Drugs, Governance and Civil Conflict

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Abstract:
This paper proposes to investigate the relationship between the production and trafficking of illicit narcotics, the stability of political institutions, and the incidence of internal military conflict. The linkages between drugs, governance and civil conflict have been the subject of some speculation, but no serious empirical studies have been conducted to date. For example, Jordan (1999; p.43-44) suggests that in both Mexico and Colombia the consolidation of democratic institution have been hindered by elites who are corrupted by the narcotics trade in their countries. In the World Drug Report (2000) an explicit claim is made about the effect of civil conflict on the illegal drug market. The World Drug Report claims that, "The cases of Afghanistan and Myanmar, in particular, demonstrate with unusual clarity that wartime may under certain conditions minimize the costs while raising the benefits of illicit drug production; conflict can act as a catalyst which converts traditional, small-scale drug production into a large-scale, income-generating enterprise" (World Drug Report 2000; 156). The paper uses empirical data from 1988 to 1999 to test speculative hypotheses derived from our theoretical model. Statistical data on nation-level drug seizures and production from the United Nations' International Narcotics Control Board Report are used along with Uppsala conflict data (Gleditsch, et al, 2002) and World Bank data on the control of corruption. In preliminary statistical analyses, drug production was found to be significantly and positively associated with both corruption and civil conflict.

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The illegal drug market and civil conflict are inextricably linked. Not only is the incidence of an extensive drug market associated with the incidence of civil conflict, but the presence of internal conflict has the reciprocal consequence of facilitating the growth of the illegal narcotics market. Afghanistan, positioned as the world's leading supplier of opium products, provides an unfortunate example of both the effect of drug trafficking on attempts to control civil violence and of the effect of civil violence on illegal drug markets. For example, most experts agree that the growth in opium production in Afghanistan is among the gravest threats facing the new administration of President Hamid Karzai. Illicit drug markets have a corrupting effect on government, which undermines their legitimacy, and consequently their ability to effectively govern. According to a *New York Times* report citing senior Afghan and American officials, the illegal drug market in Afghanistan "has corrupted the government from bottom to top, including governors and cabinet officials…and is financing warlords like Gulbuddin Hekmatyar, local militias, the Taliban and possibly Al Qaeda" (*The New York Times,* 2004).

The ensuing instability brought about by internal conflict creates a favorable environment for drug traffickers. As reported in the UN *World Drug Report* (2000:156), "The cases of Afghanistan and Myanmar, in particular, demonstrate with unusual clarity that wartime may under certain conditions minimize the costs while raising the benefits of illicit drug production; conflict can act as a catalyst which converts traditional, small-scale drug production into a large-scale, income-generating enterprise." Amidst the current turmoil of post intervention Afghanistan, opium cultivation is reported to be surging, despite the efforts of the Afghan government and international officials to stop it. Last year Afghanistan produced almost 4,000 tons of opium, accounting for almost three-fourths of the world's supply. Estimates from the

United Nations are that trade in Opium accounted for more than half of Afghanistan's national income in 2003.

In South America the link between drugs and civil insurrections is considered just as strong. *The New York Times* (2001) reported that, "Traffickers have fled determined eradication programs in Peru and Bolivia and found haven in Colombia, fueling its civil conflict." "With the drug trade now an organic part of the Colombian civil conflict," the Department of State reported, "the question facing the anti-drug coalition will be how to reduce the supply of illegal drugs without exacerbating local conflicts that threaten regional stability." In these exemplary cases we see clear evidence of the reciprocal relationship between drugs and civil conflict. On one hand the destabilizing effect of illegal drug trafficking fuels civil conflict, while on the other hand, the breakdown of authority during civil conflict provides opportunity for the illegal drug market to flourish.

In this article, we investigate the theoretical linkages between the production and trafficking of illegal narcotics, state development, and the incidence of civil conflict. Our central argument is that illegal narcotics do not directly cause civil conflict; rather that drugs are associated with an erosion of state authority and development, which are directly related to the incidence of armed civil conflict. To analyze the nature of the endogenous relationship between drugs and state strength and the incidence of deadly domestic conflicts, we employ a three-stage least squares model.

Governance, Drugs, and Civil Conflict

Drugs play an important role in the developing theories regarding the relationship between lootable resources, governance, and conflict (Addison, Murshed & Le Billon, 2001; Buhaug & Lujula, 2004; Collier and Hoeffler, 1999; De Soysa, 2002; Klare, 2001: Le Billon, 2001; Lujula, et al. 2003; Ross, 2003). Ross investigated the effect of

varying types of natural resources on the outbreak of civil wars and found that of oil, hard-rock minerals, gemstones, timber, agricultural commodities, and illegal drugs, "diamonds and drugs are most strongly associated with the civil wars that occurred between 1990 and 2000" (2003: 43).

In this paper we focus on three aspects of illicit narcotics trafficking that contribute to the destabilization of the state and increase the likelihood of civil conflicts arising. First, drug trafficking undercuts the authority of the state, depriving it of valuable fiscal resources (by shifting the tax base). Second drugs delegitimize the moral authority of the state by fostering graft and other forms of corruption. Finally, drugs inject a culture of politicized violence into societies making civil conflict more likely.

Drugs and Efficient Governance: Revenue Collection

While drugs are a natural resource, their production and trade are illegal nearly everywhere rendering them quite unlike most other lootable resources. This illegality prohibits a state's ability to tax their sale and the incomes of those who produce and traffic them. Moreover, combating drug traffickers requires the use of governmental resources in personnel and money that could be used to provide other state services. Drugs, thereby, not only deprive the state of valuable fiscal resources, but tax revenues from legitimate businesses must be used to combat drug traffickers rather than to provide infrastructure.[1] Empirical support is found for this proposition in Table 1, which shows the results of a GEE model demonstrating the negative effect of drug production on a state's ability to collect income tax.

Table 1: Drug Producing states and their ability to collect income tax (1988-1999).

[1] Although one way that governments can derive benefits from high levels of drug trafficking in their country is if they can get foreign aid to combat drug traffickers. Indeed, this is exactly what Afghanistan is trying to do now and what the Andean countries have been doing for years.

Variable	Tax on Income (% of current revenue)
Lag of GDP in 1000's	0.588*** (0.226)
Log of Lagged Population	3.082*** (0.856)
Oil exporter	-0.957 (1.425)
Trade as % GDP	0.046*** (0.014)
Democracy (lagged one year)	2.670*** (0.967)
Hi Drug Producer	-2.951*** (1.105)
Lagged Internal Conflict	-0.073 (0.612)
Constant	-10.866 (8.332)
N	860

Estimated with a GEE model with AR (1) Correlation. ***p<.01.

The endogenous relationship between drug markets and the inability to effectively govern is exasperated as state authority is weakened, and the profitability of trading in illegal narcotics increase. This phenomenon induces more and more people out of legitimate sectors into the drug sector. Farmers abandon normal agricultural products to produce fabulously more profitable drugs. An example of these effects is found in Badakshan, a northern province of Afghanistan, where the *New York Times* (2004) reported that "poppy cultivation has driven up dowry prices and raised the cost of labor so much that wheat was not harvested last year." Indeed, under these circumstances, the economy as a whole shifts over from legitimate sectors to illegitimate -- a vicious circle results.

Another example of how of how drugs can affect conflict by weakening the central government is provided by the Colombian conflict. In drug producing regions such as those found in the Colombian demilitarized zone, guerrillas who derive a large portion of their operating expenses from the sale of illicit narcotics, have virtually replaced the central government, taking over many of the duties typically associated

with government. The guerrillas tax the farmers and in return provide services like protecting crops and negotiating fair prices with drug cartels. These are services normally provided by government bureaucracies and police forces. To empirical investigate this rival hypothesis, we perform statistical tests to see whether the direct or indirect specification of the influence of drugs on internal conflict works best.

Drugs and Corruption: The undermining of State legitimacy

Drugs, also because of their illegality, foster corruption and thereby undercut the moral authority of the state. The most common conception of political corruption is that it is "the abuse of public office for private gain" (Warren, 2004: 329). Drug traffickers are quite direct in many cases offering cash for a favorable ruling by a judge, or in exchange for a policeman's silence, or a politician's vote on matters important to the traffickers. When it is possible to gain influence through corrupt officials, drug traffickers usually have more than enough money to spare. Once a smuggler determines that bribery is necessary to operate safely, "the enormous profits from drug smuggling (inflated by the drug's criminalized status) provide the financial means to corrupt" (Andreas, 1998; p.162). One study cited by Andreas concludes that smugglers spend on average about $500 million on bribes each year.

Whether government officers are elected by popular vote or appointed by non-elected officials, the riches of drug traffickers have the ability to influence government officials. In general, money tends to be used to purchase access and that access provides opportunities to influence. Endemic graft undermines the legitimacy of the state, which in turn, strengthens the hand of groups opposed to the authority of the state. For example, Guaqueta (2003) argues that the Colombian civil conflict accelerated to previously unreached levels of violence after 1996, in part because the Samper regime lacked legitimacy and was overwhelmed by political crisis stemming

from the discovery that Samper's presidential campaign accepted $6 million USD from the Cali cartel in 1994.

Of course in a properly functioning democracy, the voice of one representative should be defeated by the voices of the many other representatives from regions of the country who are ultimately hurt by the production and trafficking of illegal narcotics. Thus, "the introduction of pluralistic, democratic governance dilutes this risk of selective application, for it devolves decision-making power to a broader cross-section of a country's ethnic and regional interests. While an elected official from one part of the country known for illicit poppy cultivation may be reluctant to call attention to the region's top, albeit illegal, income earner, there may be other representatives, or a free press, that is willing to do so out of competing self-interest" (*World Drug Report*, 2000: 155). However, the greatest harm associated with the bribing of officials by drug traffickers may be the damage done to the reputations of politicians, as in the Samper case in Colombia. Table 2 shows empirical support for the proposition that countries producing high quantities of drugs have greater difficulty controlling corruption. Figure 1 relates the control of corruption with the ability to effectively govern and shows a strong positive relationship between the ability to control corruption and the ability to effectively govern.

Table 2: Drug Production and Corruption (1986 and 1988)

	World Bank Corruption Control Index (-2.5 to +2.5)		
	N	Mean	95% CI
Low Drug Production Countries	271	.003	-.116 to .121
High Drug Production Countries	24	-.591	-.721 to -.460
Homogeneous mean	295	-.046	-.156 to .065
Difference in means		.593***	-192 to .994

H_o: Difference in means = 0. *** p<.001 for a two tailed t test.

Drug Production and Civil Conflict

When the corruption of government officials fails, drug traffickers have been known to make direct attempts to destabilize the system through acts of political violence. The goal is to make the current state of affairs unbearable, resulting in change of policy to favor the desires of drug traffickers. It is at this point that we most commonly see the goals of 'narcos' and guerrillas' overlap. Both profit from, and thus desire, a weak destabilized regime. In Colombia, for example, many have difficulty separating narcos from guerrillas and question whether the civil war is ideologically or profit based. The confusion arises because both groups tend to use the same means, political violence, to achieve completely different goals. The revolutionaries have ideological goals of bringing about a more egalitarian Colombia and use violent attacks against the regime to achieve the goal. Drug traffickers seek goals such as freedom from extradition and turn to bribery or violence to achieve the goal. But for the casual observer on the outside, it is difficult to discern the difference.

A great deal of the political turmoil in Colombia's recent history has been associated with drug trafficking. For example, in 1989, near the height of the open war between Colombia's drug cartels and its government, one judge reported that during the year they "buried one judge every 15 days" (Toronto Star). The same newspaper reports, "when drug traffickers are going to kill a Colombian judge, they send the target a copy of his own obituary, a funeral wreath or a copy of what is known as 'the book of the dead'" (Toronto Star). According to the paper "an estimated 1,600 of Colombia's 4,600 judges have received threats, mostly from drug traffickers who have powerful influence in this country," and 220 judges and court employees were estimated to have been killed between 1980 and 1989.

Both of these aspects (graft and political violence) undermine state authority, which can weaken the incumbent regime against potential political adversaries,

leading to an increased likelihood of challengers emerging. In many cases these challenges can lead to prolonged armed conflict, particularly in cases where there are no institutionalized mechanisms for political reform. We, therefore, expect to see an endogenized positive relationship between drug trafficking and civil conflict. As a preliminary test of this hypothesis Table 3 shows that states experiencing internal conflict have a significantly higher level of drug production than those that do not.

Table 3: Drug Production and Internal Conflict

	N	Mean	95% CI
With Conflict	432	1.73	1.25-2.20
Without Conflict	1381	.306	.186-.425
Homogeneous mean	1813	.644	.496-.792
Difference in means		-1.42***	-1.76 to -1.08

H_o: Difference in means = 0. *** p<.001 for a two tailed t test.

The Direct Effect of Drugs on Internal Conflict

While Table 3, confirms the bivariate relationship between drug production and internal conflict, we are also interested in developing a multivariate model. We take Fearon and Laitin's (2003) model of the determinants of civil war onset as a base model and after making minor modifications described below, add our variable for the percent of the world's illicit drug production that a country accounts for. The results presented in Table 4 are based on a GEE model with AR(1) correlation structure for the period 1988-1999. The dependent variable is the incidence of any level of internal conflict. Fearon's model was used to predict Civil War occurrence during the period 1945-1999, and he used a standard logit model with a lagged dependent variable on the right hand side. The important point for our analysis is that even controlling for other factors expected to be associated with civil conflict, drug production remains positive and significantly related to the presence of internal conflict.

In the preceding paragraphs we made a strong theoretical argument for why drug production affects the incidence of civil conflict indirectly through government corruption, but it could be argued that drug production has a direct effect by providing exploitable resources that are easily convertible to hard currency and weapons. Fearon and Laitin hypothesize, but do not directly test, the conjecture that civil wars will be more likely when rebels posses "Land that supports the production of high value, low-weight goods such as coca, opium, diamonds, and other contraband, which can be used to finance an insurgency" (2003:81). Furthermore, this relationship may be stronger when considering smaller level insurgencies and when considering the prolonged incidence of conflicts.

One problem that remains is that, as we discussed earlier, evidence from major drug producing countries experiencing civil conflict suggests that the relationship is

endogenous. In the methodology section we will discuss in greater detail the need to account for this endogeneity in our statistical model through the use of structural equations. The results from table 3 represent reduced form regressions form the that still leave us to question how drug production affects the propensity for internal conflict. (i.e., is the effect of drug production on internal conflict direct or indirect)?

Table 4: GEE Model with AR 1 correlation for Determinants of Civil Conflict 1988-99

	(1) Internal Conflict
Lag of GDP (1000's)	-.026*** (.005)
Lag of population (Logged. In 1000's)	.054*** (.015)
Log (%mountainous)	.014 (.014)
Noncontiguous state	.158*** (.047)
Oil Exporter	.029 (.046)
New state	-.040 (.064)
Instability	-.048* (.027)
Ethnic Fractionalization	.160* (.081)
Religious Fractionalization	-.071 (-098)
Lagged anocracy	.010 (.035)
Lagged democracy	-.033 (.033)
% of total world illicit drug production	.014*** (.005)
Constant	-.274* (.142)
N	1645

State Strength, Governance, and Civil Conflict

Before turning to the remainder of our empirical analysis, in this section, we investigate further how state strength is related to the onset of civil war? First, and foremost, the state constitutes the basis of governance. The state is a political organization exhibiting sovereignty over a people and a given territory. Sovereignty is the critical dimension. Not only does it mean autonomy (which is obviously important for international relations and interstate conflict), but it also has to do with political control and authority, which are more relevant for civil war.

Civil war occurs when a (economic) political entrepreneur forms an army of some sort and takes up arms against the state. The state can deter such politically motivated armed violence with a strong military or police capability. Most states (through history) have relied on this method of rule. The ability of the state to project its power is the critical variable. Fearon & Laitin (2002) in their APSR article focus particularly on the ability of the state to project its power into the peripheral areas of the country, especially in areas of difficult terrain.[2] Theoretically, Fearon & Laitin extend the logic of international power politics to a civil dimension. Essentially this is about the ability to project force, so integral to understanding international security, applied to conflict located *within* the boundaries of a country. Concepts such as balance of power, deterrence, etc. lurk under the surface.

Yet, what really matters, when it comes to armed civil conflict, are all sorts of police, security services and state-sponsored paramilitary formations. These are the types of forces that actually "control" territory, while the armed services can be characterized as an instrument for "potential control".[3] The problem is that we cannot simply add these forces together to calculate a state's strength and ability to control its sovereign territory. Indeed, all too often the "police" (in the broad sense of the term) are competing with the armed forces for state resources. Examples of such tension between the military and the 'police' abound (e.g. Revolutionary Iran, Georgia, Indonesia (particularly with regard to East Timor), Russia, and Pakistan) (Baev, 2004). In principle, any of these cases could escalate into violent confrontation as political attention shifts from external to internal security challenges or the other way around, resulting in one side or the other losing their advantage. Nonetheless,

[2] It should be noted, however, that their operationalization of state power is questionable at best. Their primary indicator is simply GDP.

[3] See Elster (2004) and Baev (2004) for discussions relating to actual state control and potential state control.

regardless as to whether we are discussing the role of the military or the police force, the focus is on deterrence – the ability of the state to deter rebellion.

A more effective means of avoiding civil conflict than deterrence, however, is to make the notion of taking up arms against one's system of government unthinkable. State legitimacy is essential in this regard. States derive their legitimacy in four dimensions: a systemic norm of procedural justice (especially with regard to the enforcement of contracts); a consolidated system of governance (the organizing principle of sovereignty); a perceived sense of a fair allocation of services (especially with regard to solving collective action problems – public goods); and, in modern states especially, a sense of identity and citizenship (the fundamental elements of a nation-state). Unfortunately, none of these dimensions is easily operationalized. No standard set of indicators are available to serve as proxies or measures of these variables. To address this problem, and to account for the endogenous nature of the association between governance, drugs, and conflict, we focus on a measure of a government's ability to address corruption.

States lacking in one or more of these dimensions of moral authority end up relying more on policing as a means of control. Policing though is easier in a legitimate state aided by a pervasive norm of procedural justice. Jordan (1999) argues that the state and its *uncorrupted* institutions are the principal means for combating drug production and the violence that accompanies it. "Thus the corruption of the state itself—and of its law enforcement agencies and judiciaries—can become a serious problem beyond its own borders, while within its borders, corruption undermines the accountability of the democratic republic" (Jordan 1999; p.5). Juxtaposing a corrupt-state and an efficient-state (institutionally bureaucratic in a

Weberian sense and tax-efficient in an Organski[4] sense) leads one to consider both the notions of procedural justice as well as aspects of governance (e.g. taxation without representation). The authoritative dimensions of the state are mutually constituted in control (or policing and enforcement) and moral authority (legitimacy). The two dimensions are mutually reinforcing.

Consolidated democratic systems with diffuse patterns of authority exhibiting widespread acceptance of the laws and rules of governance exhibit remarkable stability. Democracies offer political entrepreneurs the opportunity for political competition. Moreover, those who lose these contests accept their losses and give up or forego positions of authority. Once such a system is consolidated, there seems to be no going back. State authority tends to be completely legitimated.[5]

Authoritarian systems with concentrated centralized authority tend to last as long as the leader (Gates, et al., 2004).[6] Duration of such systems depends on authority and control more than on legitimacy. Nonetheless, legitimacy helps provide stability to autocratic regimes. Ideology plays a big role in establishing and maintaining legitimacy of such states. Indeed the strongly centralized autocracies do not tolerate corruption; it undercuts the hierarchical structure of the state.

The least stable systems of governance exhibit institutionally inconsistent authority patterns. They possess the characteristics of both democracy and autocracy,

[4] See Organiski (1958?) or Organiski & Kugler (1980?). Also see Kugler & Arbetman (?) and Benson & Kugler (2002?).

[5] See Przeworski (1992?), Weingast (1996), Gates, et al. (2004).

[6] Birth rites provide monarchies with a system of succession and tend to be rather durable, but significantly less so than consolidated democracies. In the age of Kings when such systems were legitimate, monarchies tended to be more robust. (Even without an established system of primogenitor, dictators often try to grant authority to their sons – witness Kim Il Sung and Kim Jong Il or Hafez al-Assad and Basha al-Assad. At least in the cases of North Korea and Syria the system of governance has been sustained, but for how much longer is difficult to determine.)

mixing open and diffuse authority. Such systems tend to evolve towards autocracy or democracy with the centralization or diffusion of authority. With such volatility, institutionally inconsistent systems are unlikely to become legitimate. When these systems are corrupt, they may be even less likely to evolve toward democracies. Indeed, anocracies are likely to persist with a minimal state, moving towards neither autocracy nor democracy.

Moreover, regimes with stable domestic institutions (democratic or authoritarian) may be less susceptible to the influence of powerful drug markets. Jordan (1999:37) pointing to the retarded pace of the consolidation of democratic institutions in both Mexico and Colombia argues that the process has been greatly hindered by elites who have been corrupted by the drug trade in their countries because "corrupt elites threaten accountable governments." Also, transitional regimes, such as these, have also been found to be more likely to experience civil wars. Hegre et al. (2003) found strong support for the presence of an inverted U shape in the relationship between regime type and civil war. Not only does a strong state provide a more difficult target for the influence of bribery, all states (democratic or autocratic) have incentives to oppose drug trafficking regardless of the regime type. In general, the stronger the state, the better it should be at this task.

States derive moral authority by giving something to its citizens. This aspect of state legitimacy also connects to tax efficiency. If those being taxed feel that the taxation is fairly distributed and that they are getting something for their money, the state will be more efficient in its extraction. However, as argued by Warren corruption undermines this legitimacy: "corruption creates inefficiencies in deliveries of public services, not only in the form of a tax on public expenditures, but by shifting public activities toward those sectors in which it is possible for those engaged in corrupt exchanges to benefit" (2004: 328). Thus, one of the primary roles of the state, to solve

collective action problems such as the production of public goods and the allocation of common property resources, is impaired by corruption.

If the state fails in this regard, other political organizations often try to fill the void. Indeed, effective rebel groups engage in extensive distributional services countering the state with a counter-state. Hamas, the FARC, and the IRA are exemplary in this manner. Not only do such activities strengthen the moral authority of the rebel group, but they weaken the state's legitimacy and effectively limit its ability to control and enforce its authority (at least for a portion of the population). Similarly, the United Nations, in its annual World Drug Report (2000; 154) concluded that "Progress in reducing illicit crop cultivation depends on the political environment in which central governments and local communities interact".

The moral authority of the modern state is vested most strongly in the notion of identity and citizenship. Societies with polarized senses of identity are particularly vulnerable to civil war. The biggest danger occurs with a polarization of identity in which one group is associated with control of the government. High degrees of ethnic heterogeneity offer the opportunity to create a unique national identity paralleling the authoritative dimensions of the state.

No society, though, regardless of the extent of its legitimacy, escapes from violence. Criminal violence alone necessitates the need for the state's monopolistic control of violence. But it is not criminality that we are discussing here. It is civil war. If we define legitimacy as precluding the notion of taking up arms against one's system of governance, then legitimacy precludes civil war. Thus, the military capabilities and moral authority are linked.

Research Design and Data

The goal of this paper is to investigate the connection between corruption, governance and internal conflict. We argue that effective governance, or the lack

thereof, explains a large part of the variance in incidence of civil conflict across countries. Furthermore, the ability to effectively govern is strongly influenced by perceptions of government corruption, which are negatively influenced by drug production and trafficking. Figure 1 shows the strong positive association between controlling corruption and effectively governing. A belief that government decisions are being made for reasons other than the best interests of the population erodes confidence in the government and, "When people lose confidence that public decisions are taken for reasons that are publicly available and justifiable, they often become cynical about public speech and deliberation." (Warren, 2004:328). This duplicity in public speech comes to tarnish and inhibit all public officials, whether they are corrupt or not. The measure of effective governance comes from the World Bank and its potential endogeneity is treated by the use of instruments for government ability to tax, spend on infrastructure, and levels of corruption.

Methodology

All three-stage least squares (3SLS) estimations were run with STATA. Three-stage least squares, as the name implies, involves three steps: First, instrumented (or predicted) values of the endogenous variables are generated, using all exogenous variables in the system. This stage is identical to the first step in 2SLS. It is done to obtain consistent parameter estimates. Second, based on the residuals of the 2SLS structural equations, a cross-equation covariance matrix of the disturbances from the first stage is estimated. Third, the main equation with internal conflict as the dependent variable is estimated with generalized least squares using the estimated covariance matrix and other exogenous variables as well as the instrumented variables in place of the endogenous variables.

A serious potential problem that must be addressed in estimating a model of this type is omitted variable bias. It is hard to specify even theoretically which

variables should impact upon a country's commitment with respect to the incidence of civil conflict. It is even more difficult to construct actual specific control variables. We have tried to include as many theoretically justified control variables as we could. But if there are any other potentially omitted variables that are correlated with governance or corruption, then omitted variable bias could pose problems for our estimations. We have therefore developed a simultaneous equation model, in which governance and corruption are endogenized and explained as a function of exogenous variables, so-called instrumental variables. If the positive and statistically significant effect of governance on the incidence of civil conflict is still discernible in this simultaneous equation model, then we have good reason to believe that it is not due to omitted variable bias. This will hold true as long as we believe, not unrealistically, that our instruments are not correlated with any potentially omitted variable.

Three-stage least squares estimation (3SLS) has an important advantage over two-stage least squares (2SLS); it uses the covariance matrix of disturbances, which improves the efficiency of estimation leading to smaller standard errors. This improvement, however, depends on the consistency of the covariance matrix estimates, since with 3SLS misspecifying one equation affects the estimates in all other equations.

Our equation allows us to analyze the effect of government effectiveness and corruption on the incidence of internal conflicts through the careful use of the limited set of exogenous variables that determine government effectiveness and corruption.

It should be noted that 3SLS assumes that the dependent variable is continuous. Our proxy for internal conflict, however, is binary and not continuous. In the single equation models we have used GEE, a maximum likelihood estimation technique. There is no readily available maximum likelihood estimation technique that can account for the simultaneous structure addressed by our 3SLS estimations,

while also dealing with a dichotomous dependent variable. Applying a linear probability model such as 3SLS to a binary dependent variable unfortunately suffers from a shortcoming; the errors are dependent on the coefficients. Aldrich and Nelson (1984) demonstrate, however, that this is not necessarily a perilous problem. As a robustness check we estimated a recursive bivariate choice model, described in Greene (1998). This model utilizes a seemingly unrelated regression technique, as does 3SLS, only it uses maximum likelihood estimation making it suitable for the dichotomous nature of the internal conflict variable. To perform this analysis, we must also dichotomize our control of corruption variable. The results of this estimation are incredibly robust to those of the 3SLS estimation, with no variables changing sign or significance.

Development of Data

Main Dependent Variables

Internal Conflict

To operationalize internal conflict we use data on armed conflicts from Gleditsch, Wallensteen, Sollenberg, and Strand (2002). The operational definition of an internal conflict in this data set is "An armed conflict is a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths" (Gleditsch, Wallensteen, Sollenberg, and Strand, 2002, p.2). One advantage of this data is the relatively low death threshold adopted which allows for the inclusion of more conflicts while still being high enough for the violence to represent a politically significant event. Our primary dependent variable dichotomizes this measure by assigning a 1 for each state year when there was an occurrence of either an internal or internationalized internal conflict in a country.

We draw attention to two aspects of this operationalization. First, the variable represents the incidence of conflict rather than the onset of new conflicts. This differs from previous research by Fearon and Laitin who operationalize onsets of civil wars. The explanation provided by them is "We do not code as ones years in which a civil war continues, which would be relevant if our focus were causes of war duration rather than onset" (Fearon and Laitin 2003: 82). Since we are interested in onsets and continuation of conflicts, we use the less restrictive incidence of conflict indicator. The second difference is that we operationalize conflict for all internal conflicts that reach the 25 related death threshold, rather than the more restrictive approach taken by Fearon and Laitin of only observing 'civil wars' with at least 1000 deaths. Observing lower level conflicts allows us to see the effect of drugs and corruption on lower level 'insurgencies' as well as civil wars.

World Bank Control of Corruption

According to Fearon and Laitin (2003:80), "Insurgents are better able to survive and prosper if the government and military they oppose are relatively weak – badly financed, organizationally inept, corrupt, politically divided, and poorly informed about goings-on at the local level." Thus, we expect to see more incidences of insurgencies when governments are hampered by institutional corruption. We believe this operationalization improves on Fearon and Laitin's use of income per capita, which they argue "should be associated with a lower risk of civil war onset because (a) it is a proxy for a state's overall financial, administrative, police, and military capabilities" (Fearon and Laitin, 2003: 80). Data measuring the control of corruption comes from the World Bank's Governance and anti corruption project. The data is described in full detail in the World Bank publication *Governance Matters III: Governance Indicators for 1996-2002*. The *Control of Corruption* variable measures "perceptions of corruption, conventionally defined as the exercise of public

power for private gain" (Kaufman, Kraay, Mastruzzi, 2003: 4). The particular aspects of corruption measured by the various sources ranges from the frequency of "additional payments to get things done, to the effects of corruption on the business environment, to measuring grand corruption in the political arena or in the tendency of elite forms to engage in state capture" (Kaufman, Kraay, Mastruzzi, 2003: 4).

Independent Variables

Drug production Index (Used to create *hidrugprod, drugprod*)

Collier and Hoeffler (1999, 2001) found that opportunity was a better predictor of civil wars than were measures of grievances. Further, they argued that the main determinant for opportunity was the ability to recruit rebels by providing financing that exceeds what is available from other opportunities. Operationally they use measures of primary commodity exports and rates of secondary school enrolment for males to represent the quality of competing alternatives to joining a rebel group. An alternative approach is to attempt to measure the potential availability of resources for rebels to pay recruits by measuring the level of drug production in the country. Fearon and Laitin (2003:80) say "To survive, rebels need arms and material, money to buy them, or smugglable goods to trade for them." These conditions match almost perfectly to the characteristics associated with illegal narcotics.

Data for our world drug production index were gathered from a variety of sources. These sources included the International Narcotics Control Strategy Report (various years, 1988-2002), The United Nations International Drug Program's International Narcotics Control Board Report (various years, 1988-2002), OAS drug data from the Inter-American Observatory on Drugs (available online at: www.cicad.oas.org/oid/), and the National Drug Control Strategy Report (2002). As a general rule when estimates differed between these sources, we gave priority to UN sources, followed by OAS sources, followed by US sources. Us sources were

considered last because of the potential bias that could be introduced because the report in which they are found is also the basis for the president's decision to levy sanctions on a country that is not cooperating in the 'war against drug trafficking'. This might lead to a biased report of higher levels of drug production in countries that are typical targets of US sanctions. Likewise, the UN report is considered over the OAS report because it is more international and less suspect of regional under or over reporting for political reasons.

The drug production index is constructed by first creating three broad categories for different types of organic drugs; cannabis, coca, and opium products. Within each of these categories two types of production levels are measured: cultivation and production. This produces 6 categories:

Opium cultivation
Opium production
Coca cultivation
Coca production
Cannabis cultivation
Cannabis production

Next, following the familiar procedure for constructing the correlates of war capabilities index (Singer et. al, 1972), a drug trafficking capabilities index is created. First, the total amount of world production per year in each of the six categories is computed. Then each country's yearly percent of the world production in that area is calculated. Next, the categories are added together and divided by six to give a total drug production 'capability' for that country in that year. Using this procedure avoids having to calculate dose equivalents for each of the types of drugs. For example, accounting for 20% of the world's production of opium products under this operationalization is equal to accounting for 20% of the world's production of Coca products. Simply adding together the quantity of each drug being trafficked would be incorrect because 1 Kg of opium products represent a more serious threat than 1 Kg of

cannabis products. But, as in the correlates of war capabilities index, by standardizing the quantities as percentages of the total world quantity and adding the percentages a valid index is produced. The *Hi Drug Producer* variable is created by assigning a one to countries in the top 10% of the world's total production.

Taxes on income, profits and capital gains (% of current revenue)

Data comes from the World Bank's World Development Indicators, 2003. The definition provided in the World Development Indicators is:

Taxes on income, profits, and capital gains are levied on wages, salaries, tips, fees, commissions and other compensation for labor services; interest, dividends, rent, and royalties; capital gains and losses; and profits of businesses, estates, and trusts. Social security contributions based on gross pay, payroll, or number of employees are not included, but taxable portions of social security, pension, and other retirement account distributions are included.

Participation

Data comes from Vanhanen's Polyarchy index (Vanhanen, 2000). The participation variable used in this index measures the percentage share of the adult population voting in elections.

Health Expenditures Public (%GDP)

Data comes from the World Bank's World Development Indicators, 2003. The definition provided in the World Development Indicators is:

Public health expenditure consists of recurrent and capital spending from government (central and local) budgets, external borrowings and grants (including donations from international agencies and nongovernmental organizations), and social (or compulsory) health insurance funds.

Trade as % GDP

Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product. Data comes from the World Bank's World Development Indicators, 2003.

Log of GDP PPP

GDP per capita based on purchasing power parity (PPP). PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. Data comes from the World Bank's World Development Indicators, 2003.

Control Variables

The majority of our control variables are taken from the replication dataset for Fearon (2003) and are relatively self-explanatory, based on their names. Summary statistics are provided in Tables 5, and 6 for all variables used in estimations for data spanning 1988-1999 and 1996, 98. In the following paragraph we provide some minimal clarification as needed for these variables and refer the interested reader to Fearon's article for a more detailed description.

Lag of GDP in 1000's; Lag of population (Logged and in 1000's); *Log % mountainous; Noncontiguous state*; *Oil Exporter* (> 1/3 export revenues from fuels); *New state; Instability* (> 2 change in Polity measure in last 3 yrs); *Ethnic Fractionalization* (Based on Soviet Atlas; plus estimates for missing in 1964); *Religious Fractionalization*; *Lagged anocracy* (-6 < polity < 6); *Lagged democracy* (polity > 5); *previous internal conflict.* One if there was an internal conflict in the previous year.

Results

We started our analysis by demonstrating the drug production is associated with civil conflict. Table 3 showed the results of a comparison of means t-test of the relationship between drug production and internal armed conflict. The bivariate relationship was clearly evident. In Table 4, we provided further evidence of that relationship by embedding our measure of drug production in well specified model used for predicting civil conflict.

Table 5 shows the results of the main test of our central thesis; that drug production, while related to civil conflict, is related indirectly through its effect on perceptions of corruption. In the instrumental equation of Model (1) drug production is found to be negatively and significantly related ($p<.01$) to a state's ability to control corruption. In the main equation, the ability to control corruption is found to significantly reduce the probability of internal conflict.

In Model 2, when drug production is included as an exogenous factor affecting the likelihood of civil conflict, it fails to reach significance at the .1 level. These results demonstrate the need for an endogenous model that has the ability to show the indirect effects of drug production. In this model we see that the strongest effect of drug production on civil conflict is via governance; it is not direct.

Table 5: 3SLS Regressions with Drugs as an Endogenous and Exogenous Variable

	(1) Internal Conflict	(2) Internal Conflict
Control of Corruption	-0.130*** (0.040)	-0.126*** (0.040)
Year Dummy	0.060 (0.046)	0.059 (0.045)
Oil exporter	0.018 (0.069)	0.013 (0.069)
Log of Lagged Population	0.037** (0.018)	0.035** (0.018)
Noncontiguous State	0.141** (0.070)	0.138** (0.070)
Log (%mountainous)	0.018 (0.017)	0.016 (0.017)
Instability	0.003 (0.70)	-0.001 (0.069)
Ethnic Fractionalization	0.035 (0.104)	0.043 (0.104)
Religious Fractionalization	-0.063 (0.117)	-0.048 (0.118)
Anocracy (lagged one year)	0.127* (0.071)	0.121* (0.072)
Democracy (lagged one year)	-0.017 (0.071)	-0.024 (0.071)
% Drug Production		0.012 (0.007)
Constant	-0.253 (0.181)	-0.239 (0.181)
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Instruments	**Control of Corruption**	**Control of Corruption**
Participation	0.0005 (0.002)	0.0003 (0.002)
Trade as a % of GDP	0.0005 (0.001)	0.001 (0.001)
Public Health Expenditures	0.095*** (0.027)	0.098*** (0.027)
GDP PPP (logged)	0.606*** (0.047)	0.595*** (0.048)
% Drug Production	-0.033*** (0.011)	
Constant	-5.365*** (0.328)	-5.336*** (0.333)

Standard errors are in parentheses. *p<.10; ** p<.05; ***p<.01
Estimations performed using 3SLS regression in Stata 8.

Conclusion

We proposed two possible ways that drugs can influence conflicts. The first is through the direct effect of drugs as a lootable resource that provide hard currency that can be easily converted to arms and material. This results in an increased relative desirability of joining a rebel group by providing greater financing to those recruiting

and strengthens the rebel position relative to the government position resulting in a greater incidence and duration of civil conflict.

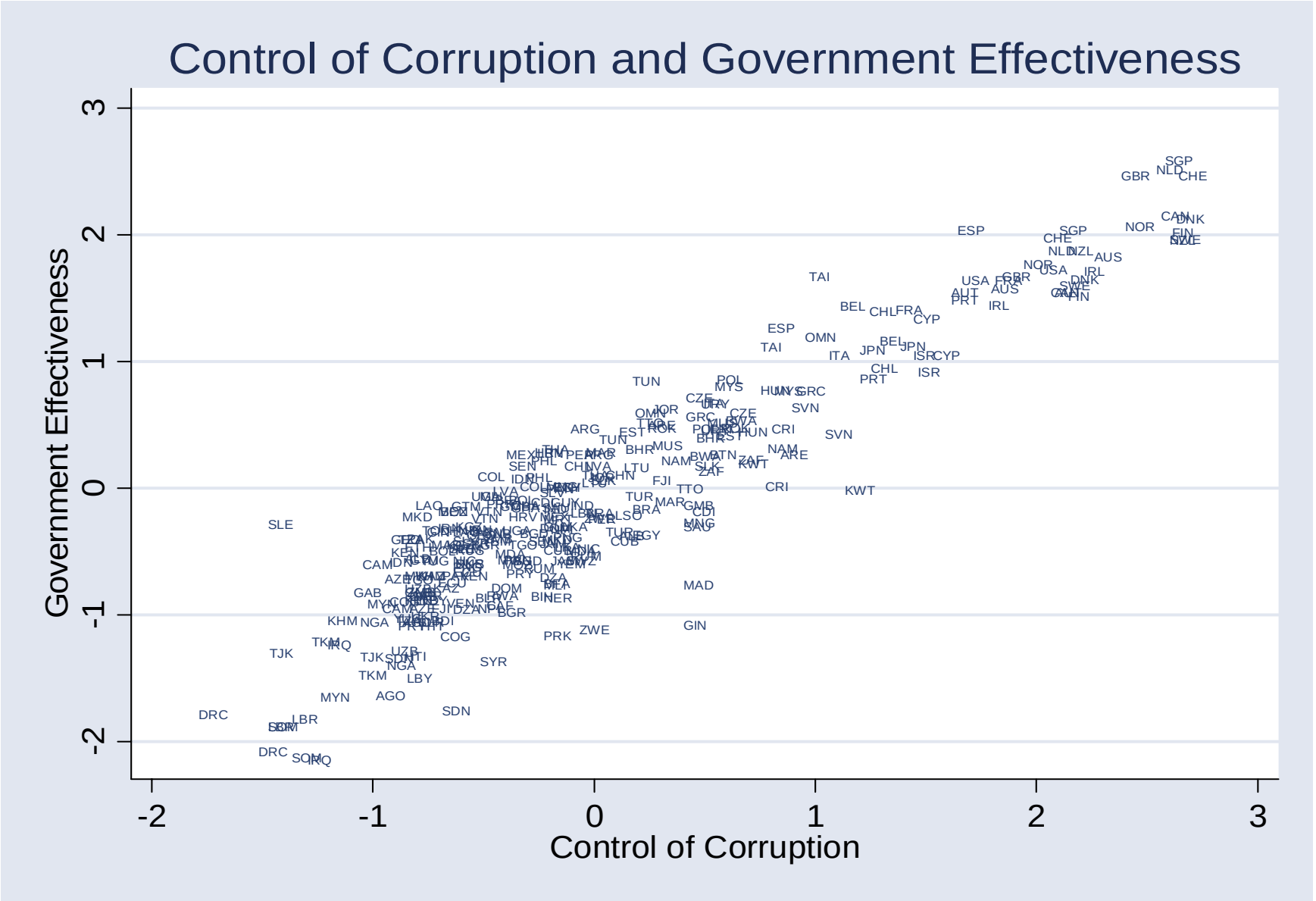
The second way that drugs influence conflicts is their indirect effect through weakening the central government. Increased activity in drug markets weakens state legitimacy through increased perceptions of corruption, and further reduces state strength by decreasing the tax base of the central government along with decreasing the penetration of the state into society as its ability to provide general services associated with government decreases. All of these factors result in an increased relative attractiveness of joining a rebel group compared to continuing in a conventional, legitimate occupation. Both the direct and indirect effects result in the rebels gaining strength relative to the government.

Our empirical analysis supports the idea that drugs may play a more important role in weakening the central government than in strengthening the rebels, although both formulations receive some support. The net effect, however, is the inescapable conclusion that countries that are large producers of illicit narcotics are at greater risk of civil conflict occurring.

Table 6: Summary of variables for models using 1988-1999 data					
Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
relfrac	1813	0.383	0.217	0	0.783
intconftot	1813	0.238	0.426	0	1
ncontig	1813	0.156	0.363	0	1
Oil	1813	0.151	0.358	0	1
nwstate	1813	0.026	0.161	0	1
instab	1813	0.183	0.387	0	1
anocl	1797	0.247	0.431	0	1
deml	1797	0.449	0.498	0	1
hidrugprod	1813	0.094	0.292	0	1
drugprod	1813	0.644	3.216	0	30.913
lmtnest	1813	2.095	1.434	0	4.557
ethfrac	1813	0.410	0.279	0.001	0.925
gdpenl	1667	4.587	4.730	0.196	20.613
lpopl1	1813	9.201	1.436	5.914	14.030
taxinc	1083	24.421	14.506	0	68.295

Table 7: Summary of variables for models using 1996-1998 data					
Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
intconftot	312	0.202	0.402	0	1
yeardum	312	0.500	0.501	0	1
Oil	312	0.144	0.352	0	1
ncontig	312	0.154	0.361	0	1
instab	312	0.157	0.364	0	1
anocl	308	0.273	0.446	0	1
deml	308	0.500	0.501	0	1
lmtnest	312	2.104	1.437	0	4.557
drugprod	312	0.641	3.347	0	27.534
part1	307	15.758	20.091	0	65.600
taxinc	186	23.491	14.103	0	68.295
ethfrac	312	0.412	0.276	0.001	0.925
healthexppub	296	3.250	1.777	0.212	8.017
tradepergdp	285	76.149	41.386	1.531	329.186
lngdpppp	282	8.336	1.077	6.131	10.329
lpopl1	312	9.224	1.428	6.358	14.020
wbcontcorr	295	-0.046	0.968	-1.850	2.580
relfrac	312	0.384	0.216	0	0.783

Figure 1: Control of Corruption and Government Effectiveness



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