States, Economic Entities, and Special Cases:
The Impact of Their Coding on Trade-Conflict Research

Rough Draft

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Abstract

Scholars continue to debate the relationship between trade and conflict. At the center of many of the debates are the treatment of missing data and the construction of operational measures to capture trade dependence and interdependence. Conflict scholars have largely ignored what is often referred to as "special cases" in trade data research. These include situations where data are disaggregated or aggregated to units other than states. We investigate the theoretical and methodological significance of the standard ways of handling a special case for trade data, compared to the way conflict is reported by states and dyads composed of states. Scholars adjust conflict data for territorial changes, but data on economic activities is often dropped for non-state reporting entities. We argue that this is a significant oversight, whether or not it impacts our empirical findings.

We focus our attention on the special cases of the People's Republic of China and its territories, Hong Kong and Macao, which returned to Mainland China in 1997 and 1999, respectively. These non-state entities remain members of many international organizations that are central to the collection and provision of data. They also have the right to negotiate commercial agreements independent of the People's Republic of China. Hong Kong and Macao are treated as "state-like" entities, regarding organization's reporting practices, but these cases drop out of the sample when merged with data consisting of recognized sovereign states. Also, this Chinese case is compelling, because it has a long history with borders changes and disputed representation issues. We expand upon earlier work on the impact of dependence and trade agreements on conflict (Peterson & Rudloff, 2015) to explore whether coding rules for special cases impact the empirical and theoretical findings and conclusions about the trade-conflict relationship. We hope that this paper will raise a dialogue about how we conceive of states, their economic relationship, and measures of state power.

Trade-Conflict Research

Scholars have made many advances in trade-conflict research.[1] They have expanded our conceptions of interdependence, dependence, and the political economy of trading relationships. They have also developed more advanced methodological techniques, such as Network Analysis, and simultaneous equation models, to obtain a fuller picture of how trade and conflict affect one another, relationships with third parties, and states with symmetrical and asymmetrical power. Many scholars remain dissatisfied with the trade data that go into trade-conflict analysis. This is particularly true of those who work with trade data and try to decipher the complexity of reporting practices and coding decisions. The majority of end users is unaware or ignores the problems, but we believe scholars should continue the dialogue about the significance of coding decisions.

There have been some advances in the collection, reporting, and provision of trade data. Recently, the International Monetary Fund (IMF) produced a working paper that describes some recent changes to their methodology for handling trade data (Marini, Dippelsman, & Stanger, 2018).[2] Some of the most serious concerns that Barbieri, Keshk, and Pollins (2009) and Barbieri & Keshk (2011) raised about trade data used in conflict research have been addressed, but others remain.[3] Foremost is the fact that the reporting practices of the IMF and other international organizations do not fit nicely with the needs of quantitative IR scholars who analysis large N analysis of interstate relations. There is often a mismatch between theoretical concept and operational measure that go unnoticed, but are significant enough to warrant attention. The case of People's Republic of China, Hong Kong, and Macau is useful for illustrating the complexity of what seem to be simple coding decisions but are instead much more significant issues that require careful consideration.

First, the sovereign entity that is the state of People's Republic of China (PRC) has changed over time. These changes are in some respects, standard, and lend themselves to standard coding practices used by conflict scholars, such as changes in borders or statehood, but not all issues have standard rules. Before and during WWII, parts of the PRC's territories were colonies, including Hong Kong and Macao. After WWII, the PRC faced issues of contested representation within the international community, with the mainland being denied representation in the UN Security Council and other international organizations in favor of Taiwan.[4] Later, the PRC became the representative of China in international organizations, but sub-national units maintained membership. The return of territories to sovereign Mainland China raises questions about coding practices, the validity of relevant measures, and the accuracy of measures depicting PRC's economic relations with the world. Economists have raised some of these issues, but the problems have not filtered into the discussion among political economists of conflict.

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[1] Reviewing all the literature on trade-conflict research is beyond the score of this paper. For trade-conflict scholarship that argues trade promotes peace position see Polachek, 1980; Maoz & Russett, 1993; Kim, 1998; Russett & Oneal, 2001; Polachek & McDonald, 1992; Polachek & Seiglie, 2007; Crescenzi, 2003; Maoz, 2009, Gartzke & Li, 2003. Those that point to no significant relationship or a positive relationship between trade and conflict include Barbieri, 1996, 2002; Beck, Katz & Tucker, 1998; Green, Kim & Yoon, 2001; Keshk, Pollins & Reuveny, 2004; Goenner, 2004. Studies that focus on the simultaneous relationship between trade and conflict include Reuveny &Kang, 1998; Keshk, Pollins & Reuveny, 2004; Kim & Rousseau, 2005 Robst, Polachek & Chang, 2007; Martin, Mayer & Thoenig, 2008.

[2] It appears that most of the changes have taken place in the last year, but the IMF regularly changes its coding rules regarding trade data.

[3] The most important change for IR scholars was the IMF's stated intent to stop using the code of zero trade to indicate both missing trade values and the absence of trade flows. We have not investigated this announcement carefully.

[4] We do not address the issue of Taiwan and the PRC's disputed claims over representation in this paper, since that matter remains contested. The cases of Hong Kong and Macao should be clear cut, in terms of the international community's recognition of the PRC as sovereign over these territories.

This paper surveys the way that IR scholars handle economic entities. We reveal the mismatch between our coding decisions and our concept of statehood over special administrative regions when it comes to PRC and its sovereignty. Next, the paper talks about the theoretical and methodological importance of alternative treatment decisions, performing some preliminary analysis to assess whether coding choices for PRC, Hong Kong, and Macao may affect the empirical findings in trade-conflict research. We do this by expanding upon a study of trade and conflict, which incorporates preferential trade agreements (Peterson & Rudloff, 2015).

Background

This paper grows out of years of research on the reporting practices of states, international organizations, and scholars on trade and other economic interactions.[5] Analyses of trade statistics reveal that simple coding rules and decisions about how to handle missing data require taking positions about states and non-state entities about which most end users are unaware. The PRC and its territories represent one set of cases, but it is a crucial set that raises essential questions about how we might evaluate ways to harmonize data across divergent units that are contained within one sovereign. As a social scientist, our goal is to understand the world and the reasons for variations that exist. Scholars often use flawed or biased data in research; fail to understand the data, its source, and problems. Many look for the most easily accessible data, without considering how data sets are produced; without reading codebooks; exploring the origins of data sets, the decision rules being used, and the expertise of creators. Barbieri, Keshk, and Pollins (2008) and Barbieri and Keshk (2011) address the most common problems faced by conflict scholars interested in studying trade ties and their relationship to conflict; issues with existing data sets; areas that require more work. The most severe problems confronting scholars have to do with the quality, availability, and accuracy of official trade statistics.

Barbieri, Keshk, and Pollins (2008) described problems with several decisions rules scholars have used to handle missing trade data. These decision rules introduce errors into our analysis that are merely spread as one published dataset get downloaded and distributed. Thus, findings are replicated, but they are based on a limited and inaccurate view of the world. Regarding problems confronting trade-conflict research, the most serious hurdle is the absence of data for the phenomenon we seek to understand.

Some states aggregate trade data for minor trading partners into one group, without listing the states in that group. This makes it difficult to conclude that two countries do not trade, if trade data are missing at the dyadic level. Oneal & Russett (1997, 2001) popularized the decision rule of replacing missing trade values with zero trade values, assuming no trade exists when it is not reported in dyadic records.[6] The practice of treating missing data as zero trade was particularly problematic in periods when large parts of the world were not IMF members and studies that relied upon IMF member data contained a disproportionate share of missing data (e.g., the East Bloc states during the Cold War).[7] Over time, the IMF and other organizations have revised its historical data, but early trade data are often used and treated as definitive statements of empirical facts.

In general, reporting agencies face problems with inaccurate trade reports.[8] Erroneous trade reports may result from deliberate or non-deliberate acts by governments who compile information; publish trade records, and submit these to international organizations. For example, states may be active transit traders and serve as a conduit through which hostile countries trade and may provide a means for circumventing

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[5] Barbieri serves as co-host to the Correlates of War Trade Database (Barbieri and Keshk, 2017).

[6] Russett & Oneal provide the rationale for their decision in their 2001 work, but employ this rule in earlier, related studies.

[7] Most of the Eastern Bloc states were not IMF members during the Cold War. These states were largely excluded from the IMF trade figures for approximately a decade after the collapse of the Berlin Wall.

[8] Barbieri & Keshk, (2011) explain, states and firms have economic and political reasons for misreporting their trade and other economic data.

sanctions, quotas, and other trade law. Ignoring black markets, illegal, and hidden trade and arms sales have prevented us from understanding the full picture of the trade-conflict relationship.

Many of the strategies that scholars use to deal with trade data problems are based on the assumption that two states should report roughly equal values for the economic activities that take place between them. This is a faulty assumption—and has been the subject of much research when it comes to trading partners. It has also received a lot of attention when it comes to PRC, where reporting discrepancies are higher across this state and its partners than in most other relationships. Typically, PRC reports a lower export flow value than what the recipient/importing state reports for its imports from PRC. This has been the subject of many political disputes. Huenemann (2000) examines China-Canadian trade reporting discrepancies and cites the standard reasons given for trade partner reporting differences, including differences in shipment dates, exchange rate fluctuations, false invoices, uneven enforcement. He explains that inconsistencies in trade reports can be traced to double counting and markups for goods that go through Hong Kong.[9] Moreover, he finds that some international organizations rely on PRC's trade reports for flows to and from PRC. Feenstra, with various colleagues, has done extensive research on the issue of Chinese trade data discrepancies and explains the markups that exist in goods flowing through Hong Kong.[10] Prices for products going through Hong Kong may be marked up, even if there is not significant processing within the territory. When one thinks carefully about Hong Kong and PRC's trade statistics, the situation becomes complicated. If we rely upon PRC's trade reports, then we can imagine that trade through Hong Kong is excluded. However, if an importing state is monitoring trade through Hong Kong that originates in China, they may report some of Hong Kong's business. The Unites States threatened to include Hong Kong in Chinese trade figures, even before Hong Kong returned to Chinese sovereignty.

Given the complexity of trade reporting for PRC and the politicization of trade reports, some solutions developed by scholars to address trade data problems appear particularly problematic. In particular, Barbieri & Keshk, (2011) and Barbieri, Keshk, & Pollins (2009) take issue with Gleditsch's (2009) coding decision that assumes "balanced trade" between import and export flows. This assumption means that when one state's trade import value is missing, its export value is used. The situation is different from the common practice of substituting partner reports for "mirror trade." By that, we mean that the importer and the exporter report the flow from State A to State B in the same direction. If one of these states does not report the flow, data are used from the state that reports it. In the case of Gleditsch's balanced trade assumption, you would use the same state's data, but substitute their dyadic export value for their dyadic import value. In other words, the Unites States should export to PRC the same value that it imports from PRC. If its export value is missing, the US exports to China could be valued at the reported import values. We question the logic of the balanced trade assumption, particularly in relationships that are characterized by tensions over trade imbalances. If we adopt this decision rule, we erase imbalances from the equation and ignore a potential source of conflict. We also neglect the tensions that emerge from the politicization of trade data in such relationships—it is not only that trade is imbalanced, but that one country may be or may be perceived to be distorting trade data to alter the picture. In examining the impact of data reporting on trade-conflict results, we argue that studies that rely on assumptions of balanced trade to generate values for missing data could prove problematic on empirical grounds. In our view, they are problematic on theoretical grounds, but the differences may not be statistically significant. Scholars have not solved all the problems with missing and inaccurate trade data, but continue to work to improve the data.[11]

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[9] For example, there are differences in rates f.o.b./c.i.f. (free on board versus cost, insurance, freight added to export value when imported), where exports are reported in f.o.b. and imports in c.i.f.

[10] On differences in China-US trade statistics and related investigations by expert panels, see Martin (2011).

[11] Programs that use multiple imputations to replace missing data rely upon reported figures for a similar attribute of the dyadic relationship. The problem, of course, is that we do not know if the data are missing because something has happened that means the link has departed from the norm. For example, a conflict may have broken out, or the

China's Changing Borders

Most scholars who are interested in the status of PRC, Hong Kong, and Macau are area experts who focus on relations within the region. As international relations scholars, we are searching for global patterns and looking at interstate ties over broad historical periods. Scholars, particularly those associated with large data projects, like the Correlates of War, have learned to make adjustments for the changing international system. When it comes to trade and other economic reporting, the practices that states and international organizations employ are often disputed and subject to political debated. But, the issue of PRC is interesting because it brings to the forefront several coding problems that are not merely empirically relevant, but theoretically important. Unfortunately, they are also politically sensitive. So, two issues are at stake. The first is that excluding Hong Kong and Macau from measures of PRC amounts to measurement error that could affect empirical findings. The second changes the way we depict and think about a given state. While Hong Kong and Macau's economic activities may appear minor relative to PRC's massive economy, these areas serve essential functions for the country and contribute to its national power.

When it comes to PRC, improving the quality data, it is more than a methodological issue. This is an issue about changing mindsets about national sovereignty. Is there a right or wrong answer to how we treat the PRC and its sub-national entities when it comes to quantitative analysis? What kind of guidance do we have on this matter? When merging data from international organizations that treat Hong Kong, and Macao as state-like entities with interstate system member data from the Correlates of War, the data for Hong Kong and Macao are discard, unless scholars consciously make an effort to integrate them. Scholars are unaware that the problem exists. Our argument is not that Hong Kong and Macao should always be part of Greater China, but that they should be included when the international community recognizes that China is the sovereign over these territories. The same is true of other states that are sovereign over non-state entities.

As a point of information, Chinese borders have gone through some changes over the period usually examine in conflict studies associated with the Correlates of War Project. COW defines Taiwan as a state entity, but other parts of Mainland China are defined as non-state entities at various times in the modern state system. In the table below, we show the COW State and Colonial Entity periods for Greater China. Most large-scale data projects record conflict that happens with Mainland China and other sovereign states, when it comes to inter-state conflict, but may look at conflicts within Mainland China as a domestic conflict.

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states or firms do not want to report the dyadic trade. We must ask why data are missing or it makes little sense to try to examine variations in our independent variable and the impact they have on the dependent variable. Barbieri, Keshk, Pollins (2009) provide evidence that trade data are more likely to be missing when conflicts break out.

TABLE 1. Changes in China's Territorial Status

COW State Entities	Start Year	
PRC	1860	
Taiwan	1949	
COW Colonial Entities	Years	Changes
China	1937-1945	Occupied by Japan
Manchukuo	1928-1932	Became part of China
Manchukuo	1932-1945	Occupied by Japan
Manchukuo	1945-1993	Became part of China
Mongolia	1816-1911	Became part of China
Mongolia	1919-1921	Occupied by China
Mongolia	1921-1924	Occupied by USSR
Taiwan/Formosa	1816-1895	Became part of China
Taiwan/Formosa	1895-1945	Became colony of Japan
Taiwan/Formosa	1945-1949	Became part of China
Hong Kong	1816-1839	Became part of China
Hong Kong	1839-1841	Occupied by Great Britain
Hong Kong	1841-1942	Became colony of Great Britain
Hong Kong	1942-1945	Occupied by Japan
Hong Kong	1945-1996	Became colony of UK
Hong Kong	1997	Became part of China
Macao	1816-1993	Became colony of Portugal
Macao	1999	Became part of China

Source: Correlates of War

If the state is the primary unit of analysis, data are measured at the state level. The differences within any given country are combined in some process that produces one national measure (even if that measure is intended to capture differences within the state). In most cases, colonial trade was not included in bilateral trade relations for a given state. It was also not included as a domestic economic activity. It was a different type of trade; it was a colonial trade. In this respect, treating Hong Kong, as a colony of the United Kingdom and not including it as a state makes sense. But, when Honk Kong is reunified with PRC, it seems something must change in the way we approach this area.

As social scientists, we must consider the reality of the situation regarding statehood. We can simply ask who the state actor is when it comes to activities in Hong Kong and Macao? The Chinese military provides security for Hong Kong. There is no independent military force for Hong Kong. Imagine that the PRC has a conflict with a third party and sanctions it. Hong Kong could eventually sign a separate trade agreement with that third party state, independent of PRC. Hong Kong and Macao have a right to have different international agreements from PRC, but it does not appear from the data that they exercise the right. Given that Hong Kong is part of PRC, should we not consider what this means regarding Hong Kong's strategic importance to PRC. Its geographic location and historical reputation as a free trader provides PRC access to the world. PRC can use that to its advantage by using the zone to mask its activities to the outside world.

Hong Kong is known for being among the most economically free societies in the world. It is often rated number one on the Economic Freedom of the World Data (Frasier Institute, 2018). Many IR scholars might assume that Hong Kong is politically free, including from its powerful neighbor, the PRC. But, the PRC is more than a neighbor. It is the sovereign state of Hong Kong. PRC granted rights to Hong Kong and Macao in negotiated treaties that allowed these territories rights to separate system under Special Administrative Regions. States have a right, under international law, to exit treaty agreements and may do so if the conditions of the agreement have changed. This means that the PRC's agreements on Hong Kong and Macao remain subservient to the PRC's sovereign rights over such territories. Hong Kong and Macao are not Crimea. The international community recognizes that Hong Kong (since 1997) and Macao (since 1999) fall under the sovereignty of PRC and this country has the right under international law to make and enforce laws in its territories.

The rules governing a state's relations with the outside world have received only a minor attention, but Ip (2016) and Kutnesov (2015) explain that the relations of sub national entities with the world has received less attention. They refer to the 'vertical' distribution of power between national and sub-national governments and point to the increase of 'paradiplomacy', which combines a number of different actors in foreign affairs, rather than states alone (Ip, 2016; Kutnesov, 2015). The cases of Hong Kong and Macao, in their commercial agreements with the outside world, represent one area of 'paradiplomacy.'

Ignoring Hong Kong and Macao and their data would be the easiest way to deal with the problem, but is it the best or most accurate way to deal with the ambiguous status. Hong Kong is also a valuable asset regarding PRC's economic relations with the world. For this reason, extreme care is needed to analyze these cases not to underestimate in the quantitative analysis the importance of these territories regarding the strategic location and other factors, including the economic activities that take place through these areas. That is what happens when international organizations report the data for these non-state entities and then dropped out of the data set when data for interstate relations are merged.

Historical Significance as PRC's Transit State to the World

Hong Kong's Entrepot trade is one of the most important components of PRC's foreign trade. This can be traced back to the post Opium War period (1839-1842), Kong (2017) pointed out that PRC's export trade towards Hong Kong took 28.32% of PRC's total exports, while PRC's import from Hong Kong received 30.58% of PRC's total import on average between the 1870s and 1930s. However, Hong Kong itself was not able to produce and consume such vast quantities of goods. Considering that the third industrial was not a significant part of the foreign trade, Hong Kong played the role of the Entrepot as functioning to import foreign goods to the ports in mainland PRC and export Chinese products to foreign countries.

The case of how data were reported to the UN and other organizations from 1950 to 1971 is often unclear. In the case of international relations scholarship, Taiwan was often excluded from the interstate analysis, because it was not considered a sovereign state. In recent decades, it has been included in the membership of the interstate system, but its data are not readily available from the same sources that scholars rely upon for other states. That alone means that data are often missing and the cases drop out of the analysis. Resolving the problems with how to treat Taiwan and the mainland is something we do not consider in this paper because the status of Taiwan has not asserted its independence from PRC. The situation of Hong Kong and Macao, on the other hand, are resolved. They are part of the sovereign state of PRC.

Lui (2015) argues that Hong Kong did not anticipate some of the problems that it is now experiencing, in part, because Hong Kong had been PRC's window to the world. Now, however, the power has shifted, whereby PRC's economy is dominant in global trade and Hong Kong remains less central. In the trade-conflict relationship research, scholars have to be more careful to handle such a "special case" in trade data. If we treat Hong Kong's trade data separate from Mainland PRC, then we significantly underestimate PRC's trade flows, as we do not distinguish whether Hong Kong's trade is for self-production, consuming, or carrying (Kong, 2017). As a result, many Chinese scholars have been separating Hong Kong's actual trade from the reported ones.

Review of "a high degree of autonomy"
The Basic Law is a political arrangement regulating the relationship between PRC and Hong Kong after the transfer of sovereignty of Hong Kong to PRC in 1997. The spirit of the Basic Law is that Hong Kong has a high degree of autonomy even if Hong Kong becomes one of the special administrative regions of PRC. Regarding finance, The Basic Law states that "The Hong Kong Special Administrative Region shall have independent finances." The Chinese government cannot levy taxes on Hong Kong, and Hong Kong does not transfer part of her tax revenue to PRC. The Basic Law confers Hong Kong's full autonomy in matters of revenue and expenditure. In respect of financial independence, Hong Kong prepares and manages its income and Hong Kong people do not pay taxes to the Central People's Government. However, financial freedom does not mean economic independence or political independence.

Scholars provide evidence that the relationship between Hong Kong and PRC in the economic areas has become closer since 1997. Additionally, PRC significantly affects Hong Kong's international status and its economy. The rapid development of foreign trade in PRC enhances Hong Kong's status of PRC's Entrepot trade port. The national "12th Five-Year Plan" supports the stability of Hong Kong and the development of Hong Kong in finance, maritime, logistics, tourism, information, and other high value-added services industries (Lau, 2012). The national "12th Five Year Plan" clearly states that "Support Hong Kong to become an offshore Renminbi (RMB) business center and an international asset management center, to consolidate and enhance the status of Hong Kong as an international financial, trade and shipping center and enhance the global influence of financial centers." Additionally, with the policy support from the Central Government, Hong Kong has become the offshore RMB business center and the international asset management center, functioning to divert RMB hot money as PRC's economy prominently grows. Moreover, the Central Government has implemented various supportive measures to enhance the connection and cooperation between Mainland China-Hong Kong economy, for instances, the Closer Economic Partnership Arrangement (CEPA), the Outline of the Plan for the Reform and Development of the Pearl River Delta, and the Framework Agreement on Hong Kong/Guangdong Cooperation. Therefore, "after 30 years of interactions between Mainland and Hong Kong, their economic relations are closely related" (Lau, 2012, 10).

In particular, the signing CEPA marks a historical and significant change in the economic relations between Hong Kong and Mainland China. "The implementation of the CEPA has reduced and eliminated the institutional obstacles in the economic and trade exchanges between PRC and Hong Kong, accelerated the free flow of capital, goods, and personnel among themselves and boosted the economy of Hong Kong (Zhou, 2008)". It provides an excellent opportunity for Hong Kong to develop its headquarters economy and become an economic and trade coordination and operation center in the Asia Pacific region.

Trade-Conflict Research & Important Measurement Issues
Research on trade and conflict seems like a prominent place where the issue of disaggregated data seems relevant. Many of the recent studies about trade and conflict have been tied to debates over whether economic ties or political freedom are more important for producing dyadic peace. Mousseau (2018) explains that both democracy and peace are the result of what he calls "contractualist economies" and their associated economic norms. His critics charge that it is democracy that is the primary source for peace between democratic states (Dafoe, 2011; Dafoe and Russett, 2013; Dafoe et al., 2013; Ray, 2013; Russett, 2010). Regardless of where one stands in the debate over the strength of political versus economic norms and institutions for promoting peace, two things are clear. First, scholars recognize an intimate connection between political and economic freedoms, recognizing that the two are not perfectly correlated. Second, the data that go into the related analysis and the measures constructed from that data did not consider differences that exist within the state or the exclusion of important economic entities like Hong Kong and Macao. There are not efforts to discuss how we might combine PRC, Hong Kong, and Macao and consider the interaction among the difference forces that exist there. Moreover, there is no recognition that the economic entity often ranked number one on economic freedom has as its sovereign a state that is often seen as politically un-free. According to their economic freedom and overall freedom,

Hong Kong ranks number two in the overall *Human Freedom Index* in 2017, while PRC ranks thirteenth.[12]

It is unclear how to combine the measure of PRC and the special administrative regions; one might argue that you could weigh the regime type and other characteristics by population. However, that is an unsatisfactory resolution, since it would not account for the difference in military power and status of sovereignty that PRC maintains. Scholars of international law have focused a considerable amount of attention on differences that may exist among Hong Kong's "rule of law" relative to PRC's practices, which are typically rated lower on the scale of the rule of law. Both legal and trade scholars have pointed to the tendency of international businesses to locate in Hong Kong and conduct business with PRC through that territory. They are motivated, in large part, by the perception that Hong Kong and Macao are better able to protect contracts and that rule of law is enforced. Some even argue that Hong Kong is proving to be a more considerable influence on PRC than the other way, because of its ability to spread the norms of the rule of law Others contend that the opposite has occurred and that Hong Kong, which some say has always had remnants of authoritarianism, has wavered in its commitment to the rule of law and the standards expected by the international community.[13]

Another critical area of research has been the inclusion of Preferential Trade Areas (PTAs) as an element conditioning the trade-conflict relationship. Some scholars argue that trade should promote peace in state united in PTAs, but not necessarily in other dyadic relationships. Supporters argue that trade institutions build mutual trust through increasing expected gains, and enlarge negotiation range as firms invest in a preferential grouping (Mansfield et al., 1999; Mansfield and Pevehouse, 2000). Therefore, PTA member states are less likely to be involved in hostilities as trade flows rise between them (Mansfield and Pevehouse, 2000). However, Baier and Bergstrand (2007) demonstrate through careful theoretical and empirical analysis that PTAs dramatically increase members' international trade using the gravity equation approach. They argue that "a free trade agreement approximately doubles two members' bilateral trade after ten years on average" (74). In this sense, scholars fail to identify the separate effect of PTAs on conflict. Solving the challenge of PTAs being correlated with trade levels that favor peace, Peterson & Rudloff (2015) examine PTAs' effect on conflict when considering PTAs that are signed compared to those in force, arguing that the signed agreements that are not in force should represent relationships where trade expectations exist, but may not be realized. Peterson & Rudloff provide evidence that signed PTAs have a pacifying effect, while in-force agreements have no statistically significant impact on militarized disputes.

In RTA or PTA studies, the issue of how Hong Kong and Macao are coded seems necessary, perhaps not in overall empirical impact, but at least in theoretical terms. Both Hong Kong and Macao can negotiate trade agreements independent of PRC. The question then is whether or not we should count third parties that have a PTA with Hong Kong as also having one with PRC. If Hong Kong and Macao drop out of the sample of interstate relations, should we allow the trade and PTA data to disappear? Do these not affect ties between that trading state and PRC? Given that PRC conducts a good deal of its economic activities through Hong Kong, this means that PRC's relations with other countries can take place through companies registered in Hong Kong. Thus, there it seems reasonable that these relations be reflected in

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[12] The Human Freedom Index is a collaborative product between the Frasier Institute, the Cato Institute and the Friedrich Naumann Foundation for Freedom.

[13] For example, Rice (2011) argues that Hong Kong has failed to protect the rights of refugees and has knowingly subjected people to a fate of torture and even death at the hands of the state to which they are returned. There is also the case of Moody's being fined $3 million for raising red flags about several Chinese firms; they lost their appeal to the HK high court, despite the fact that most of their warnings provided to be accurate (Weinland, 2017). In addition, China has cracked down since the Umbrella Revolution (Cite).

any analysis of PRC's relations with the world and that a center of finance, like Hong Kong, is considered in any studies of trade and conflict.

PRC's National Power & Interstate Conflict

When measuring the PRC's comprehensive national power, Chinese scholars mainly focus on the difference between GDP and GNI, the difference between nominal GDP and Purchasing Power Parity (PPP), and the way in which Chinese scholars weigh different dimensions of PRC's comprehensive national power. Hong Kong's GDP is an integral part of the PRC's power, since the PRC could mobilize Hong Kong's resources during a war against foreign countries or domestic unrest within Hong Kong. The Basic Law states,

> In the event that the Standing Committee of the National People's Congress decides to declare a state of war or, by reason of turmoil within the Hong Kong Special Administrative Region which endangers national unity or security and is beyond the control of the government of the Region, decides that the Region is in a state of emergency, the Central People's Government may issue an order applying the relevant national laws in the Region (Article 18).

In trade conflict research data, the conflict/war definition should be equivalent to the emergency cases listed in the Basic Law. Therefore, Hong Kong's regional power is a significant component of PRC's national power. The Correlates of War Composite Index of National Capabilities does not include Hong Kong and Macao in the measures.14 This measure does not use GDP but relies upon iron and steel production, the population in urban areas and total population, and military power. The PRC is the only one of these three to have military capabilities.

There is less of a problem of excluding Hong Kong and Macao when it comes to conflict data than when it comes to trade data because most conflict projects treat the state as the unit of analysis. Within the COW Project, the PRC is the state that engages in conflict, and HK and Macao cannot engage in military conflict. The Uppsala conflict database defines the PRC as the state actor and includes no cases where Hong Kong or Macao are the actors in a conflict. In fact, the PRC is involved in few fatal conflicts in the post-WWII period. There are no reported military conflicts between the PRC and Hong Kong or Macao.

Unlike the conflict data projects, the Global Dataset of Events, Location, and Tone (GDELT) includes Hong Kong, Macao, and China as separate actors, when recording conflictual and cooperative events, since GDELT includes sub-national and supra-national actors in addition to nation-states.[15] In other words, if there is an event that occurred between Hong Kong and another actor, GDELT would not include the PRC in the event, unless the PRC was the other actor. Another popular event database that provides conflict events, the Integrated Data for Events Analysis (IDEA) *(*Bond, Bond, Oh, Jenkins, and Taylor, 2003*)*, does not treat Hong Kong and Macau as independent actors, separate from the PRC. Scholars can only use IDEA to investigate the relationship between PRC, and not Hong Kong or Macao, and other states.

While CAMEO provides some ability to disaggregate China and its territories conflictual relationships with third parties, it is not easy to move from event data to aggregate measures to characterize a dyadic relationship in a manner consistent with other variables in analysis. Some scholars posit that by averaging the scores of events in a fixed period, we can produce a net conflict-cooperation score to measure the hostility or the amity between two countries (Thomas 2015, Polachek, Seiglie, and Xiang). However, there is some criticism about averaging the event data in an interval. For instance, countries usually respond to other countries' actions very quickly.

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[14] Personal correspondence with Andrew Enterline, data host for Correlates of War Composite Index of National Capabilities (CINC) data set, March 20, 2018.

[15] GDELT uses the Conflict and Event Mediation Event Observation (CAMEO) ontology and event taxonomy to identity events of an initiator and target.

Research Design. Spatial and Temporal Domain
We are interested in whether data and coding, particularly in relation to Greater China, impact empirical findings on the trade-conflict relationship. To explore this question, we are interested in comparing our findings to a related study that explores the impact of trade dependence and trade agreements on military conflict, using replication data from Peterson & Rudolf (2015). The reason why we use militarized interstate dispute (MIDs) data to measure conflict is that we are interested in whether trade relationship affects the likelihood of serious conflict (i.e., militarized conflict). Next, we want to conduct logistic regression tests on trade and conflict since our dependent variable is dichotomous, that use our preferred measure of interdpeendnece and an expanded measure of trade agreements. Here, we compare findings for Greater China measures and for Mainland China alone.

In investigating the empirical impact of coding and measurement difference on trade-conflict relations, when considering the joint influence of PTAs and interdependence, we want to compare the findings from the militarized interstate dispute data. For this study, we have the dyad year as our unit of analysis and focus on interstate dyads, consisting of sovereign states, as defined by the Correlates of War Project (Palmer, D'Orazio, Kenwick, & Lane, 2015). Our analysis covers the period of 1960-2010, except the analysis that relies upon replication data Peterson & Rudolf (2015) who examine the period 1957-2000. The number of dyads per year varies, due to missing data, but we include as many observations for which we have data. We drop cases with missing data on any of our central variables.

Data and Variables. Dependent Variable: Conflict
We use the COW Militarized Interstate Dispute (MID) Version 4.0. to divide our sample into years in which a dyad experienced conflict and those in which it did not (Brown 2017, Palmer, D'Orazio, Kenwick, and Lane 2015, Jones, Bremer, and Singer, 1996; Ghosn, Palmer, and Bremer, 2004; and Ghosn and Bennett, 2003).[16] Our dependent variable is conflict, and we measure that using two different types of MIDs: all MIDs and FATAL MIDs (MIDs with at least one fatality). Second, for the dependent variable one could measure the start of a MID (a variable set to 1 in the first year of the MID and 0 otherwise) or the presence of a presence of a MID (a variable set to 1 for each year of a MID and 0 otherwise). We employ the presence of a MID as our first dependent variable, due to the rarity of MIDs and also the belief that the appearance of a conflict should not be coded as zero and should not be excluded from the analysis. Thus, we believe it is reasonable to argue that states involved in a MID must evaluate their decision to engage in conflict with each year. We recognize that economic ties may have a different impact on different phases of the conflict process, but that is beyond the scope of this study.

Independent Variables. Trade Dependence & Interdependence
The difference in trade data and economic dependence measures may impact empirical findings of trade and conflict (Boehmer, Jungblut, & Stoll, 2011; Barbieri, 2002). Barbieri & Peters (2005) argue that some measures or data distort and diminish the information available to describe dyadic relationships[17]. A dyad, by definition, models or describes the interactions between two actors. The dyadic analysis is useful in the study of international relations precisely because a dyad describes a bilateral relationship between two states as a function of the variables in both – ideally variables in each in each that are independently measurable. When a dyad is simplified by selecting the value of a variable from one actor and ignoring the value in the other (say by taking the minimum amount from the pair), it is no longer a dyad. When the values of one state are used and the second state is discarded, we lose information. We argue that such an approach excludes relevant information that could (and in fact does) change the outcome of the analysis. Dixon & Goertz (2003) asserted that if you identify the lower or higher of two values, you have considered some information about the second actor. This may be true, but it is a limited amount of information. If we have two states, where the lower dependence score is 10 percent of GDP and the

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[16] We are grateful to Davis Brown for sharing his dyadic version of the Correlates of War MID data, Version 4.0. See Brown (2017) for a discussion of his enhanced MID data.

[17] See debate between Barbieri & Peters (2003, 2005) and Gartzke & Li (2003a, 2003b).

higher is 90 percent, the relationship would be different than one where both states are dependent upon the other for only 10 percent of GDP. Using the 10 percent of the lower score does not capture the differences in these two relationships. The use of a simple rank-ordering can exclude enough information that the resulting analysis is inaccurate. The magnitudes of the differences in trade dependence between states in a dyad are lost, and there is a reason to believe that these magnitudes are salient. Since Russett and Oneal's call to use minimum dependence scores, the practice has continued for reasons that have limited scientific merit.

Of course, the measures of interdependence here are limited and require expansion. In the future, we hope to include other forms of economic ties, including foreign investment. This is important in the Greater China case, but dealing investment issues surrounding Hong Kong become more complicated than the already problematic trade data. Since each of the hypotheses we test specifies a particular directional influence, we employ two-tailed tests in our analyses. Since our dependent variable may experience temporal dependence, we use Beck et al. (1998) program to calculate the number of peace years since the last MID and include that in our models. We calculate two different peace years' variables ("anymidpyrs" and "fatalmidpyrs"), the former one for any MID and the latter one for FATAL MIDs. [18]

We use two different trade sets in our analysis: (1) the Peterson & Rudloff (2015) replication data[19] which uses Gleditsch's (1999) Trade Data Set and (2) the Version 4.0 of the COW Trade Data Set (Barbieri & Keshk, 2017). We also use two different measures of interdependence. We want to compare our findings with studies that rely upon the lower dependence score of states within a dyad. This will allow us to compare across data sets, by using the Low Dependence score and then our low dependence score, created with World Bank GDP data. GDP data come from primarily from the World Bank (2018) and were reported in current US dollars. We transformed these to millions of US dollars, so they were compatible with the COW trade data.

Greater China measures include data for Mainland China, Hong Kong, and Macao. To create the Greater China measures, we combine data for dyadic trade, as well as GDP, for these three reporting entities. The COW trade data set provides this information. For the GDP data, we merged the current dollar values for GDP from the World Bank (2018). They are reported in nominal values, and we transformed them into millions of current US dollars, so they would be compatible with the trade data, which is reported in millions of current US dollars. From this, we created a dependence score for each state, where dependence is equal to Dyadic trade/GDP State 1 and Dyadic trade/GDP State 2. For our interdependence measure, we follow Barbieri (2002) and use her measure of Salience of Economy Dependence, which is the geometric mean of the two dependence scores. We call this INTERDEPENDENCE here.

Trade Agreements
Since trade institutions build mutual trust through increasing expected gains, and enlarge negotiation range as firms invest in a preferential grouping (Mansfield et al., 1999; Mansfield and Pevehouse, 2000), PTA member states are less likely to be involved in hostilities as trade flows rise between them (Mansfield and Pevehouse, 2000). However, Baier & Bergstrand (2007) demonstrate through careful theoretical and empirical analysis that PTAs dramatically increase members' international trade using the gravity equation approach. They argue that "a free trade agreement approximately doubles two members' bilateral trade after ten years on average" (74). In this sense, scholars fail to identify the separate effect of PTAs on conflict. Solving the challenge of PTAs being correlated with trade levels that favor peace, Peterson and Rudloff (2015) tried to directly examine PTAs' effect by distinguishing PTAs between signed but not in force and those in force. By doing so, they argue that signed PTAs are pacifying while in-force agreements have no statistically significant impact on militarized disputes. In summary, it is reasonable to include PTA as an independent variable in the model.

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[18] We do not include the cubic splines in the model, because there is no compelling reason to do so.

[19] The Peterson & Rudloff (2015) replication data is named as "P&R's model" in the tables in which the authors compare their models (i.e., BHW's model) to P&R's models.

We use World Trade Organization Database and examine 153 of PTAs notified to the WTO for creating the independent variable "PTA" which is a dummy variable.[20] The WTO maintains a database to identify preferential trade arrangements (PTAs) and regional trade agreements (RTAs). The WTO defines PTAs as "non-reciprocal preferential schemes."[21] The category includes agreements under the Generalized System of Preferences (GSP) schemes (designed to grant benefits to developing states) under which developed countries allow preferential tariffs to imports from developing countries) and those receiving a waiver from the WTO General Council. The WTO defines regional trade agreements (RTAs) as reciprocal trade agreements between two or more partners.[22] They include free trade agreements and customs unions. We include measures of PTAs and RTAs in our analysis (WTO, 2018). In terms of the PTA of Greater China, if China, Hong Kong, or Macao signs a PTA or RTA with state A, Greater China is deemed to sign a PTA with state A.

Control Variables
The likelihood of a MID can be affected by variables other than trade dependence and agreements. For this reason, we include several control variables shown to reduce the risk that our findings will be spurious. Within the trade-conflict literature, some of the most common control variables are contiguity (Correlates of War Project. Direct Contiguity Data, 1816-2016. Version 3.2.), distance (Peterson and Rugloff 2015), joint-democracy (Marshall, Jaggers, & Gurr 2016), alliance ties (Gibler 2009)[23], capability ratio (Singer, Bremer, & Stuckey, 1972)[24], and peace years (Brown 2017, Palmer, D'Orazio, Kenwick, & Lane, 2015).

In terms of joint-democracy, we rely on the Polity IV Annual Time-Series, 1800-2016 data (Marshall, Jaggers, & Gurr, 2016) to represent dyadic democracy here, in order to fit our unit of analysis. In the Polity IV dataset, a score of -10 is given if the regime is highly authoritarian, while the score of 10 represents a highly democratic regime. We use Erik's (2007) calculation method to prepare monadic values by "combining Polity democracy (DEMOC) and autocracy (AUTOC) scales as follows: $[(DEMOC_i - AUTOC_i) + 10]/2$" (174). BOTH DEMOC. ($\geq 7$) equals one ("1"), and zero ("0") if one of dyad is less than seven.

DISTANCE is measured as the log distance of states within a dyad and was derived from Peterson & Rugloff's (2015) replication data. To fill in cases for the post-2000 period, we relied upon data from the year 2000, assuming that territorial changes did not occur after this period.[25] DISTANCE is assumed to be negatively related to conflict. To reduce the risk that the dependent variable is influencing our independent variables, we lag the trade and PTA variable, our central variables of interest. This is a common practice in trade-conflict research, but not ideal (see Li and Reuveny, 2003). Finally, we turn to the temporal dependence variables. PEACE YEARS counts the number of years since the last MID or Fatal MID (see Beck et al., 1998).

Empirical Results
The empirical results are shown in Tables 1-4 below. We employ logistic regression analysis because our dependent variable is a dichotomous dependent variable. We can run logistic regressions to analyze the relationship between militarized interstate disputes and the independent variables (i.e., trade interdependence and PTA).

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[20] More details are described in Appendix A on Data Construction Methodology.

[21] See PTA Database at ptadb@wto.org

[22] The database is available at Rtais.wto.org

[23] The dataset we use to measure the alliance ties is formal alliances (v4.1) on the COW website.

[24] The dataset we use to measure the capability ratio is national material capabilities (v5.0) on the COW website.

[25] We do not think that distance will differ significantly when adding Hong Kong and Macao.

In Table 1, the results that rely upon P&R LOWER DEPENDENCE measure appear in Column 1. There we first see the result of an analysis that consists of all MIDs. We see that the P&R LOWER DEPENDENCE variable is statistically significant and the coefficient is -33.845. Nevertheless, the result is not consistent with the independent variable LOWER DEPENDENCE_GREATER CHINA which we include in our analysis in Column 2. Despite the negative sign for the coefficient for the variable LOWER DEPENDENCE_GREATER CHINA (-1.807), the variable is not statistically significant. In both models, the PTA variables are not statistically significant. These coefficient have opposite signs, but the fact that they are not statistically significant does not allow us to interpret the findings.

TABLE 2

Next, we turn to our analysis of FATAL MIDs, in Columns 3 and 4 of Table 1. There, we see that the variable P&R LOWER DEPENDENCE is statistically significant and the coefficient of P&R LOWER DEPENDENCE is -127.047 in Column 3. Likewise, the result is different from the independent variable LOWER DEPENDENCE_GREATER CHINA in Column 4. Although the coefficient of LOWER DEPENDENCE_GREATER CHINA is also negative (-13.361), the independent variable LOWER DEPENDENCE_GREATER CHINA is not statistically significant. Another difference is that although the coefficients of independent variables PTA and PTA_ GREATER CHINA are both positive (one is 0.011, and the other one is 0.258), the independent variable PTA_GREATER CHINA is statistically significant, but the independent variable PTA is not. In short, the results of P&R's models and our models are not identical, because of using different data and using different independent variables LOWER DEPENDENCE_GREATER CHINA includes Hong Kong and Macao but P&R LOWER DEPENDENCE does not).

Moreover, regarding the dependent variable ALL MIDs, the results in Table 2 are highly similar when comparing one model with the independent variables PTA_GREATER CHINA and INTERDEPENDENCE_ GREATER CHINA to the model with the independent variables PTA and INTERDEPENDENCE. For one thing, both of the independent variables PTA_ GREATER CHINA and PTA are statistically significant and the coefficients are both positive (the former one is 0.314 and the latter one is 0.315). For the other, both of the independent variables INTERDEPENDENCE_GREATER CHINA in Column 1 and INTERDEPENDENCE in Column 2 are not statistically significant and the coefficients are both negative (the former one is -3.938 and the latter one is -4.030). The result shows that signing PTAs has a positive impact on militarized conflicts and interdependence has no impact on militarized conflicts. It is interesting because the result is not consistent with that of P&R's model in Column 1 in Table 1 which shows that signing PTAs has no impact on militarized conflicts and lower dependence has a negative impact on militarized conflicts.

Likewise, regarding the dependent variable FATAL MIDs when we compare one model with the independent variables PTA_GREATER CHINA and INTERDEPENDENCE_GREATER CHINA to the model with the independent variables PTA and INTERDEPENDENCE, the results are very similar. The effects of PTA_GREATER CHINA in Column 3 in Table 2 and PTA in Column 4 in Table 2 on the FATAL MIDs are exactly identical since the coefficients are both 0.487 and these two independent variables are both statistically significant. Furthermore, both of INTERDEPENDENCE_ GREATER CHINA in Column 3 in Table 2 and INTERDEPENDENCE in Column 4 in Table 2 are statistically significant and the coefficients are both negative (one is -21.337 and the other one is -21.304). That is, there is no difference by adding Hong and Macao to China as the greater China. In this regard, it is clear that Hong and Macao are not important to change the effect of the PTA and INTERDEPENDENCE on the ALL MIDs and FATAL MIDs. Moreover, the result shows that signing PTAs has a positive impact on militarized conflicts and interdependence has a negative impact on militarized conflicts. It is interesting because the result is not consistent with that of P&R's model in Column 3 in Table 1 which shows that signing PTAs has no impact on militarized conflicts.

TABLE 3

For further investigating the effect of China on the MIDs, we include a dummy variable "China" in our models in Table 1 and Table 2. According to the table 1, in terms of the dependent variables "all MIDs" and "fatal MIDs", including the dummy variable "China" does not change the empirical findings we have before. For instance, in the Column 1 in Table 1, it is statistically significant that P&R LOWER DEPENDENCE has a negative impact on militarized conflict. In the Column 5 in Table 1, the result is identical but the magnitude is changed slighted (one is -33.845 and the other one is -33.026). That is, even though the coefficients may not be exactly identical, the statistical significance of each independent variable and the signs of the coefficients are not different. In addition, the interesting finding is that the coefficients of "China" are all positive and it is statistically significant that "China" has a positive impact on the "all MIDs" and the "fatal MIDs" in all 8 models with the independent variable "China" (i.e., the right-hand side 4 models in Table 1 and the right-hand side 4 models in Table 2). In other words, China is positively associated with the "all MIDs" and the "fatal MIDs".

Given that it is statistically significant that China has an impact on the "all MIDs" and the "fatal MIDs", we create a subset merely including Chinese case (i.e., either the ccode 1 or the ccode 2 is China) and run the same logistic regressions for comparing the Chinese models in Table 5 to the general models that does not include the independent variable "China" in Table 2. The result shows that the impacts of the independent variables on the dependent variable in the Chinese models are different from that in the general models.

For instance, in terms of fatal MIDs, the coefficients of PTA_GREATER CHINA and INTERDEPENDENCE_GREATER CHINA in the general model (i.e., in the Column 4 in Table 2) are 0.487 and -21.304 and those two independent variables are both statistically significant. Nevertheless, the two independent variables (i.e., PTA_GREATER CHINA and INTERDEPENDENCE_GREATER CHINA) in the Chinese model (i.e., in the Column 4 in Table 5) are not statistically significant. In other words, PTA_GREATER CHINA is positively associated with militarized conflict and INTERDEPENDENCE_GREATER CHINA is negatively associated with militarized conflict in the general model but they have no impact on militarized conflict in Chinese model. The situation is exactly same when it comes to comparing the model in the Column 4 in Table 2 to the model in the Column 4 in Table 5.

In terms of ALL MIDs, even the result shows that PTA_GREATER CHINA has a positive impact on militarized conflict in the Chinese model (i.e., in the Column 1 in Table 5) and the general model (i.e., in the Column 1 in Table 2), and that PTA has a positive impact on militarized conflict in the Chinese model (i.e., in the Column 2 in Table 5) and the general model (i.e., in the Column 2 in Table 2), the magnitude of those independent variables are different between the Chinese models and the general models. For instance, the coefficient of PTA_GREATER CHINA of the general model in the Column 1 in Table 2 is 0.314 and the coefficient of PTA_GREATER CHINA of the Chinese model in the Column 1 in Table 5 is 1.251. Moreover, the coefficient of PTA of the general model in the Column 2 in Table 2 is 0.315 and the coefficient of PTA of the Chinese model in the Column 2 in Table 5 is 1.253.

TABLE 4

Since there is a body of literature maintaining that the impact of interdependence on the militarized conflict is conditioned on PTA, we create the interaction term PTA*INTERDEPENDENCE in Column 1 and Column 3 in Table 4 and the interaction term PTA_GREATER CHINA*INTERDEPENDENCE_GREATER CHINA in Column 2 and Column 4 in Table 4 to see whether they matter.

There are several interesting results that we find, after running the logistic regressions for models that include an interaction term that considers the presence of interdependence in the presence of a PTA.

(1) The interaction term PTA_GREATER CHINA*INTERDEPENDENCE_GREATER CHINA is statistically significant and has a negative impact on the ALL MIDs in the Column 1 in Table 4.

(2) The interaction term PTA*INTERDEPENDENCE is statistically significant and has a negative impact on the ALL MIDs in the Column 2 in Table 4.

(3) The interaction term PTA_GREATER CHINA*INTERDEPENDENCE_GREATER CHINA is statistically significant and has a negative impact on the FATAL MIDs in the Column 3 in Table 4. Nevertheless, the independent INTERDEPENDENCE_GREATER CHINA is no longer statistically significant after including the interaction term.

(4) The interaction term PTA*INTERDEPENDENCE is statistically significant and has a negative impact on the FATAL MIDs as shown in Column 4, Table 4. Nevertheless, the independent variable INTERDEPENDENCE become statistically insignificant after including the interaction term.

TABLE 5

Conclusions
When questions arise over the differing outcomes of different studies, it is often the case that the studies use different metrics if not different data.[26] Not all trade data and measures are equal. Not all scholars have equal power to promote their findings. We have more confidence in those studies that do not oversimplify the data. In particular, we are unconvinced by dyadic analyses that exclude data from one of the actors based on rank-ordering. International trade and conflict subsume, and are affected by, many variables.

How do we distinguish between states and non-state entities? What about semi-autonomous or autonomous regions within a country? Should their international relations with the world be viewed as part of the subsuming states relations or considered separate? The answer should be based on more than opinion or convenience. This paper explores one small set of cases to illustrate the complexity of coding decisions and unresolved issues. We hope to raise awareness of the problems of special circumstances that generate a dialogue about developing well-reasoned solutions. The fact of PRC is not an isolated one. Shifting territorial boundaries have been a regular part of international relations. They are likely to remain that way, as regions view for special status within and outside the control of sovereign states. Scholars cannot arbitrarily elevate a territory to statehood when the entity and international community deem them a non-state actor, nor should they ignore the activities taking place in economic centers of the world.

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[26] See Barbieri (2002) for a discussion of other possible sources of discrepant findings.

Table 1: Comparison of P&R's Model and BHW's Model

	Dependent variable:							
	All MIDs		Fatal MIDs		All MIDs		Fatal MIDs	
	(P&R Model)	(BHW)	(P&R Model)	(BHW)	(P&R Model)	(BHW)	(P&R Model)	(BHW)
ptal1	−0.079		0.011		−0.024		0.092	
	(0.084)		(0.115)		(0.084)		(0.116)	
timlowdep	−33.845***		−127.047***		−33.026***		−121.956***	
	(8.989)		(27.086)		(8.926)		(27.108)	
grptal1		0.097		0.258*		0.146		0.335**
		(0.090)		(0.126)		(0.091)		(0.126)
grlowdepl1		−1.807		−13.361		−1.416		−11.801
		(1.784)		(7.105)		(1.770)		(7.001)
China					0.961***	0.959***	1.262***	1.304***
					(0.119)	(0.127)	(0.158)	(0.170)
jointdem	−0.362**	−0.635***	−0.647***	−0.791***	−0.324**	−0.602***	−0.598**	−0.738***
	(0.114)	(0.122)	(0.188)	(0.192)	(0.114)	(0.123)	(0.188)	(0.193)
alliance	−0.212*	−0.066	−0.242*	−0.142	−0.160	−0.008	−0.191	−0.084
	(0.083)	(0.086)	(0.115)	(0.119)	(0.083)	(0.086)	(0.116)	(0.119)
caprat	−0.401***	−0.146**	−0.528***	−0.273***	−0.444***	−0.203***	−0.579***	−0.342***
	(0.040)	(0.048)	(0.060)	(0.075)	(0.041)	(0.049)	(0.061)	(0.076)
lndist	−0.081***	−0.041*	−0.313***	−0.278***	−0.088***	−0.041*	−0.326***	−0.285***
	(0.016)	(0.016)	(0.039)	(0.044)	(0.016)	(0.017)	(0.039)	(0.045)
contiguity	2.103***	1.995***	0.527	0.259	1.964***	1.923***	0.294	0.087
	(0.127)	(0.133)	(0.313)	(0.354)	(0.130)	(0.134)	(0.313)	(0.356)
anymidpyrs	−0.140***	−0.142***			−0.139***	−0.141***		
	(0.003)	(0.004)			(0.003)	(0.004)		
fatalmidpyrs			−0.132***	−0.146***			−0.131***	−0.145***
			(0.004)	(0.005)			(0.004)	(0.005)
Constant	−2.481***	−2.707***	−1.106***	−1.094**	−2.415***	−2.709***	−0.991**	−1.047**
	(0.146)	(0.156)	(0.324)	(0.365)	(0.147)	(0.158)	(0.322)	(0.367)
Observations	483,009	355,054	483,009	355,054	483,009	355,054	483,009	355,054
Log Likelihood	−6,429.934	−5,070.637	−3,749.644	−2,869.953	−6,401.104	−5,045.898	−3,722.684	−2,845.758
Akaike Inf. Crit.	12,877.870	10,159.270	7,517.289	5,757.906	12,822.210	10,111.800	7,465.368	5,711.515

Note: *p<0.05; **p<0.01; ***p<0.001

Table 2: Comparison Models with Greater China and China

	Dependent variable:							
	All MIDs		Fatal MIDs		All MIDs		Fatal MIDs	
	(Gr. China)	(China)	(Gr. China)	(China)	(Gr. China)	(China)	(Gr. China)	(China)
grptal1	0.314**		0.487***		0.377***		0.564***	
	(0.102)		(0.138)		(0.102)		(0.138)	
grinterdl1	−3.938		−21.337*		−3.992		−18.913*	
	(2.832)		(9.267)		(2.859)		(9.048)	
ptal1		0.315**		0.487***		0.378***		0.565***
		(0.102)		(0.138)		(0.102)		(0.138)
interdl1		−4.030		−21.304*		−4.093		−18.939*
		(2.853)		(9.263)		(2.883)		(9.053)
China					1.327***	1.328***	1.848***	1.850***
					(0.149)	(0.149)	(0.195)	(0.195)
jointdem	−0.601***	−0.601***	−0.791***	−0.791***	−0.535***	−0.535***	−0.698***	−0.698***
	(0.133)	(0.133)	(0.202)	(0.202)	(0.134)	(0.134)	(0.204)	(0.204)
alliance	0.111	0.111	0.013	0.013	0.198	0.198	0.125	0.125
	(0.103)	(0.103)	(0.140)	(0.140)	(0.104)	(0.104)	(0.142)	(0.142)
caprat	0.030	0.030	−0.011	−0.011	−0.070	−0.070	−0.169	−0.169
	(0.063)	(0.063)	(0.092)	(0.092)	(0.065)	(0.065)	(0.097)	(0.097)
lndist	−0.048*	−0.048*	−0.278***	−0.278***	−0.059*	−0.059*	−0.319***	−0.319***
	(0.023)	(0.023)	(0.060)	(0.060)	(0.024)	(0.024)	(0.059)	(0.059)
contiguity	1.890***	1.890***	0.382	0.382	1.766***	1.766***	−0.013	−0.013
	(0.191)	(0.191)	(0.477)	(0.477)	(0.194)	(0.194)	(0.475)	(0.475)
anymidpyrs	−0.134***	−0.134***			−0.131***	−0.131***		
	(0.005)	(0.005)			(0.005)	(0.005)		
fatalmidpyrs			−0.129***	−0.129***			−0.125***	−0.125***
			(0.006)	(0.006)			(0.006)	(0.006)
Constant	−2.986***	−2.986***	−1.641***	−1.641***	−2.959***	−2.959***	−1.387**	−1.387**
	(0.218)	(0.218)	(0.494)	(0.494)	(0.221)	(0.221)	(0.494)	(0.494)
Observations	277,304	277,304	277,304	277,304	277,304	277,304	277,304	277,304
Log Likelihood	−3,029.603	−3,029.552	−1,786.506	−1,786.509	−2,996.746	−2,996.671	−1,751.901	−1,751.858
Akaike Inf. Crit.	6,077.207	6,077.105	3,591.012	3,591.017	6,013.491	6,013.343	3,523.803	3,523.716

Note: $^{*}p<0.05$; $^{**}p<0.01$; $^{***}p<0.001$

Table 5: Comparison Models between Greater China and China on Dyads Involved China

	Dependent variable:			
	anymid		fatalmid	
	(Gr. China)	(China)	(Gr. China)	(China)
grptal1	1.251**		0.310	
	(0.476)		(0.715)	
grinterdl1	−6.417		16.886	
	(16.241)		(158.136)	
ptal1		1.253**		0.307
		(0.478)		(0.716)
interdl1		−9.680		8.409
		(16.851)		(153.140)
alliance	−12.362	−12.353	−11.079	−11.076
	(845.894)	(842.051)	(1,235.931)	(1,232.034)
caprat	−0.376	−0.390	−0.226	−0.227
	(0.212)	(0.213)	(0.280)	(0.280)
lndist	0.016	0.017	0.167	0.167
	(0.079)	(0.079)	(0.131)	(0.131)
contiguity	−0.194	−0.195	0.226	0.217
	(0.538)	(0.539)	(0.832)	(0.832)
anymidpyrs	−0.251***	−0.251***		
	(0.025)	(0.025)		
fatalmidpyrs			−0.472***	−0.471***
			(0.056)	(0.056)
Constant	−0.214	−0.194	−0.646	−0.636
	(0.711)	(0.712)	(1.182)	(1.182)
Observations	4,928	4,928	4,928	4,928
Log Likelihood	−189.376	−189.263	−77.580	−77.585
Akaike Inf. Crit.	394.753	394.526	171.161	171.169

Note: *p<0.05; **p<0.01; ***p<0.001

Table 4: Comparison Models with Greater China and China with Interaction Term

	Dependent variable:			
	All MIDs		Fatal MIDs	
	(Gr. China)	(China)	(Gr. China)	(China)
grptal1	0.412***		0.703***	
	(0.111)		(0.158)	
grinterdll1	3.866		−6.386	
	(4.173)		(8.843)	
ptal1		0.412***		0.704***
		(0.111)		(0.158)
interdll1		3.723		−6.343
		(4.197)		(8.834)
grptal1:grinterdll1	−14.736*		−55.226*	
	(7.135)		(22.534)	
ptal1:interdll1		−14.687*		−55.305*
		(7.175)		(22.534)
jointdem	−0.596***	−0.596***	−0.752***	−0.752***
	(0.133)	(0.133)	(0.202)	(0.202)
alliance	0.099	0.099	0.001	0.001
	(0.103)	(0.103)	(0.140)	(0.140)
caprat	0.029	0.029	−0.018	−0.018
	(0.063)	(0.063)	(0.092)	(0.092)
lndist	−0.045	−0.045	−0.273***	−0.273***
	(0.023)	(0.023)	(0.060)	(0.060)
contiguity	1.898***	1.898***	0.417	0.417
	(0.191)	(0.191)	(0.479)	(0.479)
anymidpyrs	−0.134***	−0.134***		
	(0.005)	(0.005)		
fatalmidpyrs			−0.128***	−0.128***
			(0.006)	(0.006)
Constant	−3.037***	−3.036***	−1.722***	−1.723***
	(0.219)	(0.219)	(0.497)	(0.497)
Observations	277,304	277,304	277,304	277,304
Log Likelihood	−3,027.039	−3,027.036	−1,782.877	−1,782.868
Akaike Inf. Crit.	6,074.078	6,074.073	3,585.754	3,585.735

Note: $^{*}p<0.05$; $^{**}p<0.01$; $^{***}p<0.001$

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Appendix A: RTA Data Construction Methodology (Wen, 2015)

The database records the economic integration of bilateral country pairings for 195 countries annually from 1950 through 2011. Depending on the level of economic integration, a country pairing was assigned a number code from 0 to 6. The codes are explained on the following table.

IIA Ranking	Type of Agreement	Type of Agreement	Definition
0	No Agreement	N/A	No preferential trade agreement
1	NR-PTA	Non Reciprocal Preferential Trade Arrangement	Preferential terms and customs concessions given by developed nations to developing countries
2	PTA	Preferential Trade Arrangement	Preferential terms to members vs. non-members
3	FTA	Free Trade Areas	Trade barriers eliminated (or substantially so) among members; treat non-members differently
4	CU	Customs Union	Same as FTA; but treat non-members the same
5	CM	Common Market	Same as CU; but also includes free movement of labor/capital
6	EUN	Economic union	Same as CM, but also monetary and Fiscal Policy coordination; further harmonization of taxes/regulation/monetary system

No Country Entries

The "NoCty" cell designation is defined as a country-pair/year cell whereby at least one of the two countries in a pair either does not exist or does not have independence (and hence is not recognized as a "country"). The purpose of this entry is to delineate between a "0", which is used for cells that have been investigated and found to not have any economic integration agreement (EIA) versus instances where one or both countries are not countries (and hence cannot have an EIA) for the country-pair/year in question. The data source used for determining NoCty entries is the CIA World Factbook 2007-2008. By clicking on a NoCty hyperlink on the "Data Sheet" of the FTA data file, you will be sent to the "Comments & PDF Links" page. Here you will find copies of the CIA World Factbook documents used.

The following countries have recorded EIAs prior to the statement of their independence. Hence, for these countries, the status of "NoCty" has not been filled in, since the presence of an EIA is interpreted that the country "exists," even though the CIA World Factbook indicates otherwise. Researchers may thus wish to construct an indicator for each of those countries listed above, for years of official independence.

The year of independence is recorded after each country name: Bahamas (1973), Bermuda (1981), Cape Verde (1975), Comoros (1975), Dominica (1978), Guinea- Bissau (1974), Iran (1979), Micronesia (1986), Mozambique (1975), Namibia (1990), Palau (1994), Papua New Guinea (1975), Saint Kitts and Nevis (1983), Saint Lucia (1979), Saint Vincent and the Grenadines (1979), Seychelles (1976), Solomon Islands (1978), Suriname (1975), Thailand (1975), Vanuatu (1980), Yemen (1968), Zimbabwe (1980).

Further, certain countries were not included in the set of 195 countries for a variety of reasons. Some were not included because of their size, while others, namely the former Yugoslavia and the Democratic People's Republic of Korea (North Korea), were not included because of their policy of self-reliance, which more or less forbade the two countries from participating in trade agreements with other countries.

World Trade Organization Database
A very important part of our research was to examine and classify accordingly all the trade agreements that had been notified to the World Trade Organization from 1950 to the beginning of 2005. In total we examined 153 of such agreements. A detailed list of the agreements can be found in the file WTO Agreements List 2007-2008.xls. For each agreement, we determined the level of economic integration between the involved countries, the year the agreement came into effect, and the current status of integration. In most cases, the WTO webpage included a link to where we could find a PDF copy of the agreement and a copy of the notification letter sent by the notifying parties to WTO. For the cases in which the agreement was not found directly within WTO we were able to retrieve the agreements from other sources, such as web pages of country governments, World Trade Law (http://www.worldtradelaw.net/fta/ftadatabase/ftas.asp), and the Tuck Trade Agreements Database at the Tuck School of Business at Dartmouth University (http://www.dartmouth.edu/~tradedb/index.php). Each of the 153 agreements within the WTO Agreements List is properly recorded in our database and includes links to the original text of the trade agreement as well as to the WTO notifying letter.

Council of the European Union
A critical resource for recording the agreements between the European Union and other parties around the world was the Council of the European Union. This website lists the bilateral relationships between the European Union and third parties on an individual country basis.

These relationships were recorded with varying, although usually sufficient, levels of documentation, although outside sources were occasionally consulted for verification. These outside sources included individual country websites, websites of regional agreements, and the WTO and Tuck Databases. Relevant treaties from the Council of the European Union are included in our database with links to primary source documentation.
http://www.consilium.europa.eu/

Tuck Trade Agreements Database
The Tuck Trade Agreements Database served as a supplement to the WTO trade agreements listing. Put out by the Center for International Business at the Tuck School of Business at Dartmouth, this database has a listing comprised only of free trade agreements and provides PDFs of the original treaties. Additional research was conducted to determine if the treaty went into force and the date on which that happened. All treaties within the Tuck Trade Agreements Database as of 1 May 2014 are included in the database if they went into force in or before 2011.
http://www.dartmouth.edu/~tradedb/index.php

USA GSP
The countries that are eligible for treatment as beneficiaries under the United States Generalized System of Preference are categorized from the beginning of the program in 1976 to 2011. While the Trade Act of 1974 created the system, it was not implemented until 1976. The Trade Act granted the President the authority to designate and remove beneficiary status to countries eligible as proscribed by law. The designation of a country's status is modified by a Presidential Proclamation or Executive Order in the U.S. Federal Register. As a result, the Federal Register was search from 1976 to 1979 using HeinOnline.com and from 1980 to 2011 using Lexis.com for applicable proclamations and executive orders referencing the GSP program. Copies of the document bestowing beneficiary status are contained in the data set. If the beneficiary status is removed from a country, the document doing so is also contained in the data set.

This process was also applied to the African Growth and Opportunity Act, Andean Trade Preference Act,

and Caribbean Basin Initiative, which expanded the benefits granted by the GSP program. For the prior three acts, in addition to the U.S. Federal Register research was supplemented by www.agoa.gov and http://www.ustr.gov/archive/Trade_Development/Preference_Programs/Section_Index.html.

EU GSP

The countries that are eligible for treatment as beneficiaries under the European Union Generalized System of Preferences are categorized from the beginning of the program in 1976 to 2011. The European Union cites the UN as the original motivation and resolution that preferential treatment needed to be given to developing countries. As a principle, this was accepted by the European Union countries in 1968. The European Union states that the GSP system was first in place in 1971, with the period of 1971 to 1981 being covered by the first agreements. However, in practice, the European Union passed annual resolutions that identified both the scope of the GSPs (which items were covered) as well as the countries which were currently deemed as developing and in need of preferential treatment.

Data was collected from the Official Journal of the European Communities. The first GSP reference we found in the written Official Journal of the European Communities was in the 1976 Official Journal of the European Communities, in L349. The prime source document contains the 1976 GSP resolution, followed by the annual developing country list appendix for every year in which there was an addition or subtraction from the list. Countries in the European Union Generalized System of Preferences were added according to their admittance into the European Union and similarly dropped from preferential treatment when no longer part of the European Union community. Due to lack of online historical data, in regards to the Official Journal of the European Communities, data collection prior to 1993 was collected via hard copy and copied into PDF format for reference.
http://eur-lex.europa.eu/JOIndex.do

Other GSP Agreements

Other country-specific GSP agreements were gathered from a variety of sources, using primarily the UNCTAD (United Nations Conference on Trade and Development) GSP Handbooks as a starting point. Further, a list of 7 national GSP schemes (aside than the ones already listed above), was obtained from the UNCTAD website, and further research was conducted to find primary documents that clarified the exact GSP agreements for each of these countries.
http://www.unctad.org/Templates/Page.asp?intItemID=1421&lang=1
As of November 2014, we believe we've included all GSP agreements for WTO member countries (conditioned on the assumption that such countries would notify the WTO of such agreements). Other major additions in the 2014-2015 working period include GSP agreements for India, South Korea, and China.
NB: As reflected in the document, some country pairs both give and receive GSP. This applies to Cyprus-Belarus (2004-2012), Belarus-Turkey (2010-2012), and Russia-Turkey (2010-2012).

Bilateral Trade Flows

We also utilized bilateral trade flow in dollar terms to automatically establish that there were no trade agreements between a country pair when we had no specific information of the existence of an agreement. First, if a country pair did not have any trade in any year, it was concluded that the country pair consequently did not have an agreement. Second, it was also concluded that if a country pair did have trade for some years but did not have trade for multiple years (for example, a country pair had no trade from 1960-1989, and then no trade in 2006, 2009, and 2010) that country pair also did not have any trade agreements. This was only utilized on country pairs we did not have information on, and did not have any impact on country pairs for whom we had already gathered information indicating the existence or lack of trade agreements. Overall, by using this first method on an older data sheet (one that only detailed 1960-2005), we were able to establish that there were no trade agreements between approximately 26.77% of the country pairs. Then, extending the data sheet back to 1950, using the second method, we were further able to establish that there were no trade agreements for an additional 12.52% of the country pairs. This left us with approximately 1.4% of all country pair and year combinations for which we could not be

absolutely certain that there was no agreement between the country pair in that specific year. However, given the depth of our research, we must operate under the assumption that if we have not discovered a trade agreement between that specific country pair, in all likelihood a trade agreement does not exist.