Introduction

Can we predict the failure of peace *after* a crisis has been settled? Some crises might break out again after years of peace, yet others are fully resolved and, hence, do not recur. The International Crisis Behavior (ICB) dataset indicates that almost half of all international crises since 1918 were recurring ones, i.e., crises that are related to some earlier hostility between the same actors on the same issue (Hewitt 2003).[1] A recurring crisis is a failure to maintain peace between actors. At the same time, a non-recurring crisis and the durability of the settlement following the first crisis is regarded a "success." But what specific factors affect the risk of non-recurrence of an international crisis?

International organizations (IOs) usually have an intermediary role between states, and this shapes the motivation of this article: do IOs prevent international crises from recurring between the same actors? I examine states' count of co-memberships in IOs with a view to identifying the *passive* mechanisms that create peace and induce the non-recurrence of an international crisis. To this end, this research is *not* about examining the *active* involvement of an IO in an interstate crisis, but what the *passive* impact of an IO derived from membership in that organization is on international crisis recurrence.[2] By passive impact, I refer to those elements that IOs offer without actually intervening in a conflict, such as communication forums, information provision in the background,

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[1] I use the definition of international crisis from Brecher and Wilkenfeld (1997, 4): a crisis may pertain to hostile, verbal, or physical interactions between two or more states, with a heightened probability of military hostilities. Hence, all crises in my data are of an international and interstate character.

[2] Hence, I do not address the effect that IOs may have by *intervening* in an international crisis. I focus on mechanisms that are able to "heal" states' rivalries and potentially prevent the stage of intervention more indirectly (or passively) in order to examine crisis recurrence. IOs' membership primarily encourages cooperation among states and, therefore, offers peace and good relations (Shannon 2009). I thus focus more on the functional role of IOs (Keohane 1984): hence, I do not assume an independent role for IOs and see IOs more as an "information arena" or forum for exchange.

reputational effects, and preemptive policies. For this research, I define IOs as *formal* institutions with at least three member states (Pevehouse et al. 2004).

IOs are characterized by various mandates that define their purpose, and different classifications of IOs help identify what the impact of specific IOs in international crises may be. The existing literature has examined the impact of IOs on crisis onset and in the context of militarized interstate disputes (Boehmer et al. 2004; Shannon 2009), but little attention has been paid to crisis recurrence. Moreover, while my analysis first considers all IOs (regardless of their mandate), I also examine the impact of those IOs that are potentially more skilled and have more expertise in the passive promotion of peace, i.e., peace-brokering IOs (Shannon 2009). To further examine thoroughly the significance of IOs' mandates, I further disaggregate peace-brokering IOs into security IOs and non-security IOs. Eventually, this study reveals what IOs are most likely to reduce the risk of crisis recurrence.

In light of this, I contribute to the previous literature by analyzing whether states' memberships in IOs have an impact on international crisis recurrence and, more specifically, how these patterns look like when disaggregating IOs according to their mandate i.e., the expertise they have. While crisis onset and crisis recurrence have many similarities, when a pair of states experiences a conflict, the actors become predisposed towards their opponents that might be dangerous for post-conflict stability. Therefore, recurrent conflicts might be more severe and intense than earlier disputes. In the words of Walter (2004), "conflict begets conflict." In line with Hewitt (2003), Quinn et al. (2007), Kreutz (2010) or Mason et al. (2011), this highlights then additionally the importance of

conflict recurrence: many outbreaks of conflict are recurrences of a past conflict rather than "new" disputes.

The remainder of this article proceeds as follows. First, I illustrate more thoroughly how crisis recurrence differs from crisis onset, and I provide a review of the determinants of crisis non-recurrence i.e., what are the mechanisms that lower the risk of crisis recurrence. Second, I outline the theoretical argument behind the impact of IOs on states' relations and crisis prevention. Next, I describe the research design, the model, and the variables employed for the empirical analysis. The last section presents the results, before I conclude with a discussion of the findings and the avenues for further research.

Crisis after crisis

A peace agreement does not necessarily lead to the resolution of a crisis. Sometimes, underlying issues remain unresolved. As a result, we might observe the outbreak of another crisis between the same actors for the same underlying reasons, but due to a new trigger (Hensel 1994; Vasquez 2000). Against this background, Colaresi and Thompson (2002) argue that past and future crises are interrelated, because the initial cause keeps states in ambivalent relationships that can still increase the risk of another crisis. The important question that can be derived from this is: what causes a crisis between two actors to break out for another time?

The debate over whether previous and future crises are related to each other or not has led to different assumptions about prior crises and their effects. This study shows that the existing literature is divided into two different approaches. The first posits that states, which already experienced a crisis, tend to be more prone to see another (a new crisis

being related to the previous one) (Hensel 1994, 1995; Vasquez 2000; Colaresi and Thompson 2002). The second approach contends that states learn from their experience, and past crises can then make future crises less likely. Through repeated crises, actors become more experienced and uncertainty is reduced (Wagner 2000). Interaction between the same actors means that the disputants know their opponents, as well as their strategies, and they can more accurately predict future movements. When actors do not know their opponents' intentions, they are more uncertain about the relations between one another, which increase the risk of crisis recurrence (Gartzke and Simon 1999).

This debate differentiates *crisis onset* from *crisis recurrence*. Both concepts clearly have things in common since crises onset and crises recurrence may be given due to similar circumstances (Walter 2004; Quinn et al. 2007; Mason et al. 2011). In addition, every case of crisis recurrence is a case of crisis onset, but not the other way around. However, despite their similarity, crisis recurrence substantially differs from crisis onset and, hence, merits special attention (Grieco 2001; Walter 2004; Quinn et al. 2007; Mason et al. 2011). As demonstrated in the literature (e.g., Walter 2004; Quinn et al. 2007; Kreutz 2010; Mason et al. 2011; Rustad and Binningsbø 2012), crisis recurrence differs from crisis onset mainly since the actors have interacted in a conflict in the past, potentially due to the same reasons. This past interaction determines states' behavior and future choices. In essence, crisis recurrence is the continuation of a crisis onset, when actors fail to permanently end an initial disagreement (Diehl and Goertz 2000; Goertz et al. 2005). Moreover, since actors learn from their past experience, the knowledge of actors, the information on their opponents, their incentive structure, and the overall circumstances in the context of crisis recurrence frequently differ from those of crisis

onset. While I do not seek to underestimate the importance of crisis onset by focusing on crisis recurrence, I aim at examining thoroughly the determinants, and to measure the predictability of *crisis recurrence* considering IO influence.

As in the case of the original reasons for the first crisis to break out, commitment problems and information asymmetry are also associated with crisis recurrence (Fearon 1995; see also Voeten 2013). Therefore, every mechanism that reduces uncertainty between states can be considered a way of easing a crisis and lowering the risk of recurrence. The literature identified several mechanisms that address these issues. Among these factors are democratic forms of government, globalization, or trade ties (see Chan 1997; Gleditsch 1992; Oneal and Russett 1999; Oneal et al. 2003; Weede 2005; Gartzke 2007; Böhmelt 2010; Gartzke and Hewitt 2010). In general, these studies find that states can maintain good relations via different channels and for various purposes. Boehmer et al. (2004) particularly focus on the features of IOs that are likely to be effective in eliminating crises. These scholars argue that institutionalized IOs have an informational impact on states that reduces the likelihood of an international crisis, because these IOs then have the capacity to reduce uncertainty. At the same time, institutionalized IOs are creating commitments for states, thereby promoting cooperation and good relations (Boehmer et al. 2004).

Peace through IOs

At least since World War II, there has been an increase in states forming and joining IOs. States join IOs for efficiency gains, legitimacy reasons, or, more generally, to reduce transaction costs, and promote cooperation (see also Keohane 1984; Fearon 1998; Beth

2000; Voeten 2001; Hawkins et al. 2006; Dorussen and Ward 2008, 2010). Some IOs only take more narrowly defined roles (e.g., North Atlantic Treaty Organization as a military alliance), while others may cover a wider range of tasks (e.g., United Nations or the European Union). In general, states use IOs as *instruments* in order to fulfill their interests (Archer 2015, 114), and, as indicated above, I follow Dorussen and Ward (2008, 2010), among others, and do not assume an independent role for them (see also Keohane 1984).[3]

IOs may also specifically deal with matters of conflict and peace (e.g., Haas 1983; Boehmer et al. 2004; Shannon 2009). They act as third-party actors in a conflict to settle it or secure post-conflict stability, and they can help states to prevent conflict in the first place (Kadera and Mitchell 2006; Mitchell and Hensel 2007). To this end, IOs can be *passive* and *active* mediators.[4] On one hand, IOs are *active* mediators when they get directly involved in peace and conflict bargaining (Mitchell and Hensel 2007). An IO actively intervenes when there is a crisis to be settled by helping states to implement policies aiming to build peaceful relations among their members through an enforcement, management, and authoritarian approach (Joachim et al. 2008: 6-10; see also Hansen et al. 2008). States enter a crisis when bargaining by the belligerents fails to satisfy their interests (Fearon 1998; Powell 2002; Boehmer et al. 2004; Pevehouse and Russett 2006; Haftel 2007; Hansen et al. 2008; Shannon 2009; Shannon et al. 2010). IOs operating under the active approach may systematically facilitate bargaining and secure a solution

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[3] In this context, Dreher et al. (2015), for example, argue that membership in IOs signals to potential investors more benign policies and a more stable political environment, which ultimately increases foreign direct investment (FDI) inflows.

[4] A mediator is defined as a party that offers non-violent third-party assistance to resolve a crisis peacefully (Bercovitch et al. 1991; Bercovitch 1996: 3).

for the belligerents due to resources, leverage, and legitimacy elements (e.g., Tallberg et al. 2013) in the form of, e.g., mediation, arbitration, and adjudication (Mitchel and Hensel 2007; Boehmer et al. 2004; Shannon 2009). For example, the Organization for Security and Co-operation in Europe (OSCE) has established the Minsk group as an effort to find a peaceful solution to the Nagorno-Karabakh conflict in the Caucasus.

On the other hand, and this is my focus on in this paper, IOs can also *passively* encourage states' cooperation. A passive influence of IOs refers to all those elements that IOs offer without actively intervening in a conflict, and we see these elements then primarily in times of non-crisis. Specifically, IOs provide platforms and forums for their members that these use to communicate and exchange ideas or perceptions. An active or direct involvement of the IO is *not* given here, however. IOs passively increase interaction opportunities, which lengthens the shadow of the future and raises the reputation costs for the belligerents for violating an agreement (Mitchell and Hensel 2007). Also, by promoting information passively, uncertainty is lower, and the probability of a crisis is reduced (see also Fearon 1995). From a constructivist point of view, Dorussen and Ward (2008, 2010) argue that IOs serve as vehicles of communication between members, building trust and social capital among them. That is, frequent interactions in IOs can lead states redefine their social identities in less conflictual terms (see also Koremenos et al. 2001: 786). Along these lines, political psychologists have examined the impact of images and perceptions in foreign policy. They argue that interactions via IOs contribute to changing state elites' images of other decision makers, potentially changing an "enemy" image to a more benign one (Cottam R 1977, 62; Cottam M 1994, 32). Another explanation on the role of IOs is derived by the

liberalist approach suggesting that IOs create trade links that strengthen the domestic interests in favor of good bilateral relations opposed to conflict (Moravscik 1993, 1997). That is, states are less likely to challenge peace in the short run if they anticipate significant future interaction opportunities and they value the payoffs from those interactions. Ultimately, if a conflict escalates, the various linkages created via IOs' passive elements were not able to maintain peaceful relations.

Against the background of this general overview of IO's active and passive roles, I examine the *passive* role of IOs and study how states' co-memberships in IOs affect the risk of crisis recurrence.[5] IOs' passive mechanisms (i.e., joint membership in this study) are likely to exert an influence across conflict onset, duration, termination, and recurrence. This means that the passive mechanisms in a first crisis are also likely to be given in a later crisis. However, IOs' passive influence can build and capitalize on the information and experience accumulated since the previous crisis and as a result make an impact on crisis recurrence. I focus on three interrelated arguments to develop this claim. First, shared memberships in and increased interactions via IOs not only provide information through multiple channels (see also Dorussen and Ward 2008, 2010), but also align member states' preferences, which reduces the risk that disputants will seek to challenge peace (Werner 1999; Mitchell and Hensel 2007). In turn, repeated interactions in IOs raise the stakes for future interactions, which may make existing peace hard to challenge, and bargains that were reached more durable (Fearon 1998; Mitchell and Hensel 2007).

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[5] See Chapman and Wolford (2010) who focus on the active elements of IOs when examining conflict recurrence.

Second, IOs deter conflict (Shannon 2009). Abbott and Snidal (1998, 26) describe this feature of IOs when highlighting that "they increase the prospect of continued interaction, often across issues, and generalize reputational effects of reneging across members of the organization." Therefore, when states share memberships in IOs, they are less likely to risk peace and stability with other member-states for securing further interactions.

Third, IOs promote preemptive policies aiming at securing peace and stability, thereby altering states' conflicting interests. For instance, IOs prevent conflict by legitimating collective decisions and changing perceptions of identity and self-interest (Deutsch 1957; Stone et al. 1998; Mansfield and Pevehouse 2000; Gartzke et al. 2001; Russett and Oneal 2001; Pevehouse and Russett 2006). This discussion leads to the formulation of the first hypothesis:

Hypothesis 1: Dyads with more joint memberships in IOs have a lower risk of international crisis recurrence than dyads with fewer joint memberships in IOs.

Note, however, that IOs have different issue areas. Some, but not all IOs are formed with the explicit purpose of helping countries to peacefully manage their grievances (Haas 1983; Shannon 2009). Following this, I examine those IOs that are actually related to conflict and more likely to address security aspects as such, thereby potentially in a better position to *passively* reduce the risk of crisis recurrence than other IOs with a different agenda. In line with this rationale, Boehmer et al. (2004), for instance, argue that IOs require a certain degree of institutional structure in order to effectively intervene in conflicts and, thus, divide IOs according to their degree of institutionalization: minimal (having meetings and information gathering), structured (having policy agendas), and

interventionist (having mediation mechanisms). Boehmer et al. (2004) examine the direct, i.e., interventionist, attempts by IOs to resolve interstate conflicts.

Due to the focus of my study on the *passive* influences of IOs, though, disaggregating IOs along the degrees of institutionalization may not be the most adequate approach. Instead, I rely on a different disaggregation by focusing on those characteristics of IOs that are arguably more important for the *passive* role of IOs in crisis prevention: what IOs are or represent. I make use of the classification in Shannon (2009) who defines peace-brokering IOs as those IOs that can provide information and have the capacities to offer mediation (see Table 1 for peace-brokering IOs). These IOs are highly institutionalized, and they are likely to encourage their members to manage disputes. They mandate peaceful relations within their ranks and incorporate dispute settlement mechanisms into their charters (Shannon 2009). If peace-brokering IOs are indeed able to provide information, manage states' conflicting interests, and even resolve states' disputes by actively intervening in conflicts (Shannon 2009), they might also be able to offer their expertise passively – and before the recurrence of a crisis (see also Shannon 2009, 2010):

Hypothesis 2: Dyads with more joint memberships in peace-brokering IOs are less likely to see international crisis recurrence than dyads with fewer joint memberships in peace-brokering IOs.

Table 1. Security and non-security peace-brokering IOs

Security IOs		Non-security IOs	
Name	**Abbreviation**	**Name**	**Abbreviation**
African Union	AU	Andean Community	ANDEAN
Association of Southeast Asian Nations	ASEAN	Economic Community of Central African States	ECCAS
Commonwealth of Independent States Charter	CIS	Economic Community of West African States	ECOWAS
European Union	EU	Caribbean Commission	CARICOM
League of Arab States	LOAS	Council of Europe	COE
North Atlantic Treaty	NATO	Nordic Council of Ministers	NCM
Organization for Security and Cooperation in Europe	OSCE	Organization of American States	OAS
Organization of African Unity	OAU	Organization of Eastern Caribbean States	OECS
United Nations	UN	Organization of the Islamic conference	OIC
Western European Union	WEU	Permanent Court of Arbitration	PCA
Warsaw Pact	WPact	Southern African Development Community	SADC

Note: The information on the peace-brokering IOs is from Shannon (2009). The security and non-security classification is based on information gathered from the IOs' websites: security IOs have a reference to military issues according to their scope.

I also disaggregate the peace-brokering IOs into IOs with security and IOs with a non-security mandate. A security IO is a peace-brokering IO, but not necessarily the other way round. Security IOs offer the elements that peace-brokering IOs offer, but they have a more specific agenda on security (military) issues. Security IOs are more likely to compel members to peacefully settle than strictly economic institutions (Shannon 2009).[6] Security IOs mostly focus on consulting states about security issues that concern either

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[6] Previous studies have examined security IOs in relation to militarized interstate disputes by examining IOs' security skills during an intervention and, therefore, the *actual involvement* of IOs (Barnett and Finnemore 1999; Boehmer et al. 2004).

domestic or international threats. In other words, a security IO clearly states the focus on security-related information. NATO, for example, expresses that it is a "political and military" alliance and its essential purpose is "to safeguard the freedom and security of its members through political and military means."[7] I expect that co-memberships in peace-brokering security IOs reduce the risk of crisis recurrence even more primarily as they offer more relevant security and military-related information. And this should facilitate lowering uncertainty even more. In addition, security peace-brokering IOs can promote *ex-ante* peace agreements and, thus, increase commitments for their members. For instance, NATO is a military alliance that explicitly states the collective defense principle that ultimately encourages member states to maintain peaceful relations. No direct engagement is given, but the principle as such is likely to have a significant passive effect. I, therefore, expect that the effect of peace-brokering security IOs is larger than the effect of peace-brokering IOs that offer less specific elements of security information. Table 1 presents what are the peace-brokering IOs that qualify as security and non-security ones.

Hypothesis 3: Dyads with more joint memberships in security peace-brokering IOs are less likely to see international crisis recurrence than dyads with fewer joint memberships in security peace-brokering IOs.

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[7] A non-security IO majors on other areas, e.g., economic growth, social progress, or cultural development for its members, but without a military focus in their scope. For example, the Permanent Court of Arbitration (PCA) aims to "to facilitate arbitration and other forms of dispute resolution between states." In this case, there is no reference to military means.

Research design

I employ probit regression models to analyze time-series cross-sectional data for examining the relationship between international crisis recurrence (binary dependent variable) and IO co-memberships either aggregated or disaggregated into peace-brokering IOs and security peace-brokering IOs (main explanatory variables).[8] My sample includes yearly observations of undirected dyads,[9] which (as a pair) already experienced at least one international crisis between 1950 and 2008. I focus on the post-World War II era, since most IOs were established during that time.

Dependent variable – Crisis recurrence

The focus of this study is the prevention of another international crisis between states that have seen the outbreak of a crisis in the past. To this end, I am interested in capturing conflictive behavior at the "early stages." The Militarized Interstate Dispute (MID) data (Faten et al. 2004) provide information on military threats and conflicts that eventually turn violent. This, however, is usually after crisis initiation.

The dependent variable in my study, *crisis recurrence*, captures the recurrence of an international crisis. I use the dyadic version of the International Crisis Behavior (ICB) data set (Hewitt 2003). When the same conflict actors, which already experienced one crisis according to the ICB data, get involved in a second, third, etc. international crisis over the same underlying issue, this is coded as recurrence. The variable receives a value of 1 and 0, respectively, depending on whether the crisis recurred or not.

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[8] This setting is similar to discrete duration data. When replacing the logistic regression by a duration model, the results remain qualitatively the same.

[9] Including directed dyads would artificially increase the number of observations and decrease the size of the standard errors.

Core explanatory variables

The first core explanatory variable refers to the number of joint IO memberships for the pair of states in a dyad. This variable measures the count of co-memberships in any IO for each state dyad from 1950 to 2008. The data for the IOs are taken from the Correlates of War project (COW) (Pevehouse et al. 2004). The COW IO membership data are recorded in five-year intervals prior to 1965. I filled in missing values using linear interpolation. I also filled in the missing values after 2005 that is the end date of the COW dataset. The variable *shared memberships in IOs* ranges from 0 (no shared membership) to 76 with a mean value of 30.05.

Furthermore, I disaggregate IOs along their expertise. I follow Shannon (2009, 149):

"to appropriately test the relationship between IOs and peaceful conflict resolution, I select organizations according to two criteria: they must be highly institutionalized, and they must be likely to encourage their members to manage disputes. Using data obtained from Boehmer et al. (2004), I first choose organizations with security mandates, as they are more likely to compel members to peacefully settle than strictly economic or functional institutions. Among these security organizations, I include those that score the highest on a 3-point scale of institutionalization, since highly structured organizations have the most influence on member behavior (Koremenos et al., 2001). Then, to complete the list of relevant organizations, I consulted the Issue Correlates of War Project's Mulitlateral Treaties of Pacific Settlement (MTOPS) data (Hensel, 2003). I turn to this second source

because Boehmer et al.'s data are not exhaustive, measuring the
institutionalization and mandates of only a select group of IOs. Using the
MTOPS data and their charters, I identify organizations that specifically call
for peaceful settlement and have the ability to diplomatically intervene in
members' disputes. I cross-reference the institutions with the Correlates of
War Intergovernmental Organizations data to make sure that these are
organizations with three or more members, permanent secretariats, and
regular meetings (Pevehouse et al., 2004). The procedures narrow the
universe of IOs to 27 institutions […]. I term the institutions Peace
Brokering Organizations."

That is, first I focus on a category of IOs that have the ability to provide information
(peace-brokering IOs). These IOs have resources and diplomatic leverage that can rebuild
states' peaceful relations (Shannon 2009). I then disaggregate peace-brokering IOs
further into security and non-security IOs. A security peace-brokering IO not only has the
elements of peace-brokering IOs, but also expertise on security matters. I identify this
with own compiled data on whether military means (or issues and instruments) are
explicitly mentioned in IO charters. The variable *shared memberships in peace-brokering*
IOs ranges from 0 (no shared membership or no shared membership in peace-brokering
IO) to 8 with a mean value of 2.54. *Shared security peace-brokering IO membership*s
ranges from 0 (no shared membership or no shared membership in security peace-
brokering IO) to 4 with a mean value of 1.04.[10]

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[10] For making use of all available information, these shared-membership variables referring to memberships
are counts: the total number of joint IO memberships for each pair of states in each year. For instance, the
dyad of the United States-Angola does not share membership in an IO in 1975. A year later, this pair of
states shares five memberships in IOs and a year afterwards they are joint members in eight IOs. Also, note

Control covariates

In addition to joint memberships in international organizations, I expect other factors to influence crisis recurrence. By controlling for alternative determinants of my outcome variable, I address the issue of omitted variable bias. Moreover, most of the following controls are also correlated with the main explanatory variables (shared membership in IOs, peace-brokering, and security IOs), which allows me to address the issue of selection bias to a large extent (selection on observables). First, following Colaresi and Thompson (2002) or Gleditsch (1992), I control for the influence of regime type by considering whether two states in a dyad are jointly democratic. I use the Polity IV data (Marshall et al. 2010). Several studies find that democracies are less likely to experience a crisis in the first place (e.g., Oneal and Russett 1999; Shannon et al. 2010). In addition, particularly democracies join and participate in multilateral cooperative agreements such as IOs (see Elsig et al. 2011). Following Beardsley (2008) or Shannon et al. (2010), joint democracy is defined as both states in a dyad having a polity2 score of 6 or higher.

Second, I make use of a log-transformed version of the Composite Index of National Capability Score to create the capability ratio of the dyad under study. This controls for capabilities. On one hand, more asymmetric dyads are more likely to see crisis recurrence; on the other hand, power distribution also affects IO membership, since more powerful states are usually more active in international politics and, hence, more engaged in IOs (Dorussen and Ward 2008). The data are taken from the Correlates of War (COW) project's data on national material capabilities (Singer et al. 1972; Singer 1987).

that I provide additional statistical models employing all the different baseline combinations to examine the robustness of the results in the appendix.

Third, distance between states is also a determinant of crisis recurrence. Geographically distant states have a lower probability of getting involved in a conflict. At the same time, geographically distant countries have fewer interests in forming collaborations. Following previous studies (e.g., Oneal and Russett 1999; Boehmer et al. 2004), I thus control for contiguity, which is a dummy variable coded as 1 when a pair of states shares a land or river border (0 otherwise). The data for this variable are taken from the COW project's data on direct contiguity (Stinnett et al. 2002).

Fourth, in line with Beardsley (2008), I control for the severity of the previous crisis. The severity, and thus the costs, of an earlier crisis may affect the (non-) recurrence of a subsequent crisis. Additionally, a state's decision to join an IO may also be influenced by a previous crisis's severity – the more intense the earlier conflict, the more willing a country may be to signal good intentions or seek to get assistance from abroad in a post-conflict situation; IOs can help here. To this end, I include an ordinal severity variable that captures no violence (1), minor clashes (2), serious clashes (3), and full-scale war (4). The data for this item are taken from the ICB project (Brecher et al. 2016).

Fifth, there is the importance of ethnicity, and I take a variable that captures the existence of an ethnic component in the previous crisis. It codes whether there was either as a secessionist conflict (1), an irredentist conflict (2), or a no ethnic conflict (3). This ultimately controls for "the salience of the crisis domestically and thus captures the pressure on the states to reach more favorable terms" (Beardsley 2008, 732), and thus for an alternative mechanism behind crisis recurrence. The information for this variable is taken from the ICB dataset (Brecher et al. 2016).

Another exogenous factor that may affect crisis recurrence is the interest of third-party actors in a crisis (Beardsley 2008). To this end, a location that is of particular importance to outside actors due to, e.g., natural resources, might be prone to see one crisis after another. Moreover, states in such a region might also be more active in the international system, and this correlates with IO membership. For this reason, I also control for the salience of the geostrategic position of the previous crisis that is measured by the level and number of international systems that are affected by a crisis. This information is coded in the ICB dataset (Brecher et al. 2016) on a five-point scale (from one subsystem to global system).

Finally, states that have peaceful relations for years are more likely to maintain peace and could also be more likely to collaborate in the international system and thus, share IO memberships. Hence, along the lines of Boehmer et al. (2004), I control the time elapsed since the last crisis onset using cubic polynomials (Carter and Signorino 2010).

Empirical findings

Table 2 summarizes the descriptive statistics of all variables discussed so far as well as the variance inflation factors (VIFs) of the explanatory items. According to the VIFs, multicollinearity is unlikely to be a major issue, since all VIFs are well below the common threshold value of 5 (O'Brian 2007).

Table 2. Descriptive statistics and VIF

	Obs.	Mean	Std. Dev.	Min	Max	VIF
Crisis recurrence	9,025	0.06	0.24	0	1	
Shared IO memberships	9,025	30.05	15.61	0	76	1.92
Shared peace-brokering IO memberships	9,025	2.54	1.73	0	8	4.51
Shared security peace-brokering IO memberships	9,025	1.04	0.81	0	4	3.56
Joint democracy	8,376	0.04	0.20	0	1	1.11
Contiguity	9,025	0.29	0.45	0	1	1.32
National material capabilities $_{ln}$	8,789	1.48	1.57	0.01	10.87	1.10
Violence	9,025	2.67	1.06	1	4	1.14
Geostrategic salience	9,025	2.58	1.71	1	5	1.56
Ethnic component	9,025	2.66	0.64	1	3	1.14

Notes: The core explanatory variables (i.e., count of IOs, count of peace-brokering IOs, and the count of security IOs) are used in separate models.

Table 3. Crisis recurrence and IO memberships

	Model 1	Model 2	Model 3
Shared IO memberships	-0.01***		
	(0.00)		
Shared peace-brokering IO memberships		-0.08***	
		(0.01)	
Shared security IO memberships			-0.15***
			(0.03)
Joint democracy	0.17	0.09	0.02
	(0.10)	(0.11)	(0.12)
Contiguity	0.12***	0.10**	0.11**
	(0.04)	(0.04)	(0.04)
National material capabilities $_{ln}$	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)
Violence	0.05*	0.07***	0.06**
	(0.02)	(0.02)	(0.02)
Geostrategic salience	-0.05**	-0.05**	-0.05**
	(0.02)	(0.02)	(0.02)
Ethnic component	0.01	0.02	0.01
	(0.04)	(0.04)	(0.04)
t	-0.35***	-0.35***	-0.35***
	(0.02)	(0.02)	(0.02)
t^2	0.02***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)
t^3	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)
Constant	- 0.14	-0.29*	-0.27*
	(0.16)	(0.15)	(0.15)
Obs.	7,959	7,959	7,959
Pseudo-R²	0.33	0.33	0.33
Wald Chi²	615.44	539.84	538.91

Notes: Robust standard errors clustered on dyad in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3 summarizes the results of the probit models on the relationship between crisis recurrence and IO shared memberships. Model 1 estimates the risk of recurrence of an international crisis using the count of shared IO memberships as the main explanatory variable. Model 2 focuses on the count of shared peace-brokering IO memberships and Model 3 studies the effect of security peace-brokering IOs. The analyses reveal a negative relationship between crisis recurrence and the count of shared memberships in IOs, peace-brokering IOs, and security peace-brokering IOs, respectively. The coefficients of all core explanatory variables are statistically significant (Table 3). The

negative coefficient sign indicates that, as dyads share more memberships in IOs, they have a lower risk of experiencing another international crisis, a result that matches the expectations from the first hypothesis. Also, states that share fewer memberships in peace-brokering IOs (or no memberships at all) have a higher likelihood to experience crisis recurrence (Hypothesis 2).[11] Along the expectations of Hypothesis 3, states that share fewer memberships in security peace-brokering IOs (or no memberships at all), have a higher likelihood to see crisis recurrence. To offer a clear understanding of the baseline category, I also examined the combinations of (1) shared memberships in security peace-brokering IOs and no shared memberships, (2) shared membership in security peace-brokering IOs and shared memberships in other IOs, and (3) shared membership in security peace-brokering and shared membership in peace-brokering IOs. The results remain qualitatively the same: more shared membership in security peace-brokering IOs decrease the likelihood of crisis recurrence (see appendix for details).

In general, fewer shared memberships pertain to fewer links between states and, as a result, a higher probability for tensions and rivalries (Dorussen and Ward 2008). A large number of connections through IOs reduces the risk of crisis recurrence. At the same time, when states establish collaborative ties (i.e., a state becomes member in an IO) after a crisis, it indicates that they are willing to build a peaceful environment of cooperation and development with their former opponents. Such arguments hold when examining the disaggregated effects of IOs. Institutions that offer dispute resolution, by providing information and even information on security matters as such, decrease the likelihood of

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[11] In addition, the appendix estimates the risk of recurrence when the baseline category is defined in a less ambiguous way: combinations of (1) shared memberships in peace-brokering IOs and no shared memberships, and (2) shared membership in peace-brokering IOs and shared memberships in other IOs. The results stay qualitatively the same; more shared memberships in peace-brokering IOs decrease the likelihood of crisis recurrence.

crisis recurrence for their members. Information reduces uncertainty, and thus, states'
incentives in challenging peace again.

I have calculated the predicted probabilities of crisis recurrence in relation to shared
IO memberships (Figures 1-3). The risk of crisis recurrence decreases as the number of
shared memberships of states in IOs increase. Along with the theoretical expectations of
this study, pairs of states that are linked via IOs should have a lower risk to experience an
international crisis again. That being said, pairs of states with no such mechanisms have a
higher probability of getting involved in another international crisis. This finding refers to
all types of IOs (Figure 1), and the results hold when I focus on peace-brokering IOs
(Figure 2) or security peace-brokering IOs (Figure 3). Therefore, the risk of crisis
recurrence decreases when states share memberships in IOs – regardless of their mandate.
That is, any type of IO is able to generate links among states, promote cooperation and
peaceful relations. In addition, the expertise of an IO (peace-brokering or security peace-
brokering IOs in this case) is not that necessary when discussing the passive elements of
IOs. Interestingly then, when an IO *actively* intervenes in resolving a conflict, the
expertise is considered necessary according to the previous literature (Boehmer et al.
2004; Shannon 2009).
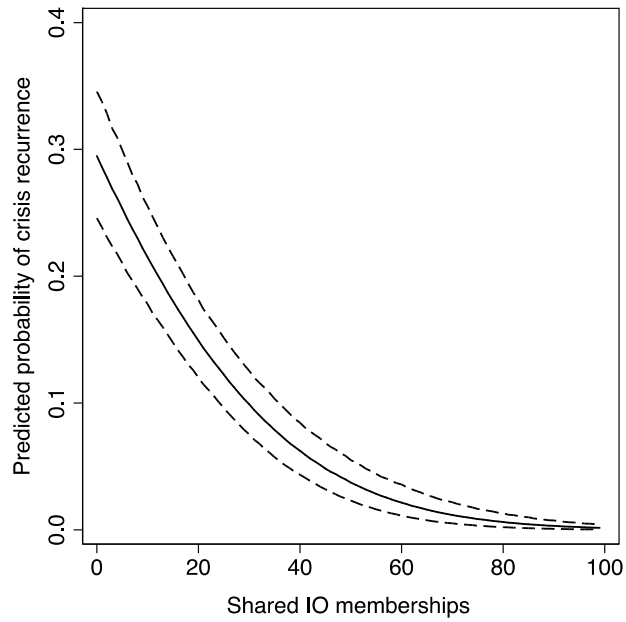
Figure 1. Crisis recurrence and IO shared memberships

Notes: Solid line captures predicted probability point estimates. Dashed lines pertain to 90% confidence intervals. Graph based on Model 1 (Table 2).
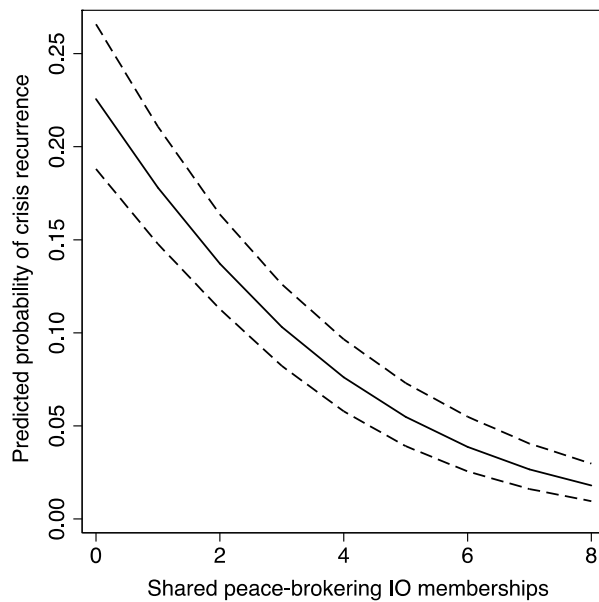
Figure 2. Crisis recurrence and peace-brokering IO shared memberships

Notes: Solid line captures predicted probability point estimates. Dashed lines pertain to 90% confidence intervals. Graph based on Model 2 (Table 2).
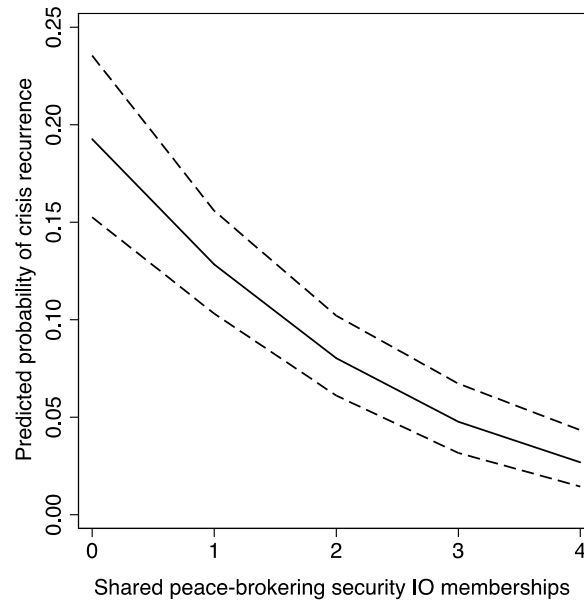
Figure 3. Crisis recurrence and security IO shared memberships

Notes: Solid line captures predicted probability point estimates. Dashed lines pertain to 90% confidence intervals. Graph based on Model 3 (Table 2).

The previous literature has shown that the mandate of an IO matters for reducing militarized interstate disputes (Boehmer et al. 2004; Shannon 2009). Yet, the results of this analysis underline that the mandate of an IO does not seem to be that crucial for lowering tensions in crises and particularly in preventing crisis recurrence. To a large extent, this means that IOs facilitate states' relations via a forum of communication that they provide. After running *t*-tests on the predicted probabilities of crisis recurrence across different combinations of IO memberships (i.e., IOs and peace-brokering IOs; IOs and peace-brokering security IOs; peace-brokering and security peace brokering IOs), there is no statistically significant difference across the different categories of IOs.
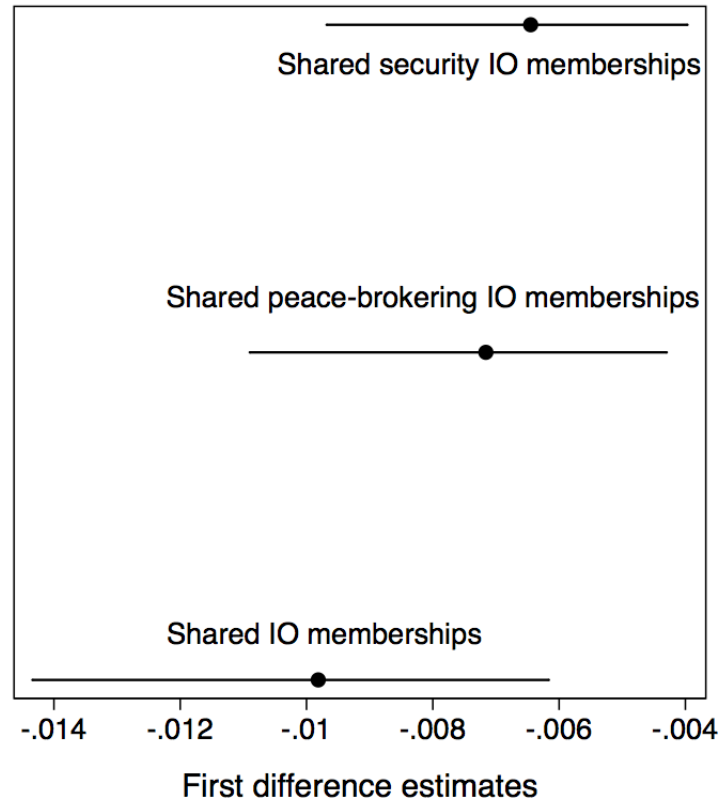
Figure 4. Effects of shared IO memberships – First differences

Notes: Horizontal bars show first difference 90% confidence intervals.

Figure 4 also shows the effects of the different types of IOs on crisis recurrence with first differences for each IO category. A first difference is defined as the change in the predicted probability of crisis recurrence when changing a variable of interest from the minimum to the maximum, while holding all other variables (i.e., control variables) at their median values. In general, shared IO memberships significantly decrease the risk of crisis recurrence. However, the fact that the confidence intervals of the three IOs categories overlap means that the different categories of IOs examined here are not significantly different from each other. Hence, the impact of all types of IOs on crisis recurrence is ultimately the same, with the mandate of IOs having not a major influence

on crisis recurrence. Shared memberships in peace-brokering and security-peace brokering IOs have a similar impact on preventing crisis recurrence. To this end, the diplomatic expertise of an IO does not play a primary role in preventing crisis recurrence. In other words, states should share memberships in any type of IO in order to maintain peaceful relations. The diplomatic expertise is probably more relevant when a crisis starts or an IO actively intervenes. In order to reduce crisis recurrence, states need to rebuild and maintain friendly relations, but this can be achieved through all sorts of cooperation and links that IOs offer – a focus on security, military, or peace-brokering as such does not seem mandatory.

To ensure the robustness of the relationship between shared memberships in peace-brokering IOs and crisis recurrence, I control for a number of factors.[12] With regards to the control variables, all control covariates display consistent effects and significance levels across the models (Table 3). That is, joint democracy, the capability ratio, national material capabilities, or the ethnic component are not significantly related to crisis recurrence. That said, contiguity is a significant determinant of crisis recurrence: non-contiguous states have a lower risk of experiencing crisis recurrence. Regarding the violence item, the models indicate that the higher the level of violence in an earlier crisis, the higher the risk of crisis recurrence. Intense crises are not forgotten or resolved easily and, as a consequence, actors may trigger further incidents. The variable of geostrategic salience has a significant effect on crisis recurrence, indicating that the importance of a conflict affects the risk of recurrence.[13] Finally, time dependency is also a determinant of

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[12] See the appendix (Tables 3, 5 and 6) for robustness checks including more control variables i.e., the types of outcomes, bilateral trade, indirect links, and democracy score of the weakest link.

[13] See the appendix (Table 4) for a detailed analysis when employing the severity of the previous crisis, the item of geostrategic salience, and the ethnic component in a binary format.

crisis recurrence. Figure 5 graphs the relationship between peace duration and crisis recurrence. It illustrates the likelihood of crisis recurrence, as a function of t, t^2, and t^3 while all other variables are hold at their mean levels. The figure portrays that the baseline hazard decreases rapidly with time. The pattern is virtually the same across all models in Table 3.
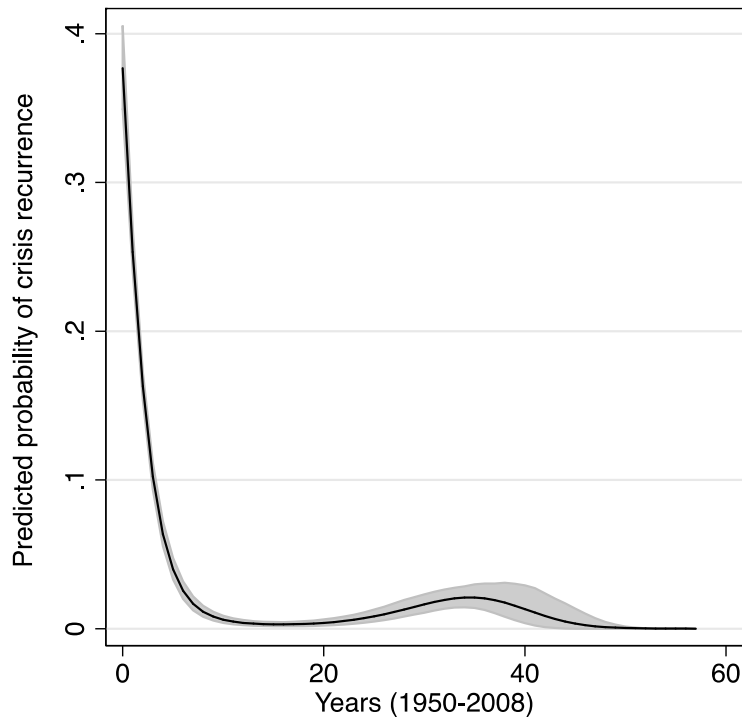
Figure 5. Predicted probability of Crisis Recurrence over time

Notes: Shaded area pertains to 90% confidence interval. Solid black line captures predicted probability point estimates. Graph based on Model 1. The results remain qualitatively the same for Models 2-3.

Note that membership in IOs occurs under certain circumstances, when for example there is a need for the state to join an IO, and this increases the risk of endogenous results (Rubin 1991). Ignoring this may underestimate or overestimate the effect of the

remaining explanatory variables. A selection effect is based to the reality that cases that see shared membership in a peace-brokering IO are not a random set and, thus, one must take into consideration the first stage of selection due to the reason that factors leading to membership in an IO may also affect the outcome of crisis. Under these conditions, if the two processes are not captured jointly, the results of the analysis might be biased. A bivariate probit analysis controls for selection effects in this study, and I provide such an analysis in the appendix (Table 8).

Conclusion

Previous research identified the possibility that IOs might be associated with promoting peace when they fulfill specific conditions, i.e., institutionalized or peace-brokering IOs (Boehmer et al. 2004; Shannon 2009; Shannon et al. 2010). This paper focused on the more passive role of IOs and demonstrated that all IOs – regardless of their scope or mandate – contribute similarly to the non-failure of peace and prevention of a future crisis when focusing on joint memberships. Ultimately, IOs offer prevention mechanisms that strengthen states' relations regardless of their expertise in some policy area.

Different claims and findings about the effect of IOs on international crises can mainly be accredited to the predisposition to treat IOs as non-equivalent; IOs are not equal or some IOs are more important than others (Boehmer et al. 2004; Hansen et al. 2008). Having examined the impact of IOs, in an aggregated and a disaggregated way, on crisis recurrence, this study found encouraging results. My results have shown that more shared memberships in IOs decrease the risk of crisis recurrence. To this end, multiple channels of IOs during peacetime reduce uncertainty that could potentially lead to another crisis. This result is particularly relevant for former belligerents as it is very difficult to rebuild

trust among former combatants. More specific results have been presented for different categories of IOs (all IOs, peace brokering and security peace-brokering IOs). Although the impact of each category is slightly different on crisis recurrence, there are no statistically significant different. The predicted probability of crisis recurrence is ultimately similar regardless of the type of IO (or IOs) that a pair of states shares membership in. The first differences and the change in the probability of experiencing a crisis recurrence underline the findings from the regression table. This means that shared IO memberships *regardless of type or mandate* reduce the risk of crisis recurrence.

Further research could focus on the mechanisms that IOs apply in order to secure the non-violation of agreements and further alleviate crisis recurrence. For example, what is the impact of monitoring and enforcement via IOs on maintaining peace? This will develop further the theoretical and empirical framework on the overall role of IOs for states' relations and behavior.

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Appendix

The main article has explored the disaggregated effects of IOs. The baseline categories of these models presented in the main analysis are either no shared membership at all or shared membership in non-peace-brokering and non-security peace-brokering IOs, respectively. Additional statistical models capture clear-cut combinations of the different baseline categories (Table 1). I first examine solely the combinations of (1) shared membership in peace-brokering IOs and no shared memberships (Model 1), and (2) shared membership in peace-brokering IOs and shared memberships in other IOs (Model 2). The results stay qualitatively the same as in the main analysis. More shared memberships in peace-brokering IOs than no membership or than membership in IOs of a different agenda decrease the likelihood of crisis recurrence. I also examined the combinations of (1) shared memberships in security peace-brokering IOs and no shared IO memberships (Model 3), (2) shared membership in security peace-brokering IOs and shared memberships in other IOs (Model 4), and (3) shared membership in security peace-brokering and shared membership in peace-brokering IOs (Model 5). Likewise, the results show that more shared memberships in security peace-brokering IOs decrease the likelihood of crisis recurrence regardless of the baseline category.

Table 1. Crisis recurrence and IO memberships

	Model 1 (baseline: no shared IO memberships)	Model 2 (baseline: shared memberships in non peace-brokering IOs)	Model 3 (baseline: no shared IO memberships)	Model 4 (baseline: shared memberships in non security peace-brokering IOs)	Model 5 (baseline: shared memberships in peace-brokering IOs)
Shared peace-brokering IO memberships	-0.12***	-0.07***			
	(0.02)	(0.01)			
Shared security IO memberships			-0.16***	-0.15***	-0.20***
			(0.04)	(0.03)	(0.05)
Joint democracy	0.14	0.09	0.02	0.03	0.02
	(0.13)	(0.11)	(0.12)	(0.11)	(0.13)
Contiguity	0.10**	0.10**	0.15***	0.14**	0.12**
	(0.05)	(0.04)	(0.05)	(0.04)	(0.05)
National material capabilities $_{ln}$	-0.00	-0.00	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
Violence	0.04	0.06**	0.03	0.05*	0.01
	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)
Geostrategic salience	-0.07***	-0.03*	-0.04	-0.03	-0.04*
	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)
Ethnic component	-0.02	0.01	0.03	-0.00	-0.05
	(0.05)	(0.04)	(0.04)	(0.04)	(0.05)
t	-0.34***	-0.35***	-0.38***	-0.35***	-0.34***
	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)
t^2	0.02***	0.01***	0.02***	0.02***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
t^3	-0.00***	- 0.00***	-0.00***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	0.07	-0.28*	-0.08	-0.25	0.10
	(0.17)	(0.15)	(0.18)	(0.16)	(0.19)
Obs.	6,777	7,602	6,430	7,602	6,415
Pseudo-R²	0.32	0.33	0.32	0.33	0.32
Wald Chi²	463.10	518.61	409.25	502.74	413.91

Notes: Robust standard errors clustered on dyad in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
The number of observations changes depending on the definition of the baseline category.

In addition to the control variables presented in the main analysis, I also include two variables that refer to the outcome of the previous crisis. That is, I first consider the content of the outcome that refers to whether the outcome of an international crisis was perceived by the actors to have been definitive or ambiguous. According to the ICB dataset (Brecher et al. 2016), a definitive outcome occurs when all actors perceive victory or defeat in terms of the achievement of basic goals of a specific crisis. When at least one of the crisis actors perceives either stalemate or compromise at the termination point of a crisis, this is called an ambiguous outcome. The results in Table 2 indicate that the content of a previous crisis outcome is not a significant predictor of crisis recurrence. That said, the results for the shared membership main explanatory variables hold and are qualitatively the same with the previous analysis.

I also included the form of the outcome of a previous international crisis at its termination point (Table 3). This is a categorical variable: formal agreement, semi-formal agreement, tacit understanding, unilateral act, imposed agreement, other, and crisis faded. The baseline category in the model is formal agreement. The results show that semi-formal agreement, unilateral acts and imposed agreements increase the likelihood of crisis recurrence (compared to the baseline category of formal agreements) regardless of the IOs' shared membership. This finding is in line with previous studies claiming that formal peace agreements and belligerents' satisfaction on the outcome are more likely to long-term peace (Huth 1988; Senese and Quackenbush 2003; Goertz et al. 2005; Beardsley 2008).

Table 2. Crisis recurrence and IO memberships

	Model 6	Model 7	Model 8
Shared IO memberships	-0.01***		
	(0.00)		
Shared peace-brokering IO memberships		-0.08***	
		(0.01)	
Shared security IO memberships			-0.15***
			(0.03)
Joint democracy	0.16	0.09	0.02
	(0.10)	(0.11)	(0.12)
Contiguity	0.12***	0.10**	0.11**
	(0.04)	(0.04)	(0.05)
National material capabilities $_{ln}$	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)
Violence	0.05*	0.07**	0.06**
	(0.02)	(0.02)	(0.02)
Geostrategic salience	-0.05**	-0.05**	-0.05**
	(0.02)	(0.02)	(0.02)
Ethnic component	0.00	0.02	0.01
	(0.04)	(0.04)	(0.04)
Content of outcome	-0.00	-0.02	-0.03
	(0.04)	(0.04)	(0.02)
t	-0.35***	-0.35***	-0.35***
	(0.02)	(0.02)	(0.02)
t^2	0.02***	0.02***	0.02***
	(0.00)	(0.00)	(0.00)
t^3	0.00***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)
Constant	- 0.13	-0.28*	-0.25
	(0.16)	(0.15)	(0.15)
Obs.	7,959	7,959	7,959
Pseudo-R²	0.33	0.33	0.33
Wald Chi²	618.24	545.55	520.35

Notes: Robust standard errors clustered on dyad in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3. Crisis recurrence and IO memberships

	Model 9	Model 10	Model 11
Shared IO memberships	-0.01***		
	(0.00)		
Shared peace-brokering IO memberships		-0.09***	
		(0.01)	
Shared security IO memberships			-0.16***
			(0.03)
Joint democracy	0.15	0.07	-0.00
	(0.10)	(0.12)	(0.11)
Contiguity	0.13***	0.10**	0.10**
	(0.05)	(0.05)	(0.01)
National material capabilities $_{ln}$	-0.00	-0.00	-0.01
	(0.01)	(0.01)	(0.01)
Violence	0.04*	0.06**	0.06**
	(0.03)	(0.03)	(0.03)
Geostrategic salience	-0.05**	-0.04**	-0.04**
	(0.02)	(0.02)	(0.02)
Ethnic component	0.00	0.02	0.00
	(0.04)	(0.04)	(0.04)
Form of the outcome			
Semi-formal agreement	0.20***	0.18***	0.17***
	(0.06)	(0.06)	(0.06)
Tacit understanding	-0.00	-0.06	-0.05
	(0.08)	(0.06)	(0.08)
Unilateral act	0.18***	0.16**	0.15**
	(0.06)	(0.07)	(0.06)
Imposed agreement	0.22***	0.18**	0.16**
	(0.08)	(0.06)	(0.07)
Other	0.05	0.04	0.06
	(0.10)	(0.09)	(0.10)
Crisis faded	0.11	0.07	0.08
	(0.12)	(0.10)	(0.10)
t	-0.35***	-0.35***	-0.35***
	(0.02)	(0.02)	(0.02)
t^2	0.02***	0.02***	0.02***
	(0.00)	(0.00)	(0.00)
t^3	-0.00***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)
Constant	- 0.21	-0.35**	-0.34**
	(0.17)	(0.16)	(0.16)
Obs.	7,959	7,959	7,959
Pseudo-R²	0.34	0.34	0.33
Wald Chi²	692.11	645.68	610.00

Notes: Robust standard errors clustered on dyad in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Another way to think about the importance of a passive IO influence on crisis recurrence is to compare my results with a more active IO role (see Boehmer et al. 2004; Hansen et al. 2008; Chapman and Wolford 2010; Shannon et al. 2010). One way to examine the active role of IOs on crisis recurrence is to consider whether an IO mediated in a previous crisis. For the purposes of this comparison, I replaced the shared membership variables in my models with a variable that captures mediating activities of an IO. This variable refers to the primary mediator of the previous crisis and is coded as 1 when the mediator of the previous crisis was either an IO or a regional governmental organization (0 otherwise). The results show that there is a decrease in crisis recurrence when an IO mediated in the previous crisis. The effect, however, is rather small (-0.01 percentage points) in comparison to the effect of the shared membership (0.3 percentage points).

I have also recoded the categorical control variables to binary variables. I clustered the "no violence" and "minor violence" as 0 and "serious clashes" and "full scale war" as 1 for the violence variable. With regards to the ethnic component variable, I coded secessionist and irredentist conflicts as 1, and 0 otherwise (no ethnic conflict). I also recoded the variable of the geostrategic salience to one (0) or more subsystems (coded as 1). After recoding these variables, the results for the main explanatory variables remain qualitatively the same (Table 4 in this appendix). The results for the main explanatory variables (shared IO memberships, shared peace-brokering IO memberships, and shared security IO memberships) remain qualitatively the same.

Furthermore, I included another robustness test including a variable on bilateral trade (Table 5 in this appendix). A log-transformed variable on bilateral trade measures the

trade links between dyads in the previous crisis. The information on bilateral trade is from the correlates of war project (Barbieri et al. 2016). The results show that bilateral trade relations in the previous crisis increase the risk of crisis recurrence, whilst the rest of the indicators remain quantitatively the same. Such finding is in line with previous research claiming that trade asymmetries may fuel conflict (Garfinkel et al. 2008; Bakaki 2016). The inclusion of bilateral trade does not affect though the rest of the covariates, and the results stay qualitative the same.

Table 4. Crisis recurrence and IO memberships

	Model 12	Model 13	Model 14
Shared IO memberships	-0.01***		
	(0.00)		
Shared peace-brokering IO memberships		-0.07***	
		(0.01)	
Shared security IO memberships			-0.14***
			(0.03)
Joint democracy	0.17*	0.10	0.04
	(0.09)	(0.10)	(0.11)
Contiguity	0.16***	0.13**	0.14***
	(0.04)	(0.04)	(0.04)
National material capabilities $_{\ln}$	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)
Violence (binary)	-0.01	0.03	0.03
	(0.06)	(0.05)	(0.05)
Geostrategic salience (binary)	-0.00	-0.00	0.00
	(0.06)	(0.06)	(0.06)
Ethnic component (binary)	0.06	0.03	0.04
	(0.06)	(0.06)	(0.06)
t	-0.35***	-0.35***	-0.35***
	(0.02)	(0.02)	(0.02)
t^2	0.02***	0.02***	0.02***
	(0.00)	(0.00)	(0.00)
t^3	-0.00***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)
Constant	- 0.12	-0.22**	-0.23**
	(0.10)	(0.09)	(0.09)
Obs.	7,959	7,959	7,959
Pseudo-R^2	0.33	0.33	0.33
Wald Chi^2	593.02	534.85	511.85

Notes: Robust standard errors clustered on dyad in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5. Crisis recurrence and IO memberships - bilateral trade

	Model 15	Model 16	Model 17
Shared IO memberships	-0.01***		
	(0.00)		
Shared peace-brokering IO memberships		-0.06***	
		(0.02)	
Shared security IO memberships			-0.09***
			(0.03)
Joint democracy	0.20**	0.05	-0.01
	(0.10)	(0.11)	(0.10)
Contiguity	0.26***	0.18***	0.18***
	(0.06)	(0.06)	(0.06)
National material capabilities $_{ln}$	-0.02	-0.02	-0.02
	(0.01)	(0.01)	(0.01)
Violence	0.11***	0.12***	0.12***
	(0.03)	(0.03)	(0.03)
Geostrategic salience	0.03	-0.02	-0.02
	(0.02)	(0.02)	(0.02)
Ethnic component	0.02	0.03	0.03
	(0.05)	(0.05)	(0.05)
Bilateral trade $_{ln}$	0.11***	0.09***	0.09***
	(0.01)	(0.01)	(0.01)
t	-0.40***	-0.40***	-0.40***
	(0.03)	(0.03)	(0.03)
t^2	0.02***	0.02***	0.02***
	(0.00)	(0.00)	(0.00)
t^3	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)
Constant	- 0.60	-0.82**	-0.83**
	(0.18)	(0.17)	(0.17)
Obs.	7,211	7,211	7,211
Pseudo-R^2	0.39	0.38	0.38
Wald Chi^2	475.76	443.73	448.39

Notes: Robust standard errors clustered on dyad in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

This study has mainly focused on the role of direct links that IOs create for dyads i.e., joint membership. Previous studies though have examined the impact of indirect links on states' relationships and behaviour. Dorussen and Ward (2008) argue that via IOs actors benefit from third party links that ultimately generate more relations in the international system. For this reason, I also examine the impact of third-party links on crisis recurrence, as an alternative core explanatory variable (Table 6 in this appendix). Note that joint membership in IOs and the measurement of indirect links are highly correlated,

hence for a robustness test I replaced the joint membership variable with the indirect links variable. The results show that indirect links decrease the likelihood of crisis recurrence finding ultimately a similar effect to the one examined in the main analysis on direct links (joint membership).

Table 6. Crisis recurrence and IO memberships - indirect links

	Model 18
Indirect links	-0.08
	(0.01)
Joint democracy	0.09
	(0.10)
Contiguity	0.04
	(0.05)
National material capabilities $_{\ln}$	-0.01
	(0.01)
Violence	0.06**
	(0.02)
Geostrategic salience	-0.07***
	(0.03)
Ethnic component	0.01
	(0.04)
t	-0.33***
	(0.02)
t^2	0.02***
	(0.00)
t^3	-0.01***
	(0.00)
Constant	0.42
	(0.19)
Obs.	6,461
Pseudo-R^2	0.31
Wald Chi^2	634.36

Notes: Robust standard errors clustered on dyad in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

In the main analysis I employ the score of dyads' joint democracy to control for the type of regime and its impact on crisis recurrence. An alternative is to control for the democracy score of the weakest links between the dyads i.e., the score of the actor with the lower score of democracy. The data is from the Polity

IV data (Marshall et al. 2010). The models presented in Table 7 below control for the democracy score of the weakest link. The results stay qualitatively the same with the democracy variable not being a significant indicator for crisis recurrence. Givent that the outcome of interest is international crisis means that it only involves minor clashes according to the international crisis behavior (ICB) dataset. That is, actors might often get involved in this type of crises regardless their form of government.

Table 7. Crisis recurrence and IO memberships – weakest link democracy

	Model 19	Model 20	Model 20
Shared IO memberships	-0.01***		
	(0.00)		
Shared peace-brokering IO memberships		-0.07***	
		(0.01)	
Shared security IO memberships			-0.5***
			(0.03)
Weakest link democracy	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)
Contiguity	0.13***	0.10**	0.11***
	(0.04)	(0.04)	(0.05)
National material capabilities $_{ln}$	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)
Violence	0.06**	0.07***	0.07***
	(0.02)	(0.03)	(0.02)
Geostrategic salience	-0.05**	-0.05**	-0.05**
	(0.02)	(0.02)	(0.02)
Ethnic component	0.00	0.02	0.00
	(0.04)	(0.04)	(0.04)
t	-0.35***	-0.36***	-0.36***
	(0.02)	(0.02)	(0.02)
t^2	0.02***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)
t^3	0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)
Constant	- 0.12	-0.29**	-0.28*
	(0.16)	(0.15)	(0.15)
Obs.	8,418	8,418	8,418
Pseudo-R²	0.34	0.33	0.33
Wald Chi²	642.53	564.88	536.42

Notes: Robust standard errors clustered on dyad in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Existing literature suggests that conflict management is not a randomly chosen phenomenon, and this can create selection bias (Beardsley 2008; Beber 2012; Gartner 2011). Derived from the specifications presented in Greene (2003, 710) and Maddala (1983, 122), I use a bivariate probit model (Table 8) where there are two separate equations with correlated disturbances. For these estimations, I define two different dependent variables: one for the outcome equation and one for the selection equation. The dependent variable for the outcome equation is the recurrence of an international crisis. The second equation is relying on crisis recurrence as the outcome variable and is then estimated at the same time as the first equation, while taking into consideration the correlation in the equations' error processes (Maddala 1983; Greene 2003). The selection variable represents shared membership in IOs (transformed into a binary variable). For identifying the model properly, following the strategy of Beber (2012) on an instrumental variable, I include time dependence in the selection equation only. This approach then captures the rationale that shared membership of IOs might be influenced by previous crises; this rationale, though, is unlikely to apply to the outcome stage. The results produced in the bivariate probit models are similar to those in the probit model (Model 1 in Table 3 in the main analysis) and this reassures us of the robustness of the results of this analysis.

As for the estimate of the ρ parameter, the model highlights that a shared membership in IOs is likely to be endogenous due to a selection issue in most model specifications. In more detail, evidence for selection effects and thus endogeneity are given for all IOs, and also when taking peace-brokering IOs, and security IOs as the selection criterion. I do

find evidence for a significant selection effect in terms throughout all models (Models 1-3). This implies that unobserved features that affect the shared membership in IOs also influence the risk of crisis recurrence. That said, the core results on the impact of IOs on crisis recurrence (outcome equation) are virtually identical to those of the main models discussed above (Table 3 in the main analysis).

Table 8. Crisis recurrence and IO shared memberships (Bivariate Probit Analysis)

	Model 22	Model 23	Model 24
Outcome equation			
IOs	-1.54***		
	(0.18)		
Peace-brokering IOs		-2.35***	
		(0.04)	
Security IOs			-2.40***
			(0.04)
Joint democracy	-0.32***	-0.21**	-0.19*
	(0.12)	(0.11)	(0.10)
Contiguity	0.13***	0.21***	0.25***
	(0.05)	(0.04)	(0.04)
National material capabilities $_{ln}$	0.00	0.00	0.01
	(0.01)	(0.01)	(0.01)
Violence	0.10***	0.11***	0.09***
	(0.02)	(0.01)	(0.02)
Geostrategic salience	-0.10***	-0.12**	-0.13***
	(0.01)	(0.01)	(0.01)
Ethnic component	0.10***	0.06**	0.04
	(0.04)	(0.03)	(0.03)
Constant	- 0.35	0.42***	0.49***
	(0.22)	(0.11)	(0.09)
Selection equation			
Joint democracy	-0.07	-0.03	-0.02
	(0.09)	(0.04)	(0.03)
Contiguity	0.36***	0.24***	0.31***
	(0.10)	(0.04)	(0.04)
National material capabilities $_{ln}$	0.03	0.05***	0.00
	(0.02)	(0.01)	(0.01)
Violence	-0.05	0.05***	0.05***
	(0.03)	(0.03)	(0.01)
Geostrategic salience	-0.46***	-0.12***	-0.14***
	(0.03)	(0.01)	(0.01)
Ethnic component	-0.23**	0.00	-0.02
	(0.10)	(0.02)	(0.03)
t	0.37***	0.09***	0.10***
	(0.04)	(0.04)	(0.00)
t^2	-0.04***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)
t^3	0.00***	0.00***	0.00***
	(0.00)	(0.00)	(0.00)
Constant	3.09***	0.36***	0.27***
	(0.33)	(0.09)	(0.09)
ρ	0.69***	0.09*	0.10*
	(0.11)	(0.05)	(0.00)
Obs.	7,957	7,959	7,959

Notes: Robust standard errors clustered on dyad in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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