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Brian Delgado April 12, 2016

War on Drugs: Drug Trafficking and its Effect on Post-Civil War Peace

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Abstract

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While research exists regarding the role of drug trafficking in civil wars, little has been discussed regarding the impact of drug trafficking on post-civil war peace. This study argues that countries with greater amounts of drug trafficking are more likely to experience a failure in peace following a civil war, returning to the conflict they have recently emerged from. Furthermore, this project posits that more comprehensive peace treaties can reduce this impact that drug trafficking has in increasing the likelihood of peace failure. This theoretical expectation is based on the notion that rebel groups face costs when they abandon a conflict, and that the peace treaty must offer sufficient benefits for rebels to accept the loss of narcotrafficking profits. Analysis is conducted using the Uppsala Conflict Data Program data set and data from the United Nations Office on Drugs and Crime. It utilizes a linear regression model to test the effect of drug seizure size on the likelihood of peace failure, as well as its interaction with different attributes associated with more comprehensive peace treaties. Findings indicate a positive relation between the size of drug trafficking in a country and the likelihood of renewed conflict, and that more comprehensive peace treaties reduce this effect. However, caution is urged with this interpretation due to the low significance values, and more research must be done to support these claims. This paper provides some groundwork for future quantitative studies on how drug trafficking affects post-civil war scenarios.

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Introduction

In 1998, then Colombian President Andrés Pastrana Arango met with leaders of the *Fuerzas Armadas Revolucionarias de Colombia* (Revolutionary Armed Forces of Colombia), also known as the FARC, in order to try and end the decades-long conflict (Forero 2012). Several agreements were reached at this meeting, including one that granted the FARC a regional concession of 16,000-square-miles in the south of the country. However, the FARC used this territory to grow in strength and increase their involvement in the drug trade (McDermott 2013). Coca cultivation expanded, and links were made with such groups as the Tijuana Cartel in Mexico, the Russian Mafia, and the Brazilian drug kingpin Luiz Fernando da Costa. Upon his capture in 2001, Costa reported that the FARC helped him to export more than 200 tons of cocaine to Brazil in 2000, charging $500 per kilogram and $15,000 per each drug flight (Otis 2014). Ultimately, both sides returned to war in 2002, each side accusing the other of lacking commitment (Long 2015).

In this paper, I seek to examine whether the size of drug trafficking in a country affects the prospects for peace following a civil war peace treaty. Specifically, do higher levels of drug trafficking in a country increase the probability that peace will collapse, returning the country to civil war? Additionally, can these peace treaties include features to reduce this potential impact from drug trafficking? These are important questions as they reflect the post-conflict wellbeing of a country. At the end of a civil war, the state faces the problem of bringing enemy combatants into society. This presents an obstacle to peace, as these combatants will have to give up access to power and economic opportunities that are not available once they become law-abiding citizens. Often times, this includes involvement in the drug trade, which becomes a potent source of financing for the conflict (Jonsson et al 2016). If they believe the costs of peace are not worth

the benefits of war and a return to drug trafficking, then peace could fail and the country will return to conflict. Ultimately, this means that post-conflict societies face destabilizing factors that could affect themselves as well as their neighbors. I will test this running a regression analysis which examines civil war peace treaties around the world from 1980 to 2011, in order to deduce how the size of the cocaine drug trade in those countries impacted the likelihood of peace failure. I will also look at different peace treaty attributes concerning economic and security benefits, and how they impacted this effect.

This paper suggests that there is a slight positive relation between the variables of interest, and that future studies should address limitations in measurement and design that could not be addressed in this study and that can explain the null findings. Potential contributions from this paper include a better understanding of the effect that narcotrafficking has on peace following a civil war, allowing post-conflict countries to better maintain stability during the transition period. Additionally, scholars would be able to use these quantitative findings to further their understanding of how components in a peace agreement help increase the duration of peace, especially in countries with serious narcotrafficking problems.

Literature Review

Drug Trafficking and Rebel Groups

Much has been written about the importance of natural resources in funding the efforts of illicit organizations. Rebel organizations, such as the Haqqani Network in the Middle East, often turn to various sources of income in order to fund their operations (Peters 2012). Although they have a large involvement in money laundering, extortion, fundraising, and legitimate businesses, the extraction of resources such as poppy and chromite in Afghanistan has enabled them to maintain a stable amount of funds to conduct and carry out terrorist acts. It is this presence of

lootable resources, such as minerals and drug crops, which tends to be correlated with non-separatist rebel movements, due to the easier extraction opportunities presented by these resources (Ross 2002). This is often referred to as the resource curse, where countries with a large presence of lootable resources tend to experience a large array of negative side effects such as intrastate war (Basedau and Lay 2009, Lujala et al 2005). The relationship between drugs and rebel groups has become so strong, that efforts by the United States and Colombia to weaken the FARC have included hurting them economically through drug eradication campaigns in order to debilitate their military operations (Holmes et al 2006). Additional studies look at the role of narcotics funding in non-separatist rebel groups, and how economic incentives encourage these groups to perpetuate the conflict for economic gain in areas of weak state presence, although the focus has been on a few specific case studies rather than broader quantitative analysis (Spitzer 2011). In this way, drug trafficking can become a way to increase the capacity of a group, presenting a large incentive for involvement in such illicit opportunities.

The importance of these lucrative sources can be seen in how rebel organizations are willing to face the costs of involvement in the drug trade in order to obtain its benefits. Rebel groups have an interest in getting involved with the drug trade, even though drug trafficking is a dangerous enterprise that carries with it a negative stigma. This stigma may not be in the interest of rebel groups, since it may be more difficult to recruit new members and obtain cooperation when a group is perceived as acting criminally. However, the economic incentives may present a stronger allure in strengthening rebel group ranks than the cost of criminal association. Originally, FARC leadership viewed narcotrafficking as a corruptive and counterrevolutionary activity (Otis 2014). But in his analysis of various criminal groups, Mandel points out that criminal organizations like the Colombian drug cartels often collaborated with rebel groups when

they had overlapping interests, such as weakening state capacity and profiting economically (Mandel 2011). This shows how economic incentives play an important role in the decision-making process, despite the costs.

There is not much in the literature about the exact impact that drugs play in the transition to a post-conflict society. Most scholars accept the idea that drug trafficking can present an incentive for rebels to prolong the conflict, in order to continue earning profits by "keeping the conflict boiling" (Crocker et al 2005). However, Jonsson et al argue that although narcotrafficking can be used by rebel groups to aid in their war efforts, drug profits could be used to aid in a transition to peace by providing a war to bribe rebels through state-legitimized drug trafficking (Jonsson et al 2016). They use a case study comparison of the FARC in Colombia and the UWSA in Myanmar, two rebel groups who are famous for their involvement in the cocaine and opium trade, as well as conflicts of long duration. However, papers that explore narcotrafficking and civil wars have tended to focus on a qualitative approach, focusing on specific groups in greater detail. Although this provides a breadth of information, this comes at a cost of generalizability among rebel groups at the international level. There is a lack of quantitative research on how narcotrafficking influences this transition into a post-conflict state.

Committing to a Peace Agreement

During negotiations, both rebels and governments must assess the continued costs of the war, in relation to the costs of the peace that they are accepting. Each side fears that the other may cheat in order to gain a possible advantage, which could translate to a better position at the negotiating table in the future. Peace becomes unstable if rebels believe they can get better terms by reinitiating conflict (Werner and Yuen 2005). Should the government be at fault for a violation, this becomes especially relevant with regards to the costs that rebels may face, since

they are at a disadvantage should they chose to demobilize and stop their war efforts, while it would be impractical for the government of a country to demobilize its army or limit its economy. Thus, commitment problems can present in issue in the establishment of a lasting peace, since parties do not know if they can trust the opposing party to not go on the offensive in order to obtain an advantage (DeRouen Jr and Chowdhury 2013, Walter 2002).

One form of commitment problem is precisely this issue of a security concern, where one side is not sure if the opposing side will attack it while it is not prepared. Nusio explored how demobilized paramilitary deal with security questions, and the different coping strategies they adopt to deal with said problems (Nussio 2011). When demobilized groups believe that they are being targeted due to their prior status as armed combatants, possibly as an act of retaliation by former victims, then they are more likely to continue acting within armed groups. Thus, if former combatants believe the state is incapable of providing security, they will pick up arms, thus defeating or threatening the aim of disarmament. By extension, these fears of security could play a role in how these rebel groups view the costs of a peace, as it becomes more expensive to live in a post-conflict scenario where one faces danger if one demobilizes.

Other scholars have focused on other possible concerns besides security concerns, such as economic worries. A survey on recidivism of former combatants across various different groups in Colombia argues against just looking at the idea of insecurity leading to reintegration failure; rather, scholars propose that the presence of criminal groups in the area, educational achievement, family ties, and personal motives for joining the conflict in the first place play a more important role in whether a former combatant turns to crime (Kaplan and Nussio 2014). These findings posit the notion that both economic opportunity as well as social situation are important factors. The former reflects the idea of potential job attainment, since lower education

levels limit occupational opportunities, while criminal presence presents a possible alternative to make money in a fashion similar to how rebel groups had been making money previously. This is further supported by work that discusses the importance of economic reintegration efforts in the demobilization of rebel groups such as the FARC, in order to combat potential recidivism (Azevedo 2014). Keeping these concerns in mind when designing a peace can help mitigate potential destabilizing factors of a civil war peace.

Comprehensive Peace Agreements

The literature highlights the importance of dealing with both security concerns as well as incentivizing economic commitment as a means of avoiding commitment problems following peace negotiations. This structural approach in the literature suggests that there may be features of a peace treaty which can reduce the likelihood of peace failure and a return to war. Mattes and Savun reiterate this in their study, pointing out to the importance of two important provisions for the success of civil war peace agreements as being fear-reducing and cost-inducing provisions, which lower the commitment problem for rebels by assuaging fears of government reprisals, while reducing their incentive to return to war (Mattes and Savun 2009).

Scholars suggest that it is important for negotiations to calm the security fears of rebels, in order for them to bridge commitment problems. One such method can be through the inclusion of territorial provisions for threatened groups, as well as other security assurances can aid in securing a lasting peace after a civil war (Hartzell et al 2001). In this way, rebel groups who believe that they are at a disadvantaged against the government following a transition to a post-conflict state can feel more secure that the government does not have an advantage over them. When parties to a peace treaty do not feel that they are being taken advantage of and that they are all equally facing the costs of a peace treaty, it is more likely to last (Bekoe 2003). So in this

way, commitment problems may be lessened due to the belief that these territorial concessions could provide a form of safeguard against unnecessary security costs and mistrust against the government.

The other way to reduce the commitment problem is through cost-reducing provisions, which encourage parties to commit to the peace and not seek to renegotiate it in the future by a return to conflict. This centers on the idea of economic advantages in the post-conflict state as a means of getting former rebels to accept the peace treaty. One of these notions includes the idea of the inclusion of rebels in power-sharing arrangements. Joshi and Mason observe that larger government coalitions tend to have more a stable post-civil war peace, since greater inclusion in the coalition gives an incentive to a greater number of actors to remain with the peace and its benefits (Joshi and Mason 2011). Another example is that of temporary cash transfer programs, which D'Aoust et al point out may have benefits over a period of time, such as with the demobilization deal in Burundi where former rebels were granted an $18-month salary allowance (D'Aoust et al 2013). However, at the end of the period, this short-term benefit was gone, indicating the importance of setting up more lasting arrangements, given that often times rebels lack employable skills in the workforce due to long amounts of time spent fighting. Because of this, factors such as post-war economic development are important in helping to stabilize civil war peace (Quinn et al 2007).

Theory

My question focuses on whether the size of narcotrafficking in a country emerging from civil war increases the likelihood that peace will fail, and whether more comprehensive and inclusive peace agreements reduce this impact. Because of the highly profitable economic opportunities available in illegal narcotics, one can expect a positive correlation between the size

of the drug market in a country and the likelihood of failure for a peace treaty. Larger drug market size suggests a larger potential profit, increasing the incentive to return to fighting in order to have better control of narcotrafficking. In situations where the peace treaty in question is more comprehensive and promises better terms to former combatants, one can expect a reduction in the effect of drug trafficking size, as the lucrative opportunities in drug trafficking are contrasted against the better incentives in the treaty.

The first part of the argument posits that illicit drug markets present a lucrative source of income. The size of the drug market plays a key part of this paper, because it is an indicator of the profits that are to be made with illegal narcotics. Rebels often incorporate drug trafficking as a means of increasing their war chest, funding their fight. Some of the more notable cases include the involvement of the Revolutionary Armed Forces of Colombia and al-Qaeda in the Islamic Maghreb with the cocaine trade, and that of the United Wa State Army of Myanmar with the narcotrafficking of opium and heroin.[1][2][3] When they control certain areas of a country, it may become easier for them to enter the market, such as coercing peasants into cultivating or paying taxes on drugs. Additionally, they may have better areas for trafficking, as with the case of AQIM which controls important transport routes through the Sahara (Thornberry and Levy

[1] Speaking at a forum at the University of Miami in 2012, then Colombian Defense Minister Juan Carlos Pinzón stated that the FARC were making between $2.4-3.5 billion in the cocaine trade, controlling around half of the country's industry (Terra Colombia 2012). It was the large amount of revenue accrued from drug trafficking that allowed the FARC to expand from 6,000 members in 1982 to around 20,000 members in the early 2000s (Otis 2014).

[2] A report from the Norwegian Peacebuilding Resource Centre states that AQIM earns half of the profits generated from drug trafficking in the region, valued at around $800 million in 2012 (Strazzari 2015, United Nations Radio 2012). Cocaine from the Andean region of Latin America is shipped through West Africa on its way to European markets, and some sources state that the FARC have worked with AQIM in order to facilitate their drug trafficking operations (Bargent 2013, Thornberry and Levy 2011).

[3] In 2003, the United States' Drug Enforcement Administration classified the UWSA as a narcotrafficking organization, using the territory they control in order to traffic drugs into neighboring China and Thailand (Jonsson and Brennan 2014). The drug trade has proven vital in the procurement of funds and arms for the UWSA, in a region of the world known as Asia's Golden Triangle due to the cultivation of illicit drugs.

2011). At the time of negotiations, the concessions that rebels make affect their access to this market. They may have to turn in land under their control to the state, and may have a harder time conducting operations under the eye of the law. In countries with very large drug markets, the potential earnings that are being lost by establishing peace with the government may be tremendous, and increase over time since former rebels may have to put up with trying to find jobs that fit their skill set. If a particular rebel was directly involved with drug trafficking, this may increase the cost of giving up the trade, since they have the skill set to operate in that illicit economy but must forego said opportunity.

Another key part of the theory centers on the attempt to establish the best possible peace deal, maximizing gains while minimizing losses. For rebels, this may mean that they lose former territorial control and illegally obtained wealth. Additionally, in situations where rebels have been fighting for long periods, they may lack transferable skills to aid in their reintegration. However, these costs are weighed against the benefits of peace, and any additional concessions given in the peace treaty help add to the benefits of the deal. Promises of security and potential jobs in a post-conflict scenario could reduce the costs of reintegration, especially once it becomes apparent that the war has no end in sight. Therefore, rebels have an incentive to obtain comprehensive peace treaties that offer more benefits, and thus be more likely to remain at peace and be party to the treaty.

The final part of the theory rests on the idea that the benefits of war increase when a party believes that it has lost more from the treaty than it has gained. The utility expected from the treaty may end up not being as high as the rebels expected. This may also weigh on the rebels over time, as inability to find new occupations that provide equivalent profits may discourage the rebels with the peace treaty that they have signed. Because of this, not only does drug trafficking

increase the difficulty for rebels to sign a peace treaty, but also to commit to it in the future, and thus increase the chance that it will be broken. In situations where the peace treaty provides particular jobs for the former rebels, the effect may not be as strong as compared to a peace treaty that does not provide such an opportunity. It is also important to point out that different types of rebel groups may value utility differently depending on factors such as strength, unity, or goals. But I hold that as rebel groups become similarity, they will assign similar utility on these benefits.

Based on my theory, I posit the following hypothesis:

H_1: There is a positive association between the size of a drug market and the likelihood of peace failure.

The hypothesis focuses on the notion that rebel groups are constantly collecting information as to whether a peace treaty is more beneficial than war. Should they believe that the benefits of a peace treaty are outweighed by the benefits of a return to war, there will be a peace failure. Potential profitable opportunities centered on drug trafficking can affect the incentives of demobilized rebels, giving them an incentive to become involved in this lucrative illicit economy, or continue to stay involved should they have experience with drug trafficking during the civil war. Larger drug markets increase the costs of peace and the benefits of war resumption. Countries with larger drug markets will be more likely to experience peace failure and a return to civil war. In situations where a peace agreement is more comprehensive and offers more concessions to rebels, the positive association in the first hypothesis should be weaker. Peace agreements that promise more benefits for rebels will increase the benefits associated with the peace, and affect the calculations of rebels in terms of whether they choose to return to war. From this, I posit a second hypothesis:

H_2: The positive association between drug market size and peace failure likelihood is weaker for more substantive peace agreements that incorporate economic and security benefits for rebels.

Research Design

Data

This project seeks to examine the impact of drug trafficking on the prospects of post-war peace following an intrastate conflict. The unit of analysis for this project will be peace agreements. The temporal domain for this project will be 1980-2011, as recorded by the Uppsala Conflict Data Program. Although the dataset in particular has entries from 1975-2011, the domain is shifted to start at 1980 because there are more entries for drug seizures starting at that year. This allows for better entries of peace treaties with corresponding drug seizure data. Although there are still peace treaty entries that do not have matching drug information, this temporal domain improves the amount of entries for analysis.

The basis for choosing data from Version 2 of the Uppsala Conflict Data Program Peace Agreement Dataset is because there are few sources that collect conflict information as thoroughly, and the field of conflict and peace resolution studies frequently uses their dataset. The UCDP defines a peace agreement as a settlement signed by two warring parties regarding a solution to an issue over which there are incompatible positions, as well as information on peace termination. This incorporates several different variables of measurement, in order to capture the features of the peace treaty.

Drug seizures data comes from the United Nations Office on Drugs and Crime, a highly reputable source on narcotics where one of their key tasks is to report accurate statistics regarding international drugs and crime. Their information on drug trafficking is composed of

reports of significant individual drug seizures reported by member states of the United Nations and submitted to them via their Annual Reports Questionnaires.

The GDP per capita data used as a control variable comes from the World Bank, another credible source on international economic statistics. Their data set features the GDP per capita of countries in current United States dollars as the gross domestic product divided by its midyear population. They obtain this data from a compilation of World Bank national accounts as well as from the Organization of Economic Co-operation and Development national account data files.

Table 1

Summary Statistics for Drugs, Peace Treaty Attributes, and Controls

Variable	Obs.	Mean	Std. Dev.	Min	Max
Cocaine	63	6102.02	16086.04	0.11	78108.00
Army jobs	81	0.32	0.47	0	1
Government jobs	81	0.16	0.37	0	1
Foreign fighter withdrawal	81	0.03	0.16	0	1
GDP per capita	81	1267.42	2964.62	155.28	26281.05
Treaty signed in peaceful year	81	0.26	0.44	0	1

Table 1 features a few brief summary statistics on the data, with the variables being discussed in greater detail below. There are 81 individual treaties being looked at, of which 63 feature cocaine seizures. The average cocaine entry was 6,102 kilograms, with a very large standard deviation of 16,086 kilograms. The stipulation calling for rebel integration into the army had an average of 0.32, with means about a third of the cases featured it as part of a peace treaty. The stipulation with provided rebels with government jobs had an average of 0.16, which means a sixth of the cases featured it in the peace treaty. The final stipulation calling for foreign troop withdrawal had an average of 0.03, the least common attribute examined in the paper. GDP per capita varied between $155 and $26,281, with an average of $1,267 suggesting that the treaties tended to be signed in poorer countries. A quarter of the treaties were signed in years of no conflict. It can be inferred from this that the average peace treaty in this set is usually signed in a period of active conflict, in a poor country with a sizable amount of cocaine. The treaty will most likely feature stipulations that provide jobs for rebels, rather than removal of foreign fighters.

Method of Analysis

This paper will incorporate a linear regression model in order to tests for the hypotheses mentioned above, and examine the correlation between the size of drug trafficking in a country and post-conflict peace.

$$y_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \beta_3 x_{1i} x_{2i} + \boldsymbol{z}\delta + \varepsilon_i$$

The dependent variable y_i is a dummy variable that measures the effectiveness of peace negotiations, by whether there is a resurgence of conflict in the country. This measures the failure of peace, with zero being continued peace, and one indicates the breakdown of peace. A breakdown is coded when at least one of the two parties involved decides to no longer accept the

conditions of the treaty and resume conflict. In the model, *i* indicates each individual peace treaty observation, β_0 is the intercept, x_{1i} represents the quantity of drugs seized, x_{2i} represents the comprehensiveness of the peace treaty (measured as a peace treaty dummy that will capture different provisions of the peace treaty), and ε_i represents the error term in the model.

For the second hypothesis, more focus is placed on the interaction between drug size and peace treaty comprehensiveness.

$$\frac{\Delta y_i}{\Delta x_{1i}} = \beta_1 + \beta_3 x_{2i}$$

The aim of this formula is to examine the change in the likelihood of peace failure that comes as a result of an increase in the quantity of drugs seized. The formula reflects the fact that such a change depends on whether the peace treaty is comprehensive or not.

β_1 is the regression coefficient for the drug in this study, cocaine. This was chosen out of the UNODC data set because they had one of the largest number of cases compared to other listed drugs, and are measured in kilograms in order to facilitate study. The appendix includes regressions run on hashish, heroin, marijuana, and opium, which also had a high number of cases relative to the other available drugs. x_{1i} is the average amount of reported drugs seized by a country in the previous five years, calculated from the data available in order to get an estimate for the size of the drug industry in a country in the years before a peace treaty. This acts as a proxy for the size of drug trafficking. I also limited the range to kilograms, in order to avoid conversion discrepancies.[4]

[4] If the drugs were listed in various different forms, such as in solid or liquid form, the most common form of the drug was kept, in order to reduce the number of discrepancies between the total amount of each drug. This includes the case of raw and prepared opium (see appendix), which was chosen above other alternatives such as liquid opium.

In accordance with H_1, β_1 should be positive, which would indicate that an increase in drug trafficking presence in a country would have an increasingly negative effect on the prospects for peace. H_2 posits that the coefficient should continue being positive, but that $\frac{\Delta y_i}{\Delta x_{1i}}$ should get smaller. This would suggest that more comprehensive peace agreement can dampen the effects of increased drug trafficking on the likelihood of peace failure.

The comprehensiveness of the peace treaty is captured by x_{2i}. Whenever it equals one, this indicates the inclusion of that measure in the peace agreement. β_2 in the regression is the coefficient of this measurement, which I would expect to be negative, since this would suggest that more comprehensive peace treaties lessen the chance that peace will fail. All of the measurements are taken from Version 2 of the Uppsala Conflict Data Program Peace Agreement Dataset. Three variables play the role of x_{2i}. The first one takes the value of one if there is a stipulation in the treaty for former rebels to be incorporated into the army. This could act as a method of assuaging security fears of rebels while providing them with jobs that could alter the economic incentives for getting involved with drug trafficking. The second one takes the value of one if there is a stipulation that calls for the withdrawal of foreign forces in the conflict. This refers to fighters brought in to help a particular side in the conflict, rather than international peacekeeping missions. In such a case, rebels may feel more secure in signing a peace treaty should foreign fighters be removed, since they will not be facing as many threats during the transition to a post-conflict state, and therefore making the possibility of peaceful demobilization more attractive, rather than continuing drug trafficking in order to fund military capacity. The third variable takes the value of one if there is a stipulation calling for rebels to receive government jobs. In this case, the promise of jobs may act as a deterrent to rebels, since it reduces economic concerns and the costs to transition to peace by guaranteeing some level of

income. If many of the former rebels cannot find employment after the conflict, they may decide to return to hostilities, since they may have had a higher income during that time due to such sources as drug trafficking. These three variables thus account for treaties which consider rebel security and economic concerns, factors which can determine the stability of peace.

There are two control variables in the model, and they are represented in the vector $\boldsymbol{z}$. These are the variables GDP per capita and whether the conflict ended in a peaceful year. The former variable examines the wealth of each country, with the idea being that poorer countries may face situations of less economic opportunity. As such, the drug market becomes a more viable alternative towards pursuing wealth. Poorer countries will be more likely to return to conflict than rich countries, *ceteris paribus*, since rebels should be more likely to want to return to war and drug trafficking. Countries with more wealth may not present the contrasts of opportunity in such a high contrasts, so they lost of opportunity in the drug market may not be as apparent.

The latter variable looks at whether the treaty was signed in a year with little actual conflict, with an inactive year coded as having less than 25 conflict deaths. This is important because it indicates the degree of fighting up to the point of the negotiations concluding in a peace treaty. If the peace treaty was signed in a year where there were no violent encounters between rebel groups and government, then this may indicate a lack of will to return to fight by both parties War weariness may lead to more stable peace agreements. It may also suggest how willing the rebels are to fight with their profits from the drug trade. In situations where rebels are avoiding fighting, they may have fewer resources to organize attacks against the government. Any actions taken would be more costly, since they are using up limited resources as opposed to a group with more adequate funding who may be more willing to spend resources to organize an

attack. Thus, the costs of returning to war may be more pressing to these parties, resulting a more lasting peace.

Analysis

In relation to H_1, the findings of this paper are somewhat supportive of the hypothesis that greater drug trafficking increases the peace failure. The coefficients for cocaine were mostly positive, albeit small and not significant. This would suggest that they increase the likelihood peace will fail and the country will return to civil war. An example of this can be seen using Model 1. This model shows a regression run without any other variables involved besides the controls, where if seizures in cocaine increase by 100 kilograms, then the likelihood of peace failure would increase by 1.78e-02%. Although this supports the hypothesis, the impact is minute. Furthermore, the p-values for the drugs in general are not significant, with the lowest p-value for cocaine being that of Model 2 at 0.27. Additionally, if the p-values were more significant, then the models would be more supportive of H_1.

In regards to H_2, the findings of this paper present are more positive. All the models have interaction terms with negative coefficients. This suggests that the presence of each specific treaty attribute has a negative effect on that of drug trafficking. Using Model 2, if seizures in cocaine increase by 100 kilograms, then the likelihood of peace failure would increase by 2.85e-02% if there is no provision for rebel integration into the army. If this provision was included with the peace treaty, then this result would be affected by the coefficient of the interaction term, -0.03885. In other words, the likelihood of peace failure in situations which included this provision would be -386e-2%, or -0.0386. This decrease indicates that more comprehensive peace treaties decrease the effect of drug trafficking on peace failure. These interaction terms tended to have much better significance than that of cocaine, such as Model 3 where the

government job and cocaine interaction term had significance at the 0.05 p-value. Model 4 also approaches some significance at a 0.08 p-value.

Table 2
Regression Results for Cocaine Models

	Model 1	Model 2	Model 3	Model 4
Cocaine	0.0001784	0.000285	0.0002083	0.0002415
(100 Kilogram)	(0.45)	(0.27)	(0.42)	(0.30)
Army	x	0.1519218	x	x
		(0.29)		
Government Jobs	x	x	-0.0729511	x
			(0.68)	
Foreign Fighter	x	x	x	**0.7661629**
Withdrawal				**(0.00)****
Army x Cocaine	x	-0.038849	x	x
		(0.32)		
Government Jobs x	x	x	**-0.0008813**	x
Cocaine			**(0.05)***	
Foreign Fighter	x	x	x	-0.0043143
Withdrawal x Cocaine				(0.08)
Observations	63			

* =0.05 or Better Significance

Conclusion

The results of this study suggest that there is a positive relationship between amount of narcotrafficking in a country and the likelihood of peace failure following a civil war peace treaty. The relationship between more comprehensive peace treaties and their impact on reducing the effect of drug trafficking on the prospects for peace seems to have even better results. Admittedly, the coefficients are small enough to make such a relation negligible, and the significance does not improve this. The implications of these findings suggest that policy makers should recognize the correlation that narcotrafficking has an important issue in post-conflict nations, although this is said with caution due to the significance of the results. However, further research is necessary in order to better understand these findings, as they may be dependent on whether limitations have significantly altered the results.

There were several difficulties encountered during this study, such as the possibility that the dependent variable may affect the independent variable. Countries where peace failure is more likely could be more prone to drug trafficking, or urge the inclusion of more comprehensive peace treaties as a result of local dynamics. Another difficulty was the lack of standardized data on drug trafficking. This study incorporated drug seizures as a proxy for drug trafficking, since the UNODC itself highlights the complexities of adequately measuring this part of the black market, and incorporate drug seizures as part of their own model for estimating the overall size of drug trafficking in a country (UNODC 2005). However, this presents an issue where countries with greater law enforcement capabilities are able to seize more drugs, leading to false impressions about the overall size of drug trafficking in a country. The UNODC depends on countries to independently report the amount of drugs that they seize annually. Given the fact that countries in civil war must allocate more of their funds for war, it is entirely plausible that

their law enforcement capabilities may be diminished, leading to a reduction in drug trafficking statistics. Although drug seizures are useful measure, the divergence between drug seizures and actual drug trafficking in a country could have altered these results. As such, it may be that countries with large amounts of drug trafficking are highly prone to peace failures, but lack of any reported statistics have led to their exclusion from this paper.

However, this lack of useful data may prove an avenue for future research, where a better method of capturing drug trafficking in a country may be used. Due to the inherently difficult task of estimating elements of the black market, it may be more useful to focus on specific regions, something that escapes the scope of this paper due to time and lack of resources. Additionally, future studies could choose to measure drugs in a different way than this study. The lack of standardized data meant that there were a plethora of measurements for similar drugs in the UNODC data sets. Rather that focus on one drug, a new estimate could be derived by finding an aggregate. Or on the contrary, future studies could focus on one particular type of drug or other lootable resource, since they have the potential to behave in a similar fashion. Ultimately, the importance of understanding drugs in conflict and peace resolution studies is vital more than ever, as the failed policies of the "War on Drugs" suggests that narcotrafficking is an issue that is here to stay.

Appendix

Table 3
Regression Results for Hashish Models

	Model 1	Model 2	Model 3	Model 4
Hashish	-0.0000446	0.0008909	-0.0001785	-0.0006924
(100 Kilograms)	(0.97)	(0.48)	(0.91)	(0.56)
Army	x	.1705195	x	x
		(0.55)		
Government Jobs	x	x	-0.1392078	x
			(0.32)	
Foreign Fighter	x	x	x	xxx
Withdrawal				(xxx)
Army x Hashish	x	-0.0039906	x	x
		(0.25)		
Government Jobs x	x	x	0.0016749	x
Hashish			(0.14)	
Foreign Fighter	x	x	x	**0.0098276**
Withdrawal x Hashish				**(0.00)****
Observations	37			

* =0.05 or Better Significance, xxx = omitted due to collinearity

Table 4
Regression Results for Heroin Models

	Model 1	Model 2	Model 3	Model 4
Heroin	0.0033779	0.0113478	0.00053	-0.013851
(100 Kilograms)	(0.69)	(0.19)	(0.96)	(0.22)
Army	x	.2473226	x	x
		(0.17)		
Government Jobs	x	x	-0.0183527	x
			(0.91)	
Foreign Fighter	x	x	x	**0.6732962**
Withdrawal				**(0.00)****
Army x Heroin	x	-0.069858	x	x
		(0.38)		
Government Jobs x Heroin	x	x	**-3.327607**	x
			(0.05)*	
Foreign Fighter	x	x	x	0.0138475
Withdrawal x Heroin				(0.22)
Observations	59			

* =0.05 or Better Significance

Table 5
Regression Results for Marijuana Models

	Model 1	Model 2	Model 3	Model 4
Marijuana	-3.49e-06	9.87e-06	-2.56e-07	-3.36e-06
(100 Kilograms)	(0.88)	(0.64)	(0.99)	(0.88)
Army	x	.2523879	x	x
		(0.19)		
Government Jobs	x	x	-0.1578478	x
			(0.20)	
Foreign Fighter Withdrawal	x	x	x	**0.7317656 (0.00)****
Army x Marijuana	x	-0.000065	x	x
		(0.14)		
Government Jobs x Marijuana	x	x	-0.0000175	x
			(0.56)	
Foreign Fighter Withdrawal x Marijuana	x	x	x	3.16e-06 (0.89)
Observations	78			

* =0.05 or Better Significance

Table 6
Regression Results for Opium Models

	Model 1	Model 2	Model 3	Model 4
Opium	-0.0013729	-0.0026538	-0.001681	**-0.0047253**
(100 Kilograms)	(0.55)	(0.44)	(0.50)	**(0.04)***
Army	x	-0.2683879	x	x
		(0.17)		
Government Jobs	x	x	**-0.4755815**	x
			(0.02)*	
Foreign Fighter Withdrawal	x	x	x	xxx (xxx)
Army x Opium	x	0.0159628	x	x
		(0.37)		
Government Jobs x Opium	x	x	**.0430633**	x
			(0.04)*	
Foreign Fighter Withdrawal x Opium	x	x	x	**.030437 (0.00)****
Observations	25			

* =0.05 or Better Significance, xxx = omitted due to collinearity

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