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Effects of Civil Wars on International Trade, 1950–92*

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The relationship between economic interdependence and international conflict is a burgeoning research topic. Previous research has examined the role of interstate conflict on bilateral trade. Civil wars also have severe consequences on society and are not uncommon. This article seeks to shed light on this relationship by examining the impact of civil war in one country on the total bilateral trade between the afflicted state and its trade partners. The repercussions of civil war participation on a militarily intervening third party's trade also receive scrutiny. Furthermore, the outcome of the civil war is investigated to determine whether all war terminations have the same effects on trade. Finally, this article questions whether the effects of civil wars can be mitigated by security partnerships. One key finding from analyses of 120 countries between 1950 and 1992 is that civil wars decrease bilateral trade between states by one-third. In addition, the findings indicate that the effects of civil wars on trade are not limited to countries where the civil wars are occurring but also affect joiners. Furthermore, the outcome types of civil wars have repercussions for future bilateral trade and, under certain situations, their effects can be alleviated.

Introduction

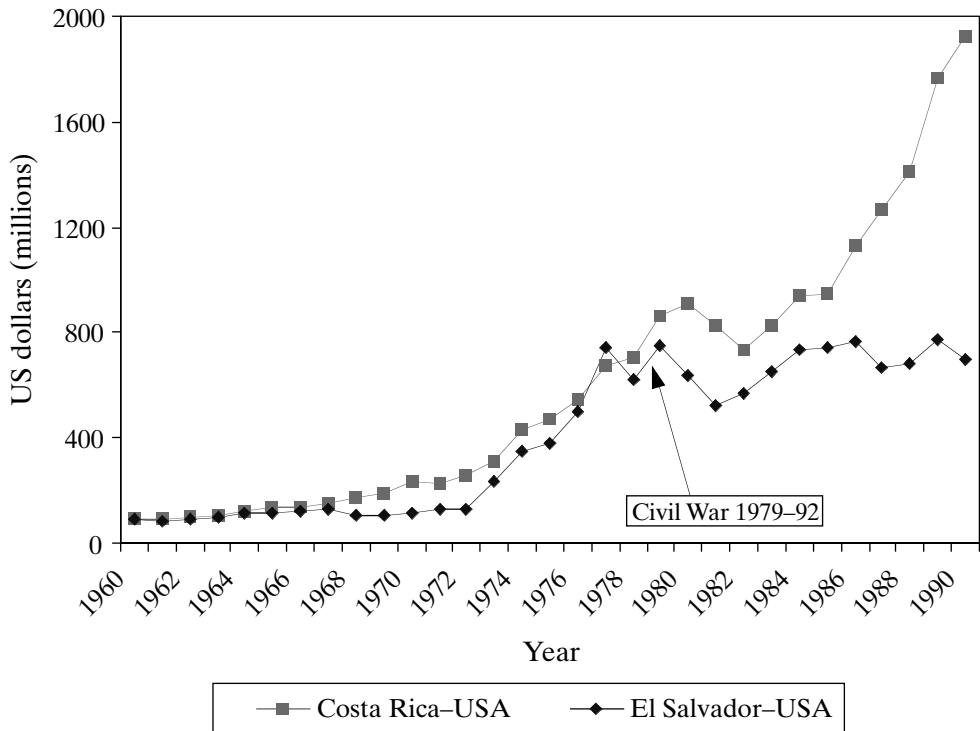
Strange (1988: 167) argued that 'nothing . . . has such a dampening effect on international trade as war'. Many studies since then have examined the effect of interstate conflicts on economic interdependence (Pollins, 1989a,b; Gowa & Mansfield, 1993; Mansfield, 1994; Mansfield & Bronson, 1997; Bliss & Russett, 1998; Barbieri & Levy, 1999; Morrow, Siverson & Tabares, 1998, 1999; Morrow, 1999; Anderton & Carter, 2001; Li & Sacko,

2002). At the same time, scholars have increasingly documented the economic consequences of civil wars (see Collier, 1999; Berdal & Malone, 2000; FitzGerald, Stewart & Wang, 2001; Collier & Sambanis, 2002; Collier et al., 2003).

This study contributes to the existing literature on conflict and trade by investigating the effect of civil wars on bilateral trade. Is it only interstate conflict that affects bilateral trade, or does intrastate conflict also have an effect? Figure 1 shows the bilateral trade between the United States and two countries in Central America: El Salvador and Costa Rica. This graph highlights the damage that civil wars can do – El Salvador had a civil war between 1979 and 1992. El Salvador is geographically closer and more populous than Costa Rica. For much of the period, El Salvador also had a larger

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Figure 1. Bilateral Trade of USA with Costa Rica and El Salvador



economy. All of these factors (which, incidentally, are all controlled factors in a gravity trade model) would lead one to expect the total volume of bilateral trade between El Salvador and the United States to be greater than US–Costa Rica trade. Yet, by 1990, there is a considerable difference in total trade flows within the two dyads, with El Salvador on the lower side.

The occurrence of a civil war is what we are primarily interested in here. However, we also develop a number of supplementary hypotheses on civil wars and trade. We analyze the effects of joining in the civil wars of other countries, the possible mitigating factors of alliances on bilateral trade during periods of civil wars, and effects of the outcome of the civil war. While the trends presented in Figure 1 are merely a demonstration, they are very much open to

explanation. As a result, we explore the relationship between civil wars and bilateral trade through a quantitative empirical test using 120 countries between 1950 and 1992 with controls.

In the next section, we present the hypotheses that link civil wars and interstate trade. The second and third sections present the research design and the findings. In the final section, we discuss the findings and suggest avenues for future research.

Civil Wars and Bilateral Trade

The existing literature on the economic impact of civil wars provides us with a number of findings that indicate that economic capabilities should decline during periods of civil war. It was found that the buying power of people residing in countries

experiencing civil wars decreases over time: Collier (1999: 175) maintains that a civil war lasting 15 years would result in the per capita GDP falling by about 30%. Collier et al. (2003: 19–23) suggest that there are various adverse ‘legacies’ that result from civil wars. States continue to devote large proportions of GDP to military spending, financial and social capital leaves the country, human rights suffer, and weary political systems are unable to accelerate recovery. In addition, Stewart, Huang & Wang (2001) find that in 15 of the 16 countries that they sampled, GDP per capita fell during the conflict years. This should have a negative effect on bilateral trade, as the gravity trade model predicts that the economic size of a partner is one of the key elements that affect the size of trade between states (Tinbergen, 1962). More generally, studies have shown that economic growth is lowered during civil wars (Elbadawi, 1999; see also Blomberg & Hess, 2002) and other periods of political instability (Alesina et al., 1996), and their presence results in human suffering and underdevelopment (Stewart & FitzGerald, 2001). Thus, the economic means of production, consumption, and transportation for one side can be reduced due to the civil war.

At the same time, the risks of trading increase owing to the unrest and instability directly associated with civil wars. This instability can be considered on a continuum ranging from little disruptions to traders fearing for their own safety. As Mwanasali (2000: 143) points out, in the Great Lakes region, ‘those [traders] who still operate along these perilous routes have been obliged to cooperate with the rebel armies and the troops of the countries that back the rebellion. In Kisangani, some traders supply the troops . . . in return for personal protection and safety along trading routes.’ Obviously, supplying troops from one side, no matter at what level, is likely to raise the ire of the opposing side. This is clearly not a conducive

environment for bilateral trade, as it has been shown that trade flourishes under stability (Dixon & Moon, 1993; Olson, 1993). Even if traders in a civil war did not have to worry about their own physical well-being, there would still be additional issues that a trader would normally take for granted in a democratic country. Part of the reason for democracies trading more is the reduced risk associated with their domestic institutions, such as property rights. During civil wars, however, these democratic safety nets begin to fray, if they ever existed at all (Olson, 1993; Dixon & Moon, 1993; Leblang, 1996; Bliss & Russett, 1998; Morrow, Siverson & Tabares, 1998, 1999; Henderson, 1999; Russett & Oneal, 2001; but see Knack & Keefer, 1995; Clague et al., 1996).

Furthermore, the instability has consequences on the running of the country and the basic infrastructure. Communication is likely to be less reliable and more expensive. Transportation is particularly likely to be hard-hit. As trade involves the safe transport of goods, it is easy prey for many factions within the country, including the institutions that are supposed to maintain that safety under normal conditions. Thus, the cost of moving the goods from one part of the country to another will increase. This general breakdown of law and order is likely to lead traders to question whether agreements will (or can) be honored. During civil wars, money that would normally have been allocated to the police is likely to be given instead to the military, but the military does not take over a proportional amount of the law and order work of the police. This leads to an increase in criminal activity. Matters are made worse by falling government revenue and expenditure during civil war, leading at times to government soldiers behaving in a similar manner to the rebel soldiers (Collier, 2000).

Further evidence of the destabilizing effects of civil wars on trade is provided by

Stewart, Huang & Wang (2001), who find that in two-thirds of the countries that they sampled, the US dollar value of total exports decreased. Also, in over three-quarters of the cases, import performance was also worse in the same years. While they do not control for the role of other factors in influencing trade, their findings do indicate the damage that civil wars can have on trade. Thus, civil wars have been found to affect negatively both exports and imports. All of this suggests the following hypothesis:

H1: Civil wars lead to decreases in total bilateral trade.

Alliances and Civil Wars

The political incentives for bilateral trade flows have also received attention. The literature on trade indicates that countries consider their relations with other countries (Pollins, 1989b; Gowa & Mansfield, 1993; Morrow, Siverson & Tabares, 1998, 1999; Morrow, 1999), and that they prefer to trade with countries with which they are politically or strategically friendly. Alliances are seen primarily as augmentations of national power and security. One wonders what will happen to trade if an alliance is present at the same time as a civil war.

The fact that an alliance continues despite the serious domestic problems in one country indicates that the other country sees this alliance as important. Thus, the ally may help its besieged partner by encouraging its traders to continue doing business. States might continue, and even openly support, the export of weapons and food supplies to the government of an ally. At the same time, the government in the civil war-torn country has incentives to maintain trade with an ally. Decisionmakers might calculate that there is low possibility that an ally will be trying to destabilize them or support the opposition. There is some evidence that alliances are

tools of management and control (Schroeder, 1976). These attempts at controlling the other's behavior can manifest themselves during periods of civil wars, as countries try to influence each other's behaviors towards the rebels.

In fact, Mansfield (1994: 164) claims that a state with limited resources might trade more with its allies during conflict. This will lead the government side to increasingly favor trade with the firms from its ally. It has been argued elsewhere that traders 'have incentives to behave in a manner consistent with government policies' (Mansfield & Bronson, 1997: 95). This effect is likely to be particularly pronounced during civil wars, where traders can decide that it is less risky to trade with countries endorsed by the government.

Thus, while the trade flow with its non-allied partners will decrease, trade with the allied country could very well increase. While bilateral trade with many countries drops in the presence of a civil war, the total trade of a state could theoretically appear to be unaffected, as the allies' firms support, or are encouraged to support, the alliance. This leads us to believe that the following hypothesis is in order:

H2: Given that a civil war is occurring in at least one trade partner, the presence of an alliance will increase levels of bilateral trade.

Military Intervention in Foreign Civil Wars

As the recent war in the Congo demonstrates, international civil wars are particularly gruesome and costly events for all concerned, including traders (see Regan, 2000). Participation might make sense for security purposes, and some countries and traders might profit from involvement in another country's internal war. However,

joining in another country's civil war creates several problems from a trading perspective.

Such military behavior is costly, and a war is likely to be seen unfavorably, even if it is not in one's homeland. Firms will be concerned about when and how this war will end. While the joining government may promise a short involvement at minimal costs, traders can have doubts as to whether these political goals are possible. A war effort dictates that the balance between butter and guns will be altered. For developing countries, joining in another country's civil war will result in precious resources being used on a foreign civil war instead of on the domestic economy. The infrastructure will be increasingly bogged down with the implementation of the decision to participate in a costly venture across the border. Even the movement of troops is likely to strain the basic infrastructure.

In addition, there is the matter of stability. Both traders from the joining countries and traders from countries that could potentially join in a civil war (see Lemke & Regan, forthcoming) will be concerned about possible internal instability brought about by conflict expansion. As some joining countries have cultural ties to parts of the population in the civil war-torn country, there might be some concern as to whether this involvement might lead to an interstate conflict in the future with the same country or whether the social balance in the joining country itself will be affected as well. All of these are likely to lead to worries about future stability. It appears that joining a civil war will disrupt normal trading behavior for firms in the joiners as well. Thus, we expect the following:

H3: One country's participation in another country's civil war decreases the bilateral trade between the joiner and each trading partner.

Civil War Termination

It seems reasonable to assume that a civil war will have a lasting effect on future bilateral trade. Most traders are unlikely to come back until they perceive that the risks of operating in this country are reasonably minimized. This could take anywhere from a couple of months to several years. Murdoch & Sandler (2002) find that short-run income-per-capita growth was negatively affected by the civil war, but there was not much effect on long-run growth (25-year period). Trade can pick up relatively quickly, as it is likely that the recovering country will need to import many things in the post-conflict reconstruction stage. For example, if the conflict has led to the rural population fleeing to the cities during the civil war, there will be an increased need for food imports. Thus, the dynamics of bilateral trade will continue to be affected even after the civil war is concluded. But how would the outcome of a civil war matter?

Recently, Walter (2002) examined the outcomes of civil wars in order to understand why some civil wars ended peacefully, whereas others are only concluded by a decisive victory. There was a successfully implemented peace settlement in only one-third of her sample of cases between 1940 and 1992. It is likely that in those cases where the sides fought to the very end, the tensions will continue for a long time, as the reasons for the conflict would not have been resolved with the needs of both sides being taken into consideration. In fact, it should be noted that the likelihood of genocide was found to be much higher when civil wars ended with a military victory (Licklider, 1995), which makes the prospects much more gruesome. This prospect is unlikely to make traders confident about doing business in such an environment. Also, the resources and the infrastructure of the country will be depleted as a result of this fight to the end.

Therefore, in cases where one side in the war has had a clear victory, the economy and bilateral trade should be negatively affected.

It is likely that a negotiated settlement will have a more positive effect on trade. This is because agreement by the parties is likely to lead traders to believe that the risks of a renewed war are lessened. Furthermore, Walter (2002) argues and finds support for third-party security guarantees playing a major role in the belligerents agreeing to sign such settlements. The presence of such a third party, who is willing to verify and enforce the terms, is likely to have a positive effect on bilateral trade, as it will alleviate the fears that traders have over continued instability following the conclusions of civil wars. This leads to the following arguments:

H4: If the civil war ended in a decisive outcome for one side, then bilateral trade should decrease.

H5: If the civil war ended in a negotiated settlement, then bilateral trade should increase.

Taken collectively, these hypotheses indicate that the international arena will be more likely to support and reward a negotiated resolution than a decisive or imposed resolution.

Research Design

We test these hypotheses on a pooled timeseries cross-sectional dataset that contains information on 120 countries from 1949 to 1992. The unit of analysis is non-directed dyad-years. We rely on data primarily from the Correlates of War project, the Armed Conflict dataset, the Penn World Table 5.6, and the Polity III dataset, and we compiled most of our data from EUGene (Bennett & Stam, 2000a).

While civil wars are generally seen as being monadic by nature, we chose a dyadic

analysis for a number of reasons. Our dependent variable is trade, which is dyadic in nature as it involves two or more actors. Also, as we examine the effect of the interaction between alliances and civil wars, a dyadic approach was in order. In addition, as studies on interstate wars have been dyadic, we felt that our results would be more comparable if we followed a similar design to the existing literature.

Dependent Variable

The dependent variable here is the nominal logged total dyadic trade. This variable (Barbieri, 1996, 1998) is the logged sum of exports and imports between two countries. Only countries that are mentioned in the Correlates of War project for the period 1949–92 are included. In order to control for the reciprocal effect of trade on our independent variables, our dependent variable is measured at time $t + 1$ while our independent variables are measured at time t .

Independent Variables

The main explanatory variables here relate to civil wars. In Model 1 below, the civil wars are based on the coding rules of the Correlates of War project (Small & Singer, 1982; Sarkees, 2000). The following criteria have to be met in order to qualify as a civil war: '(a) military action was involved, (b) the central government at the time was actively involved, (c) effective resistance (as measured by the ratio of fatalities of the weaker to the stronger forces) occurred on both sides, (d) at least 1,000 battle deaths resulted during the civil war' (Sarkees, 2000: 129). Some economic studies (Collier, 2000) have merged civil wars with extrasystemic wars, which can be thought of as imperial or colonial wars (Sarkees, 2000: 128–129). Others have argued that the 1,000 deaths-per-year threshold is too restrictive (Regan, 2000). As we are concerned here with the effects of major civil wars, we did not want

to run the risk of incorporating other types of conflicts into our measure, so we decided to follow the standard definition of civil war.

The first hypothesis captures whether at least one country in the dyad is experiencing a civil war. This is a binary variable (*civil war*) that is coded 1 for each year that at least one country in a dyad is experiencing a civil war in a dyad-year and 0 otherwise. This is the main variable that we are interested in in this study, and we expect its existence to have a negative effect on bilateral trade. There are 27 different countries that experienced civil wars in our final estimations, for varying periods. Some of these countries endured more than one civil war. For example, Guatemala experienced one civil war in 1954 and another that started in 1966 and ended in 1996. This indicates that the results are not driven by one country.

The second hypothesis concerns the relationship between alliances and civil wars. We create a binary variable that is 1 if a dyad where at least one country is experiencing a civil war had an alliance in a dyad-year and 0 otherwise (*ally * civil war*). The data on alliances were obtained from EUGene (Bennett & Stam, 2000a), and the alliance variable is further discussed below. We expect this interaction effect to have a positive effect on trade.

The third hypothesis pertains to joining civil wars. We create a binary variable that is 1 if a dyad member joined in the civil war of any another country in a particular year and is 0 otherwise (*civil war joiner*). While we do have information on whether the country intervened on the side of the government, the rebels, or neither of them, we argue that, irrespective of the side they chose, their trade will be negatively affected.¹ This variable is also obtained from the dataset on civil wars

supplied by the Correlates of War project. We checked to see if all civil war joiners were major powers, as most countries do not have the capability to undertake such operations, and found that there were over 4,000 observations where the joiners were not major powers in a given dyad-year. Our expectation is that this variable will affect bilateral trade negatively.

The last two civil war variables test our hypotheses on the outcomes of civil wars. We include in our models a binary variable that is equal to 1 if there was a decisive military victory for one side and 0 otherwise (*decisive victory*), as well as a binary variable that is equal to 1 if there was a negotiated settlement and 0 otherwise (*negotiated settlement*). We relied on Walter's codings (2002: 169–170), where decisive victory is coded as an outcome where 'one side could convince its opponent(s) to cease fighting without their demanding any major concessions in return', and a negotiated settlement was coded as a joint agreement that was also implemented (Walter, 1999: 128). These are not the only possible terminations of civil wars; victories can be less than decisive, and implementation might not occur. Also, a civil war needs to have ended for these variables to apply. We test for the effects of these outcomes over five years following civil war. We did test to see if ten years would have had any effect and did not find any difference from the results obtained from five years (see Murdoch & Sandler, 2002). We expect decisive victory outcomes to have a negative effect on bilateral trade and negotiated settlements to have a positive effect.

We also used information from the dyadic Armed Conflict Dataset for the period between 1950 and 1992 to determine if our results held with an alternate conflict dataset, which constitutes Model 2 (see Eriksson, Wallenstein & Sollenberg, 2003). For the first hypothesis, we coded the *civil war* as being present for a country that was the

¹ We did conduct tests to see if the various types of interveners affected trade differently. We found that they all had the same effect on the trade of a country and that our decision to create one variable on joining was warranted.

location of an internal armed conflict where there were over 1,000 battle-related deaths per year, including those both with and without intervention from other states. This will allow us to determine whether our results hold for particularly intense civil wars. We also interact this *civil war* variable with the alliance variable (*ally* * *civil war*) to test our second hypothesis. For the third hypothesis, we coded the *civil war joiner* as a country that intervened in one or more internal wars in a year at any degree of intensity. Our argument leads us to believe that any level of intervention should create anxiety in the market of the joiner. We were not able to test our arguments on negotiated settlements and decisive victories, as this information is currently not available in this dataset for this time-span.

In order to reduce the probability of spurious findings, we include a number of control variables. We include the gravity model of trade (Tinbergen, 1962; Deardorff, 1997). This allows us to capture the economic size of the countries. We include the national income (*GDP*) and domestic market size (*population*) of both sides. Data for these variables were obtained from the Penn World Table 5.6a (Summers & Heston, 1991; Heston et al., 1995), and the *GDP* variable is measured in 1995 constant dollars. We also include a measure to capture the distance between capitals in miles (*log distance*). Finally, in order to complete the gravity model of trade, we included the lagged dependent variable (*log of trade lagged*). This variable allows us to control for path dependence, and we expect it to be highly positively correlated with the dependent variable. All of the gravity model variables are logged.²

We also include a number of political variables. Relying on the Correlates of War

coding scheme on alliances, we create a binary variable that is 1 (*alliance*) if the two sides are allied (Singer & Small, 1968) and 0 otherwise. We expect this variable to be positively correlated with bilateral trade. Another political variable that we would expect to raise trade is common interests between states. We were not able to add affinity measures, such as Tau-b correlations between alliance portfolios (Bueno de Mesquita, 1981), because of the high correlation between the Tau-b affinity measure and the alliance variables. However, we controlled for the expectation of conflict by adding a binary variable that is equal to 1 when the equilibrium from the 'International Interaction Game' for the dyad in any given year is war and 0 otherwise (Bueno de Mesquita & Lalman, 1992; Bennett & Stam, 2000b). While the Tau-b scores play a major role in the measurement of this game, this variable does not have the same correlation problem with alliances, and it also helps to capture some of the arguments of Li & Sacko (2002) on the expectation of conflict on trade. When war is expected, there should be less trade between the states.

One political variable that has received considerable support in previous research is the positive effect of joint democracy (*joint democracy*) on trade. Following others (Bennett & Stam, 2000b; Li & Sacko, 2002), we create this variable by multiplying the differences of the two sides' Polity III democracy (plus ten) and autocracy (plus ten) scores (Jaggers & Gurr, 1995). This leads to a range from 0 to 400, with the higher scores representing higher degrees of joint democracy. We use the data from the Polity III dataset.

We include a binary variable that captures the presence of a militarized interstate dispute (MID) between members of a dyad in a particular year (Gochman & Maoz, 1984; Jones, Bremer & Singer, 1996). A MID can be a threat, display, use of military

² We thank Quan Li & David Sacko for sharing with us the gravity data that they used in their work (2002).

force, or war. We believe that this variable (*militarized interstate dispute*) will have a negative effect on bilateral trade. This variable is quite important in delineating between the impact of a cross-border war and a civil war when, in previous studies, civil wars have been lumped in with all types of conflict or have been ignored altogether. Our expectation is that interstate conflict will have a greater negative impact on trade than civil war but will not negate an independent effect that civil wars can impose.

Most of the earlier studies on trade and conflict focused exclusively on major power dyads. We control for the effects of a major power in a dyad (*major power in dyad*). This variable is coded as 1 if either member of the dyad is a great power. We expect this variable to have a positive effect on trade, as major powers have more resources to support trade. Information on major powers is taken from the Correlates of War project.

We rely on ordinary least squares estimation (OLS) for model estimation. We also used other estimations, including a two-way fixed-effects model, but found that the results were no different: the variables pointed in the same direction, and the statistical significance was not altered. We use robust standard errors, clustered on the country-dyad.

We have 101,441 non-directed dyad-year observations from 1950 to 1992 in our final models. For the first model, this set of observations has 11,235 occurrences of at least one member of a dyad having a civil war, 1,687 occurrences of the civil war–alliance interaction, 7,408 occurrences of at least one dyad member joining a civil war, 777 occurrences of a negotiated settlement to a civil war, and 3,607 occurrences of a decisive war outcome to a civil war. These observations demonstrate that civil wars are not rare phenomena in this set. In the second model, where we rely upon the Armed Conflict Dataset, there are 10,365 instances where at

least one side is experiencing a civil war, 1,508 instances of civil war–alliance interaction, and 6,969 instances of intervention into a civil war. Additionally, the proportions of these instances are similar to the proportion of civil war-related observations in all possible non-directed dyad-years, meaning that the distribution of civil wars is independent of the missing observations.

Results

Table I presents the results of the OLS regression analysis. Overall, the results support our arguments about the influence of civil wars on bilateral trade. Civil wars do have a negative impact on bilateral trade levels. This effect is reduced when the trading partners are also allied. In addition, when a state joins another state's civil war, that conflict participation is associated with reduced levels of trade. While a decisive outcome in civil war does not have an impact, a negotiated settlement does have a positive effect on trade.

When a civil war is occurring in at least one state in a dyad, the results suggest that trade will decline – a result significant at a .01 level in both models. When all else is held constant, the expected decline in the level of logged trade from times of no civil war to times of civil war is 33% in Model 1.³ This has two implications, depending on which side of the dyad a state is on. Assume a dyad with states A and B, where state A is experiencing a civil war while B is not. For state A, the implication of this finding is that trade will not only decline by over one-third between A and B, but also by one-third between A and any other state. Alternatively, the reduction of trade for state B is restricted only to its trade levels with state A. Thus, systemic effects of civil wars can be seen through the reduction of bilateral trade

³ Stata 7.0's LOGDUMMY was used for this calculation. This procedure is designed for the calculation of percentage change in logged dependent variables.

Table I. Effects of Civil War on Logged Dyadic Trade between 1950 and 1992

	<i>Model 1</i>	<i>Model 2</i>
Civil war	-0.401** [0.041]	-0.204** [0.036]
Civil war joiner	-0.146** [0.033]	-0.104** [0.036]
Negotiated settlement	0.489** [0.089]	
Decisive victory	-0.043 [0.049]	
Ally * civil war	0.314** [0.091]	0.057 [0.092]
Alliances	0.003 [0.034]	0.039 [0.034]
Militarized interstate dispute	-0.672** [0.134]	-0.691** [0.133]
War expectation	-0.054* [0.022]	-0.032 [0.022]
Joint democracy	0.000** [0.000]	0.000** [0.000]
Major power in dyad	0.120** [0.028]	0.121** [0.028]
Log of trade	0.694** [0.005]	0.696** [0.005]
Log distance	-0.151** [0.008]	-0.152** [0.008]
Log GDP side 1	0.506** [0.016]	0.508** [0.016]
Log GDP side 2	0.483** [0.015]	0.482** [0.014]
Log population side 1	-0.222** [0.017]	-0.231** [.017]
Log population side 2	-0.216** [0.013]	-0.219** [.013]
Constant	-11.374** [0.297]	-11.311** [0.295]
F-score	6027.270	6761.69
R ²	0.706	0.705

Observation in both models: 101,441. Robust standard errors in brackets.

** significant at .01 level; * significant at .05 level.

between the state stricken with civil war and their trading partners.

To build on the previous example, what happens to bilateral trade if state A or state B is engulfed in a civil war and the states are allied? The results of the analysis indicate

that the civil war–alliance interaction significantly increases levels of trade between states at a .001 level of significance in Model 1. In other words, given that at least one state in an allied dyad is waging a civil war, the level of trade between the states increases. This

result should be taken in the context of the rest of the model, however. The coefficient for the civil war–alliance interaction is absolutely smaller than the coefficient for civil war, each having a different sign. In realistic terms, then, the presence of an alliance in a dyad where at least one state is fighting a civil war *reduces* the amount of trade lost due to the civil war, though it does not completely negate the independent civil war effect. A Wald test comparing a model without the civil war–alliance interaction and the current model indicates that civil war's effect on trade is not negated by the presence of an alliance in a dyad. Since the alliance variable is insignificant, alliances are influential in this model only when they logically matter the most – during a time of conflict.

Interestingly, while the coefficient of this interaction variable was in the expected direction, it fell short of statistical significance in the second model. The Correlates of War conceptualization of civil war requires at least 1,000 deaths over the course of the conflict, whereas in the second model, we required 1,000 deaths for each year. This suggests that at such high levels of domestic violence, allies may start to reconsider their relationship with the current government. Only particularly committed allies might be willing to continue their relationships, and this is likely to be those that are in a defensive pact (see also Long, 2003). We tested for this possibility by running Model 2 instead with a defensive pact variable and a defense pact*civil war interaction variable and found statistical support for this contention, as the presence of a defensive alliance, when there were over 1,000 civil war deaths per year, had a mitigating effect.

Like the civil war variable, the fact that at least one state in a dyad joined another state's civil war has a negative impact on the trade levels of the dyad in both models. The reduction in trade levels within a dyad when at least one member has joined another state's

civil war is 13.7% in the first model. This effect on bilateral trade levels is not as strong as the effect that is produced by the civil war itself. Nonetheless, this is quite a loss in trade for a state that has decided to intervene in another's internal dispute, and this result may provide evidence that the potential loss or diversion of trade is a cost that goes into the intervention decisionmaking process.

The effect of the outcome of civil wars on bilateral trade varies. We had expected that negotiated settlements would increase dyadic trade. The results do support this argument, as negotiated settlements are found to have a positive effect on bilateral trade, and the finding is statistically significant where it was possible to test it, that is, Model 1. The results indicate that there is more bilateral trade at the end of a civil war, provided that there is a negotiated settlement. This indicates the additional benefits that parties to a civil war can achieve by coming to a mutually agreeable settlement and, potentially, a perpetual peace. We had expected that bilateral trade would be negatively affected by a decisive military outcome for one side. The results do not support this argument. While the sign is in the expected negative direction, it is statistically insignificant.

The expected effects of the control variables in both models support the prevailing findings in the standing literature. The components of the gravity model are all statistically significant in the expected direction. The value of trade in time t is strongly correlated with the level of trade in time $t + 1$. Large GDP values in both states are correlated with high values of trade in the following year, while large distances and populations have a negative effect on trade. The other political and conflict control variables also come out as expected. Joint democracy contributes positively to bilateral trade. The presence of a major power also leads to more trade. The only variable that

does not perform as expected is *alliances*. Alliances are statistically insignificant. However, this is not altogether surprising given the presence of other variables that also capture preference similarity.

War expectation and interstate conflict between dyad members are found to decrease trade in Model 1. In Model 2, expectation of war, while in the predicted direction, falls short (.146 level). These findings contribute to the interstate trade and conflict literature; particularly relevant is that the results here indicate that interstate conflict is associated with decreased bilateral trade, even after controlling for civil war. In this study, the presence of a militarized interstate conflict reduces dyadic trade by about one-half, whereas civil wars decrease trade by about one-third. These results suggest that bilateral trade is affected more by interstate conflict than intrastate conflict, but more importantly, these findings underscore the importance of considering conflict when studying bilateral trade, as conflict is found to depress dyadic trade.

Conclusion

In this study, we investigated the consequences of civil wars on dyadic trade. We wanted to see if the effects of conflict on bilateral trade are limited to just interstate conflicts or whether intrastate conflicts might also matter. The results indicate that civil wars, generally considered monadic phenomena, do impact dyadic trade. This finding indicates that traders are worried not only about instability in the relations between the two capitals but also about instability within one trading partner.

One encouraging finding is that civil war belligerents have an additional incentive to reach a negotiated settlement, as traders tend to react positively to the post-conflict peace such settlements create. This is important, since decisive outcomes are generally associ-

ated with very gruesome ends. The results here indicate that trading states do respond positively if the ending is with a negotiated settlement, and this has implications for conflict management.

Further research on this topic might examine the effect of the duration of civil wars on bilateral trade, as well as the spatial spillover effects. While it is possible that short-lived internal disturbances might not be of great concern to traders, it is highly likely that a civil war that goes on for years (for example, the Angolan or Sudanese civil wars) will be much more disastrous for bilateral trade. A long civil war will make entry to the war-torn country's markets by a new trader difficult, as reliable information will be hard to come by, and those that had previously entered the market will keep others out (Collier, 2000).

Countries that experience civil wars are not isolated in a vacuum. The effects of civil wars on trade influence the overall region in several ways (see Brown & Rosecrance, 1999; Cranna, 1994). The transportation of goods across the region is hampered, for example; the wars in Yugoslavia were particularly damaging in this respect for European goods transportation. During civil wars, neighboring countries see a flux of refugees, which hampers the infrastructure of the receiving country. Traders will consider the possibilities of a contagion effect. In fact, Murdoch & Sandler (2002) find that civil wars also affect the income-per-capita growth of neighboring countries. Our results further demonstrate that the effects of civil war are not limited to the countries in which they are taking place (see our findings on negotiated settlements and joining).

Yet, while we argue that civil war affects the trade levels of other countries, it is not reasonable to assume that the civil war affects all other countries' trade equally in the system. For some states, it might actually lead to increased trade. For example, during

the conflict in Yugoslavia, China took over some of the military markets Yugoslavia previously used to supply (Burke & Macdonald, 1994: 171). However, most of the time, civil war translates as lost trade for other countries as well. The question remains: for whom and how much? For the biggest markets of the world, it is unlikely that the loss of a market due to civil war will be of great concern; the volume of transaction will probably not be big enough to matter, since most countries that experience civil wars are not the most developed countries in the system to begin with (Henderson & Singer, 2000). However, the effects of the civil war on adjacent countries are much more dramatic. In addition to the loss of a very important market, there will be increased security concerns for the neighbor, and this will repel traders.

The findings here are also consistent with the argument that 'conflict hurts trade', especially when considering that the model presented here includes both interstate disputes and civil wars with similar directional impacts. The results, furthermore, contribute to the existing literature by providing evidence that bilateral trade is harmed by civil wars. More importantly, the findings show the excruciating economic consequences of civil wars on global society.

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