Free Traders and Drug Smugglers: The Effects of Trade Openness on States’ Ability to Combat Drug Trafficking

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ABSTRACT

The theoretical literature presents conflicting expectations about the effects of trade openness on the ability of states to interdict drug trafficking. One view expects that trade openness will undermine drug interdiction; a second argues the opposite; a third argues that trade openness does not necessarily affect drug interdiction. This article assesses empirically the effects of trade openness on drug interdiction for countries in the Americas using a pooled time-series cross-sectional statistical model. It finds that trade openness decreases the interdiction capabilities of states in drug-consuming countries while increasing those of states in drug-producing countries. Greater openness to trade does not have a consistently significant effect on the interdiction capabilities of states in drug transit countries.

I believe that the biggest problems to our security in the twenty-first century and to this whole modern form of governance will probably come not from rogue states or people with competing views of the world in governments, but from the enemies of the nation-state, from terrorists and drug runners, and organized criminals who, I predict, will increasingly work together and increasingly use the same things that are fueling our prosperity: open borders, [open commerce] and the Internet. . . . And we have to find a way to cooperate, to deal with enemies of the nation-states, if we expect progressive governments to succeed.

—President Bill Clinton, November 21, 1999

Controversy still swirls around the effects of trade openness on jobs and wages in the industrialized world. Like President Clinton, some scholars and policymakers view trade openness as fueling the prosperity of nation-states, while others blame trade openness for massive job losses and wage suppression (Lawrence 1996; Ahmad 2004; Teeple 1995). President Clinton’s comment also underscores another controversy that involves how organized criminal organizations, such as drug cartels, exploit the opportunities of economic openness and ultimately threaten the security of nation-states. How openness to trade affects the ability of states to respond to this threat is the issue this article addresses.
Does the expansion of trade openness weaken the ability of states to combat drug trafficking? Some researchers argue that trade openness undermines the ability of states to effectively execute the "war on drugs." Others contend that trade openness can enhance the ability of states to combat the drug trade. Still others argue that trade openness does not necessarily affect states' ability to interdict drug trafficking. While the various issues that surround trade openness and the security problems that are associated with drug trafficking have captured the attention of policymakers and scholars, competing views about the effects of trade openness on the interdiction capabilities of states have been subjected to almost no large-N empirical investigation. The contributions of this study therefore are twofold: it offers an alternative perspective on how openness to trade affects states' ability to combat the drug trade; and it systematically investigates these competing perspectives in the context of a large-N statistical design.

Like most global industries, the structure and operation of the illicit drug industry is defined in terms of an international division of labor or, more specifically, a narcotic international division of labor (NIDL) (Wallerstein 1974, 1984). Given certain endowments of geography or wealth, some countries find their niche as the drug industry's primary producers; others find their niche as transit centers; and other countries serve as the industry's principal consumers. This study argues that depending on a country's niche in the NIDL, trade openness will have different effects on states' ability to combat the drug trade. Trade openness will enhance the drug interdiction capabilities of states in drug-producing countries while weakening the interdiction efforts of states in drug-consuming countries. In countries that serve as transit centers for drug smugglers, trade openness will have a limited effect on the drug interdiction capabilities of these states. This study empirically tests the theory in the regional context of the Western Hemisphere. It utilizes a statistical model that analyzes the effect of the interaction between trade openness and countries' niche in the NIDL on the level of cocaine interdiction by states in the Americas from 1984 to 2003.

After briefly reviewing the debate over the effects of trade openness on the drug interdiction capabilities of states, the central hypotheses derived from these perspectives are provided. This study contributes to this debate by introducing an alternative perspective. The study proceeds with a discussion of the operationalization of the explanatory and dependent variables, along with the problems and limitations of doing empirical research using drug interdiction data, and how the research design used here addresses these problems. The statistical model that is used to analyze the data is presented, along with the detailed empirical findings. The concluding section evaluates the policy implications of this research and discusses future research efforts in this area of study.
THE TRADE LIBERALIZATION–DRUG INTERDICATION CONTROVERSY

The existing literature on the effects of trade openness on the drug interdiction capabilities of states posits three competing propositions: trade openness undermines the drug interdiction capabilities of states; trade openness enhances the drug interdiction capabilities of states; and trade openness does not necessarily affect the drug interdiction capabilities of states. These views comprise the various arguments that are presented below. The literature gives no theoretical consideration to the differentiation among countries in terms of how they are linked in the NIDL and that given these differences, the effect of trade openness on the drug interdiction capabilities of states may vary across countries. There may be a fourth perspective, however, which demonstrates the importance of taking these differences into consideration.

Trade Openness Undermines Drug Interdiction

The first argument under this rubric is that trade openness increases the sheer volume of legal cross-border trade and provides cover for drug smuggling by providing ample opportunity to conceal illicit cargo in licit trade. Consequently, the problem for law enforcement is to detect illicit commerce from licit trade. As trade openness keeps expanding the volume of legal trade, states' ability to detect and interdict drug trafficking is severely diminished (Lepgold 1998; Williams 1994a, 1994b; Trevorton 1999; Serrano 2002; Stares 1996; Flynn 1993; Andreas 1998).

The large volume of containerized traffic mitigates against intrusive inspections by border and customs officials. According to Paul Stares, in the late 1990s, the top ten seaports in the world processed 33.6 million containers, as opposed to 11.4 million in the previous ten years. Seaports in Singapore and Hong Kong processed more than 6 million containers, while seaports in Los Angeles and Rotterdam processed more than 2 and 3 million containers respectively (Stares 1996). Today, the sheer volume of trade via containerized shipping networks has allowed drug traffickers to conceal illicit cargo and has significantly lowered the probability of being detected by law enforcement.

According to the second argument, trade openness has fostered the integration of financial markets and has provided drug traffickers with more opportunities to launder money and invest in other activities, legal or illegal, further strengthening the drug industry while weakening the efforts of law enforcement to monitor the flow of drug money into the legitimate economy (Andreas 1998; Stares 1996; Wisotsky 1986). In recent years, drug traffickers have developed more sophisticated techniques of laundering drug proceeds through the legal economy. Today,
drug money is laundered through the stock market, Internet banking and Internet casino, the insurance and real estate industries, credit and debit card schemes, the diamond and gold industries, currency markets, the entertainment industry, and the hotel and rental car industries (Financial Action Task Force on Money Laundering 2003).

A third argument is that in the short and medium term, trade openness has a displacement effect on a country's work force. People who have lost jobs due to trade reforms are more likely to turn to the drug industry for alternative means of employment, thereby strengthening the drug industry with an ample supply of recruits (Hurrell and Woods 1999; Held and McGrew 2000; George 1992; Taylor 2002). Trade openness reforms that remove preferential trade policies, like the European Union's Lomé Trade Accords of 1975, which were designed to benefit the commodity exports of African, Caribbean, and Pacific countries, have significantly reduced the income of producers in developing countries; these producers could turn to the drug industry for alternative income (Jamaica Daily Gleaner 1996).

The fourth view from this perspective argues that by fostering the expansion of trade and global transportation networks, trade openness has also encouraged the cooperation and the formation of alliances among criminal organizations across different countries. Such cooperation expands the power and reach of cartels to distant markets and polities and thereby strengthens their ability to evade detection by local law enforcement (Williams 2002; Clawson and Lee 1996; Williams 1994b; Kerry 1998). It has been reported that criminal organizations work together to coordinate their money-laundering activities by having different criminal organizations handle specific stages of the laundering process. One organization structures the process through which financial transactions will be laundered, while another criminal group provides the "dirty" money to be cleaned. Moreover, a criminal organization that may have laundered money for another organization in one instance may reverse roles and provide its own "dirty" money to that organization for laundering on another occasion (Financial Action Task Force on Money Laundering 2002). The arguments from this perspective generate the following proposition:

**H.1:** Increasing levels of trade openness enhance the ability of drug traffickers to avoid interdiction by states.

**Trade Openness Enhances Drug Interdiction**

The first argument from this perspective is that the financial gains from trade will reduce the incentive to participate in the drug industry. Trade openness can open new markets to domestic producers who would oth-
erwise resort to exporting illicit drugs (Martin 1993; Dillin 1989; Clawson and Lee 1996; Lee 1989).²

The second view argues that trade openness will increase revenues to states via an influx of foreign direct investment. Increases in government revenues can be used to improve the overall drug enforcement capabilities of states. Increased revenues can also be used to purchase modern radar and surveillance technology and to improve the training and intelligence-gathering operations of drug enforcement personnel. Moreover, expanded revenues would also enable governments to provide higher wages and better benefits to law enforcement personnel, making them less vulnerable to bribes and the corruptive lure of drug money (Mabry and Perl 1989; U.S. Department of Defense 1991; Anderson 1988).

The third view argues that extensive trade openness among states can encourage greater cross-border drug enforcement coordination between law enforcement agencies in different countries. According to proponents of the North American Free Trade Agreement (NAFTA), one of the benefits of that trade accord is the increased antinarcotic cooperation between the United States and Mexico. Similarly, European integration has made possible the institutionalization of police and judicial cooperation across Europe in combating drug trafficking and other transnational crimes. While trade openness facilitates the integration of markets, it also strengthens cross-national cooperation in the gathering and sharing of intelligence that is relevant in the interdiction and prosecution of drug smugglers (Anderson et al. 1995; McLaughlin 1992; den Boer 2002; den Boer and Walker 1993). The arguments from this perspective generate the following proposition:

H.2: *Increasing levels of trade openness will increase the ability of states to interdict drug trafficking.*

**Trade Openness Does Not Necessarily Affect Drug Interdiction**

The first argument from this perspective is that the extent of trade expansion is grossly exaggerated, because world trade, as a percentage of gross domestic product, is roughly the same today as it was before World War I. There is no evidence to suggest that the ratio of illegal to legal trade is increasing. In fact, given the degree to which trade flows have become liberalized, the opportunities for transnational crime could be declining relative to the total level of international economic exchange. Therefore it is not clear what effect trade openness does have on transnational crime, such as drug trafficking, and consequently on the ability of law enforcement to interdict drug smuggling (Naylor 2002; Serrano 2002).
The second perspective is that while the openness of financial markets is vital to world trade, there is no consistent evidence that a change from a restricted exchange-control market to a liberalized market has had more than a modest effect on the level of financial crimes like money laundering. The openness of financial markets has had a negligible effect on the amount of money laundered, and has not necessarily weakened the efforts of law enforcement in combating illicit financial transfers from drug trafficking (Levi 2002; Naylor 2002).

The third view argues that the much-touted relationship between trade openness and the rise in drug trafficking may actually be spurious, because the expansion of legitimate trade has been accompanied by an equivalent increase in the selective criminalization of trade via government prohibitions. Therefore, trade openness may not have any effect on the ability of states to interdict drug trafficking (Serrano 2002).

The fourth view argues that while trade openness has made modern commerce more dependent on advanced communications and transportation technology than ever before, the impact of technology on illicit smuggling today and on the ability of governments to interdict smuggling may be no greater than those produced by the introduction of the railroad and the automobile in the early decades of the twentieth century (Naylor 2002; Serrano 2002). The arguments from this perspective generate the following proposition:

H.3: Increasing levels of trade openness will have no effect on the ability of states to interdict drug trafficking.

THE EFFECT OF TRADE OPENNESS ON DRUG INTERDICTION VARIES ACROSS COUNTRIES

The essential limitation of the existing literature is that it assumes that the effects of trade openness on drug interdiction will be uniform in spite of the different niches that countries occupy in the NIDL. In other words, the literature predicts that trade openness will have either a positive, a negative, or no effect on the ability of states to combat drug trafficking. This study offers an alternative perspective, which posits that the effects of trade openness on drug interdiction will vary depending on a country's niche in the NIDL.

Trade Openness and Interdiction in Drug-Producing Countries

Counterfactually, in the absence of trade openness, indigenous cartels would displace legitimate firms from the production process. The money-laundering activities of drug cartels can result in the cheapening
of hard currency relative to the local currency. The narco-induced appreciation of the exchange rate can reduce the competitiveness of the products of legitimate firms in domestic and foreign markets, which will ultimately reduce their market share and, in the process, shrink the tax base that finances the state's drug enforcement policies. Moreover, in the absence of trade openness, the growth of the drug industry does not provide any backward or forward linkages to the legal economy and does very little to stimulate economic growth in the legitimate sectors of the economy (Clawson and Lee 1996).

Increasing levels of trade openness, by contrast, is likely to encourage joint venture investments between local and transnational firms and thereby provide access to foreign markets for local products and boost economic growth and domestic employment—all of which discourages participation in the drug industry and adds revenue to the state's coffers to finance its counternarcotics operations (Johnson 1970, 55).

By increasing the number of joint venture investments between local and transnational firms, moreover, trade openness will efficiently mobilize resources that would otherwise flow to the illicit economy (Biersteker 1981, 2). Relative to domestic firms, transnational corporations have a greater capacity to mobilize domestic capital, labor, and the technology needed for production. It is more likely that in the absence of trade openness, more domestic resources would flow to the drug industry and would not be used productively in the legitimate economy (Vernon 1975, 20–21). Therefore, in mobilizing domestic resources for legitimate production, trade openness would not only increase the state's tax base but also reduce resources that would be available to the drug industry. This discussion generates the following proposition:

H.4: Increasing levels of trade openness will increase the ability of states in drug-producing countries to interdict drug trafficking.

Trade Openness and Interdiction in Drug-Consuming Countries

The consumption of illicit drugs in many drug-producing countries in Latin America is significantly less than in the United States. According to Colombia's National Drug Council, in 1994, just 1.4 percent of the population, or 1.4 million people, had consumed illicit cocaine at some time in their lives, while in the United States, drug consumption among lifetime users involved 31 percent of the population, or 77 million people (Colombian National Drug Council 1994). According to the United Nations World Drug Report 2006, since the 1980s, the United States remains the largest single cocaine market, accounting for more than 40 percent of all cocaine users in the world. The annual prevalence of
cocaine use between ages 15 to 64 in the United States is 2.8 percent of the population, or 6.38 million people. The annual prevalence of cocaine use in South America (including Central America and the Caribbean) for the same age range is only 0.7 percent of the population. The largest opiate market in the Americas is also the United States, with approximately 1.2 million heroin users (United Nations Office on Drugs and Crime 2006).

The strong U.S. demand for illicit drugs, coupled with the nation's relatively high levels of trade openness, will increase the sheer volume of licit and illicit trade, which is likely to overwhelm the interdiction capabilities of the state. During the 1980s and 1990s, it took five U.S. customs officers three hours to inspect one container (Stares 1996). Since the terrorist attacks of September 11, 2001, U.S. Customs and Border Protection has significantly improved the speed and efficiency of port and cross-border inspections with the purchase of modern, automated systems and sophisticated surveillance technology; but the same two factors continue to make drug smuggling into the United States a lucrative enterprise and provide smugglers with new and creative ways of evading the most sophisticated detection technologies. Given the large volume of trade that comes into the United States, Raymond W. Kelly, former CBP commissioner, notes, “finding contraband hidden among hundreds of millions of travelers and billions of dollars of trade is literally like finding a needle in a haystack” (U.S. Customs and Border Protection 2000a). Whenever U.S. Customs uncovers one method of concealment by drug smugglers, it merely forces them to take alternative measures to evade detection (U.S. Customs and Border Protection 2000b). This discussion generates the following proposition:

**H.5:** Increasing levels of trade openness will reduce the ability of states in drug-consuming countries to interdict drug trafficking.

**Trade Openness and Interdiction in Drug Transit Countries**

The geography of the Western Hemisphere makes Central American and Caribbean countries convenient transshipment sites for South American drug producers that target markets in the United States and Canada. According to U.S. policymakers, in the 1990s, the primary security threat to the United States was the transshipment of large amounts of cocaine through the Caribbean Basin (Perl 1993–94; Tokatlian 1994). How would trade openness affect the interdiction capabilities of states in transit countries? It is argued that while Caribbean Basin countries have gained from various trade openness arrangements, such as the Caribbean Basin Initiative (CBI) and the General System of Preferences
NAFTA, for example, has diverted Caribbean Basin trade from the North American market. Trade economists predicted that under NAFTA, the Caribbean Basin would experience a significant displacement of its textile and apparel exports to North America (Hufbauer and Schott 1992). The preferential concessions under the CBI and the GSP to promote export diversification among Central American and Caribbean Basin countries has been largely undermined by Mexico's preferential access to the U.S. and Canadian markets under NAFTA (Hutchinson and Schmacher 1996). As a direct result of trade and investment diversion, the Caribbean Basin has suffered the closing of more than 150 apparel plants and the loss of more than 123,000 jobs. With the inception of NAFTA, Mexican textile exports to the U.S. and Canadian markets have grown at three times the rate of those from the Caribbean Basin. In Jamaica, garment exports fell by 7 percent, resulting in the loss of more than 7,000 jobs. Guyana, Belize, and St. Lucia have recorded even larger job losses (Rother 1997). The World Trade Organization ruling against the Lomé Convention, which was established to give Caribbean Basin banana and sugar exporters preferential access to the European market, also reduced the competitiveness and export earnings of the region's producers (Dodwell and James 1993).

Thus, while the Caribbean Basin countries have gained from free trade arrangements like the CBI and the GSP, these gains were offset by later losses that were attributed to free trade policies emanating from outside the region. On balance, trade openness may not generate the level of revenue that is needed to finance effectively the counternarcotics operations of the state. It is therefore expected that trade openness will not have a significant impact on the drug interdiction capabilities of states in the transit countries of Central America and the Caribbean. This discussion generates the following proposition:

H.6: Increasing levels of trade openness will have no effect on the ability of states in drug transit countries to interdict drug trafficking.

Measuring the Effects of Trade Openness on Drug Interdiction

Hypotheses 1 through 6 can be tested by estimating drug interdiction utilizing a pooled time-series cross-sectional analysis of the data for all member countries of the Organization of American States, spanning the period 1984–2003. The central explanatory and dependent variables of the research are operationalized; then the limitations of empirical research using narcotic interdiction data are discussed. The research
design in this study, which includes a battery of theoretically and empirically motivated proxy variables, attempts to solve these limitations.

**Primary and Dependent Variables**

The primary explanatory variable is trade openness and the country's niche in the NIDL. Following convention, this study adopts a measure of trade openness that is featured in many political and economic analyses of trade and financial flows in the global economy (Li and Reuveny 2003; Dreher 2006). The variable is taken from the World Bank's *World Development Indicators 2006* and is computed as the yearly aggregate of a country's total imports and total exports (in millions of U.S. dollars) divided by its GDP in constant 1995 U.S. dollars. This variable measures the extent to which a country's economy is open if a large share of its GDP comes from trade (World Bank 2006).

The trade openness variable interacts with a trichotomous variable, which represents differences in a country's niche in the NIDL. DPC is coded 1 if a country is a primary drug-producing country and 0 otherwise. DTC is coded 1 if a country is a primary drug transit country and 0 otherwise. DCC is coded 1 if a country is a primary drug-consuming country and 0 otherwise. These codes were adopted from various issues of the CIA's *World Fact Book*.6

The dependent variable is the level of drug interdiction, operationalized as the yearly interdiction of cocaine measured in kilograms. The drug interdiction data were collected from the OAS Inter-American Drug Abuse Control Commission (CICAD n.d.).

**Control Variables**

*Number of Drug Enforcement Personnel.* Researchers in sociology and criminal justice have provided theoretical and empirical reasons for considering differences in the size of law and drug enforcement agencies in combating the drug trade (Tulder 1992). In following these researchers, it is considered that differences in the size of government agencies responsible for drug enforcement would affect the level of drug interdiction. Specifically, it is expected that countries with more drug enforcement personnel are more likely to have higher levels of interdictions than in countries where the number of drug enforcement personnel is small.7

The drug enforcement personnel data were adopted from various issues of *The Military Balance* (Institute for Strategic Studies 1984–2006).

*U.S. Aid and Bilateral Drug Maritime Interdiction Agreements with the United States.* An important factor that affects the interdiction capabilities of governments in the Western Hemisphere is the provision of aid to countries that U.S. policymakers deem to be cooperating with the
United States in combating drug trafficking. U.S. aid to support counter-narcotics operations may have a positive impact on the amount of drugs that recipient countries actually interdict. This study therefore controls for the level of U.S. aid given to Western Hemisphere countries to support drug interdiction operations. Data for this variable were collected from the U.S. Agency for International Development, U.S. Overseas Loans and Grants.

We also control for whether countries in the region are parties to a maritime drug interdiction agreement with the United States, because such agreements may enhance the interdiction capabilities of governments in the Western Hemisphere. Bilateral maritime agreements with the United States allow for joint sea and helicopter searches of vessels involved in transporting illegal drugs within the territorial waters of respective governments. These agreements also permit land and sea patrols by the U.S. Coast Guard and Navy, as well as maritime searches and seizures and drug arrests by U.S. law enforcement authorities within the sovereign boundaries of countries in the region (DEA Strategic South American/Caribbean Unit 2001). This indicator is a dichotomous variable that measures whether or not countries in our sample, in any given year, are signatories to a maritime interdiction agreement with the United States. This variable is coded 1 if a country is party to this agreement and 0 otherwise. The variable was collected from the U.S. Department of State and various issues of the *International Narcotics Control Strategy Report* (U.S. State Department 1988, 1992).

**Money Laundering and Government Corruption.** Interviews with DEA financial investigative agents suggest that the extent to which a country's banking and financial sectors become instruments for smugglers to conceal, move, and launder drug proceeds is an important factor that undermines states' drug interdiction capabilities (Walters 2001). Money laundering represents the corruption of a country's financial system. While the various service providers of a country's financial sector may not know the criminal nature of the proceeds they help to move or conceal, others launder proceeds with full knowledge of the fund's illegal origin (Financial Action Task Force on Money Laundering 2002). Because drug traffickers value the convenience of easily laundering drug proceeds while smuggling drugs through various countries, it is argued that states whose banking and financial sectors fail to implement internationally recognized anti-money-laundering measures as established by the Financial Action Task Force are less likely to interdict drug trafficking. Since money laundering may weaken the drug interdiction capabilities of states, we control for this phenomenon.

Government corruption can grease the wheels of drug trafficking by improving the efficiency of smuggling, enabling traffickers to smuggle
drugs in and out of countries with impunity (Leff 1964; Lui 1985; Kaufmann and Wei 1999; Galtung 2000). Drug traffickers are therefore more likely to move their drugs through countries where government corruption is embedded in the normal operations of the state and its agents, as opposed to countries where government agents and institutions are relatively clean. Since corruption undermines the integrity of the state and its officials, high levels of corruption are expected to have a negative effect on a government's ability to interdict drugs.

The data that measure whether a country is cooperating to implement international anti-money-laundering measures were collected from various issues of the FATF *Report on Money Laundering Typologies* (2001-3). This variable is coded 1 if a country in any given year is listed by the FATF as failing to implement international anti-money-laundering measures or 0 otherwise. The corruption variable for countries in our sample was collected from the Transparency International Perception Corruption Index. Scores on the index range from 0 (which indicates a country where business transactions are entirely penetrated by government corruption) to 10 (which indicate a perfectly clean government).

**Behavioral Factors**

To test the differential effects of trade openness on drug interdiction, it is important to consider the factors that shape the behavior of drug traffickers, since the behavior of traffickers affects states' ability to interdict drug trafficking. But because drug trafficking is an illicit enterprise, the behavior of drug traffickers is unobservable, and therefore cannot be measured directly (OECD. Statistics Directorate et al. 2002). Therefore, a significant limitation of empirical research on narcotics interdiction research is that it cannot be observed how traffickers adjust their behavior in response to the interdiction measures of drug enforcement officials (Crawford et al. 1988). If drug enforcement forces in Costa Rica, for example, rigorously patrol the country's territorial waters and air space, then traffickers seeking to penetrate the U.S. market could simply move their smuggling operations through Haiti, where drug enforcement surveillance may be less rigorous (Adams 2002; Green 2002).

In essence, empirical research on drug interdiction must address the problem of spatial correlation. This simply means that the interdiction of drugs across countries is related. This study therefore constructed a variable that is intended to capture the effects of spatial correlation on drug interdiction throughout the Americas. This variable is defined as the Drug Enforcement Effort of Neighboring Countries in the region (for the formula, see the appendix).

Another limiting factor is that because drug trafficking is unobservable, we cannot observe what portion of the total amount of drugs
being smuggled is actually interdicted. High levels of interdiction may reflect the reality that larger rather than smaller amounts of drugs are being smuggled into countries (Bagley 1989; Stares 1996). Research on narcotics interdiction is therefore limited by imperfect data because interdiction itself is imperfect.\textsuperscript{10}

In addressing this limitation, economists in recent years have developed methodological models that utilize proxy variables that indirectly measure the size of the underground economy (OECD Statistics Directorate et al. 2002; Tanzi 1982a; Pozo 1996; Frey and Pommerehne 1982). The design of the present study draws on the basic logic that has informed the methodological tradition of this research. This study compensates for data imperfection by controlling for a package of proxy variables that attempt to capture the incentives that shape the underlying structure of drug trafficking (Molefsky 1982; Feige 1996). However, this design goes beyond the methodological design of previous research in this tradition by generating proxy variables that have emerged from extensive interviews with U.S. DEA special agents and with coast guard and drug enforcement agents in Canada, Jamaica, Trinidad and Tobago, and Colombia. With the permission of officials at the Federal Correctional Complex in Coleman, Florida, interviews were also conducted with former drug traffickers who were willing to share their insights into the structure and complexities of drug smuggling.

The proxy variables those respondents identified include geography, per capita national income, the level of civil liberties and political rights, and the level of political competitiveness in a country’s polity.

**Geographic Coastline and Distance**

Former drug traffickers and the drug enforcement officials who were interviewed consistently noted that drug trafficking is as much about covering distance as it is about generating profit. Given the importance of geography for drug cartels, the geographic location and physical characteristics of countries make them more or less conducive to drug trafficking. Interview subjects noted that the length of a country’s coastline is an important aspect of the incentive structure that shapes the level of smuggling. Drug trafficking through countries with long coastlines reduces the chances of detection by the coast guard compared to countries with shorter coastlines, which increase the likelihood of detection (Green 2002; Adams 2002; Lewin 2006; Edwards 2006).

All things being equal, interview subjects also noted that longer coastlines reduce the chances for interdiction. They said that the geographical distance between drug-producing and transit countries and destination markets in drug-consuming countries in the Americas, specifically the United States and Canada, is also an important aspect
of the incentive structure that shapes the underlying level of drug trafficking. Traffickers are more likely to move their drugs through countries that are closer to destination markets in North America than through countries that are farther away (Green 2002; Adams 2002; Hinds 2006; Batchelor 2006). Relative to countries that are closer to destination markets, it is expected that countries that are farther away will be less exposed to trafficking. Therefore, interviewees noted that greater distance from destination markets reduces the chances for interdiction.

The coastline variable for the countries in our sample was collected from the CIA World Fact Book 2006, in which a country's total coastline is measured in kilometers. The distance variable measures the average geographical distance between the capitals of drug-producing and transit countries, and the capitals and land contiguity of drug-consuming countries, reported in miles. This variable was taken from Direct-Line Distances, U.S. Edition (Fitzpatrick and Modlin 1986).

**National Income Per Capita**

Former traffickers noted that the level of wealth among the countries through which they smuggled was a critical aspect of the incentive structure of drug trafficking (Green 2002; Adams 2002). Since a portion of the drugs that are manufactured in drug-producing countries and smuggled through transit countries is distributed to local users before reaching the primary customers in consuming countries, wealthier countries in the Americas are likely to spend more on illicit drugs and to be exposed to higher levels of trafficking than poor countries in the region. Therefore, the interview subjects noted that wealthier countries in the region that attract more trafficking increase the chances for interdiction. The study measures a country's per capita national income in terms of the per capita income purchasing power parity at current international prices. Data for this variable were collected from the World Bank's World Development Indicators, 2006.

**Civil Liberties and Political Rights**

The spread of economic openness has also given rise to the spread of democratization and individual political freedom (Gill 1996; Moshouni 1995; Mittleman 1996; Rueschemeyer and Evans 1985; Drake 1998). The Canadian and U.S. drug enforcement agents interviewed said that the level of individual political freedom, defined in terms of the level of political and civil liberties of citizens, is an important aspect of the incentive structure that shapes the level of drug trafficking (Helson 2004; Ogden 2006).
These agents noted that in countries where political and civil liberties are relatively high, citizens are protected from arbitrary arrest and searches by the state (Craig 1980). While these rights protect the civil liberties of citizens, they also constrain drug enforcement officers' ability to combat the drug trade (Wisotsky 1986, 117–39; Ogden 2006; Cabana 2006). Drug traffickers are therefore more likely to smuggle drugs through countries where political rights and civil liberties are relatively high, as opposed to countries where individual political freedoms are low and the state is not constrained by the civil liberties of its citizens. Consequently, Canadian and U.S. drug enforcement personnel noted that high levels of political freedom and civil liberties could shield drug traffickers from arbitrary state power and thereby reduce the chances for interdiction.11

The measure of individual political freedoms and civil liberties for the countries in our sample was collected from the Freedom House compilation Freedom in the World Country Ratings, 1972–2007 (Freedom House 2007). The scores are rescaled from 1 to 7, where 1 is the lowest score for political rights and civil liberties and 7 is the highest.

**Level of Political Competitiveness**

Drug enforcement officials from Colombia, Jamaica, and Trinidad and Tobago who were interviewed also reported that the political competitiveness (POLCOMP) of a country's polity is an important aspect of the incentive structure that shapes the level of drug trafficking. Drug traffickers are more likely to smuggle drugs through countries where the political system enables nonelites to influence political elites in regular ways. The more open countries' national polities become to nonelite participation, the easier it is for drug traffickers to gain access to political leaders and potentially to influence the decisions of political elites (García 2002; Hinds 2006; Paul 2006; Craig 2006; Watkis 2006).

In many Western Hemisphere countries, drug traffickers have participated in the competitive political process by making significant financial contributions to political parties in an attempt to co-opt political candidates (U.S. State Department 1992). In many of these countries, drug-trafficking organizations maintain loose affiliations with the country's politicians in order to secure protection from local law enforcement (Rosenberg 2000; U.S. State Department 1988).12 Therefore, the drug enforcement officials interviewed noted that countries with high levels of political competition will be exposed to high levels of drug trafficking, and therefore the chances for drug interdiction will increase.

The level of political competitiveness in a country in any given year is collected from the POLITY IV dataset (Jaggers and Gurr 1993; Polity IV Database). The variable POLCOMP is an index that ranges from 1 to 10. A score of 1 is attributed to polities that are closed. A score of 10 is
attributed to polities are relatively open. Political groups and organizations in these polities regularly compete for political influence with little use of coercion (Marshall and Jagers 2002).

**THE STATISTICAL MODEL AND EMPIRICAL RESULTS**

The theoretical model as discussed can be written as a regression equation. To evaluate the different intercepts and slope coefficients, indicator variables are inserted and interact with the trade openness variable. The indicator variables are drug-producing countries (DPC), drug transit countries (DTC), and drug-consuming countries (DCC), where DPC is used as a base category (Berry and Feldman 1985). The full equation can be written as follows:

\[
\text{DrugInterdiction}_{it} = \beta_0 + \beta_1 \text{DTC}_{it} + \beta_2 \text{DCC}_{it} + \\
\beta_3 \text{DPC}^* \text{TradeOpenness}_{it} + \beta_4 \text{DTC}^* \text{TradeOpenness}_{it} + \\
\beta_5 \text{DCC}^* \text{TradeOpenness}_{it} + \beta_6 \text{USAID}_{it} + \\
\beta_7 \text{Neighbor Enforcement Effort}_{it} + \beta_8 \text{Coast}_{it} + \beta_9 \text{Distance}_{it} + \\
\beta_{10} \text{PPP}_{it} + \beta_{11} \text{Rights}_{it} + \beta_{12} \text{Polcomp}_{it} + \\
\beta_{13} \text{Drug Enforcement Personnel}_{it} + \beta_{14} \text{Money Launder}_{it} + \\
\beta_{15} \text{Govt Corruption}_{it} + \beta_{16} \text{Bilateral Interdiction}_{it} + \epsilon_{it}
\]

The estimation method is ordinary least squares (OLS) with panel corrected standard errors (PCSE). The assumptions on the error term are

\[
E(\epsilon_{it}^2) = \sigma^2, E(\epsilon_{it}, \epsilon_{j,t}) = \alpha, \text{and } E(\epsilon_{it}, \epsilon_{j,t}') = 0 \quad (Beck 2001; Beck and Katz 1995).
\]

The six hypotheses that predicted the effects of trade openness on drug interdiction were empirically tested. Table 1 shows that the interaction terms for Trade Openness–Drug-Producing Countries, and Trade Openness–Drug-Consuming Countries are statistically significant with the signs of the coefficients in the predicted direction. Consistent with the predictions of the alternative hypotheses, increasing levels of trade openness in the Western Hemisphere have a positive effect on the drug interdiction capabilities of states in drug-producing countries but a negative effect on the interdiction efforts of states in drug-consuming countries, and no statistically significant effect on the interdiction capabilities of states in transit countries. These results suggest that in the Western Hemisphere, the effect of trade openness on drug interdiction varies across countries depending on their niche in the NIDL.
Table 1. Trade Openness and Drug Interdiction in the Americas, by County's Niche in INDL

<table>
<thead>
<tr>
<th>Drug transit countries</th>
<th>-0.328 (0.470)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug-consuming countries</td>
<td>2.134*** (0.610)</td>
</tr>
<tr>
<td>Trade openness–drug-producing countries</td>
<td>0.091*** (0.017)</td>
</tr>
<tr>
<td>Trade openness–drug transit countries</td>
<td>-0.000 (0.002)</td>
</tr>
<tr>
<td>Trade openness–drug-consuming countries</td>
<td>-0.083*** (0.016)</td>
</tr>
<tr>
<td>Drug enforcement personnel</td>
<td>0.000*** (0.000)</td>
</tr>
<tr>
<td>Total coastline (km)</td>
<td>0.001*** (0.000)</td>
</tr>
<tr>
<td>Distance from drug-consuming countries</td>
<td>-0.040*** (0.007)</td>
</tr>
<tr>
<td>Per capita purchasing power parity</td>
<td>0.133*** (0.040)</td>
</tr>
<tr>
<td>Civil liberties and political rights</td>
<td>-0.743*** (0.083)</td>
</tr>
<tr>
<td>Government corruption</td>
<td>0.175*** (0.068)</td>
</tr>
<tr>
<td>Money laundering</td>
<td>-0.414** (0.195)</td>
</tr>
<tr>
<td>Political competitiveness</td>
<td>0.328*** (0.063)</td>
</tr>
<tr>
<td>Neighboring country's enforcement effort</td>
<td>0.008 (0.048)</td>
</tr>
<tr>
<td>Bilateral maritime interdiction agreement</td>
<td>0.008 (0.027)</td>
</tr>
<tr>
<td>USAID</td>
<td>0.000 (0.001)</td>
</tr>
<tr>
<td>Constant (drug-producing countries)</td>
<td>7.290*** (0.797)</td>
</tr>
<tr>
<td>Observations</td>
<td>400</td>
</tr>
<tr>
<td>R²</td>
<td>0.52</td>
</tr>
</tbody>
</table>

Panel corrected standard errors in parentheses.
*Significant at 10%, **significant at 5%, ***significant at 1%
In terms of our control variables, it was argued that U.S. political influence, specifically its use of aid to encourage foreign government cooperation in combating drug trafficking, is expected to have a positive effect on drug interdiction throughout the Western Hemisphere. However, the variable USAID is not statistically significant. As expected, the variable Drug Enforcement Personnel, which measures the size of countries' drug enforcement agencies, has a positive and statistically significant effect on drug interdiction. Also as expected, the prevalence of money laundering has a negative and statistically significant effect on drug interdiction. The prevalence of government integrity (low government corruption) has a positive and statistically significant effect on drug interdiction. It was also argued that the interdiction of drugs across countries is related. The variable Drug Enforcement Effort of Neighboring Countries, which controls for the effects of spatial correlation, is not statistically significant. Countries' bilateral maritime interdiction agreements with the United States have no statistically significant effect on drug interdiction.

How did the proxy variables perform in capturing the incentives that structure the underlying level of drug trafficking? In terms of geography, we argued that longer coastlines reduce the chances for interdiction and that greater distance from destination markets also reduces the chances for interdiction. The effect of a country's coastline on drug interdiction is statistically significant, but the sign of the coefficient is not consistent with the predicted direction. However, the effect of a country's distance from destination markets in North America on drug interdiction is statistically significant, with the sign of the coefficient in the predicted direction. We also argued that richer countries are more likely to attract more trafficking and therefore increase the chances for interdiction. As predicted, the effect of a country's per capita purchasing power parity on drug interdiction is positive and statistically significant.

We argued that high levels of political freedom and civil liberties will shield drug traffickers from arbitrary state power and thereby reduce the chances for interdiction. As predicted, the effect of civil liberties and political rights on drug interdiction is negative and statistically significant. It was also argued that countries with high levels of political competition would be exposed to more trafficking, which would increase the chances for interdiction. Consistent with the prediction, the effect of a country's political competitiveness on drug interdiction is positive and statistically significant.

Some readers may object to our adoption of the CIA's coding, which classifies countries in our dataset as drug producing (or drug source countries), drug transit, and drug consuming; they may think that our findings are an artifact of these classifications. In testing the validity of this concern, we relaxed our theoretical argument and ran separate
Table 2. Trade Openness and Drug Interdiction in the Americas, by Regional Grouping

<table>
<thead>
<tr>
<th>Explanatory Variables</th>
<th>Andean South America</th>
<th>Non-Andean South America</th>
<th>Central America and Caribbean</th>
<th>North America</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade openness</td>
<td>0.110***</td>
<td>0.002***</td>
<td>0.001</td>
<td>-0.071**</td>
</tr>
<tr>
<td></td>
<td>(0.041)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.029)</td>
</tr>
<tr>
<td>Drug enforcement personnel</td>
<td>0.003*</td>
<td>-0.000</td>
<td>0.008***</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Total coastline (km)</td>
<td>0.916**</td>
<td>0.032***</td>
<td>0.045***</td>
<td>-0.002***</td>
</tr>
<tr>
<td></td>
<td>(0.435)</td>
<td>(0.006)</td>
<td>(0.007)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Distance from drug-consuming countries</td>
<td>0.638</td>
<td>-0.141***</td>
<td>0.071***</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.417)</td>
<td>(0.020)</td>
<td>(0.019)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Per capita purchasing power parity</td>
<td>-0.565*</td>
<td>0.418***</td>
<td>0.030</td>
<td>-0.128*</td>
</tr>
<tr>
<td></td>
<td>(0.341)</td>
<td>(0.050)</td>
<td>(0.039)</td>
<td>(0.075)</td>
</tr>
<tr>
<td>Civil liberties and political rights</td>
<td>-1.277***</td>
<td>-0.257</td>
<td>-0.457***</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.298)</td>
<td>(0.157)</td>
<td>(0.049)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Government corruption</td>
<td>0.411**</td>
<td>0.018</td>
<td>0.051</td>
<td>1.543***</td>
</tr>
<tr>
<td></td>
<td>(0.202)</td>
<td>(0.117)</td>
<td>(0.063)</td>
<td>(0.438)</td>
</tr>
<tr>
<td>Money laundering</td>
<td>0.000</td>
<td>0.000</td>
<td>0.308</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.188)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Political competitiveness</td>
<td>0.370*</td>
<td>-0.049</td>
<td>0.337***</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.223)</td>
<td>(0.070)</td>
<td>(0.066)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Neighboring country drug enforcement</td>
<td>-0.324**</td>
<td>-0.525***</td>
<td>0.279***</td>
<td>0.361**</td>
</tr>
<tr>
<td></td>
<td>(0.163)</td>
<td>(0.155)</td>
<td>(0.033)</td>
<td>(0.141)</td>
</tr>
<tr>
<td>Bilateral maritime interdiction</td>
<td>0.197</td>
<td>0.849**</td>
<td>-0.140</td>
<td>0.077*</td>
</tr>
<tr>
<td></td>
<td>(0.436)</td>
<td>(0.377)</td>
<td>(0.145)</td>
<td>(0.040)</td>
</tr>
<tr>
<td>USAID</td>
<td>-0.000</td>
<td>0.031***</td>
<td>-0.007**</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.001)</td>
<td>(0.012)</td>
<td>(0.003)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Constant</td>
<td>-34.872</td>
<td>12.406***</td>
<td>1.146*</td>
<td>21.521***</td>
</tr>
<tr>
<td></td>
<td>(27.266)</td>
<td>(1.520)</td>
<td>(0.678)</td>
<td>(5.042)</td>
</tr>
<tr>
<td>Observations</td>
<td>51</td>
<td>94</td>
<td>227</td>
<td>28</td>
</tr>
<tr>
<td>R²</td>
<td>0.81</td>
<td>0.83</td>
<td>0.52</td>
<td>0.96</td>
</tr>
</tbody>
</table>

Andean countries include Peru, Bolivia, Ecuador, Colombia, and Chile. Non-Andean countries: Argentina, Brazil, Uruguay, Paraguay, and Venezuela. North American countries: the United States, Canada.
Panel corrected standard errors in parentheses.
*Significant at 10%, **significant at 5%, ***significant at 1%
time-series cross-section regressions without the interaction terms for a
country's niche in the NIDL, which is based on the CIA's classification.
These regressions produced estimates for the effects of trade openness
on drug interdiction for the countries of South America (Andean and
non-Andean), Central America and the Caribbean, and North America.
Even after respecifying the model in this way, the results, as reported in
table 2, are robust and substantively consistent with those reported in
table 1, which uses the CIA classification.\textsuperscript{15}

Trade openness has a positive and statistically significant effect on
the interdiction capabilities of states in South America (both Andean and
non-Andean countries). Among these countries, Colombia, Bolivia, and
Peru are considered to be the world's primary source countries for
cocaine production. Trade openness has no statistically significant effect
on the interdiction capabilities of states in Central America and the
Caribbean, countries widely regarded as drug transit centers. Trade
openness has a negative and statistically significant effect on the inter-
diction capabilities of states in North America. Among these countries,
the United States is widely recognized as the world's largest consumer
of cocaine.

\textbf{Conclusions}

The theoretical literature presents conflicting expectations about the
effects of trade openness on the ability of states to combat drug traf-
ficking. This analysis is the first attempt to assess this controversy statist-
ically in a large sample of countries from an important region of the
world, the Americas. The empirical analysis suggests that trade open-
ness enhances the counternarcotics operations of states in drug-pro-
ducing countries in the Americas but weakens the interdiction capabili-
ties of states in drug-consuming countries.

Important policy implications emerge from this analysis. Should
drug-consuming countries in the Americas restrict trade in order to limit
their exposure to drug trafficking? With the growing concern over trade-
related job losses and the recent collapse of the financial sector in the
United States and other OECD countries, U.S. policymakers might be
tempted to interpret this finding as additional evidence for placing
restrictions on trade. In the post-9/11 security environment, this
response may appear reasonable, especially considering that many ter-
orist organizations are connected to the drug trade (Drug Enforcement
Administration 2002). However, it would be a mistake to erect barriers
to trade, because revenues earned from trade enable states in drug-
producing countries in the Americas effectively to interdict drug trafficking
at its very source and potentially to limit the flow of drugs into North
America. Moreover, because the analysis shows that increasing levels of
trade openness have a positive effect on the counternarcotics operations of states in drug-producing countries in the Western Hemisphere, policymakers throughout the region should consider extending the various trade and investment provisions of NAFTA to South America, especially to the Andean countries, where drug trafficking is a major concern.

The results of this study also hold important implications for future research. This research could be extended in several directions. One possibility would be to expand the temporal domain of the analysis; another possibility would be to expand the dataset to include the interdiction of different types of drugs from other regions of the world; namely, Europe, Southeast Asia, Africa, and the Middle East. Such empirical extensions of the statistical design could also be complemented with comparative case studies of the interactions between trade openness and countries' niche in the NIDL with the ability of states to interdict drug smuggling. As the pace of economic globalization intensifies in the years ahead, along with the growing threat of terrorism, it will become increasingly important to understand how trade openness affects the ability of states to interdict narcotrafficking.

APPENDIX: CALCULATION FOR DRUG ENFORCEMENT EFFORT OF NEIGHBORING COUNTRIES

The variable Drug Enforcement Effort of Neighboring Countries was calculated with the following formula:

\[
\sum_{i=1}^{N-1} \frac{1}{\text{Distance from } j_i} \cdot \text{Drug Enforcement Personnel}_{i,j} \frac{N-1}{N-1}
\]

for a single country j, where N is the total number of countries, i is a neighboring country, and i ≠ j. Distance from j_i is the distance from a single country j to a neighboring country i, and drug enforcement personnel_i,j is the number of the drug enforcement personnel in a neighboring country i. The expected relationship between the average drug interdiction effort by neighboring countries i and a single country j is positive. The drug enforcement personnel data were adopted from various issues of The Military Balance (Institute for Strategic Studies 1984–2006), and the distance data were collected from Direct-Line Distances, U.S edition (Fitzpatrick and Modlin 1986).
1. Since geographic endowment enables cocaine to be produced in the countries of the Andes, this argument is limited to the cocaine interdiction capabilities of states in the Western Hemisphere.

2. For a comprehensive discussion of how the drug trade cripples economic development and growth in source countries, see Clawson and Lee 1996.

3. Relative to the 1980s, annual cocaine consumption in the United States declined by 50 percent in the 1990s and has since stabilized (U.N. Office on Drugs and Crime 2006, 96). However, during the period of this study, “in absolute terms [U.S. cocaine consumption and] the total number of people in treatment for cocaine abuse [are] still by far the highest worldwide” (U.N. Office on Drugs and Crime 2000, 59).

4. Some readers may challenge these arguments on the grounds that they need an explanation of why trade diversion matters only to transit and not to producing countries. NAFTA’s benefits to Mexico have also been undermined by the U.S. openness to the Chinese market, so the “diversion” factor should also play a role in Mexico’s inability to fight illegal drugs effectively. This argument makes sense in absolute terms. Relative to drug-producing countries, however, transit countries in Central America and the Caribbean have much smaller economies of scale and are far more vulnerable to external changes in trade. Trade diversion would certainly affect small transit countries to a greater extent than producer countries, whose economies are far more diversified. Currently, Mexico’s oil exports have largely compensated for any diversion experienced by U.S. openness to the Chinese market (U.S. Congressional Budget Office 2003).

5. Cocaine interdiction data are not available for Cuba, the Cayman Islands, and the islands of the French and Dutch West Indies.

6. To check the robustness of the results, the CIA’s classification was compared with the U.S. State Department’s International Narcotics Control Strategy Report (INCSR) classification of all the countries in the sample. The comparison found that there were no differences in how countries in the sample were classified.

7. This study adopts the definition of drug enforcement personnel from the U.S. State Department, the U.S. Drug Enforcement Administration (DEA), and the Institute of Strategic Studies in London, which collects this information and reports it in the publication The Military Balance. Specifically, a country’s drug enforcement personnel include its coast guard, customs agents, border police, special drug enforcement agents attached to a country’s police force, and special paramilitary drug enforcement strike forces that are attached to a country’s army, navy, and air force.

8. The analysis was also conducted with data on U.S. aid for economic and military assistance, and this variable did not deviate from the results reported in tables 1 and 2.

9. Every year the FATF produces a list of countries that are not cooperating with its recommendations for implementing anti-money-laundering measures. Most of these recommendations relate to measures that protect a country’s banking sector, the traditional means of laundering money. In recent years, however, money laundering has not been limited to banks; therefore this meas-
ure is at best conservative. To check the robustness of the results, we also used the U.S. State Department's *International Narcotics Strategy Report* (1988, 1992) classification scheme on countries whose financial systems are highly vulnerable to money laundering. Our results are robust to the use of the INCSR money-laundering classification scheme. These results are available from the authors on request.

10. Some readers may argue that since drug interdiction data are imperfect, the subject cannot be studied in the context of a statistical design, and may conclude that a qualitative design would be more fruitful to study drug trafficking. The real issue with imperfect drug interdiction data, however, is that such data will probably produce random measurement error. But random measurement error can be controlled for in a large-N statistical design; and such error would simply increase the uncertainty of the central explanatory variables of our study and make the results of our research conservative (Kmenta 1997). On the other hand, measurement error poses a greater problem to qualitative studies of drug trafficking because the design and data sources of these studies (archives and historical narratives) do not allow the researcher to control for such error, making it difficult to know if the results are merely a byproduct of uncontrolled measurement error. In this regard, measurement error is far more likely to undermine the integrity of qualitative studies of drug trafficking, reducing confidence that the results of such research are robust and rigorously derived. Qualitative studies, as a result, provide no clear advantage over large-N statistical designs.

11. It is also possible that countries where civil liberties are high may also have stringent criminal penalties for drug smuggling, making them less attractive for traffickers. However, we are unable to capture this phenomenon, because quantitative indicators to measure the relative stringency of countries' criminal penalties for drug smuggling are not available.

12. We also recognize that while drug traffickers can influence a country's policymakers at the national level, their influence on policymakers at the local and municipal levels of government may be even stronger.

13. This analysis also included sensitivity tests in which we subjected our model to different estimation procedures. We estimated the model using First Order Autocorrelation with PCSE as well as Fixed Effects with PCSE. These additional estimation procedures did not alter the findings. These results are available from the authors on request.

14. In our sensitivity tests, the USAID variable is not significant in the fixed effects model and only weakly significant in the first order autocorrelation model.

15. One of the costs of running separate regressions for different regional subsets of the data is that some of the control variables lack sufficient variation to generate coefficient estimates. These costs notwithstanding, the statistical estimates for trade openness, the main variable of interest, are consistent with the results reported in table 1.
REFERENCES


BARTILOW AND EOM: DRUG TRAFFICKING


