 (0.07)	0.134 (0)	-9.005 (4.48)**	-1.836 (0.04)	19.047 (0.54)	-5.339 (0.16)
Observations	610	614	614	580	614	611
Number of group(countryc)	52	52	52	52	52	52

**Table 6: Sensitivity Analysis for Measles, Upper Middle Income Countries, IV with country fixed effects**

	(1) Measles rate (log)	(2) Measles rate (log)	(3) Measles rate (log)	(4) Measles rate (log)	(5) Measles rate (log)	(6) Measles rate (log)
Convention on the Rights of the Child-yes/no (CRC)	0.078 (3.68)**	0.091 (4.18)**	0.096 (4.42)**	0.082 (1.88)	0.105 (4.25)**	0.06 (2.92)**
GDP per capita (in constant 2000 US dollars, log)	-0.098 (2.11)*	-0.082 (1.78)	-0.006 (0.23)		-0.053 (1.15)	-0.04 (0.91)
ICRG-Bureaucratic Quality	0.03 (3.97)**	0.035 (4.68)**	0.034 (4.61)**		0.035 (4.43)**	0.022 (3.09)**
Polity2x	-0.007 (1.89)					
Population Density (log)	0.49 (0.16)	0.688 (0.22)	0.036 (2.85)**		1.733 (0.55)	0.3 (0.1)
Total Population (log)	-0.209 (0.07)	-0.412 (0.13)	0.008 (0.73)		-1.36 (0.43)	-0.134 (0.05)
YEAR	0.005 (2.57)*	0.005 (2.51)*	0.006 (5.39)**	0.005 (2.68)**		0.003 (1.51)
Democracy		-0.007 (3.11)**	-0.005 (3.04)**		-0.006 (2.88)**	-0.005 (2.24)*
GDP per capita (in constant 2000 US dollars, log) (Lag)				-0.046 (0.95)		
Log Measles Immunization Rate (Lag)						0.318 (8.26)**
B-spline on [1989,1995)					-0.035 (1.32)	
B-spline on [1995,2000)					-0.021 (0.95)	
B-spline on [2000,2006)					-0.013 (0.73)	
ICRG-Bureaucratic Quality (Lag)				0.02 (2.44)*		
Democracy (lag)				-0.004 -1.55		
Log Population Density (Lag)				(0.372) -0.1		
Log Total Population (Lag)				(0.189) -0.05		
Constant	-3.024 (0.07)	-0.411 (0.01)	-8.067 (3.71)**	-3.78 (0.08)	20.629 (0.52)	-1.202 (0.03)
Observations	610	614	614	580	614	611
Number of group(countryc)	52	52	52	52	52	52



**Table 7: Sensitivity Analysis for DPT, High Income Countries, IV with country fixed effects**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)	DPT rate (log)
Convention on the Rights of the Child-yes/no (CRC)	0.037 (1.95)	0.048 (2.41)*	0.027 (1.35)	0.048 (1.87)	0.046 (2.14)*	-0.006 (0.37)	0.026 (1.62)	0.018 (1.02)
GDP per capita (in constant 2000 US dollars, log)	0.235 (5.69)**	0.289 (6.84)**	0.045 (2.14)*		0.26 (7.26)**	0.034 (0.98)	0.006 (0.15)	0.21 (4.95)**
ICRG-Bureaucratic Quality	0.085 (8.03)**	0.083 (7.60)**	0.079 (7.38)**		0.085 (7.98)**	0.044 (5.23)**	0.037 (4.72)**	0.019 (0.89)
Polity2x	0.045 (3.79)**							
Population Density (log)	1.255 (1.22)	0.801 (0.76)	-0.01 (0.91)		0.675 (0.64)	-0.451 (0.57)	0.23 (0.09)	2.04 (1.84)
Total Population (log)	-1.363 (1.34)	-0.915 (0.87)	-0.008 (0.7)		-0.811 (0.78)	0.392 (0.49)	0.039 (0.01)	-2.042 (1.88)
YEAR	-0.002 (1.4)	-0.003 (2.08)*	0.002 (1.29)	-0.002 (1.54)		0.001 (0.76)	0.002 (1.23)	-0.001 (0.93)
Democracy		-0.021 (3.29)**	-0.007 (2.59)**		-0.022 (3.37)**	-0.009 (1.86)	0.019 (1.22)	-0.005 (1.18)
GDP per capita (in constant 2000 US dollars, log) (Lag)				0.252 (5.79)**				
Log DPT Immunization Rate (Lag)						0.606 (20.05)**		
B-spline on [1989,1995)					0.036 (1.84)			
B-spline on [1995,2000)					0.016 (1.08)			
B-spline on [2000,2006)					0.01 (0.85)			
ICRG-Bureaucratic Quality (Lag)				0.072 (6.65)**				
Democracy (lag)				-0.018 (2.77)**				
Log Population Density (Lag)				0.05 (0.05)				
Log Total Population (Lag)				-0.174 (0.16)				
Constant	22.27 (1.72)	19.356 (1.45)	0.992 (0.44)	9.228 (0.68)	12.022 (0.98)	-4.853 (0.48)	-0.772 (0.02)	29.662 (2.17)*
Observations	633	635	635	606	635	635	720	405
Number of group(countryc)	48	48	48	47	48	48	51	29

**Table 8: Sensitivity Analysis for Measles, High Income Countries, IV with country fixed effects**

	(1) Measles rate (log)	(2) Measles rate (log)	(3) Measles rate (log)	(4) Measles rate (log)	(5) Measles rate (log)	(6) Measles rate (log)	(7) Measles rate (log)	(8) Measles rate (log)
Convention on the Rights of the Child-yes/no (CRC)	0.054 (2.61)**	0.067 (3.19)**	0.051 (2.47)*	0.082 (3.04)**	0.088 (3.82)**	-0.003 (-0.18)	0.049 (2.29)*	0.071 (3.33)**
GDP per capita (in constant 2000 US dollars, log)	-0.095 (2.13)*	-0.041 (0.9)	-0.002 (0.08)		-0.007 (0.18)	-0.031 (0.93)	-0.308 (5.95)**	-0.043 (0.83)
ICRG-Bureaucratic Quality	-0.02 (1.76)	-0.025 (2.12)*	-0.015 (1.37)		-0.028 (2.42)*	-0.011 (1.25)	-0.019 (1.76)	-0.004 (0.17)
polity2x	0.037 (2.88)**							
Population Density (log)	-0.08 (0.07)	-0.509 (0.45)	0.002 (0.14)		-0.3 (0.26)	-0.511 (0.62)	2.482 (0.71)	0.492 (0.37)
Total Population (log)	-0.077 (0.07)	0.357 (0.32)	-0.002 (0.18)		0.153 (0.13)	0.475 (0.58)	-2.627 (0.75)	-0.624 (0.47)
YEAR	0.007 (4.54)**	0.006 (3.75)**	0.004 (3.37)**	0.007 (4.36)**		0.004 (3.09)**	0.014 (7.54)**	0.004 (2.55)*
Democracy		-0.027 (4.05)**	-0.005 (1.78)		-0.027 (3.88)**	-0.015 (2.94)**	0.02 (0.93)	-0.005 (0.98)
GDP per capita (in constant 2000 US dollars, log) (Lag)				-0.05 (1.09)				
Log Measles Immunization Rate (Lag)						0.46 (21.05)**		
B-spline on [1989,1995)					-0.069 (3.28)**			
B-spline on [1995,2000)					-0.045 (2.77)**			
B-spline on [2000,2006)					-0.016 (1.24)			
ICRG-Bureaucratic Quality (Lag)				-0.024 (2.10)*				
Democracy (lag)				-0.026 (3.86)**				
Log Population Density (Lag)				-0.964 (0.85)				
Log Total Population (Lag)				0.756 (0.67)				
Constant	-8.318 (0.59)	-10.955 (0.77)	-3.666 (1.56)	-16.863 (1.2)	3.597 (0.27)	-10.174 (0.97)	12.302 (0.29)	4.497 (0.27)
Observations	633	635	635	606	635	635	720	405
Number of group(countryc)	48	48	48	47	48	48	51	29

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