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Civil War in a Globalized World: Diplomacy and Trade*

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Abstract

We consider the impact of diplomatic intervention in civil wars on international trade. Using a large data set over the period 1948-2005, we obtain two striking results: (i) diplomatic intervention has a positive effect on trade for the country in which the civil war occurs (target country); and (ii) bilateral trade between the target and intervening country does not increase more than trade between the target country and the other countries. We argue that intervention induces an enhancement of trade-promoting capital in the target country and show that diplomatic intervention has a positive effect on institutional quality in the target country.

Keywords: Civil War, Trade, Third Party Intervention, Trade Costs.

JEL : F50, F10, O11

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1 Introduction

A third of world countries has experienced civil conflict since the end of World War II. Civil war dramatically alters infrastructures, human capital and institutions. Civil war also has deep and persistent negative effect on international trade, up to (at least) 20 years after the end of conflict (Martin et al., 2008a). The end of war constitutes a new starting point for the building of a peaceful society through the reconstruction of infrastructures, human capital and institutions. This great challenge faced by countries after conflict needs to be analyzed in considering the role played by all the parts involved in the rebuilding. A crucial issue is the role and consequences of third party intervention in civil war.

We exploit a new dataset on diplomatic intervention in civil war to examine the effect of intervention on trade over the post World War II period (1948-2005). The context of civil war is of particular interest because it is a period of great political instability and the effect of diplomacy on local politics is potentially huge. We find that third party diplomatic intervention increases trade despite the persistent global decrease in trade observed in post-conflict countries. The positive effect of diplomatic intervention on trade has two possible explanations. The first is that following intervention, the intervener and the target countries may introduce some formal trade preferences. The intervener may use its intervention to exercise certain power and influence to promote bilateral trade. This explanation will be supported if trade between intervener and target country grows more than trade between the target country and the other world countries. The second is that intervention may decrease transaction costs through enhancement of some trade-promoting capital such as institutions, infrastructure rebuilding, trust,... This explanation will be strengthened if the increase in trade with the intervener is the same as the increase in trade with all the other countries.

Our main result are that: (i) diplomatic intervention has a positive effect on global trade for the country that experienced the civil war; and (ii) bilateral trade between the target and intervener country does not increase more than trade between the target and other countries. Our conclusions on the effect of diplomatic intervention on trade reinforce the idea of an enhancement of trade-promoting capital after a diplomatic intervention. Through an event-study analysis, we show that after civil war, the increase in quality of institutions for countries that experienced intervention is higher than for countries that did not.

To our knowledge, few studies have tackled the effect of third party intervention on international trade. Berger et al. (2009) focus on US trade patterns after CIA interventions during

the Cold War. They show that the share of imports of the target country from the US increases, but find no effect on exports from the target country to the US. They argue that the increased importation of the target country reflects a trade diversion and is due to an increase in the power and influence arising from CIA intervention. The authors claim that these effects do not stem from decreased transaction costs. There are also few studies dealing with the effect of intervention on institutions. Easterly et al. (2008) provide an estimate of the effect of CIA interventions during the Cold war on levels of democracy. They show that superpower interventions are followed by significant declines in democracy. Our results are very different from these two articles as we focus on diplomatic interventions which, by nature, differ from CIA interventions.

Our paper also contributes to the literature on the aftermath of civil war. A strand of the political science literature contributes to our understanding about the roots of conflict (Fearon and Laitin, 2003; Collier and Hoeffler, 2004) and there is a growing strand that focuses on the effects of civil war (Martin et al., 2008a) and its aftermath (Fosu and Collier, 2005; Chen et al., 2007). Among other consequences, institutions are dramatically affected by civil war. Civil conflict induces a disorganization or total collapse of national institutions. In reviewing the recent literature on the role of institutions for growth, Blattman and Miguel (2009) write that 'the social and institutional legacies of conflict are arguably the most important but least understood of all war impacts'. In this paper, we argue that interveners improve the institutional quality in the target country.

The remainder of our paper is structured as follows. Section 2 describes the data on diplomatic intervention and trade. Section 3 explains the estimation procedure. Section 4 presents our empirical results regarding the effect of diplomatic intervention. Section 5 focuses on endogeneity issues. Section 6 is dedicated to the institutional channel and Section 7 concludes.

2 Data on diplomatic intervention and trade

We use the database in Regan (2002), in which diplomatic intervention is either mediation or a forum. Mediation is a non-coercive, non-violent, and, ultimately, non-binding form of intervention. The definition of mediation used to build this database is borrowed from Bercovitch and Wille (1991) that mediation is 'a process of conflict management where disputants seek the assistance of, or accept an offer of help from, an individual, group, state, or organization to settle their conflict or resolve their differences without resorting to physical

force or invoking the authority of the law'. An international forum is a formally organized meeting of the representatives from several countries whose outcome, in this case, is also non-binding. In our sample, 98% of diplomatic interventions are initiated by a third party and 2% are requested by at least one of the warring parties. From 1948 to 2005, there have been 119 diplomatic interventions in civil wars. Figure 1 shows that the least developed countries where civil wars are frequent, are often the targets of diplomatic interventions (black coloured). Figure 2 depicts the countries that intervened in civil conflict (grey coloured). The countries with the most developed economies are the most frequent interveners. At the top of the list, the US launched 26 diplomatic interventions over the period.

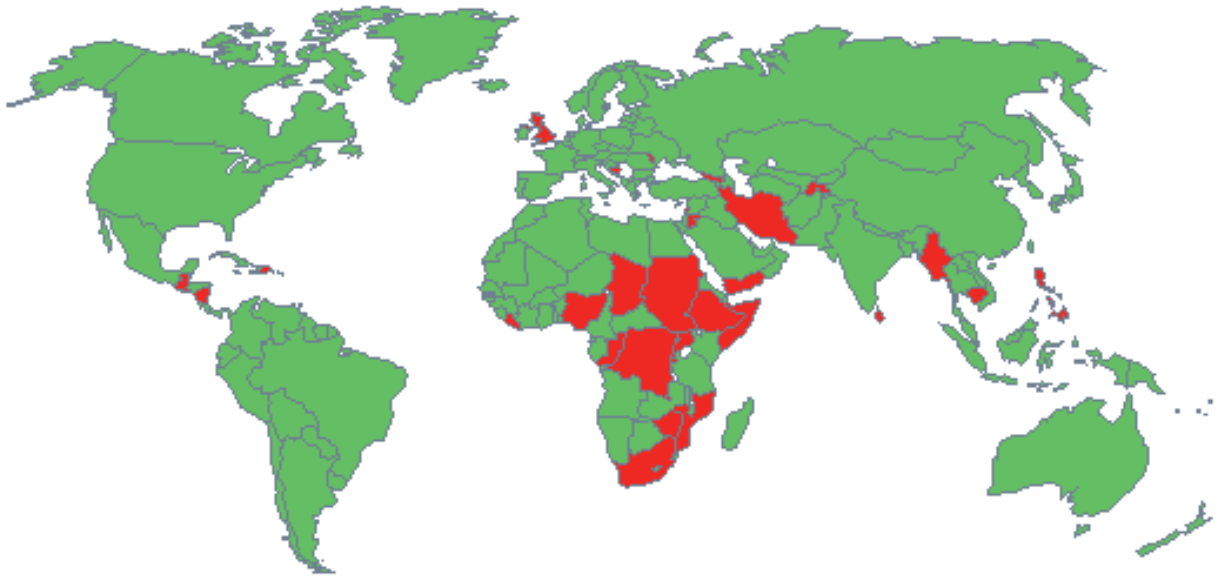

Figure 1: Target countries

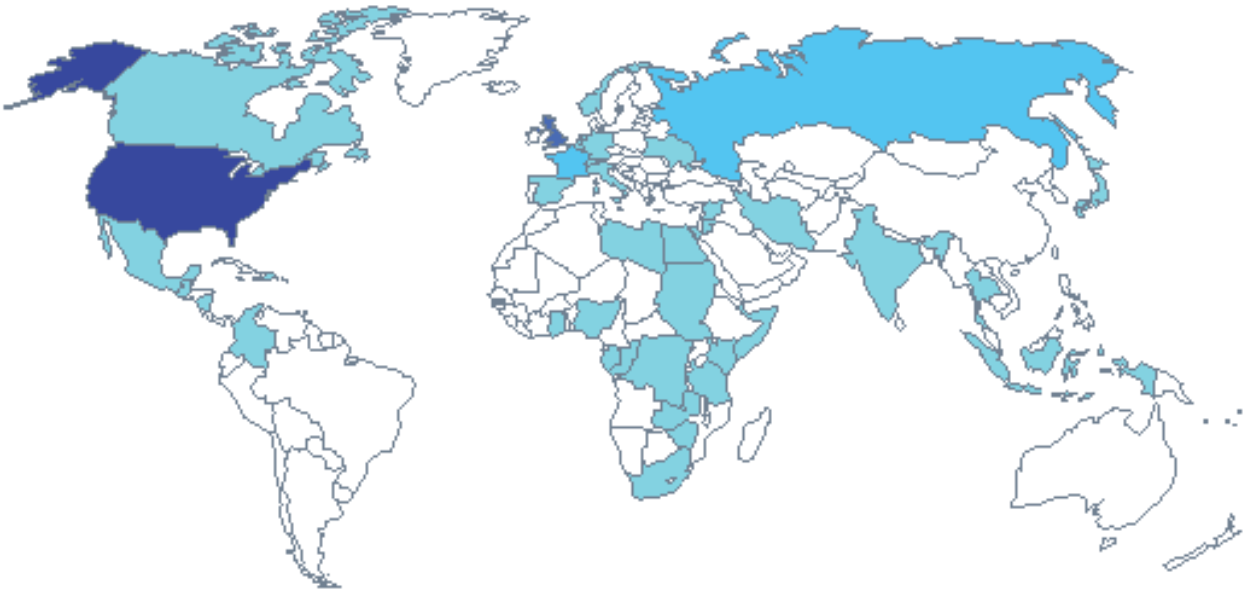

Figure 2: Interveners

For civil war, we use Correlates Of War data proposed by Gleditsch (2004) and completed by Regan (2002) which takes account of civil wars with less than 1,000 deaths per year.[1] For the usual gravity variables we use various sources. We use International Monetary Fund (IMF) Direction of Trade Statistics (DOTS) data augmented by Martin et al. (2008b) for the aggregated trade variables. The Regional Trade Agreements data comes from Vicard (2009), the Currency Union data from Jose de Sousa[2] and gross domestic product (GDP) from the World Bank (World Development Indicator) completed by Barbieri (2002).

[1] The dataset contained in Regan (2002) records all the interventions in conflicts with more than 200 deaths per year.

[2] `http://jdesousa.univ.free.fr/data.htm`

3 Specification and estimation procedure

In order to estimate the effect of diplomatic intervention on trade, we use the gravity equation formulation and the estimation procedure proposed by Baier and Bergstrand (2009). We first explain why we choosed these procedure. Following Head and Ries (2009), the vast majority of empirical and theoretical formulations of the gravity equation can be summarized in the following equation for the value of X_{ijt}, the exports from country i to country j at time t:

$$X_{ijt} = G_t M_{it}^{\exp} M_{jt}^{imp} \phi_{ijt}. \tag{1}$$

Different theoretical foundations occur in the literature (Anderson and van Wincoop, 2004; Eaton and Kortum, 2002; Chaney, 2008). $M_{it}^{\exp}$ and M_{jt}^{imp} represent the respective individual attributes of the exporter i and of the importer j at time t, G_t is a year specific factor and ϕ_{ijt} represents bilateral determinants. We specify the log of the bilateral term ϕ_{ijt} as:

$$\ln \phi_{ijt} = \boldsymbol{\delta} \boldsymbol{D}_{ijt} + \varepsilon_{ijt}, \tag{2}$$

where $\boldsymbol{D}_{ijt}$ represents the observed and ε_{ijt} the unobserved bilateral trade cost determinants. Taking the logarithm of equation (1) and substituting (2) into the new equation and defining $\rho_t = \ln G_t$, we obtain:

$$\ln X_{ijt} = \ln M_{it}^{\exp} + \ln M_{jt}^{imp} + \boldsymbol{\delta} \boldsymbol{D}_{ijt} + \rho_t + \varepsilon_{ijt}. \tag{3}$$

In the standard gravity equation, $M_{it}^{\exp}$ and M_{jt}^{imp} are the respective GDPs of the two countries, GDP_{it} and GDP_{jt}. This means that the standard gravity equation omits 'multilateral resistance terms' (Anderson and van Wincoop, 2003; Feenstra, 2004). Most applications of the gravity equation concentrate on the variations in bilateral trade, that is $\boldsymbol{D}_{ijt}$, and use fixed effects for each exporter-year and importer-year in order to eliminate the two monadic determinants in (3).

Our objective is to determine whether a diplomatic intervention induces a change in trade between intervener and target countries and whether this induces a change in trade between the target country and all its trading partners. Hence, we concentrate on both the monadic and dyadic determinants of trade. To our knowledge, the only theoretically grounded method that is appropriate for this objective is the method proposed in Baier and Bergstrand (2009) which enables estimation of bilateral trade for a large number of countries, over a long period, without elimination of the monadic determinants. They use Taylor expansions around symmetric trade costs to derive a linear econometrically implementable equation. Following

their notations, T_{ijt} is the bilateral trade cost, σ the elasticity of substitution of consumers' preferences and the equation of interest is:

$$\ln(X_{ijt}) = \beta_{0t} + \ln(GDP_{it}) + \ln(GDP_{jt}) - (\sigma-1)\ln T_{ijt} + (\sigma-1)MRT_{ijt} + \rho_t + \varepsilon_{ijt}, \quad (4)$$

where, $\beta_{0t} = -\ln\left(Y_t^W\right)$ and the MR terms are defined as follows:

$$MRT_{ijt} = \sum_{k=1}^{N}\theta_k \ln T_{jkt} + \sum_{m=1}^{N}\theta_m \ln T_{mit} - \sum_{k=1}^{N}\sum_{m=1}^{N}\theta_k\theta_m \ln T_{kmt}. \quad (5)$$

The multilateral resistance term, MRT_{ijt}, is an exogenous variable that takes account of multilateral price effects in the estimation. We will estimate equation (4) and focus on the dyadic effect and monadic effects of diplomatic interventions. The first determinant we consider can be captured by a dyadic dummy variable, INT_{ijt}^{bil} which is 1 only if one of the two countries i and j intervenes in the other country at time t. The second determinant can be captured by monadic dummies, $INTX_{it}^{G}$ and $INTM_{jt}^{G}$ which are 1 only if i and j respectively were the target of an intervention at time t. In the rest of the paper, we use the lags of these dummies and when our interest is not in distinguishing exports and imports, the monadic effects are aggregated into a single variable $INTG_{ijt}$. This dummy variable is 1 if either i *or* j experienced an intervention at time t.

4 The effect of diplomatic intervention on trade

In this section we present our main results. We focus first on the effects of diplomatic intervention on target country trade flows without distinguishing between imports and exports. After some robustness checks, we estimate the effect on imports and exports separately.

4.1 The effect of diplomatic intervention on global trade

We use the methodology in Baier and Bergstrand (2009) described above. We specify the trade barrier term of equation (4) in order to take account of the global effect of diplomatic intervention:

$$T_{ijt} = \exp\left(-\widetilde{\boldsymbol{\beta}}_G \boldsymbol{INT}_{ijt}^{G} - \widetilde{\boldsymbol{\beta}}_{bil}\boldsymbol{INT}_{ijt}^{bil} - \widetilde{\boldsymbol{\beta}}_C \boldsymbol{CONTROL}_{ijt} + \mu_{ij}\right), \quad (6)$$

where μ_{ij} is a country pair fixed effect and $\boldsymbol{INT}_{ijt}^{G}$ and $\boldsymbol{INT}_{ijt}^{bil}$ are two lagged dummy vectors (from $t-k$ to t). The component INT_{ijt-d}^{G} is 1 only if country i or j experienced an intervention at time $t-d$. It measures a global effect of intervention, i.e. the effect of

interventions on the patterns of trade of all the partners of the target country. $\boldsymbol{INT}_{ijt}^{bil}$ is also a vector of the lagged dummies. Its component INT_{ijt-d}^{bil} is 1 only if j intervened in i *or* i intervened in$j$ at time $t-d$. It measures the effect of intervention on the intensity of bilateral trade between the intervener and the target country. $\boldsymbol{CONTROL}_{ijt}$ is a vector of the control variables. It includes RTA_{ijt}, a dummy set to 1 if countries i and j are are members of the same Regional Trade Agreement at time t and CU_{ijt}, a dummy set to 1 if countries i and j are members of a common Currency Union at time t. It also includes a vector of lagged dummies indicating the end of conflict in country j or i ($\boldsymbol{EndWar}_{ijt} = (EndWar_{ijt-k}, ..., EndWar_{ijt})$). $EndWar_{ijt-k}$ is a dummy and is set to 1 only if country i or country j came out of the war k years before time t. Substituting this specification into (4), we write our main equation of interest:

$$\begin{aligned} ln\left(X_{ijt}\right) &= \beta_{0t} + \ln\left(GDP_{it}\right) + \ln\left(GDP_{jt}\right) + \boldsymbol{\beta}_G \boldsymbol{INT}_{ijt}^{G} + \boldsymbol{\beta}_{bil} \boldsymbol{INT}_{ijt}^{bil} \\ &\quad + \boldsymbol{\beta}_C \boldsymbol{CONTROL}_{ijt} + \boldsymbol{\beta}_{MR} \boldsymbol{MR}_{ijt} + \mu_{ij} + \rho_t + \varepsilon_{ijt}, \end{aligned} \tag{7}$$

where $\beta_{0t} = -\ln\left(Y_t^W\right)$, $\boldsymbol{\beta}_I = (1-\sigma)\,\widetilde{\boldsymbol{\beta}}_I$ for $I = G, bil, C$. The term $\boldsymbol{MR}_{ijt}$ comprises multilateral terms for all the explanatory variables (excepted the GDP).[3] μ_{ij} is a dyadic fixed effect, ρ_t a time dummy, and ε_{ijt} is the random error term. All MR terms are defined similar to formula (5).

Our main specification includes 442,810 observations (dyads) from 1948 to 2005, and 11,054 diplomatic interventions (2.5%), i.e. 119 different diplomatic interventions (for a complete list, see Table 3 in Appendix). We choose to study the persistence of the intervention effect over a long time scale, and use dummies lagged up to 15 years. Our regression contains a large number of lagged variables (from 1 to $k = 15$ years). For ease of reading, we present our results in graphical rather than tabular form.[4] All estimated coefficients for the usual variables in the gravity equation are very similar to the results in the literature. The coefficients are smoothed by a one year window around the year of interest.

Figure 3 shows (the black squares) the effect of the end of civil war on trade (imports + exports) with a 10% confidence interval. The effect is persistent for 15 years after the end of the conflict and trade is still 15% lower than its natural level. The line with black circles is the effect of diplomatic intervention on the trade of the target countries ($\widehat{\boldsymbol{\beta}}_G$). The effect

[3] Formally, $\boldsymbol{\beta}_{MR}\boldsymbol{MR}_{ijt} = +\boldsymbol{\beta}_G \boldsymbol{MRINT}_{ijt}^{G} + \boldsymbol{\beta}_{bil}\boldsymbol{MRINT}_{ijt}^{bil} + \boldsymbol{\beta}_C \boldsymbol{MRCONTROL}_{ijt}$.

[4] Our main regression contains 79 variables and all multilateral resistance terms joined. This gives us 158 variables excluding time dummies. All the tables are available upon request.

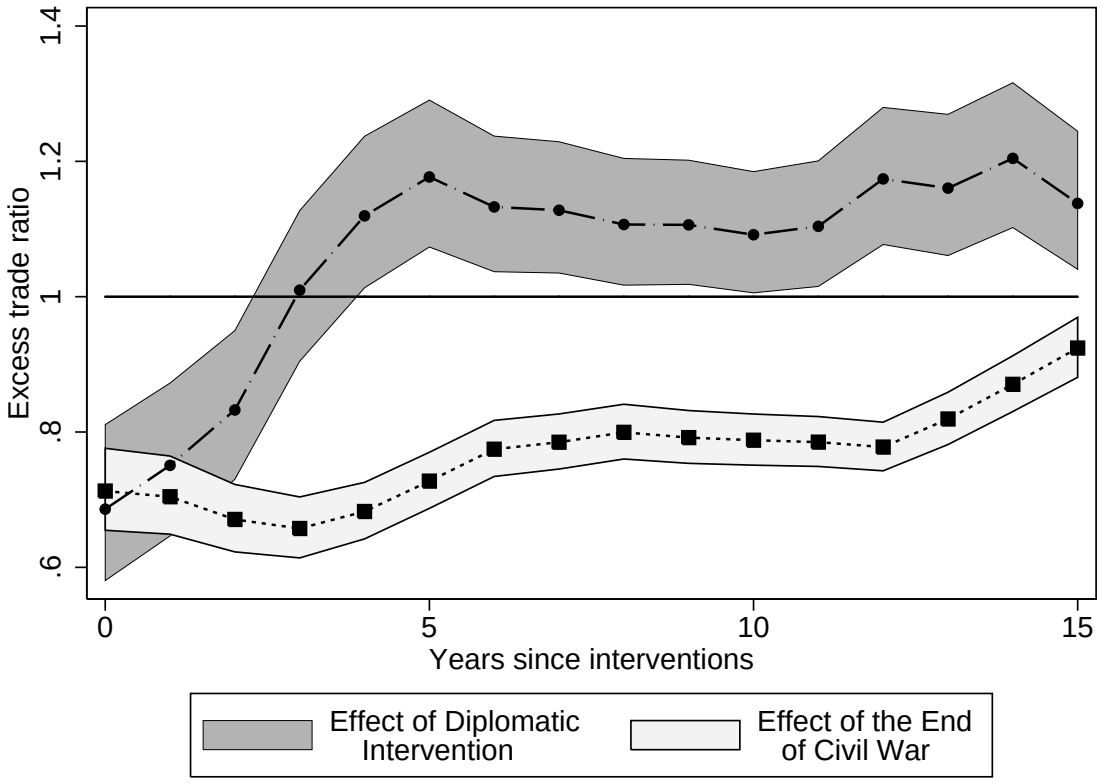

Figure 3: The impact of diplomatic intervention and civil war on trade

of diplomatic intervention is large and persistent up to 15 years after the end of civil war. The coefficient shows a nearly 20% increase in trade above its natural level. This shows that diplomatic intervention compensates (at least partially) for the negative effect of the end of conflict. We do not plot the effect of intervention on bilateral trade (between target and intervener countries) because none of the estimated coefficients in the vector $\widehat{\beta}_{bil}$ is significant. It seems that diplomatic intervention does not induce a privileged trading relationship between intervener and target countries. In other words, trade between these countries does not grow more than trade between the target country and its other partners. This result does not support the exertion of bilateral influence by the intervener but supports the transaction costs reduction effect of diplomatic intervention.

4.2 Robustness checks

In this section, we check whether our results regarding diplomatic intervention are robust to other control variables. We include other types of intervention (economic or military) and

interventions by the United Nations and Non-Governmental Organizations (NGO). We also check the robustness of our result to the introduction of level of development of the intervener, and the intensity of the conflict.

Other types of intervention: Our main results are unaffected when we introduce two vectors of dummies (with lags) to take into account economic and military interventions. Military intervention refers to intervention using military troops, naval forces, equipment or aid, intelligence or advisors, air support, or military sanctions.

United Nations and NGO interventions: Our main results are also unaffected when we introduce United Nations and NGO interventions.[5] Data on NGO interventions are from Regan (2002) and include diplomatic intervention by the Organization of African Unity, the Inter-Governmental Authority on Drought and Development and the Catholic Church Economic Community Of West African States.

Intervener's level of economic development: Our main results hold even for interveners outside OECD. To show this result, we split the sample into two groups. The first includes interveners belonging to the OECD group (over 112,000 observations) and the second group includes interveners that do not belong to the OECD (332,000 observations). The effect of diplomatic intervention on the trade of the target country ($\widehat{\beta}_G$) is still positive[6] and the effect of intervention on bilateral trade is still non-significant.

Intensity of conflict: Finally, our main results hold for conflicts with high and low intensities.[7]

4.3 Imports and exports

Next we distinguish the effect of intervention on (Figure 4) and exports (Figure 5). We want to check whether the effect of the intervention differs depending on the type of trade flows. We decompose $\boldsymbol{INT}_{ijt}^{bil}$ and $\boldsymbol{INT}_{ijt}^{G}$ into two components: $\boldsymbol{INT}_{ijt}^{bil}$ is decomposed into $\boldsymbol{INTX}_{ijt}^{bil}$ and $\boldsymbol{INTM}_{ijt}^{G}$. The component $INTM_{ijt-d}^{bil}$ of $\boldsymbol{INTM}_{ijt}^{bil}$ is a dummy that is equal to 1 only if country i intervened in country j at time $t-d$. It captures the effect of a diplomatic intervention on imports by the target country (j) from the intervener (i). Similarly, component

[5] Interpreting NGO, military and economic intervention effects is difficult. For the first coefficients we observe a negative effect (significant or not) and for the last coefficients a positive effect (for the last 3 years only at mean).

[6] For the first group, the coefficient is negative for the first two years, but non-significant, while in the main regression it was negative and significant.

[7] We introduce a dummy that controls for the intensity of conflict. It is 1 when the number of deaths per year is higher than a threshold. This result is robust to different thresholds, defined as a number of deaths/year (1000, 50 000...).

$INTX^{bil}_{ijt-d}$ of $\boldsymbol{INTX}^{bil}_{ijt}$ is a dummy that is equal to 1 only if country j intervened in country i at time $t-d$. It captures the effect of diplomatic intervention on exports from the target (i) to the intervener country (j). $\boldsymbol{INT}^{G}_{ijt}$ is decomposed into $\boldsymbol{INTX}^{G}_{it}$ and $\boldsymbol{INTM}^{G}_{jt}$. The component $INTX^{G}_{it-d}$ of $\boldsymbol{INTX}^{G}_{it}$ is a dummy that is equal to 1 only if country i experienced an intervention at time $t-d$. It captures the effect of diplomatic intervention on the imports of the target country (j) from all its partners. Similarly, component $INTM^{G}_{jt-d}$ of $\boldsymbol{INTM}^{G}_{jt}$ is a dummy that is equal to 1 only if country j experienced an intervention at time $t-d$. It captures the effect of diplomatic intervention on the exports of the target country (i) to all its trade partners. We redefine the trade barrier terms as follows:

$$T_{ijt} = \exp\left(\begin{array}{c} -\widetilde{\boldsymbol{\beta}}_{GX}\boldsymbol{INTX}^{G}_{it} - \widetilde{\boldsymbol{\beta}}_{GM}\boldsymbol{INTM}^{G}_{jt} - \widetilde{\boldsymbol{\beta}}_{bilX}\boldsymbol{INTX}^{bil}_{ijt} \\ -\widetilde{\boldsymbol{\beta}}_{bilM}\boldsymbol{INTM}^{bil}_{ijt} - \widetilde{\boldsymbol{\beta}}_{C}\boldsymbol{CONTROL}_{ijt} \end{array}\right). \tag{8}$$

Notice that T_{ijt} is not necessarily equal to T_{ijt}. We use the definitions above to estimate the following equation:

$$\begin{aligned} ln\left(X_{ijt}\right) \;=\; & \beta_{0t} + \ln\left(GDP_{it}\right) + \ln\left(GDP_{jt}\right) + \boldsymbol{\beta}_{GX}\boldsymbol{INTM}^{G}_{it} + \boldsymbol{\beta}_{GM}\boldsymbol{INTX}^{G}_{jt} \\ & + \boldsymbol{\beta}_{bilX}\boldsymbol{INTX}^{bil}_{ijt} + \boldsymbol{\beta}_{bilM}\boldsymbol{INTM}^{bil}_{ijt} + \boldsymbol{\beta}_{C}\boldsymbol{CONTROL}_{ijt} \\ & + \boldsymbol{\beta}_{MR}\boldsymbol{MR}_{ijt} + \mu_{ij} + \rho_{t} + \varepsilon_{ijt} \end{aligned} \tag{9}$$

where $\beta_{0t} = -\ln\left(Y^{W}_{t}\right)$, $\boldsymbol{\beta}_{I} = (1-\sigma)\,\widetilde{\boldsymbol{\beta}}_{I}$ for $I = G, bil, C$. The term $\boldsymbol{MR}_{ijt}$comprises the multilateral terms for all the explanatory variables (excepted GDP).[8]

The effect of diplomatic intervention on imports: similar to the effects on global trade, diplomatic intervention has no significant effect on the imports of the target country from the intervener ($\widehat{\boldsymbol{\beta}}_{bilM}$ is non-significant). Figure 4 plots the estimated effect of interventions on the imports of the target country ($\widehat{\boldsymbol{\beta}}_{GM}$). We still find a negative effect of the end of civil war on trade. After the 4th year following an intervention, we observe a positive and significant effect of the intervention on the total imports of the target country ($\widehat{\boldsymbol{\beta}}_{GM}$ is significant). This effect is not always significant over the 15 years. The coefficient of intervention involves more than a 10% increase in imports over the natural level. Diplomatic intervention partially compensates for the negative effect of the end of conflict on imports.

The effect of diplomatic intervention on exports: the bilateral effect on exports ($\widehat{\boldsymbol{\beta}}_{bilX}$) is also never significant. The intervener does not import more from the target country than from

[8]Formally, $\boldsymbol{\beta}_{MR}\boldsymbol{MR}_{ijt} = \boldsymbol{\beta}_{GX}\boldsymbol{MRINTX}^{G}_{ijt} + \boldsymbol{\beta}_{GM}\boldsymbol{MRINTM}^{G}_{ijt} + \boldsymbol{\beta}_{bilX}\boldsymbol{MRINTX}^{bil}_{ijt} + \boldsymbol{\beta}_{bilM}\boldsymbol{MRINTM}^{bil}_{ijt} + \boldsymbol{\beta}_{C}\boldsymbol{MRCONTROL}_{ijt}$

other countries. Figure 5 represents the effect of intervention on the exports of the target country ($\widehat{\beta}_{GX}$). This effect is positive and significant after the 5th year following the intervention. The values of the coefficients are larger than the coefficients of imports. The coefficient induces a more than 30% increase in exports from the natural level. This persistent effect of diplomatic intervention partly compensates for the negative effect of the end of civil war on exports.

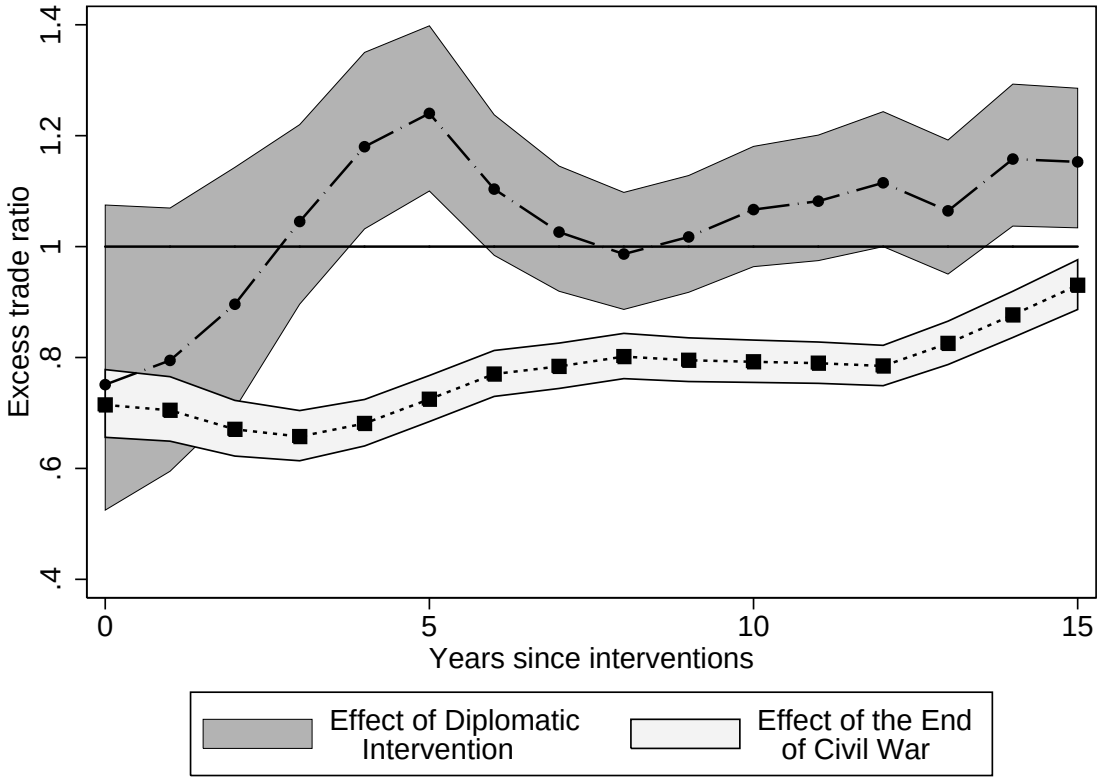

Figure 4: The impact of diplomatic intervention and civil wars on importations

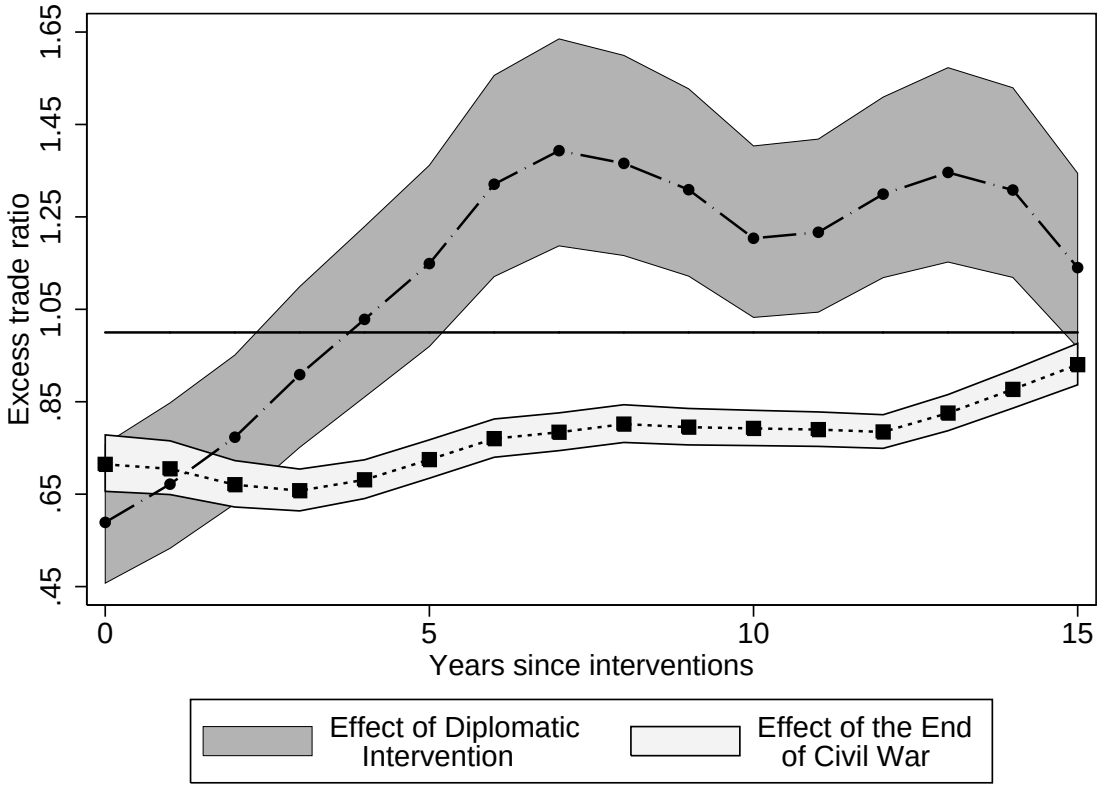

Figure 5: The impact of diplomatic intervention and civil wars on exportations

5 Endogeneity issues

5.1 Correcting for omitted variables

A possible problem concerning our estimations is the omission of explanatory variables that influence the decision both to intervene and to trade. Following Eichengreen and Irwin (1998) we use lagged dependent variables of trade flows to manage this omitted variable bias. To control for the possibility that the decision to intervene in a country in a state of civil war depends on previous trade, we re-estimate all the specifications adding one, two or three year lagged bilateral trade flows. Previous bilateral trade has a positive and significant influence on current trade. However, our results regarding diplomatic intervention are unaffected.[9]

[9] Results not shown here, but they are available upon request.

5.2 Reverse causality between trade and diplomatic intervention?

A topic that is connected to our study relates to the motivations of countries to intervene in civil war. We need to address this question because there may be a reverse causality between bilateral trade and diplomatic intervention. Does trade provide incentives to intervene? To our knowledge, few studies have tackled this question.[10] Greig and Regan (2009) show that a third-party with no trade with civil war state is more likely to offer mediation to the civil war than one with an average level of trade. The confirmation of this result with our data would contradict an intuitive, expected positive influence of trade on the choice to launch a diplomatic intervention. To test this potential endogeneity problem, we estimate the effect of imports and exports on the probability for each country i to intervene in country j involved in civil war:

$$\begin{aligned} Proba(INT_{ijt}) &= \beta_0 + \beta_1 M_{ijt} + \beta_2 X_{ijt} + \beta_3 \boldsymbol{CONT_{ij}} \\ &\quad + \beta_4 \boldsymbol{CONT_{ijt}} + \beta_5 \boldsymbol{CONT_{it}} + \mu_{ij} + \rho_t + \varepsilon_{ijt} \end{aligned} \tag{10}$$

The main variables of interest, M_{ijt} and X_{ijt}, are respectively import and export flows from i to j at time t. We use dyad variables ($\boldsymbol{CONT_{ijt}}$) to denote diplomatic relationships (United Nations votes, Military Alliances) and dyad variables invariant in time ($\boldsymbol{CONT_{ij}}$) as geographic proximity (Log distance, Contiguity) and historical linkages (common language, ex-colony, common colony). We also control for some intervener characteristics (Log GDP, military capability, democracy index) ($\boldsymbol{CONT_{it}}$).[11]

We restrict our sample such that the set of countries j are countries where civil war occurred between 1960 and 1996. The results of the estimations are reported in Table 1. In specification (1) to (3) we use a logit specification to predict the probability that a country will intervene diplomatically in a civil war. In the first regression, we find that imports and exports do not influence the intervention probability. In the second regression, we add control variables. Import and export flows still show non-significant effects, and the coefficients of the control variables have the expected signs: Geographical distance reduces the incentive to intervene in a civil conflict whereas colonial linkages, military capabilities and the GDP of potential interveners increase the probability of intervention. In regression (3) we employ dyad fixed effects and time dummies and a logit estimation procedure. This method forces us to exclude countries that have never experienced an intervention, which reduces our sam-

[10] See Greig and Regan (2009) for a recent survey on mediation in political science.

[11] See data sources in the appendix.

ple dramatically. We next apply the ordinary least squares (OLS) estimation procedure to regressions (4) to (6). Whichever the specification considered, import and export flows have non-significant effects on the probability of intervention. These results are robust to other controls and lags for imports and exports (results not shown here).[12]

We can propose several explanations for the non-significant effect of import and export on the probability of intervention. First, countries involved in civil war are generally small countries in terms of world trade. Their share in the trade flows of a potential intervener is generally small. Second, main trading partners may not take part in the civil conflict because intervention is risky and may fail to resolve it. If the intervener is suspected of defending one of the parties involved in the conflict which subsequently is the loser, the winning party may punish the intervener and drastically reduce its trade flows with this country. For these reasons, we are confident that the intervention decision is an exogenous determinant of trade flows.

None of the results we have found support the imposition of bilateral influence hypothesis but they support the transaction costs reduction hypothesis. This suggests that the positive effect of diplomatic intervention is due to the enhancement of some trade-promoting capital such as institutions, infrastructure rebuilding, trust,... following a diplomatic intervention.

[12] Unlike Greig and Regan (2009), we do not find a negative effect of trade on the probability of intervention. Our main variable of interest is level while they consider the proportion of the third party's total imports and exports traded with the target country.

Table 1: Trade Effect on Intervention's Probability

Specification:	(1)	(2)	(3)	(4)	(5)	(6)
Exportation$_{ijt}$	0.188	0.182	0.769	0.000643	0.000468	0.000658
	(0.121)	(0.169)	(0.566)	(0.000425)	(0.000794)	(0.000971)
Importation$_{ijt}$	0.0122	-0.187	-0.326	0.000146	-0.000539	-0.000281
	(0.120)	(0.164)	(0.593)	(0.000428)	(0.000783)	(0.000955)
Un Vote$_{ijt}$		0.159	1.741		-0.000186	0.00684
		(0.463)	(1.330)		(0.00310)	(0.00573)
Military Alliance$_{ijt}$		-0.334	-1.659		1.13e-05	-0.00904
		(0.362)	(1.599)		(0.00282)	(0.00801)
Distance$_{ij}$		-1.247***	7.373*		-0.00553***	-0.00254
		(0.216)	(3.938)		(0.00125)	(0.0254)
Contiguity$_{ij}$		-0.298	-0.679		0.00244	0.00640
		(0.473)	(4.304)		(0.00375)	(0.0790)
Comm. Language$_{ij}$		0.466	4.435		0.00118	-0.00278
		(0.325)	(3.735)		(0.00221)	(0.0755)
Colony$_{ij}$		1.558***	-13.49		0.0201***	0.00652
		(0.502)	(9.162)		(0.00557)	(0.0819)
Common Colony$_{ij}$		1.303***	-2.767		0.00825***	-8.22e-05
		(0.423)	(2.235)		(0.00296)	(0.0906)
Log GDP$_i$		0.410***	2.298		0.00103*	6.69e-05
		(0.132)	(1.410)		(0.000610)	(0.00323)
Militaries Capabilities$_i$		16.76***	-85.70		0.210***	-0.317
		(3.905)	(69.34)		(0.0308)	(0.216)
Democracy Index$_i$		-0.0296	0.0448		-3.21e-05	-0.000376
		(0.0262)	(0.143)		(0.000128)	(0.000294)
Observations	26365	9578	306	26365	9578	9578
R^2	0.02	0.17	0.22	0.001	0.016	0.330
Estimation Method	Logit	Logit	Logit	OLS	OLS	OLS
Dyad fixed effect	no	no	yes	no	no	yes
Time dummies	no	no	yes	no	no	yes

Note: Standard errors in parentheses with ***, ** and * respectively denoting significance at the 1%, 5% and 10% levels.

6 The institutional channel

In this section, we argue that institutions are a potential channel for the positive effect of diplomatic intervention on trade. The literature on the aftermath to civil war shows that institutions are dramatically affected by such conflicts. Diplomatic, economic or military interventions affect war outcome in terms of civil war duration (Regan, 1996, 2002). Collier (2006) argues that the intervener plays an important role in the institutional rebuilding of the target country. The intervener can provide institutional alternatives and assistance from skilled personnel. After civil war, the different parts share power and responsibility for institutional rebuilding. The intervener plays go-between and often proposes institutional design solutions. We refer to Acemoglu (2008), which defines institutions as '... rules, regulations, laws and policies that affect economic incentives and thus the incentives to invest in technology, physical capital and human capital'(pp126). There is a large literature showing that institutional quality matters for trade. Institutional levels and the institutional distance between trade partners are major determinants of bilateral trade flows. Anderson and Marcouiller (2002) show that corruption and imperfect contract enforcement reduce imports. The index of bad institutional quality (high degree of corruption, bad investment climate or inefficient judicial system) acts as a hidden tax on imports or increases the fixed costs of entry (Levchenko, 2007). Institutions also influence specializations patterns (Berkowitz et al., 2006; Nunn, 2007; Costinot, 2009). This literature shows that 'good' institutions are a source of comparative advantage and enable countries to produce and export more complex goods. According to the prominence of institutions in trade flows, we study the evolution of institutional quality following a diplomatic intervention in the light of historical illustrations and then provide new evidence.

6.1 Historical illustrations

Diplomatic intervention in civil war not only affects the chances of a peace agreement, but also leads to an improvement in the quality of the institutions in the target country, which, in turn, increases the target country's trade flows with the rest of the world. In this section, we discuss how diplomatic intervention in a civil war impacts on the target country's institutions, in the light of historical fact. Diplomatic interventions have an impact on the institutions in the target country. Peace agreements ending civil wars are generally focused not only on cease-fire and non violence clauses, they also often include conditions about new institu-

tions. We illustrate this argument using three different cases of intervention in civil wars in Guatemala, Rhodesia and Yugoslavia.

After the diplomatic intervention of Spain, the civil war in Guatemala (1961-1996) ended with a negotiated agreement signed by the leftist rebel leaders of the Unidad Revolucionaria Nacional Guatemalteca (URNG) and government representatives. In 1996, five different agreements were signed: an agreement on social and economic, and agrarian aspects, an agreement related to the strengthening of civilian power and the role of the armed forces in a democratic society, an agreement to a definitive cease-fire, an agreement on constitutional reform and an electoral regime, and an agreement related to the legal integration of the URNG.

Between 1976 and 1979, the US and Great Britain tried to implement the negotiation of a peace agreement to end the civil war in Rhodesia (1971-1979). In 1979, the Lancaster House Agreement ended this war following negotiations between representatives of the Patriotic Front (PF) and the Zimbabwe Rhodesia government. The parties signed a single agreement including the Independence Constitution, arrangements for the pre-independence period, and a cease-fire. The Independence Constitution included definition of the Republic state, rule of citizenship, a declaration of liberty and property rights, definition of the Judicature, governance of defence forces, and governance of public finance.

In Europe, the Balkan crises led to the end of the State of Yugoslavia. In 1995, the leaders of Bosnia, Croatia, and Serbia signed the Dayton Peace Accords, which officially ended the wars in Bosnia (1992-1995) and Croatia (1991-1995). NATO troops entered Bosnia in 1995 in order to enforce and end to the fighting. Diplomatic representatives of the US, Germany, France, the UK and Russia enabled the signing of the Dayton Peace Agreement. This agreement includes such detail as precise steps for the end to fighting, definition of the geographic boundaries between the Federal Republic of Yugoslavia and Bosnia and Herzegovina, voting rules for the next elections, and a new constitution.

These examples show that ending civil wars and promoting peace keeping is conducted through agreement on a constitution that includes at least the holding of free and fair elections, the building of a judiciary system, the governance of public finance and the safeguarding of liberty and property rights.

6.2 Results

We use seven different measures to analyze the effect of diplomatic intervention on institutions. Our results are robust whatever institutional measure is used. We consider four measures from The PRS Group. The first is an aggregate indicator, International Country Risk Guide (ICRG), which includes data from 1984. This aggregate measure is broken down into three others measures to account for economic, financial and political institutions. We use two indicators from Freedom House to reflect 'civil liberties' and 'political rights'. Our third institutional indicator source is the Fraser Institute. It provides a score for countries' 'regulation' of credit, labor and business. We are aware that these institutional measures do not reflect North (1994)'s definition, nor do they take account of criticisms related to institutional measures (Glaeser et al., 2004; Persson, 2005).[13] We think these measures capture at least some perception of the level of institutional quality and that variations in this perception can affect trade.

Is the hypothesis of a positive link between intervention and quality of institutions confirmed by our data? Are institutions affected by diplomatic intervention? To answer these questions, we follow the event-study methodology used by Chen et al. (2007). We consider post-civil war countries and compare the evolution of their institutions in terms of quality, between those countries targeted by diplomatic intervention and those which were not. Our 'event time' is the 10 years after the end of the civil war. The first year after the end of war is defined as event year 1, the second year as event year 2, and so on. Since the number of years for which data on institutions is available is not large, we restrict the 'event' duration to 10 years. We focus on the group of countries which experienced a civil war and were the target of a diplomatic intervention (WI). We need two control groups. The first group is composed of countries that have never experienced civil war (P), which allows us to control for an increasing world trend in the quality of institutions observed in the data. The second group is composed of countries that suffered civil war, but received no diplomatic intervention (W). For each of the two control groups, (P) and (W), for each year, and for each institutional variable, we compute the median values of the institutional quality index, λ_t^P and λ_t^W, respectively. We then compute the difference between the institutional quality in the country of interest, λ_{it}^{WI}, and the median for each institutional variable and each control group. Formally, we denote $\Delta_{it}^P = \lambda_{it}^{WI} - \lambda_t^P$ and $\Delta_{it}^W = \lambda_{it}^{WI} - \lambda_t^W$. We estimate the three following equations separately

[13] North (1994) defines institutions as '... the humanly devised constraints that structure human interaction'

for each of the seven institutional measures:

$$\lambda_{it}^{WI} = \alpha^{WI} + \beta^{WI} Endwar_{it} + \mu_i^{WI} + \varepsilon_{it} \quad (11)$$

$$\Delta_{it}^{P} = \alpha^{P} + \beta^{P} Endwar_{it} + \mu_i^{P} + \varepsilon_{it} \quad (12)$$

$$\Delta_{it}^{W} = \alpha^{W} + \beta^{W} Endwar_{it} + \mu_i^{W} + \varepsilon_{it} \quad (13)$$

where $Endwar_{it}$ counts the number of years after the end of the civil war (from 1 to 10). Table 2 presents the results of the estimations.

Table 2: Post-War Trends on Institutions in Conflict Countries

Dependent Variable	Group (WI) (λ_{it}^{WI})	(WI) relative to (P) (Δ_{it}^{P})	(WI) relative to (W) (Δ_{it}^{W})	Nbr of observations/ of countries
ICRG				
Global	1.28***(0.172)	0.74***(0.14)	0.53***(0.136)	225/25
Economic	0.48***(0.115)	0.401***(0.110)	0.155 (0.108)	229/25
Financial	0.914***(0.135)	0.744***(0.123)	0.51***(0.114)	238/26
Political	1.515***(0.205)	0.876***(0.187)	0.941***(0.183)	238/26
Freedom House				
Civil Liberties	0.028**(0.011)	0.037**(0.014)	0.017 (0.012)	471/37
Political Rights	0.029**(0.013)	0.034**(0.013)	0.028**(0.013)	471/37
Fraser				
Regulation	0.051**(0.020)	0.033*(0.019)	0.041*(0.021)	97/22

Note: Standard errors in parentheses with ***, ** and * respectively denoting significance at the 1%, 5% and 10% levels.

We observe that the trend for quality of institutions for group (WI), $\widehat{\beta}^{WI}$, is positive and significant whatever the institutional measure considered (Column 2). The institutional quality trend for countries that were the target of a diplomatic intervention (WI) relative to those that were at peace (P), $\widehat{\beta}^{P}$, is positive and significant (column 3). In other words, when we control for improvement in the quality of institutions over time, we see that the trend for quality of institutions for group (WI) is positive. Our main interest is the estimation comparing group (WI) and group (W) (Column 4). We observe a positive trend, $\widehat{\beta}^{W}$, for almost all

indices. Diplomatic intervention seems to have a positive effect on institutions in post-civil war countries. This conclusion is additional proof of the important role played by diplomatic intervention in the aftermath to civil war. It confirms that diplomatic intervention enhances some trade-promoting capital in the target country. It is also coherent with the positive effect of intervention on trade and the absence of a 'bonus' of increased bilateral trade with the intervener.

7 Conclusion

This paper considered the effect of diplomatic intervention by a third country in civil war. We have shown that diplomatic intervention affects the trade flows of the countries involved in the civil war: while trade levels generally fall in post-war countries, diplomatic intervention has a positive effect on exports and imports of these countries. We have also shown that intervener countries do not benefit from a privileged trading relationship with target countries. We argue that these effects are due to an enhancement of trade promoting capital and show that diplomatic intervention has a positive effect on institutional quality in the target country. The institutional channel appears a plausible explanation for the effect of intervention on trade.

Appendix A: reverse causality between trade and diplomatic intervention: data sources

As in the main part of the paper, bilateral trade (import and export) data come from IMF DOTS augmented by Martin et al. (2008b). For the geographic variables we use the CEPII bilateral distance database (`www.cepii.fr/anglaisgraph/bdd/distances.htm`). The 'Military capabilities' variable comes from Correlates of War (`http://www.correlatesofwar.org/`) and is the mean of six country components: Energy consumption, Iron and Steel production, Military expenditure, Military personnel, Total population, Urban population. The 'Alliances' variable also comes from Correlates Of War and is coded 1 if dyad shares a defensive, neutrality, non-aggression or entente alliance at year t. The UN votes correlation annual database, available for 1946 to 1996, is from Gartzke (`http://dss.ucsd.edu/~egartzke/`). The democracy index is from the Polity IV database; it ranks each country on a -10 to +10 scale. Intervener GDP is based on World Bank (World Development Indicator) completed by Barbieri (2002).

Table 3: Intervener and Target Countries

Intervener	Target Country	Year	Intervener	Target Country	Year	Intervener	Target Country	Year
U.k	Cyprus	1963	Spain	Guatemala	1987	Ghana	Liberia	1995
USA	Cyprus	1964	USA	Ethiopia	1989	Nigeria	Liberia	1995
U.k	Cyprus	1964	France	Cambodia	1989	Canada	Sri lanka	1995
Sudan	Ethiopia	1964	Thailand	Myanmar	1989	Norway	Sri lanka	1995
USA	Dominican Rep.	1965	Zimbabwe	Mozambique	1989	Netherlands	Sri lanka	1995
Gabon	Nigeria	1969	Kenya	Mozambique	1989	USA	Sudan	1995
Switzerland	Nigeria	1969	USA	Sudan	1989	USA	Burundi	1996
Libya	Chad	1969	Norway	Guatemala	1990	Russia	Moldova	1996
Egypt	Jordan	1970	USA	Liberia	1990	Gabon	Chad	1996
Somalia	Uganda	1972	Italy	Mozambique	1990	Russia	Tajikistan	1996
U.k	Cyprus	1974	USA	Ethiopia	1991	Gabon	Congo	1997
Zambia	Zimbabwe	1974	USA	Liberia	1991	Zaire	Congo	1997
Sudan	Ethiopia	1975	Italy	Mozambique	1991	USA	U.k	1997
Indonesia	Philippines	1975	Zaire	Rwanda	1991	Russia	Tajikistan	1997
Zambia	Zimbabwe	1975	Nigeria	Sudan	1991	Iran	Tajikistan	1997
USA	Lebanon	1976	Nicaragua	El Salvador	1991	Tanzania	Burundi	1998
Libya	Lebanon	1976	Djibouti	Somalia	1991	USA	U.k	1998
Syria	Lebanon	1976	Zimbabwe	Mozambique	1992	Thailand	Cambodia	1998
USA	Zimbabwe	1976	Italy	Mozambique	1992	Japan	Cambodia	1998
U.k	Zimbabwe	1976	Tanzania	Rwanda	1992	France	Yugoslavia	1998
USA	U.k	1977	Nigeria	Sudan	1992	USA	Yugoslavia	1998
U.k	Zimbabwe	1977	USA	Somalia	1992	Italy	Yugoslavia	1998
USA	Zimbabwe	1977	USA	Georgia	1993	Germany	Yugoslavia	1998
Jordan	Iran	1978	Spain	Guatemala	1993	Uk	Yugoslavia	1998
USA	Lebanon	1978	Norway	Guatemala	1993	South Africa	Zaire	1998
France	Lebanon	1978	Ukraine	Moldova	1993	Egypt	Sudan	1999
USA	Nicaragua	1978	Tanzania	Rwanda	1993	Canada	Sudan	1999
Dominican Rep.	Nicaragua	1978	Belgium	Rwanda	1993	U.k	Yugoslavia	1999
Guatemala	Nicaragua	1978	Nigeria	Sudan	1993	France	Yugoslavia	1999
USA	Zimbabwe	1978	Russia	Bosnia and Herzegovina	1994	South Africa	Zaire	1999
U.k	Zimbabwe	1978	Russia	Georgia	1994			
U.k	Zimbabwe	1979	Ghana	Liberia	1994			
Canada	El Salvador	1981	USA	Rwanda	1994			
Mexico	El Salvador	1982	Kenya	Sudan	1994			
India	Sri lanka	1983	Iran	Tajikistan	1994			
France	Chad	1983	Egypt	Yemen	1994			
Colombia	El Salvador	1984	U.k	South Africa	1994			
USA	El Salvador	1984	USA	South Africa	1994			
Congo	Chad	1984	France	Bosnia and Herzegovina	1995			
India	Sri lanka	1984	Germany	Bosnia and Herzegovina	1995			
Kenya	Uganda	1985	Russia	Bosnia and Herzegovina	1995			
Spain	Guatemala	1986	USA	Bosnia and Herzegovina	1995			
India	Sri lanka	1986	U.k	Bosnia and Herzegovina	1995			
India	Sri lanka	1987	USA	U.k	1995			

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