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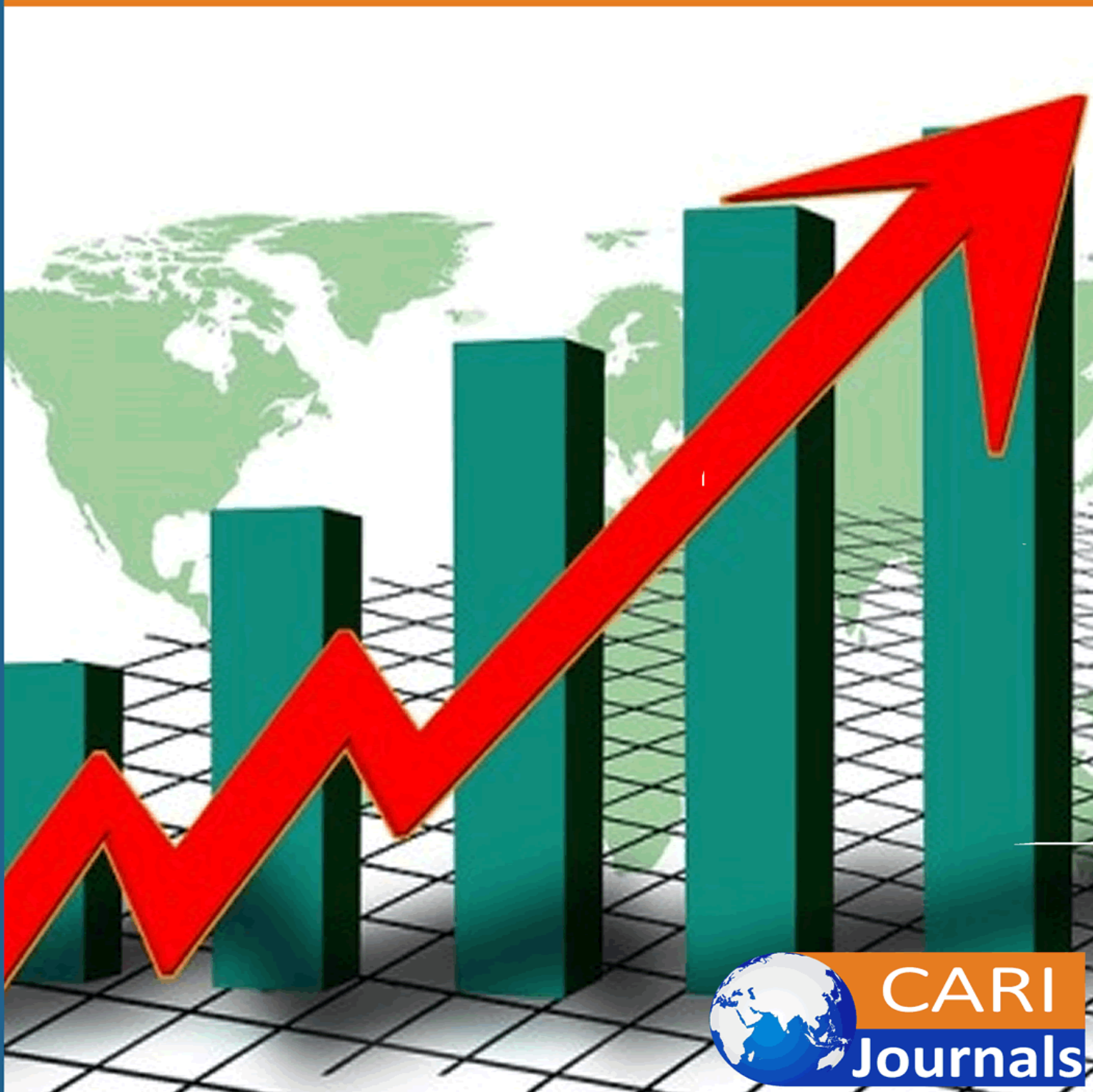

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Trade, Power, and Peace: Revisiting the Liberal and Structural Determinants of Militarized Conflict, 1946–2014

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Abstract

Purpose: This study investigates how economic interdependence, political institutions, and power asymmetry jointly influence the likelihood of militarized interstate disputes (MIDs).

Methodology: Using cross-national quantitative analysis, the study employs both country–year (1960–2014) and dyad–year (1946–2014) research designs based on data from the Correlates of War and World Development Indicators. Logistic regression models with lagged predictors test four hypotheses: (1) trade openness reduces the likelihood of conflict; (2) this pacifying effect strengthens with higher economic growth; (3) trade asymmetry increases the probability of dyadic disputes; and (4) democracy moderates the trade–peace relationship.

Findings: The country–year analysis partially supports the liberal peace hypothesis: greater trade openness modestly reduces the risk of conflict onset. However, its pacifying influence does not significantly depend on short-term economic growth and weakens in more democratic regimes. It suggests that political accountability and nationalist pressures can offset the stabilizing effects of trade. The dyad–year analysis confirms that power asymmetry and trade interdependence substantially decrease conflict probability, implying that peace is most sustainable under stable power hierarchies.

Unique Contribution to Theory, Practice, and Policy: The study advances theoretical understanding by bridging liberal and structural realist frameworks. It shows that economic openness promotes peace only when grounded in asymmetric but stable power structures. It also contributes by integrating country- and dyad-level analyses to capture both domestic and systemic dimensions of the trade–peace relationship. From the policy perspective, the findings suggest that fostering trade interdependence alone is insufficient to ensure stability without addressing political and structural contexts that condition its effects.

Keywords: *Trade Interdependence, Power Asymmetry, Liberal Peace, Economic Openness, Militarized Interstate Disputes*

JEL Codes: *F10, F51, F52, O57, C33*

1. INTRODUCTION

Despite unprecedented globalization and the deep integration of global supply chains, the renewal of great-power rivalry, illustrated by escalating tensions between the United States and China and the economic disruptions following the Russia-Ukraine conflict, has revived long-standing discussions about whether trade promotes peace or intensifies rivalry. The relationship between economic interdependence and interstate disputes endures one of the most challenged questions in international relations. While liberal theories emphasize the trade's ability to reduce the probability of war by increasing mutual reliance and the opportunity costs of war (Oneal & Russett, 1999; Gartzke, Li, & Boehmer, 2001), while critics maintain that economic ties can turn into tools of coercion and vulnerability (Copeland, 2015; Barbieri, 1996).

The liberal peace tradition, based on Immanuel Kant's *Perpetual Peace* (1795), postulates that democracy, trade, and international institutions, the "Kantian tripod", cooperatively foster peace by increasing transparency, raising the costs of war, and establishing states in cooperative frameworks (Oneal & Russett, 1999; Keohane & Nye, 2012). From this liberal perspective, trade acts as a constraining force on dispute by aligning national interests around economic growth and shared gains from integration. In contrast, structural realism asserts that peace ultimately depends on power distribution and deterrence rather than economic relationship (Hegre, 2004). From this realist view, power asymmetries and capabilities result in stability by deterring challenges from relatively minor states. Nevertheless, these two perspectives are not mutually exclusive and may, in fact, interact. Recent scholarship shows that economic interdependence and power hierarchies may together build conflict dynamics, with trade's pacifying effects relying on the underlying power distribution (Sandnes, 2024).

Despite extensive empirical exploration, key gaps remain. Studies often separate either national-level economic factors of dyadic power relations, ignoring the interplay between domestic and structural determinants of peace. Further, most analyses treat trade as uniformly pacifying and thus fail to explain how its effects may depend on political institutions, economic performance, or power asymmetry. Therefore, this research fills up these gaps by implementing both country-year and dyad-year analyses across the 1946-2014 period. It examines how trade openness, economic growth, and democracy jointly affect conflict onset at the national level, and how trade interdependence and power disparity form conflict dynamics at the dyadic level.

By combining these two perspectives—liberalist and structural realist —the study aims to offer a more comprehensive understanding of the trade-peace relationship. The country-year

models examine whether trade openness and economic growth reduce the likelihood of militarized disputes and whether this relationship differs across regime types. The dyad-year models explore how power asymmetry and trade interdependence structure dyadic peace and conflict. By integrating these two distinct approaches, the study provides a framework that connects domestic economic performance with systemic power configurations. This is done by drawing on data from the Correlates of War and World Development Indicators covering the period from 1946 to 2014, employing lagged logistic regression models with fixed effects, which address potential endogeneity through temporal sequencing. Ultimately, this approach offers a unified assessment of how economic openness and power structure together shape international peace.

The findings show that trade openness modestly lowers the risk of militarized disputes, lending partial support to the liberal peace hypothesis. However, its pacifying influence diminishes in democratic regimes, suggesting that domestic political constraints and nationalist pressures may counteract the stabilizing role of economic interdependence. Economic growth exerts no significant moderating effect, suggesting that structural trade patterns matter more than cyclical economic shifts. At the dyadic level, greater interdependence and balanced power relations are associated with lower conflict probabilities, indicating that trade fosters peace most effectively when embedded in a stable power structure.

The remainder of this paper proceeds as follows. Section 2 reviews the preexisting theoretical foundations and develops four testable hypotheses. Section 3 outlines the research design, data sources, and methodology. Section 4 presents the empirical findings, while Section 5 discusses the theoretical implications of those findings and suggests directions for future research.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The liberal peace tradition, rooted in Immanuel Kant's *Perpetual Peace* (1795), posits that democracy, economic interdependence, and international institutions together shape a "Kantian tripod" that promotes peaceful relations among states. Building on this theoretical foundation, liberal scholars have argued that commerce and interdependence enhance mutual restraint and cooperation. Oneal and Russett (1999), for instance, empirically demonstrated that trade interdependence significantly reduces the likelihood of militarized interstate disputes (MIDs) from 1885 to 1992, even when controlling for realist factors such as power balance, alliances, and contiguity. Their study demonstrated that states with higher trade-to-GDP ratios were less likely to engage in disputes. This finding is largely rooted in the logic of opportunity cost, stating that economic openness increases the opportunity cost of war and thereby guarantees peace.

Earlier liberal scholars, such as Polachek (1980), argued that trade creates domestic interest groups — exporters and multinational investors —who oppose war to secure economic gains. Similarly, Morrow (1999) emphasized that leaders predict future economic benefits and are thus limited from using force against major trading partners. Together, these mechanisms align with the rational choice expectation that economic interdependence fluctuates leaders' cost-benefit calculations in favor of maintaining peace.

However, this liberal peace thesis has not been unchallenged. Barbieri (1996) and Barbieri and Schneider (1999) asserted that certain patterns of interdependence, especially asymmetric dependence, possibly increase vulnerability and therefore raise the risk of disputes. From this perspective, trade relations can become sources of leverage or coercion, which makes economic openness a potential liability in times of dispute. Furthermore, endogeneity complicates the causal relationship, as conflict can also reduce trade flows. Mansfield and Pollins (2001) and Keshk, Pollins, and Reuveny (2004) addressed this by applying simultaneous equation models. From their refined models, they found that "trade follows the flag," meaning that political relations often structure trade flows as much as trade influences peace.

Despite these critiques, recent analyses reaffirmed a conditional nature of the liberal peace. Hegre, Oneal, and Russett (2010) used updated estimations to confirm that trade interdependence continues to reduce MIDs, while recent works such as Choi (2023) and Hover (2025) underscore how globalization and nationalist repercussions reshape the trade-peace relationship. Collectively, these studies suggest that while economic openness remains a significant predictor of interstate peace, its effects may be conditional on domestic politics and structural asymmetries.

Therefore, the relationship between trade openness and interstate disputes can be hypothesized as follows:

Hypothesis 1: Greater trade openness (trade/GDP) decreases the likelihood of militarized interstate dispute onset.

The liberal peace framework argues that economic prosperity and interdependence reduce the incentives for armed conflict by increasing the opportunity costs of war. According to this logic, as trade and growth expand, states become more embedded in mutually beneficial economic networks, making conflict disproportionately costly. As Oneal and Russett (2001) highlight, expanding economies enhance national welfare and the legitimacy of political institutions, which in turn increase the costs of military confrontation.

This opportunity-cost logic holds that leaders of growing economies are less likely to

initiate conflict, as war would destroy and disrupt the conditions that sustain domestic stability and prosperity. Building on this rationale, Mansfield and Pollins (2001) extend the claim by distinguishing economic growth as an independent driver of peace, rather than a secondary outcome of interdependence. They argue that growth functions as both a cause and a mechanism. It can directly promote peace through improved state capacity and legitimacy, and indirectly by reinforcing the benefits of trade and cooperation.

As states experience economic development, citizens' expectations rise and the regime gains political stability, both of which discourage the leaders of states from engaging in costly external disputes. Recent contributions have further applied this logic to contemporary geopolitical contexts. Song et al. (2022), exploring US-China relations, found that trade dependence interacts with economic growth expectations to shape perceptions of rivalry and cooperation. Their discoveries show that periods of high growth reduce the possibility of zero-sum competition by increasing optimism about future gains, while economic slowdown can escalate conflict risk. Taken together, these studies demonstrate that the pacifying effect of trade is conditional on sustained economic growth, which strengthens the opportunity-cost mechanism central to the liberal peace tradition.

Therefore, the impact of GDP on the relationship between trade openness and interstate disputes can be hypothesized as follows:

> *Hypothesis 2: The pacifying effect of trade openness on militarized conflict is moderated by economic performance, such that higher GDP per capita growth strengthens—or economic slowdown weakens—the conflict-reducing influence of trade.*

While the liberal peace tradition highlights the pacifying effects of interdependence, the asymmetric dependence perspective challenges its core assumption that trade equally promotes peace. Copeland (1996) asserts that the relationship between trade and conflict depends not only on the volume of trade but also on expectations about future trade. According to his "trade expectation theory," when one state becomes heavily reliant on another for critical imports or export markets, and leaders anticipate a potential disruption in these relations, the dependent state may initiate conflict to secure access or reduce vulnerability. Thus, trade asymmetry can alter interdependence from a source of stability into a strategic responsibility.

Empirical research supports this conditional view. Barbieri (1996) and Barbieri & Schneider (1999) found that asymmetric dependence, rather than interdependence itself, tends to increase conflict risk. Their cross-national analyses manifested that when trade benefits are

unevenly distributed, powerful states can exploit weaker partners, raising instability. This contradicts the liberal argument that economic ties inherently discourage conflict, suggesting instead that interdependence under inequality may produce friction rather than peace.

Scholars have refined these insights. Mansfield & Pollins (2001) warned that synthesizing interdependence with asymmetry disrupts the real causal dynamics. They argued that while mutual interdependence can restrain conflict, asymmetric dependence reflects power imbalances that can lead to coercion or exploitation. Since power asymmetry may amplify or mitigate these effects, relative capabilities must also be controlled for in the analysis. Bremer (1992) demonstrated that power ratios strongly predict the likelihood of war, meaning that any assessment of trade asymmetry's effects must account for the underlying balance of power between states.

Recent research reaffirms the persistence of asymmetric vulnerabilities in a globalized economy. Hover (2025) finds that asymmetric risks continue even in today's globalized trade networks. Despite deep integration, concentrated dependencies, particularly in strategic industries, continue to create leverage and insecurity, consistent with Copeland's theoretical expectations.

Therefore, the impact of the asymmetric trade relationship on the militarized disputes can be hypothesized as follows:

Hypothesis 3: Greater bilateral trade asymmetry increases the likelihood of the onset of dyadic militarized interstate disputes.

Finally, it is worth considering the role of a country's political institutions. The liberal peace tradition contends that democracy, economic interdependence, and international institutions together reduce the likelihood of armed conflict, a framework known as the "Kantian tripod" (Oneal & Russett, 1999). Within this structure, democracy is theorized to amplify the pacifying effects of trade by introducing audience costs and institutional constraints that limit leaders' ability to engage in conflict. Democratic leaders are more accountable to economic interest groups that benefit from trade, and thus face higher political costs for disturbing peaceful economic relations. Consequently, the opportunity cost of war becomes salient in democratic systems, where societal opposition to financial loss constrains aggressive foreign policy.

Oneal and Russett (2001) and Hegre, Oneal, and Russett (2010) show that interdependence and joint democracy reduce the probability of MIDs. Their findings suggest that democracy magnifies the peace-promoting influence of trade openness. However, newer research emphasizes that this relationship is conditional. Choi (2023) shows that nationalism and regime extremism can ruin the liberal peace logic, weakening the impact of trade even within formal

democracies. Therefore, the expectation is that trade openness decreases the likelihood of conflict most effectively in democratic partners, where institutional restrictions and public accountability reinforce the opportunity-cost mechanism of peace.

Therefore, the impact of political institutions on the relationship between trade openness and dispute can be hypothesized as follows:

Hypothesis 4: The pacifying effect of trade openness is stronger in more democratic states (negative interaction between trade and democracy).

3. RESEARCH DESIGN AND METHODOLOGY

This study employs a quantitative, cross-national approach that combines two complementary analytical frameworks. The first utilizes a country-year design to test whether a state's overall trade openness and economic growth influence its tendency to initiate or participate in militarized interstate disputes (MIDs), corresponding to Hypotheses 1, 2, and 4. The second framework employs a dyad-year design to examine how asymmetric trade relations between pairs of states affect their conflict probabilities, thereby testing Hypothesis 3. Together, these levels of analysis provide a comprehensive perspective of how national and bilateral economic factors, including openness, growth, and bilateral dependency, shape patterns of interstate conflict. Both datasets cover all recognized states in the international system from 1946 to 2014, consistent with the Correlates of War (COW) membership coding.

The dependent variable across all models measures the onset of militarized interstate disputes, drawn from the COW MID 5.0 dataset. In the country-year analysis, a binary indicator equals 1 in the first year a state becomes involved in a new MID and 0 otherwise. To test robustness, two alternative measures can be used: disputes involving the use of force (hostility level ≥ 4) and fatal disputes involving at least one battle-related death. However, these are the rare events that prevent the binary choice estimations from producing statistically meaningful results; they were not considered in the final analysis. In the dyad-year analysis, the dependent variable is similarly coded as 1 when a new MID arises between a pair of states in a given year.

Independent variables are obtained from widely established data sources. Trade openness, the main predictor for Hypothesis 1, is measured through total trade (imports + exports) divided by GDP, based on data from the World Development Indicators (WDI). Economic growth, used to test Hypothesis 2, is defined as the annual percentage change in real GDP per capita from the WDI. Trade asymmetry, the central explanatory variable for the dyadic analysis for Hypothesis 3, is computed as the absolute difference in trade dependence between two states: $|Trade_{ij} / GDP_i -$

$Trade_{ji}$ / GDP_j|, using bilateral trade data from the COW Bilateral Trade Dataset v4.0 and GDP data from the WDI. For Hypothesis 4, democracy is measured by the Polity V polity2 score (ranging from −10 to +10), and the interaction between trade openness and democracy captures whether the peace-promoting effect of trade varies with regime type.

Several control variables are included to account for economic and political factors. Economic development and size are represented by the natural logarithms of GDP per capita and total population, respectively. Military expenditure as a percentage of GDP controls for defense burden, while overall national power is measured by the Composite Index of National Capability (CINC) from the National Material Capabilities v6.0 dataset. In dyadic models, relative power is calculated as each state's share of the dyad's combined CINC score, and the absolute distance from parity (|relative power − 0.5|) reflects asymmetry in material capabilities. All monetary values are converted to constant 2015 U.S. dollars, and missing data are managed through listwise deletion following data merging.

Since the dependent variable is dichotomous, logistic regression serves as the primary estimation technique. In the country-year models, the baseline specification estimates the probability that state *i* experiences an MID onset in year *t,* as a function of lagged trade openness, economic growth, democracy, their interaction, and relevant controls. These lagged variables ensure the models do not suffer from an endogeneity problem, which is a well-recognized concern in interdependence research (Mansfield & Pollins, 2001; Keshk, Pollins, & Reuveny, 2004). By lagging the predictors, it was ensured that trade and growth precede conflict onset.

Country fixed effects are incorporated to account for unobserved, time-invariant characteristics such as geography or culture, and standard errors are clustered by country to correct for serial correlation. Although Hausman tests indicated a preference for random effects, fixed effects were chosen because they produced more stable and more interpretable coefficients. The interaction between trade openness and GDP growth (H2) reflects whether the pacifying effect of trade varies with short-term economic performance, while the trade–democracy interaction (H4) tests whether regime type moderates the influence of openness.

For the dyad–year analysis (Hypothesis 3), logistic regression was applied to estimate the probability that a dyad (country i and j) experiences a new MID onset in a given year, t. In doing so, two samples were analyzed: one including all dyads and another restricted to those with positive bilateral trade flows. Predictors were lagged by one year, and a year trend was included to account for temporal factors.

4. FINDINGS

4.1 Descriptive Statistics

Tables 1 and 2 summarize the descriptive statistics for the country-year and dyad-year samples utilized in the analysis.

For the country-year sample (Table 1), the mean value of *Any MID Onset* is 0.33, meaning that militarized disputes occur in about one-third of observed country-years. This relatively high frequency mirrors the inclusion of both vast- and micro-scale dispute types in the dataset. Average trade openness, measured as trade as a percentage of GDP, is about 61.8%, but the wide range, from near-zero to over 400%, suggests substantial heterogeneity in countries' integration into the global economy. GDP per capita growth averages 1.96% annually, with significant dispersion that encapsulates periods of both economic expansion and crisis through the 1960-2014 period. The mean *polity2* value of 1.25 reflects the existence of both democratic and autocratic regimes, indicating variation in institutional limitations that may affect the likelihood of conflict. Logged GDP per capita and population data (8.19 and 16.38, respectively) ensure the inclusion of countries at a wide range of extent in terms of economic development and size, while military expenditure averages 3.1% of GDP, consistent with global defense spending patterns.

Table 1. Descriptive Statistics (Country–Year Sample, 1960-2014)

Variable	N	Mean	SD	Min	Max
Any MID Onset (MID_onset)	4957	0.33	0.47	0.00	1.00
Trade (% of GDP) (trade_gdp)	3865	61.77	43.34	0.02	437.33
GDP per Capita Growth (%) (gdp_pc_growth)	4436	1.96	5.78	-64.42	91.78
polity2	4672	1.25	7.39	-10.00	10.00
log_gdp_pc	4459	8.19	1.45	5.11	11.33
log_population	4957	16.38	1.40	12.41	21.04
military_gdp	3934	3.11	3.16	0.00	34.38

These descriptive results underscore that the sample encompasses a wide range of political and economic contexts. This is a crucial condition for exploring how trade and growth affect the probability of militarized disputes.

For the dyad-year sample (Table 2), the mean incidence of *Any MID Onset (Dyad)* is 0.01, highlighting the rarity of militarized dispute initiation between any two states in a given year. The mean *Relative Power* (0.45) and *Capability Ratio* (0.30) suggest that most power relationships

within dyads are moderately asymmetric, reflecting a global system in which power disparities are common but not extreme. The variables *Power Asymmetry* and *Trade Interdependence* exhibit exceptionally small numerical values, since they are based on standardized ratios of economic and military capabilities. Their representation in scientific notation reflects that, although interdependence and asymmetry are generally low in magnitude, they display systematic variation across dyads. This trend aligns with theoretical expectations that both power balance and trade relationships can shape conflict dynamics.

Taken together, these descriptive statistics reveal a dataset marked by rare occurrences of conflict but notable variation in economic openness and relative power, key variables underpinning the forthcoming empirical analysis of the trade-conflict relationship.

Table 2. Descriptive Statistics (Dyad–Year Sample, 1946-2014)

Variable	N	Mean	SD	Min	Max
Any MID Onset (Dyad) (MID_onset_dyad)	798,157	0.01	0.08	0.00	1.00
Power Asymmetry (asymmetry)	180,340	3.97×10^{-9}	5.39×10^{-8}	0.00	4.36×10^{-6}
Trade Interdependence (interdependence)	180,340	-8.58×10^{-11}	3.06×10^{-9}	-3.25×10^{-8}	1.80×10^{-7}
Relative Power (relpower)	221,211	0.45	0.33	0.00	1.00
Capability Ratio (cap_ratio)	221,211	0.30	0.15	0.00	0.50

4.2 Estimation Results

Table 3 presents the results from the country-year logistic regression analyses testing Hypotheses 1,2, and 4. In all models, the dependent variable is the binary indicator of *Any MID Onset*, and all independent variables are lagged by one year to address potential endogeneity. Each specification also includes a linear year trend to capture long-term shifts in the frequency of conflict over time.

Model 1 (H1) investigates the impact of trade openness on the likelihood of militarized conflict onset. The coefficient for lagged *Trade (% of GDP)* is negative and statistically significant at the 10 percent level (odds ratio = 0.998). Substantively, this indicates that higher levels of trade openness are associated with a modest decline in the probability of militarized disputes in the following year. Although the effect size is small, given the scale of the trade variable, it provides limited but consistent evidence in support of the liberal peace hypothesis, which posits that economic interdependence constrains conflict behavior. This finding suggests that deeper integration into the global economy, by increasing the opportunity costs of war, reduces the

likelihood that states will initiate or participate in militarized disputes.

Model 2 (H2) assesses whether this relationship varies with a country's short-term economic performance. The model incorporates an interaction between lagged *Trade (centered)* and *GDP per capita growth (centered)* to test whether the pacifying effect of trade diminishes during economic downturns or intensifies during periods of growth. The interaction term is statistically insignificant, and both main effects remain small and non-significant. This implies that fluctuations in economic growth do not substantially alter the influence of trade openness on conflict behavior. In practical terms, states exhibit smaller levels of foreign policy restraint regardless of short-term growth conditions, suggesting that the trade-peace relationship is driven primarily by structural rather than cyclical economic factors.

Model 3 (H4) introduces an interaction between *Trade (% of GDP)* and *Polity2* to assess whether the impact of trade openness on conflict varies across political regimes. The interaction term is positive and highly significant ($p < 0.01$), while *Polity2* itself exhibits a negative effect on conflict onset. Together, these results indicate that the conflict-mitigating effect of trade weakens as regimes become more democratic. In more autocratic systems, greater trade openness is associated with a stronger pacifying effect, whereas in democratic regimes, the relationship becomes weaker and may even approach neutrality, or slightly positive values, at very high levels of openness. A plausible explanation is that democratic governments, though generally characterized by transparency and accountability, face domestic political constraints and nationalist pressures that can counterbalance the stabilizing role of trade. Alternatively, democracies' greater involvement in global governance and trade regulation may expose them to a higher likelihood of dispute participation stemming from their elevated international engagement.

The control variables perform largely in line with established findings in the conflict literature. *Population size* and *military expenditure* both exhibit positive associations with MID Onset, indicating that larger and more heavily armed states are more likely to initiate or become involved in militarized disputes. The coefficient for *log GDP per capita* is negative but not statistically significant, suggesting that higher income levels alone do not necessarily reduce conflict risk after controlling for other factors. The *Composite Index of National Capability (CINC)* remains strongly significant, likely reflecting that materially powerful states are inherently more prone to involvement in disputes, whether as aggressors or as targets.

Taken together, these results offer partial support for the liberal hypothesis that trade

reduces the likelihood of conflict (H1). The effect, while statistically significant, is relatively modest in magnitude. There is no evidence that short-term economic performance moderates this relationship (H2), suggesting that structural patterns of interdependence exert a more consistent influence than cyclical economic conditions. Finally, evidence for H4 demonstrates that regime type shapes the trade-peace relationship. Although openness generally reduces conflict risk, its pacifying effect diminishes under democratic institutions, underscoring a more nuanced interplay between political and economic liberalization than conventional liberal theory predicts

Table 3. Logistic Regression Results for Trade and Conflict (Country–Year Sample, 1960–2014)

Dependent variable: Any MID Onset

Variables	**(1) Trade Openness (H1)**	**(2) GDP Growth × Trade (H2)**	**(3) Trade × Democracy (H4)**
Lagged Trade (% of GDP)	0.998* (0.001)	—	—
Lagged GDP per Capita Growth (%)	—	1.007 (0.008)	—
Lagged Trade (% of GDP, centered)	—	0.997* (0.001)	—
Lagged GDP Growth × Trade Interaction	—	1.000 (0.000)	—
Lagged Polity2	—	—	0.963*** (0.013)
Lagged Trade × Polity2 Interaction	—	—	1.001*** (0.000)
Lagged Log GDP per Capita	0.951 (0.030)	0.953 (0.030)	0.941 (0.036)
Lagged Log Population	1.631*** (0.079)	1.623*** (0.079)	1.610*** (0.081)
Lagged Military Expenditure (% GDP)	1.203*** (0.018)	1.206*** (0.019)	1.213*** (0.021)
Lagged CINC	149,431.08*** (521,091.05)	112,649.18*** (391,694.88)	650,143.98*** (2,334,962.86)
Year	1.003 (0.003)	1.004 (0.003)	1.004 (0.004)
Constant	0.000** (0.000)	0.000*** (0.000)	0.000** (0.000)
Observations	3,216	3,188	3,072
RMSE	0.42	0.42	0.42

Note: Logistic regression estimates with lagged predictors and year trend.
*$p < 0.1$, **p < 0.05, ***$p < 0.01$.

Table 4 presents the results from the dyad-year logistic regression models testing Hypothesis 3, which examines how power asymmetry and trade interdependence influence the likelihood of militarized conflict onset between pairs of states. As in previous models, all predictors are lagged by one year, and a year trend is included to capture long-term temporal patterns in conflict incidence.

The findings reveal a clear and consistent relationship between dyadic power configuration and the probability of conflict. In both specifications, one including all dyads (*Model 1: Any Onset (Strict)*) and one limited to trading pairs (*Model 2: Any Onset (Trading Dyads)*), the coefficient for *Power Asymmetry* is negative and highly significant ($p < 0.01$). This indicates that as asymmetry in power increases, the likelihood of the onset of militarized disputes decreases as well. In other words, dyads characterized by clear power imbalance are less prone to conflict. This supports the power preponderance hypothesis, which posits that distinct hierarchies of capability deter military challenges by making the expected costs prohibitively high for weaker states. The consistency of this effect across both samples underscores the robustness of the asymmetry-peace relationship.

The results for *Relative Power* and *Capability Ratio* further reinforce this interpretation. Both variables are highly significant and behave as expected: *Relative Power* displays large odds ratios (7.03 and 6.58), suggesting that as the dominant state's share of total dyadic power increases, the probability of conflict rises substantially. Conversely, the negative coefficients for *Capability Ratio* (0.26 and 0.34) imply that dyads with more balanced military capabilities are more stable, while those with pronounced imbalances experience fewer militarized disputes. Together, these patterns reflect a well-established dynamic in international relations: conflict is most likely when states possess roughly equal capabilities, since outcome uncertainty encourages risk-taking, whereas clear asymmetry fosters deterrence and stability.

The variable Trade Interdependence is not displayed because its odds ratio is extremely small (on a variable scale), but is reported as significant at conventional levels in both models. It's estimated direction aligns with liberal expectations: higher levels of trade interdependence correspond to a lower probability of conflict. This finding supports the commercial peace argument, indicating that interdependent economic ties reduce incentives for militarized confrontation by raising the opportunity costs of disruption. Moreover, the persistence of this effect across both the full and restricted samples suggests that the pacifying influence of trade operates not only among highly integrated duads but also across a border range of bilateral relationships.

The time trend *(Year)* is positive and significant in both specifications, indicating a modest upward trajectory in the baseline probability of MID onset over the 1946-2014 period. This pattern likely reflects the post-World War II expansion in the number of active dyads and the growing complexity of global political interactions during decolonization and the Cold War.

Table 4. Logistic Regression Results for Power and Interdependence (Dyad–Year Sample, 1946–2014)

Dependent variable: Any MID Onset (Dyad)

Variables	**(1) Any Onset (Strict)**	**(2) Any Onset (Trading Dyads)**
Lagged Power Asymmetry	0.000*** (0.000)	0.000*** (0.000)
Lagged Trade Interdependence	***	***
Lagged Relative Power	7.033*** (0.606)	6.581*** (0.617)
Lagged Capability Ratio	0.259*** (0.043)	0.337*** (0.061)
Year	1.016*** (0.002)	1.012*** (0.002)
Constant	0.000*** (0.000)	0.000*** (0.000)
Observations	176,162	107,667
RMSE	0.10	0.12

Note: Dyad–year logistic regressions with lagged predictors and year trend.
*$p < 0.1$, **$\mathbf{p} < 0.05$, ***$\boldsymbol{p} < 0.01$.

The dyad-year analyses provide strong support for Hypothesis 3, demonstrating that both power structure and economic interdependence play central roles in shaping peace and conflict in the international system. The results reaffirm that clear power hierarchies and dense trade linkages jointly stabilize dyadic relations, lowering the incentives for militarized disputes. Crucially, the consistent significance of power-related variables underscores that economic interdependence alone is insufficient to guarantee peace; rather, its pacifying effects are embedded within the broader structural asymmetries that shape states' strategic behavior.

The country-year and dyad-year analyses present a coherent yet nuanced understanding of how economic factors, political context, and structural power interact to shape conflict dynamics. At the country level, the results provide partial support for liberal peace theory: higher trade openness is associated with a modest reduction in the probability of militarized conflict onset, though the magnitude of this effect depends on political conditions. The interaction results indicate that the pacifying effect of trade is not uniform across regime types, weakening as states become

more democratic. This suggests that domestic institutions condition how international economic integration influences foreign policy behavior, underscoring the complex interplay between political and economic liberalization.

At the dyadic level, the findings emphasize the structural foundations of peace. Both power asymmetry and trade interdependence consistently predict lower conflict risk, highlighting the stabilizing roles of economic and material hierarchies. These results support the view that international stability rests not only on the constraining effects of commerce but also on the deterrent power of clear capability differentials. The coexistence of trade-based restraint and power-based deterrence thus constitutes a dual mechanism through which peace is maintained.

Overall, the evidence suggests that economic interdependence alone does not ensure peace without enabling context of political and structural asymmetry. Trade appears most effective in reducing conflict when embedded within unequal but stable power configurations, rather than in environments of parity or high political openness where strategic competition may intensify. This integrated interpretation bridges liberal and structural realist perspectives, demonstrating that both market incentives and material power remain essential for understanding the conditions under which economic interdependence sustains peace in the postwar international system.

5. DISCUSSION

5.1. Summary and Theoretical Explanations of the Results

This study examined how trade openness, economic growth, regime type, power asymmetry, and trade interdependence influence the onset of militarized interstate disputes (MIDs) at both the country-year and dyad-year levels. The country-year analysis provides partial support for the liberal peace hypothesis: higher trade openness is associated with a modest reduction in conflict onset, though this effect depends on regime type. The interaction between trade and GDP growth is not significant, indicating that short-term economic performance does not moderate the trade-peace relationship.

In contrast, the dyad-year results show that both power asymmetry and trade interdependence significantly decrease the probability of conflict onset. These findings point out the importance of structural power configurations and economic linkages in maintaining stability at the dyadic level, complementing the country-level dynamics of openness and regime characteristics.

From a liberal theoretical perspective, trade and interdependence are expected to reduce

conflict by increasing opportunity costs and promoting mutual dependence (Gartzke, Li, & Boehmer, 2001). The negative association between trade openness and conflict in the country year model aligns with this expectation. However, the finding that the effect of trade weakens in democratic regimes adds nuance to the liberal peace argument. Democracies, while generally more transparent and accountable, may experience domestic political pressures or interest-group competition that heighten dispute risks even under high economic interdependence (Park, 2018).

The dyad-level results strongly supported structural realist arguments, which highlight the stabilizing role of power hierarchies. Aligning with the power preponderance theory, obvious asymmetries in material capabilities deter possible challengers and decrease the risk of militarized conflict (Hegre, 2004; Sandnes, 2024). The concurrent significance of trade interdependence and power asymmetry provides a synthesis of liberal and realist perspectives: economic linkages are most effective in preventing dispute when embedded within stable hierarchies of power (Gartzke et al., 2001).

This integrative interpretation connects two dominant paradigms in international relations. Trade alone does not automatically acquire peace; its pacifying influence relies on political institutions and power structures that shape states' incentives and expectations (Mandfield & Pollins, 2001). Thus, economic and structural conditions together show the limitations and opportunities that determine whether interdependence enhances stability or escalates rivalry.

5.2. Policy and Research Implications

For policymakers, these discoveries emphasize that promoting trade and interdependence remains a feasible strategy for reducing interstate conflict, but only when supported by political and structural foundations that enhance stability. Governments should thus design trade agreements that integrate credible enforcement mechanisms and transparent monitoring. Such institutions decrease uncertainty and prevent economic tensions from developing into political or military disputes. Equally significant is aligning trade policy with domestic political institutions. Democracies, in particular, must employ measures, including compensation for affected industries, targeted social protections, and clear communication in order to minimize nationalist counteraction and incentives that might otherwise prove the stabilizing effects of economic openness.

At the systemic level, the results highlight that interdependence is most effective wen embedded within stable power structures. In regions where great-power parity is emerging, for instance, U.S.-China relationship, trade alone cannot counterbalance strategic rivalry. Policymakers should thus enhance multilateral institutions capable of manipulating asymmetric

dependencies and formalizing expectations, alongside confidence-building measures such as joint economic initiatives, and regular diplomatic dialogues.

For researchers, the outcome reinforces the need to examine more carefully how political regime type and power distribution together condition the trade-peace relationship. Rather than treating trade openness as exogenous or linear determinant of peace, future explorations should investigate interaction effects that capture the conditional nature of these relationships. Multi-level approaches that combine country, dyad, and system-level dynamics will be particularly useful for capturing these complex interactions. Further, extending empirical analysis to issue-specific forms of interdependence, including technology, energy, or more, may reveal patterns of vulnerability that have significant implications for interstate stability. Such ways of approaching would advance theoretical understanding of when and how economic openness contributes to peace.

5.3 Limitations and Future Research Agenda

This study has several limitations. First, even though lagged independent variables address endogeneity concerns, they do not fully eliminate reverse causality: for example, states that predict conflict might reduce trade or increase military spending. Second, measures of trade openness and interdependence, while widely used, may mask qualitative changes in trade composition or dependency structure (Gartzke, Li, & Boehmer, 2001). Third, by focusing on militarized disputes, the analysis excludes non-militarized forms of conflict, such as economic coercion, cyber warfare, and diplomatic crises. Finally, the time coverage (1946–2014 for dyads and 1960–2014 for countries) possibly limits generalizability to earlier historical periods or to the developing patterns of twenty-first-century trade and security relations.

Building on these results, several avenues for future investigation emerge. First, future studies should enhance the depth of analysis of domestic regime contexts in shaping the trade-peace relationship. While this study underscores that the pacifying effect of trade differs by political regime, the underlying mechanisms remain uncertain. Scholars could research how institutional features such as party competition, media freedom, or public opinion moderate the foreign policy consequences of economic interdependence. This would define why democracies may not always translate openness into greater peace.

Second, there is room for mechanisms that connect interdependence and power. The dyad-level findings show that both power asymmetry and trade interdependence reduce conflict probability, but future studies should examine how these dynamics unfold over time as relative capabilities fluctuate. For instance, longitudinal analyses could examine how emerging powers

alter their conflict behavior as their economic ties and military capabilities expand.

Third, future explorations should broaden the empirical scope beyond conventional militarized conflicts. Including non-militarized forms of dispute, such as cyber operations, economic coercion, and diplomatic crises, would help assess whether interdependence exerts similar pacifying effects across the full range of interstate rivalry.

Fourth, the temporal aspect of globalization justifies closer examination. As digital trade, supply-chain dependencies, and multipolar competition reshape the global economy, it remains unclear whether the stabilizing effects observed in the postwar period persist under contemporary conditions of economic fragmentation and technological competition.

Finally, future studies would benefit from mixed-methods approaches that include quantitative and qualitative analysis. Statistical models can discover broad trends, but in-depth case studies, such as evolving strategic interplays between the United States and China or India and Pakistan, can spotlight the casual mechanisms through which trade, power asymmetry, and political context together shape conflict tendency.

Together, these directions would not only reshape theoretical understanding but also strengthen the empirical foundations of the trade-peace discussion, allowing scholars to capture the complex interaction among economic inclusion, political institutions, and the distribution of power in the international system.

6. CONCLUSION

The findings of this study confirm that while trade interdependence can promote peace by raising the costs of conflict, its stabilizing power is conditional. Contemporary trade disputes and ongoing wars—from the Russia–Ukraine conflict to escalating U.S.–China trade frictions—illustrate that economic ties alone cannot offset geopolitical rivalry. In an era of deep interdependence, as in the case of rare metals and semiconductors, global supply chains and trade networks have become both instruments of cooperation and tools of coercion. The evidence presented here suggests that peace is most sustainable when economic openness is grounded in stable power hierarchies and supported by resilient political institutions. As global economic fragmentation deepens, states must recognize that interdependence without trust or balance may amplify rather than reduce insecurity. Future efforts to preserve international stability should therefore focus not only on expanding trade but also on reinforcing multilateral institutions and maintaining equilibrium in global power relations.

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