

CHAPTER 35

**CAN GLOBAL VALUE CHAIN PARTICIPATION
MITIGATE CONFLICT BETWEEN NATIONS
IN THE GLOBAL TRANSFORMATION AGE?**

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Abstract

This study investigates the impacts of the global value chain (GVC) participation on conflicts across nations. The first novelty of this study is to observe the impacts of GVC participation on conflicts. In other words, the trade statistics are not conventional, but they track true domestic value-added embedded in exports and true foreign value-added embedded in imports, which provides a more accurate way to measure trade values. Secondly, the comprehensive data set enables us to include 188 countries and to conduct disaggregated analysis via the heterogeneity across sectors. The findings indicate that bilateral GVC participation has a significantly negative impact on the number of conflicts regardless of sector groups. The multilateral GVC participation of manufacturing and service sectors also decreases the number of conflicts across the countries. In other words, greater GVC activities can foster economic interdependence and peace because countries with close economic relations are less likely to wage war on one another due to the associated costs. Moreover, GVC participation may allow countries to access resources that are not available domestically. Therefore, trade can alleviate a potential cause of conflict. Regarding control variables, membership in the GATT, distance, common language, and polity measures are negatively associated with the number of conflicts whereas contiguity, common border, landlocked, and common colony are positively correlated with the number of conflicts. The findings are quite robust to a couple of robustness checks: different dependent variables, different samples, and 5-year (moving) averages. Therefore, we can argue that enlarging and deepening world trade negotiations and policies emphasizing peace might help to decrease tensions.

Keywords

*Forward GVC Participation, Backward GVC Participation,
Conflict, Peace, Disaggregated Analysis*

Introduction

Over the past thirty years, the world has witnessed high levels of tensions such as the Gulf War (1990-1991), Yugoslav Wars (1991-2001), Afghanistan War (2001-present), Iraq War (2003-2011), Arab Spring (2010-2013), Syrian Civil War (2011-present) and Ukraine Crisis (2014-present). Wars are not the only form of international conflict. A wide range of animosity levels are also evident, including threats to use force, display use of force, and use of force. In the meantime, the world also observed highly integrated and interdependent economies thanks to the rapid increase in information, communication, and transportation technologies and the decrease in transportation costs. The structure in which a product is produced entirely by one country has been replaced by a system in which parts of a product are produced by different countries. Today, based on comparative advantage, firms unbundle each stage of production across different countries in order to maximize productivity and minimize costs. Due to this new production structure, all parts of a product become subject to trade. For example, the design and high-tech components of a smartphone may be developed in the United States, assembled in China and the raw materials sourced from various countries around the world.

Trade literature generates a concept to describe this new production and trade landscape: Global value chains (GVCs). This concept, which includes all value-added activities from the development of a product idea, design, production, sale and distribution, is defined as GVCs (Porter, 1985; Gereffi, 1994; Koopman et al., 2010, 2014; Yanikkaya & Altun, 2020; Yanikkaya et al., 2022). Although varying in scale and depth, participation in GVCs increases in almost all countries across different geographies. In fact, according to the World Bank's 2020 World Development Report, two-thirds of international trade consists of intermediate goods and services, i.e. participation in GVCs (World Bank, 2020).

Therefore, although the world has witnessed major tensions and conflicts in the last three decades, trade may appear to play an important role in reducing the risk of conflict by increasing integration and interdependence between countries. According to the World Trade Organization (WTO), trade can contribute to stability and promote peace (WTO, 2023).

Even though the trade performance of all countries has shown significant improvements during these three decades through various types of liberalization efforts, there is still higher trade potential driven by countries and sectors with different comparative advantages in the world economies. Within these facts, therefore, this study investigates the impacts of GVC participation on conflicts across nations. We ask the following two main questions:

- Can global value chain participation mitigate conflict between nations?
- Does this effect show heterogeneity across sectors?

Through a number of channels, trade can have a considerable impact on conflicts. First, trade increases the economic interdependence of nations. Strong trade relations reduce the likelihood of hostility between nations. Nations avoid aggression due to the disruption of supply lines and economic losses. Second, through trade agreements, trade provides a forum for diplomacy and communication that may reduce tensions. Third, a country with stronger trade linkages with the rest of the world is more likely to have wars (Martin et al., 2008). Conflict inside the region has a lower opportunity cost because the foreign market gives a wider range of possibilities. Numerous studies have been conducted in literature on the connection between trade and conflict. Many authors prove the negative impact of conflicts on international trade (Polachek, 1980; Martin et al., 2008; Hegre et al., 2010; Li & Reuveny, 2011; Kinne, 2012; Asik & Marouani, 2021). Polachek (1980) suggests that trade and disputes have a negative relationship. Martin et al. (2008) claim that while bilateral trade decreases conflict, multilateral trade increases the probability of conflict because of the opportunity cost associated with the loss of bilateral trade gains. Hegre et al. (2010) argue that trade promotes peace. According to Li and Reuveny (2011), trade in energy items raises the potential of conflict while trade in agricultural and chemical/mineral goods lowers the likelihood. Kinne (2012) asserts that central countries in terms of networks experience fewer conflicts.

Asik and Marouani (2021) assert that intra-MENA trade is more likely to reduce the probability of violence. However, Barbieri (2002) asserts that regions with significant economic interdependence are more likely to have armed conflicts. Goenner (2004) discovers that although broad trade links do not lessen conflict, democracy does.

In another study very similar to this study, Tat and Yanikkaya (2024) analyze the impacts of trade-in value-added measures on conflict in the MENA region. Their results suggest that while bilateral trade has no significant impact on regional conflicts, the multilateral trade of manufacturing and agriculture sectors increases the number of conflicts within the region. Our study differs from their study in terms of a couple of aspects. First, we employ directly GVC participation indices rather than trade-in value-added statistics. Second, we use larger country coverage rather than focusing on one specific region.

The first novelty of this study is to observe the impacts of GVC participation on conflicts. In other words, the trade statistics are not conventional, but they track true domestic value-added embedded in exports and true foreign value-added embedded in imports which provides a more accurate way to measure trade values (Wang et al., 2017a, 2017b, 2021). Secondly, the comprehensive data set enables us to include 188 countries and to conduct disaggregated analysis via the heterogeneity across sectors.

Regardless of sector groups, the results show that bilateral GVC participation has a significantly negative impact on the number of conflicts. The multilateral GVC participation in manufacturing and service sectors also lowers the frequency of conflicts among the nations. In other words, increased GVC initiatives can promote economic interconnectedness and peace since the costs of war between closely integrated nations deter them from going to war. Participation in the GVC may also provide countries with access to resources that are unavailable within their borders. Trade can thereby mitigate a possible source of conflict. In terms of control variables, contiguity, common borders, landlocked areas, and common colonies have positive correlations with the number of disputes, while GATT membership, distance, common language, and polity measures have negative correlations. The results hold up well to several tests of robustness, including using an alternative dependent variable, samples, and 5-year (moving) averages. Therefore, we argue that measures promoting peace and expanding and deepening global trade agreements may contribute to a reduction in tensions.

The study is organized as follows. The next section explains the data and the third section describes the methodology. The fourth section provides estimation results and robustness checks. The final section concludes the paper.

Data

To evaluate our research questions, we utilize a variety of different databases. We take the conflict measures from the Militarized Interstate Disputes dataset (version 5.0) of the Correlates of War project (Palmer et al., 2022). The project reports each incidence and gives a number from one (1) to five (5) to indicate the hostility level of each conflict until the year 2014. One (1) is for no military action, two (2) is for threat to use force, three (3) is for display use of force, four (4) is for use of force, and five (5) is for war.

We utilize the EORA26 database (Lenzen et al., 2012, 2013) which provides inter-country input-output (I-O) tables covering 26 sectors of 188 countries from 1990 to 2016. We prefer to use the EORA26 database because it has a quite large coverage including many developing countries and a continuous time.

We compute forward and backward GVC participation by using the value-added decomposition methodology of Wang et al. (2017) and calculation steps in UIBE (2017, 2017a, 2017b). Forward GVC participation means the ratio of domestic value-added of the sector embedded in its exports to sectoral value-added. Backward GVC participation means the ratio of foreign value-added embedded in imports to sectoral final demand. We control both forward and backward GVC participation with the rest of the world in our empirical model to assess the impact of multilateral trade on regional conflict.

We employ several gravity measures such as being a member of the General Agreement on Tariffs and Trade (GATT), distance, contiguity, landlocked, common colony, common language from the CEPII database (Conte et al., 2022), and polity index from Polity V database (Marshall & Gurr, 2020). The polity index ranges from -10 meaning strongly autocratic to +10 meaning strongly democratic. We sum the polity indices of the home and partner countries to depict the institutional quality of both nations with a single index because we have a bilateral dataset that covers both home and partner countries. Table 1 presents the descriptive statistics of all variables we employ in our empirical analysis.

Table 1
Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
<i>log(Number of incidents)</i>	613,727	0.01	0.10	0.00	4.98
<i>Bilateral GVC Participation (%)</i>	613,727	0.09	0.24	0.00	2.19
<i>Multilateral GVC Participation (%)</i>	613,727	22.81	12.82	3.93	81.98
<i>Bilateral GVC Participation - Manufacturing (%)</i>	611,569	0.03	0.09	0.00	0.85
<i>Multilateral GVC Participation - Manufacturing (%)</i>	610,719	8.16	5.12	1.04	31.54
<i>Bilateral GVC Participation - Service (%)</i>	612,400	0.04	0.11	0.00	1.05
<i>Multilateral GVC Participation - Service (%)</i>	611,687	11.17	6.27	1.99	41.07
<i>Bilateral GVC Participation - Agriculture (%)</i>	609,589	0.00	0.01	0.00	0.12
<i>Multilateral GVC Participation - Agriculture (%)</i>	608,246	1.31	0.92	0.15	6.15
<i>Bilateral GVC Participation - Mining (%)</i>	608,936	0.01	0.02	0.00	0.19
<i>Multilateral GVC Participation - Mining (%)</i>	609,249	1.94	2.54	0.11	25.20
<i>GATT</i>	613,727	0.57	0.50	0.00	1.00
<i>log(Distance)</i>	613,727	8.71	0.77	2.44	9.90
<i>Contiguity</i>	613,727	0.02	0.13	0.00	1.00
<i>Landlocked</i>	613,727	0.04	0.20	0.00	1.00
<i>Common colony</i>	613,727	0.01	0.10	0.00	1.00
<i>Common language</i>	613,727	0.13	0.34	0.00	1.00
<i>Polity</i>	613,727	6.19	8.66	-20.00	20.00

Notes: The number of incidents counts conflicts according to five main hostility categories: no military action, threat to use force, display use of force, use of force, and war. While bilateral GVC participation represents trade between the home and partner country, multilateral GVC participation indicates trade between the home (partner) and other countries. The polity index varies between -10 and +10. Higher values mean more democratic and lower values mean more autocratic governance. We sum up the number of incidents and political indices of home and partner countries.

Before conducting the empirical analysis, it is essential to first comprehensively understand the insights provided by the data. Figure 1 shows the total GVC participation ratios (summation of backward and forward) of country averages from 1990 to 2015. In the 1990-2000 period, the percentage of GVC participation fluctuated between 20% and 25%. From 2000 onwards, GVC participation started to increase and exceeded 30% in 2005. Between 2005 and 2010, participation increased rapidly, exceeding 40% in 2010. After 2010, GVC participation fluctuated, but remained generally high, staying above 38% in 2014.

Figure 1
GVC Participation (%) (country averages)

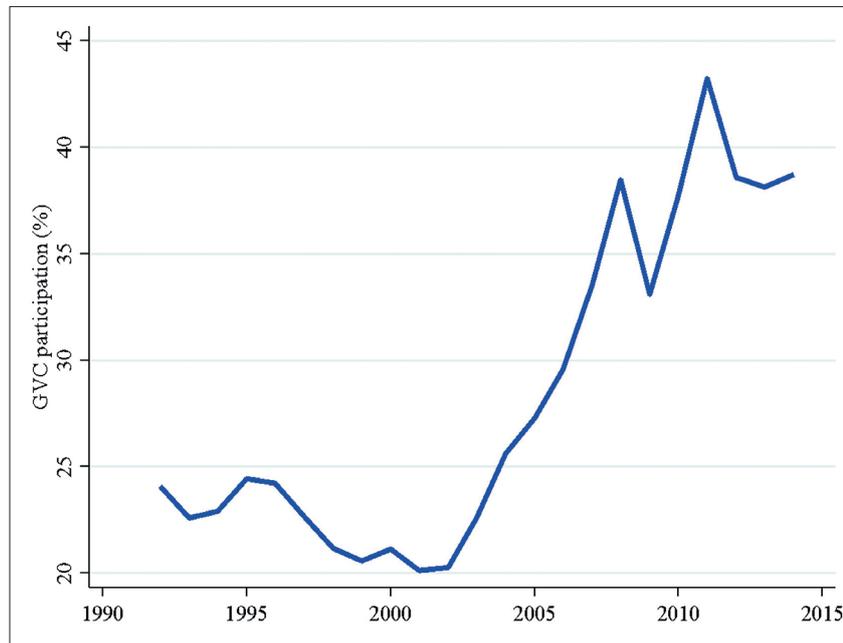


Figure 2 presents the number of incidents according to five hostility levels (no military action, threat to use force, display use of force, use of force, and war) between 1990 and 2015. The colored dots represent the frequency of each type of event. While relatively fewer conflicts are observed from 1995 to 2000, the increase in the number of conflicts after the year 2000 is noteworthy. No military action (blue dots) category represents events that do not involve military action and appear regularly throughout the graph. It shows an increase in the late 1990s and early 2000s. Threats to use force (red dots) are widely distributed throughout the period, with a rise in 2000. Display use of force (green dots) is more prominent from the mid-1990s to the early 2000s. Use of force (orange dots) is evenly distributed over the entire period, with a particular increase in the early 2000s. War (gray dots) are rare and appear in very small numbers throughout the graph. The most striking point in the graph is the sudden increase in all categories around 2000. The conflict increases in 1998-1999 are based on three main events. These are the Yugoslav War (1988-1999), the incident involving Israel, Lebanon, and Syria (1997-1999), and an incident involving Iraq, the USA, Israel, Kuwait, Egypt, the Saudi Arabia and the EU countries (1997-1999). This increase started to decline again after 2000. In general, incidents not involving military action and threats to use force are the most frequent types of incidents. The use of force and incidents involving the use of force occur less frequently. War situations are extremely rare. Overall, these data suggest that international tensions and conflicts have increased during certain periods (especially around 2000) but have generally remained relatively stable over the period 1990-2015.

Figure 3 illustrates total GVC participation ratios across countries (year averages). The color gradient represents the level of GVC participation, with darker shades of green indicating higher levels of participation and lighter shades representing lower levels. The figure shows that countries in Europe, North America, and East Asia have high levels of GVC participation, countries in South America, Southeast Asia, and the Middle East have medium levels, and many countries in Africa, Central Asia, and the Pacific Islands have low levels. Specifically, Singapore, Malaysia, Hong Kong, Trinidad and Tobago, Belgium, Ireland, Slovakia, Slovenia, the Czech Republic, and Sao Tome and Principe are the countries with at least 50% GVC participation. Therefore, this figure highlights the differences in global trade integration, with developed and industrialized countries participating more actively in global value chains compared to many developing countries.

Figure 2
Number of Incidents According to Five Hostility Levels

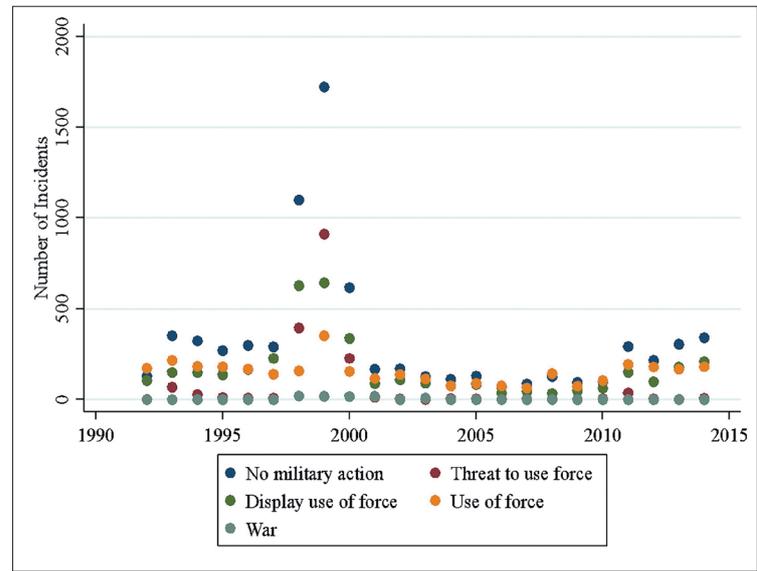


Figure 3
GVC Participation Across Countries



Figure 4 presents the total number of incidents across countries (year averages). The figure shows that countries such as the United States, Russia, India, and China have the highest number of conflicts (dark brown), some countries in South America, Africa, and the Middle East have moderate conflict intensity (medium brown) and many other countries have low conflict intensity (light brown). Indeed, countries the USA, Croatia, Israel, Bosnia and Herzegovina, Lebanon, TFYR Macedonia, Slovenia, Montenegro, Serbia, Türkiye, Pakistan, and Iraq have more than 20 conflicts on average over the sample period.

Overall, when the two figures are considered, it can be seen that countries with high GVC participation generally have a lower number of conflicts. Even this initial eye inspection suggests that deeper integration into GVCs can contribute to a reduction in conflict between countries.

Figure 4
Conflict Across Countries



Methodology

Based on the theoretical discussion above regarding trade and conflict, we propose three hypotheses to explore these dynamics. These hypotheses seek to investigate the effects of various trade flow types and heterogeneity on the frequency of conflicts.

Hypothesis 1: Bilateral GVC decreases conflict.

Hypothesis 2: Multilateral GVC with the rest of the world increases conflict.

Hypothesis 3: The impact shows heterogeneity across sectors.

We analyze the impacts of trade on regional conflicts by following this equation:

$$Conflict_{c,p,t} = \beta_1 Bilateral_GVC_{c,p,t-1} + \beta_2 Multilateral_GVC_{c,p,t-1} + \beta_3 Gravity_{c,p,t-1} + \beta_4 C_c + \beta_5 P_p + \beta_6 T_t + \varepsilon_{c,p,t} \quad (1)$$

where c , p , t stand for country, partner country, and time, respectively. $Conflict_{c,p,t}$ signifies the number of conflicts between the country and the partner country. $Bilateral_GVC_{c,p,t}$ stands for the summation of bilateral forward GVC participation of home and backward GVC participation of partner countries with each other varying in different sector groups (manufacturing, service, agriculture, and mining). $Multilateral_GVC_{c,p,t}$ stands for the summation of multilateral forward GVC participation of home and backward GVC participation of partner countries with the rest of the world varying in different sector groups (manufacturing, service, agriculture, and mining). $Gravity_{c,p,t}$ represents several sectoral gravity measures such as GATT membership, distance, contiguity, landlocked, common colony, common language, and polity index. We also include the country (C_c), partner country (P_p), and time (T_t) fixed effects in our empirical model.

We employ the Ordinary Least Squares (OLS) method to estimate our empirical model. To address potential endogeneity issues, we take a one-year lag of all the right-hand side variables, implying that the lagged variables are not influenced by the current error term. This approach helps ensure that our estimations are not biased by contemporaneous shocks. Furthermore, we conduct several robustness checks by employing different dependent variables, varying samples, and using 5-year (moving) averages to validate the consistency and reliability of our results.

Results

Table 2 illustrates the impact of bilateral and multilateral GVC participation on the number of conflicts. Our results indicate that bilateral trade has a negative effect on the quantity of conflicts in all sectors. This result can be explained through various mechanisms. Trade increases the economic interdependence of nations. Strong trade relations reduce the likelihood of violence between nations. Nations avoid hostility due to the disruption of supply lines and economic losses. Besides, through trade agreements, commerce provides a forum for diplomacy and communication that may reduce tensions.

Table 2
Conflicts and GVC participation

	(1)	(2)	(3)	(4)	(5)
	Total	Manufacturing	Service	Agriculture	Mining
<i>Bilateral GVC Participation</i>	-1.371*** (0.477)	-3.100** (1.214)	-3.633*** (0.900)	-19.720*** (7.122)	-10.090** (4.602)
<i>Multilateral GVC Participation</i>	-0.017*** (0.004)	-0.076*** (0.013)	-0.026*** (0.008)	-0.057 (0.051)	0.024 (0.030)
<i>GATT</i>	-0.009*** (0.001)	-0.009*** (0.001)	-0.009*** (0.001)	-0.009*** (0.001)	-0.010*** (0.001)
<i>Distance</i>	-0.009*** (0.001)	-0.009*** (0.001)	-0.009*** (0.001)	-0.009*** (0.001)	-0.008*** (0.001)
<i>Contiguity</i>	0.117*** (0.016)	0.121*** (0.016)	0.115*** (0.015)	0.114*** (0.015)	0.101*** (0.015)
<i>Landlocked</i>	0.004* (0.002)	0.004* (0.002)	0.003 (0.002)	0.003 (0.002)	0.004* (0.002)
<i>Common colony</i>	0.027** (0.012)	0.030** (0.013)	0.028** (0.012)	0.027** (0.012)	0.026** (0.012)
<i>Common language</i>	-0.006*** (0.002)	-0.006*** (0.002)	-0.006*** (0.002)	-0.006*** (0.002)	-0.006*** (0.002)
<i>Polity</i>	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
<i>Constant</i>	0.088*** (0.017)	0.087*** (0.018)	0.089*** (0.016)	0.089*** (0.017)	0.085*** (0.017)
<i>Observations</i>	585,469	585,322	585,234	586,856	585,658
<i>R-squared</i>	0.054	0.055	0.054	0.052	0.050

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Country, partner, and year dummies are included. We take a one-year lag of all the right-hand side variables.*

In addition, we observe a negative association between the number of disputes and multilateral GVC only for manufacturing and service sectors. This negative impact is explained by the increase in multilateral dependence and the cost of multilateral conflict. In other words, globalization strengthens the incentive to avoid disputes, especially for the manufacturing and service sectors.

Moreover, our analysis shows that GATT membership, distance, common language, and democratic form of government tend to reduce the number of disputes. In contrast, factors such as border contiguity, landlockedness, and shared colonial history are more likely to increase disputes.

These findings suggest important policy implications. Promoting both bilateral and multilateral trade can be used as a conflict mitigation tool, particularly in the manufacturing and services sectors. Policymakers should support deeper integration into GVCs and promote multilateral trade agreements (Martin et al., 2012). Moreover, promoting democratic forms of governance and utilizing common language and historical ties can further enhance peacebuilding efforts. In contrast, bordering countries, landlocked regions, and regions with shared colonial histories may require more targeted conflict prevention strategies. In such regions, specific policies should be developed to mitigate potential causes of conflict.

Robustness

We conduct four robustness checks to control the validity of our results. First, we employ an alternative dependent variable that counts the number of incidences ranging from 3 to 5 (Table 3). Second, we restrict our sample to countries that experienced at least one incidence (Table 4). We want to ensure that our findings are not driven by countries with no conflict history and hence provide a more realistic assessment of conflict dynamics. Third, we take 5-year moving averages to further consider the possibility of simultaneity issues in the model (Table 5). Last, we use 5-year averages to smooth the data and take the cyclical fluctuations in the economy into account (Table 6). All these exercises prove the validity and robustness of the main findings.

Table 3
Conflict and GVC participation, number of incidences (3)-(5)

	(1)	(2)	(3)	(4)	(5)
	Total	Manufacturing	Service	Agriculture	Mining
<i>Bilateral GVC Participation</i>	-0.896** (0.360)	-2.280** (0.909)	-2.351*** (0.685)	-9.260* (5.423)	-6.006* (3.476)
<i>Multilateral GVC Participation</i>	-0.004 (0.003)	-0.019** (0.008)	-0.004 (0.005)	0.002 (0.033)	0.013 (0.018)
<i>GATT</i>	-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)
<i>Distance</i>	-0.004*** (0.001)	-0.004*** (0.001)	-0.005*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)
<i>Contiguity</i>	0.082*** (0.012)	0.084*** (0.012)	0.081*** (0.012)	0.080*** (0.012)	0.070*** (0.011)
<i>Landlocked</i>	0.003* (0.002)	0.003* (0.002)	0.003* (0.002)	0.003 (0.002)	0.003* (0.002)
<i>Common colony</i>	0.015* (0.008)	0.017* (0.009)	0.016* (0.009)	0.015* (0.008)	0.013 (0.008)
<i>Common language</i>	-0.003** (0.001)	-0.004*** (0.001)	-0.003** (0.001)	-0.004*** (0.001)	-0.004** (0.001)
<i>Polity</i>	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
<i>Constant</i>	0.052*** (0.014)	0.053*** (0.015)	0.052*** (0.013)	0.052*** (0.014)	0.049*** (0.014)
<i>Observations</i>	585,469	585,322	585,234	586,856	585,658
<i>R-squared</i>	0.045	0.046	0.045	0.043	0.040

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Country, partner, and year dummies are included. We take a one-year lag of all the right-hand side variables.*

Table 4
Conflict and GVC participation, experienced at least one incidence

	(1)	(2)	(3)	(4)	(5)
	Total	Manufacturing	Service	Agriculture	Mining
<i>Bilateral GVC Participation</i>	-1.631*** (0.534)	-3.898*** (1.333)	-4.198*** (1.007)	-24.067*** (8.386)	-12.781** (4.988)
<i>Multilateral GVC Participation</i>	-0.020*** (0.005)	-0.085*** (0.016)	-0.032*** (0.010)	-0.096 (0.078)	0.038 (0.034)
<i>Gatt</i>	-0.011*** (0.002)	-0.011*** (0.002)	-0.011*** (0.002)	-0.010*** (0.002)	-0.012*** (0.002)
<i>Distance</i>	-0.011*** (0.001)	-0.011*** (0.001)	-0.011*** (0.001)	-0.010*** (0.001)	-0.010*** (0.001)
<i>Contiguity</i>	0.123*** (0.016)	0.128*** (0.017)	0.122*** (0.016)	0.119*** (0.016)	0.106*** (0.016)
<i>Landlocked</i>	0.005* (0.003)	0.005* (0.003)	0.004 (0.003)	0.004 (0.003)	0.005* (0.003)
<i>Common Colony</i>	0.029** (0.013)	0.033** (0.014)	0.030** (0.013)	0.028** (0.013)	0.028** (0.013)
<i>Common Language</i>	-0.007*** (0.002)	-0.008*** (0.002)	-0.007*** (0.002)	-0.008*** (0.002)	-0.007*** (0.002)
<i>Polity</i>	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
<i>Constant</i>	0.103*** (0.019)	0.103*** (0.020)	0.105*** (0.019)	0.104*** (0.020)	0.098*** (0.020)
<i>Observations</i>	479,417	479,498	479,148	484,639	480,661
<i>R-squared</i>	0.058	0.060	0.058	0.056	0.054

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Country, partner, and year dummies are included. We take a one-year lag of all the right-hand side variables.*

Table 5
Conflict and GVC participation, 5-year moving average

	(1)	(2)	(3)	(4)	(5)
	Total	Manufacturing	Service	Agriculture	Mining
<i>Bilateral GVC Participation</i>	-1.224** (0.475)	-3.061** (1.211)	-3.125*** (0.937)	-18.248** (7.231)	-7.890* (4.540)
<i>Multilateral GVC Participation</i>	-0.020*** (0.005)	-0.086*** (0.016)	-0.026*** (0.009)	-0.035 (0.060)	0.046 (0.032)
<i>GATT</i>	-0.011*** (0.001)	-0.010*** (0.001)	-0.010*** (0.001)	-0.010*** (0.001)	-0.011*** (0.001)
<i>Distance</i>	-0.009*** (0.001)	-0.009*** (0.001)	-0.010*** (0.001)	-0.009*** (0.001)	-0.009*** (0.001)
<i>Contiguity</i>	0.118*** (0.015)	0.121*** (0.016)	0.117*** (0.015)	0.116*** (0.015)	0.105*** (0.015)
<i>Landlocked</i>	0.004 (0.002)	0.004* (0.002)	0.003 (0.002)	0.003 (0.002)	0.003 (0.002)
<i>Common colony</i>	0.025** (0.012)	0.027** (0.012)	0.026** (0.012)	0.024** (0.012)	0.024** (0.012)
<i>Common language</i>	-0.006*** (0.002)	-0.006*** (0.002)	-0.006*** (0.002)	-0.007*** (0.002)	-0.006*** (0.002)
<i>Polity</i>	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
<i>Constant</i>	0.097*** (0.017)	0.096*** (0.017)	0.098*** (0.016)	0.098*** (0.017)	0.094*** (0.017)
<i>Observations</i>	605,223	604,367	605,591	606,668	604,918
<i>R-squared</i>	0.089	0.090	0.089	0.088	0.084

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Country, partner, and year dummies are included. We take a one-year lag of all the right-hand side variables.*

Table 6
Conflict and GVC participation, 5-year average

	(1)	(2)	(3)	(4)	(5)
	Total	Manufacturing	Service	Agriculture	Mining
<i>Bilateral GVC Participation</i>	-1.087** (0.493)	-3.084** (1.280)	-2.410** (1.077)	-15.618** (7.840)	-2.518 (5.537)
<i>Multilateral GVC Participation</i>	0.003 (0.006)	0.015 (0.018)	0.006 (0.012)	-0.165** (0.066)	0.063* (0.037)
<i>GATT</i>	-0.011*** (0.001)	-0.011*** (0.001)	-0.011*** (0.001)	-0.011*** (0.001)	-0.012*** (0.001)
<i>Distance</i>	-0.008*** (0.001)	-0.008*** (0.001)	-0.009*** (0.001)	-0.008*** (0.001)	-0.008*** (0.001)
<i>Contiguity</i>	0.121*** (0.016)	0.123*** (0.017)	0.119*** (0.016)	0.117*** (0.016)	0.106*** (0.015)
<i>Landlocked</i>	0.005** (0.002)	0.005** (0.002)	0.005** (0.002)	0.004** (0.002)	0.005** (0.002)
<i>Common colony</i>	0.032** (0.013)	0.033** (0.013)	0.032** (0.013)	0.030** (0.012)	0.029** (0.012)
<i>Common language</i>	-0.006*** (0.002)	-0.007*** (0.002)	-0.006*** (0.002)	-0.007*** (0.002)	-0.007*** (0.002)
<i>Polity</i>	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
<i>Constant</i>	0.098*** (0.020)	0.097*** (0.020)	0.101*** (0.020)	0.101*** (0.020)	0.093*** (0.019)
<i>Observations</i>	109,950	109,770	110,007	110,199	109,941
<i>R-squared</i>	0.080	0.079	0.079	0.078	0.074

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Country, partner, and year dummies are included. We take a one-year lag of all the right-hand side variables.*

Conclusion

Over the last three decades, the world has experienced different types of conflicts. Despite the rapid globalization trends and liberalization efforts in the world during these forty years, the world has still significant trade potential. These characteristics make the trade-conflict nexus special to be further investigated. Therefore, this study examines whether participation in the global value chain mitigates conflict between countries and whether this effect differs across sectors.

The findings indicate that bilateral GVC participation has a significantly negative impact on the number of conflicts regardless of sector groups. The multilateral GVC participation of manufacturing and service sectors also decreases the number of conflicts across the countries. In other words, greater GVC activities can foster economic interdependence and peace because countries with close economic relations are less likely to wage war on one another due to the associated costs. Moreover, GVC participation may allow countries to access resources that are not available domestically. Therefore, trade can alleviate a potential cause of conflict. Regarding control variables, membership in the GATT, distance, common language, and polity measures are negatively associated with the number of conflicts whereas contiguity, common border, landlocked, and common colony are positively correlated with the number of conflicts. Different samples, 5-year (moving) averages, and different dependent variables all provide strong evidence for the robustness of the findings.

Overall, emphasis should be placed on enlarging and deepening both bilateral and multilateral GVC participation and on trade policies that promote peace in specific regions. We claim that expanding and extending international trade talks and peace-oriented policies could contribute to a reduction in hostilities. Lastly, the importance of understanding the heterogeneity in these dynamics is emphasized.

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