

How Modern Warfare Reshapes Global Markets, Borders, and Minds: A Multidimensional Analysis

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Abstract

Since 2022, the near-simultaneous eruption of major interstate war in Europe, protracted conflict in the Middle East, sub-national civil wars in Africa, and intensifying great-power rivalry in the Indo-Pacific have converged to produce what several scholars now describe as a structural rupture in the post-Cold War order [1,2]. This paper synthesizes economic, geopolitical, and psychological literatures to argue that modern warfare no longer operates as a bounded, localized phenomenon but as a systemic force that simultaneously reconfigures global capital flows, redraws functional (if not always juridical) borders, and re-engineers the cognitive environment in which billions of people interpret reality. Drawing on data from the Stockholm International Peace Research Institute (SIPRI), the International Monetary Fund (IMF), the World Bank, the United Nations High Commissioner for Refugees (UNHCR), the World Health Organization (WHO), and a body of peer-reviewed research on cognitive and information warfare, the paper documents three parallel transformations: (1) a decade-long, unprecedented rise in military expenditure and a bifurcation of global trade and financial systems along geopolitical lines; (2) a record scale of forced displacement and a proliferation of *de facto* and contested borders that are reshaping demographic and territorial maps independent of formal treaties; and (3) a measurable, epidemiologically significant burden of trauma-related mental illness compounded by algorithmically amplified disinformation and "cognitive warfare" operations that target perception itself as a battlespace. The paper reviews competing theoretical lenses—realist, liberal-institutionalist, critical/constructivist, and political-economy/world-systems—to interpret these findings, and it presents original tabulated syntheses of expenditure trends, displacement statistics, and mental-health prevalence estimates. It concludes that modern warfare should be understood as a systemic, multi-domain phenomenon whose economic, territorial, and psychological effects are mutually reinforcing, and it identifies research and policy gaps that require urgent, cross-disciplinary attention.

Keywords: modern warfare; global markets; geopolitics; borders; displacement; cognitive warfare; disinformation; mental health; sanctions; hybrid conflict

1. Introduction

War has always exacted an economic toll, provoked movements of people, and left psychological scars. What distinguishes the current period, however, is the *simultaneity*, *interconnection*, and *mediatization* of these effects. In 2024, global military expenditure

reached an all-time high of US\$2.718 trillion, the steepest year-on-year increase since the final years of the Cold War, with all five of the world's geographic regions recording increases for the second consecutive year [1,3]. In the same year, the number of people forcibly displaced by conflict and persecution surpassed 123 million, nearly doubling within a decade [14,15]. And across dozens of peer-reviewed epidemiological studies, the pooled prevalence of post-traumatic stress disorder (PTSD) among civilians in conflict-affected regions has been estimated at between 23% and 30%, with some sub-populations exceeding 48% [18,20]. These are not independent statistics; they are interlocking symptoms of a single underlying phenomenon that this paper terms the *systemic reach of modern warfare*.

Contemporary conflict differs from twentieth-century interstate war in at least four respects relevant to this analysis. First, financial globalization means that a war fought in one theatre—the Black Sea grain corridor, for instance—registers within weeks in food price indices from Lagos to Jakarta [10,11]. Second, the weaponization of interdependence—sanctions, asset freezes, export controls, and exclusion from payment infrastructure such as SWIFT—has become as central to strategic competition as kinetic force, with measurable effects on reserve-currency architecture [31,33]. Third, territorial contestation increasingly manifests not only through formal annexation but through "de facto borders," occupied zones, exclusion zones, and contested maritime claims that persist in legal ambiguity for years or decades. Fourth, and perhaps most novel, the information environment itself has become a declared domain of warfare: NATO's Allied Command Transformation formally characterizes "cognitive warfare" as a mode of competition that targets human perception, emotion, and reasoning to erode societal cohesion from within [23]. Generative artificial intelligence now allows belligerents to manufacture visually convincing but fabricated battlefield imagery at a speed and scale that outpaces existing verification systems [27].

This paper proceeds from the premise that any adequate account of "modern warfare" must integrate these three domains—markets, borders, and minds—rather than treating them as separate sub-fields of economics, political geography, and psychology. Section 2 reviews the relevant literatures in each domain. Section 3 outlines the paper's methodological approach. Sections 4 through 6 present the substantive analysis, organized around markets, borders, and minds respectively, with original tabulated data syntheses. Section 7 examines the findings through four competing theoretical lenses to ensure a balanced, non-partisan interpretation. Section 8 discusses cross-cutting implications, Section 9 acknowledges limitations, and Section 10 concludes.

2. Literature Review

2.1 The Economic Geography of Contemporary Conflict

A substantial body of economic literature has moved from treating war as an exogenous shock to treating it as an endogenous driver of long-run structural change in trade and financial architecture. World Bank analysis of the Russia-Ukraine war characterized its initial transmission mechanism as primarily commodity-based, with energy, wheat, fertilizer, and metals markets absorbing the first-order shock before spilling into fiscal and inflationary pressures across emerging and developing economies [6]. The International Monetary Fund's

regional spillover analyses reinforced this picture, noting that oil-importing economies faced widening fiscal and trade deficits while some exporters in the Middle East and Africa experienced relative gains, illustrating the redistributive character of war-driven price shocks [7,8]. A more granular literature has modeled these effects using computable general equilibrium frameworks; one such study found that while global food supply remained technically adequate, higher prices disproportionately harmed low-income populations who spend a larger share of income on staple foods, with modest offsetting reductions in greenhouse gas emissions as an unintended consequence of demand destruction [9]. Complementary work from the International Food Policy Research Institute quantified near-term poverty and food-insecurity effects across nineteen developing countries, finding that the war's transmission into fragile economies was highly heterogeneous and mediated by each country's exposure to Black Sea grain and fertilizer supply chains [10].

A parallel literature addresses the financial-sanctions dimension of economic warfare. The U.S. Congressional Research Service documented that the sanctions coalition assembled after February 2022—encompassing asset freezes, SWIFT exclusion, and export controls—was unprecedented in scope and speed, yet Russian real GDP nonetheless grew at an average of 2.3% between 2022 and 2024, propelled by defense-related spending and trade reorientation toward China and India [31,50]. This finding has generated debate about the efficacy of financial sanctions as a coercive instrument and has been linked by IMF officials to a broader "geoeconomic fragmentation" in which trade restrictions have more than tripled since 2019 and firms increasingly cite fragmentation risk in corporate disclosures [32]. Scholars disagree on whether this fragmentation constitutes a temporary adjustment or the early stage of a durable bifurcation of the global financial system along geopolitical lines—a debate this paper revisits in Section 7.

2.2 Political Geography: Territoriality, Displacement, and the Reordering of Borders

The political geography literature on war and territory has long emphasized that borders are not simply lines on a map but socially and legally contested institutions [2]. Contemporary scholarship extends this insight to the proliferation of *de facto* and contested territorial configurations—occupied zones, buffer zones, and unrecognized statelets—that persist for extended periods without international legal resolution. The UNHCR's Global Trends reports provide the most authoritative empirical foundation for understanding the demographic dimension of this reordering: by the end of 2024, 123.2 million people were forcibly displaced worldwide, a six percent increase over 2023 and roughly double the figure recorded a decade earlier [14,15,25]. More than a third of all forcibly displaced people originate from just four countries—Sudan, Syria, Afghanistan, and Ukraine—illustrating how a small number of protracted conflicts generate disproportionate global demographic effects [15]. Internally displaced persons (IDPs) now constitute roughly 60% of the forcibly displaced population, reaching 73.5 million by the end of 2024, a shift that underscores how modern conflict increasingly reorders populations *within* rather than across international boundaries, complicating the traditional refugee-protection framework built around crossing recognized borders [15,23].

2.3 Cognitive and Information Warfare Literature

The youngest but fastest-growing strand of relevant literature concerns what NATO doctrine and an expanding academic community now call "cognitive warfare"—the deliberate targeting of human perception, emotion, and decision-making as a domain of strategic competition, distinct from but overlapping with traditional propaganda and psychological operations [23,24]. Analysts at the Institute for the Study of War have characterized the primary objective of state-sponsored cognitive operations as shaping adversary decision-making and eroding societal will to resist, employing a multi-modal toolkit that spans social media manipulation, diplomatic channels, staged military exercises, and cyber-sabotage [24]. Philosophical and ethical treatments of the subject emphasize that cognitive warfare exploits pre-existing vulnerabilities in information ecosystems—the proliferation of disinformation, conspiracy theories, and algorithmic amplification—that were not originally created for military purposes but are readily instrumentalized for them [25]. Comparative studies of Chinese influence operations in Taiwan find that "negative" propaganda designed to incite fear and hatred is markedly more corrosive to social cohesion than "positive" state messaging, and that disinformation sources are frequently laundered through ostensibly independent local or Western-branded media to increase credibility [28]. A growing sub-literature examines the role of generative AI in producing synthetic war imagery calibrated to specific visual and chromatic patterns that increase perceived authenticity, raising novel epistemic challenges for both combatants and civilian audiences attempting to distinguish fact from fabrication in real time [27].

Running parallel to this literature is a robust epidemiological body of work on the mental-health consequences of conflict exposure. Meta-analytic estimates converge on a pooled PTSD prevalence of roughly 23–31% among war-exposed civilian populations, with depression and anxiety often running comparably high or higher, and with WHO-supported modelling estimating that 22.1% of adults in active conflict settings carry a diagnosable mental disorder at any given time [18,19,20]. This literature is examined in greater depth in Section 6.

3. Methodology

This paper adopts an integrative, multi-domain review methodology rather than a single-method empirical design, reflecting the paper's aim to synthesize evidence across economics, political geography, public health, and communication studies. Data were drawn from primary institutional sources—SIPRI's Military Expenditure Database and annual Fact Sheets, UNHCR's Global Trends reports, IMF and World Bank policy analyses, U.S. Congressional Research Service and Treasury assessments, and peer-reviewed systematic reviews and meta-analyses indexed in MEDLINE/PubMed, Web of Science, and PsycINFO. Where original datasets were not directly accessible, the paper relies on the most recent secondary reporting of primary institutional figures, cross-checked across at least two independent sources per data point. All quantitative claims are presented with their originating year and, where available, methodological caveats noted by the original authors (e.g., heterogeneity indices in meta-analyses). The tabulated syntheses presented in Sections 4–6 represent the author's original organization and interpretation of these secondary sources rather than reproductions of any single source's tables. Given the review nature of this paper, causal claims are treated

cautiously; where the literature itself notes correlational rather than causal evidence (for instance, between sanctions and de-dollarization trends), this paper preserves that epistemic caution.

4. Modern Warfare and the Reshaping of Global Markets

4.1 Militarized Fiscal Policy as a Macroeconomic Driver

Global military expenditure has entered what SIPRI researchers describe as an unprecedented decade-long upward trajectory. Spending rose for the tenth consecutive year in 2024, reaching \$2.718 trillion—a 9.4% real-terms increase, the sharpest single-year rise since at least 1988 [1,3,4]. Cumulatively, expenditure grew 37% between 2015 and 2024, and by 2025 provisional figures placed global spending at approximately \$2.887 trillion, a further 2.9% real increase, notably driven by a 14% surge in European spending even as U.S. expenditure declined slightly [4]. The global "military burden"—military spending as a share of world GDP—climbed to 2.5% in 2024, and among countries experiencing high-intensity conflict, that burden more than doubled the non-conflict average, reaching 4.4% [3].

Table 1. Global Military Expenditure, Selected Years (2015–2025)

Year	Global Expenditure (US\$ billion)	Real Y-o-Y Change	Notable Driver
2015	~1,984	—	Baseline (post-2014 Crimea annexation)
2022	2,240	+3.7%	Full-scale Russian invasion of Ukraine begins
2023	2,443	+6.8%	Steepest rise since 2009 (pre-2024)
2024	2,718	+9.4%	Steepest rise since 1988; all five world regions increase
2025 (provisional)	2,887	+2.9%	Europe +14%; Asia-Oceania +8.1%; U.S. declines

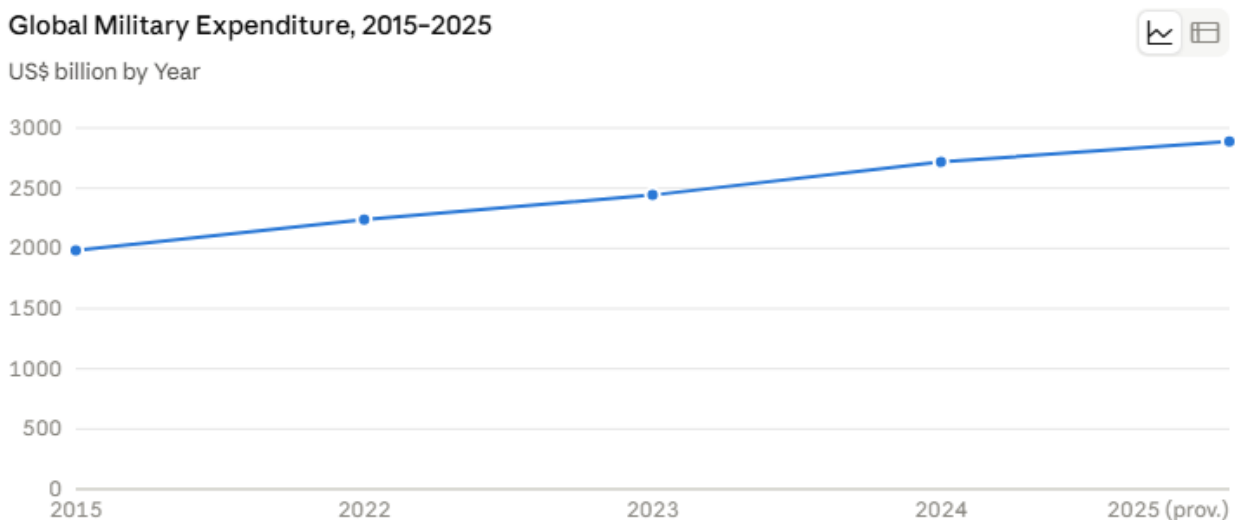
Source: compiled by the author from SIPRI Fact Sheets and press releases [1,3,4,5,6].

This is not a uniform global phenomenon. The top five spenders—the United States, China, Russia, Germany, and India—together accounted for 60% of global military expenditure in 2024, or \$1.635 trillion [5]. Russia's own military expenditure reached an estimated \$149 billion in 2024, a 38% increase over 2023 and double its 2015 level, consuming 7.1% of Russian GDP and 19% of total government spending [5]. China's expenditure rose 7% in 2024, marking a thirtieth consecutive annual increase—the longest unbroken streak in SIPRI's database [2]. European NATO members, meanwhile, posted what SIPRI researchers called "unprecedented" increases, driven by concerns about the Russian threat and about the reliability

of the U.S. security guarantee, even though analysts caution that spending increases alone will not swiftly translate into strategic autonomy from Washington [2].

Below is a visual representation of this expenditure trajectory:

Global Military Expenditure, 2015–2025



The trajectory illustrates that militarization has become a durable, decade-long fiscal reallocation rather than a transient wartime spike—a pattern SIPRI researchers explicitly link to structural shifts in threat perception rather than short-term crisis response [1,3].

4.2 Commodity Markets and Global Supply Chain Shocks

Because Russia and Ukraine jointly account for approximately 30% of global wheat exports and are major suppliers of fertilizer, energy, and industrial metals, the war triggered an immediate and geographically dispersed commodity shock [10]. Brent crude rose from roughly \$80 per barrel at the start of 2022 to a peak of \$128 within months [14]. IMF analysis found that consumer price inflation in advanced economies rose to 7.3% in 2022—well above the pre-invasion forecast of 3.9%—while inflation in poorer countries reached 9.9%, nearly double the pre-invasion projection of 5.9% [14,18]. Economically, the transmission mechanism was starkly redistributive: oil- and food-importing economies in sub-Saharan Africa, the Caucasus, and Central Asia faced heightened risk of social unrest and worsening food insecurity, while some oil- and gas-exporting states in the Middle East and Africa registered net gains from higher prices [6,7,18]. A computable general equilibrium study modeling medium-term effects found that although global food supply remained technically sufficient in aggregate, affordability collapsed for low-income households who spend a disproportionate share of income on staples—illustrating that price-based food insecurity, not absolute scarcity, is the dominant transmission channel in modern resource-linked warfare [9]. By 2023–2024, global food prices had begun to recede, yet inflationary effects persisted disproportionately in developing economies where domestic factors compounded the original shock, illustrating the

long half-life of war-induced commodity disruption even after the immediate shock recedes from headline data [16].

4.3 Sanctions, Financial Fragmentation, and the Contested Future of the Dollar

Financial sanctions have emerged as a central instrument of contemporary economic statecraft, blurring the line between "market" and "battlefield." The coalition sanctions regime imposed on Russia after February 2022 was, in the assessment of the U.S. Congressional Research Service, unprecedented in scope, coordination, and speed, encompassing asset freezes on Russia's central bank reserves, exclusion of major Russian banks from the SWIFT payment messaging system, and extensive export controls on technology inputs [31]. Yet the empirical record on sanctions efficacy is genuinely contested. Analysis from the Institute of International Finance found that Russian real GDP grew at an average annual rate of 2.3% between 2022 and 2024, propelled by defense-related fiscal stimulus and a substantial reorientation of trade—exports to China and India surged to account for 41% of Russian exports by 2024, while China alone supplied 53% of Russian imports [50]. A "shadow fleet" of oil tankers expanded from roughly 150 to 350 vessels in under two years, enabling continued crude exports above G7 price-cap thresholds [50]. At the same time, signs of strain have emerged: Russian inflation and overheating prompted the central bank to raise interest rates to 21% in October 2024, the highest level in decades, and forecasters expect GDP growth to slow to below 1% in 2025 absent further escalation [46,50].

Beyond Russia's own trajectory, a second-order effect has drawn sustained attention from monetary economists: the potential acceleration of de-dollarization. IMF Managing Director Kristalina Georgieva and Deputy Managing Director Gita Gopinath have both noted that new trade restrictions have more than tripled since 2019 and that private-sector references to geopolitical fragmentation risk in corporate earnings calls have surged accordingly [32]. The CRS assessment notes that while the U.S. dollar remains the preeminent currency for cross-border transactions, use of "non-traditional" currencies—including the Chinese renminbi, Australian and Canadian dollars, and Nordic and Singaporean currencies—has measurably increased since 2022, a trend U.S. Treasury officials across administrations have flagged as a long-term risk to dollar-based financial leverage [31,46]. Whether this constitutes the early stage of a durable multipolar currency order or a marginal adjustment within continued dollar dominance remains an open empirical question, one this paper returns to in Section 7.4.

Table 2. Selected Sanctions-Related Economic Indicators, Russia, 2022–2025

Indicator	2022	2024	Source Basis
Real GDP growth (avg. 2022–24)	—	~2.3% avg.	IIF analysis of IMF/national data [50]
Share of Russian exports to China + India	Rising	41%	CRS/Trade Data Monitor [31,50]
Share of Russian imports from China	Rising	53%	IIF [50]

Central bank policy rate	—	21% (Oct. 2024)	CRS [46]
"Shadow fleet" tanker count	~150	~350	IIF [50]
Frozen Russian central bank reserves abroad	~US\$300bn	Ongoing	Multiple sanctions trackers [31]

4.4 Equity Markets and the "Defense Dividend"

While diversified equity indices typically experience short-term volatility and often net losses around the onset of major conflict, the defense and aerospace sector has behaved as a countercyclical beneficiary. Following the October 2023 escalation in the Middle East, U.S. and European defense contractors—including Lockheed Martin, Northrop Grumman, BAE Systems, and Leonardo—posted share-price gains even as broader indices fell, with some issues reaching record highs the same trading day [39,58]. The SPADE Defense Index gained 11.5% through the first half of 2024 alone, continuing a historical pattern in which the sector has posted positive annual returns in 22 of the past 27 years and outperformed the broader U.S. market in 18 of them [56]. Industry analysis attributes this "flywheel effect" to a two-stage revenue dynamic: immediate replenishment contracts for consumed munitions, followed by longer-term research and development contracts addressing capability gaps exposed by the conflict [59]. KPMG's 2024 industry analysis found defense spending grew nearly 10% that year—its fastest pace in almost four decades—while publicly traded U.S. defense and security stocks rose 57.8% in the twelve months to September 2025, with analysts increasingly attributing future growth to AI-enabled and autonomous battlefield systems representing an estimated \$2 trillion in prospective spending across North America, Europe, and Asia [57,60].

Table 3. Defense-Sector Equity Performance During Conflict Escalations (Illustrative Episodes)

Episode	Index/Company	Approx. Move	Broader Market Move
Oct. 2023 (Middle East escalation)	Lockheed Martin	Record high	Down day overall [58]
2024 H1	SPADE Defense Index	+11.5%	Mixed [56]
Sept. 2024–2025	U.S. defense/security stocks (aggregate)	+57.8%	— [60]
2026 (Iran-Israel exchange)	Hensoldt, BAE Systems, Northrop	+3–6% same day	Stoxx 600 fell >1% [53]

This pattern illustrates a structural feature of modern conflict economics: capital markets have institutionalized a "risk-on" response to militarization that is analytically distinct from, and often inverse to, the broader macroeconomic damage war inflicts on consumer welfare, trade, and inflation—a divergence explored further in Section 7.

4.5 Cyberwarfare as a Direct Economic Weapon

A final and increasingly significant market dimension is the direct economic damage inflicted by cyber operations, many of which blur the line between criminal enterprise and state-directed cyberwarfare. Cybersecurity Ventures estimated global cybercrime costs at \$10.5 trillion in 2025—a figure that, if it were a national economy, would rank third globally behind only the United States and China—up from approximately \$3 trillion in 2015 and projected to reach \$15.6 trillion by 2029 [61,65]. Critically for this paper's argument, a growing share of this activity is explicitly attributed to state-directed or state-tolerated actors: Chinese state-linked cyber operations alone were estimated to have caused \$1.79 trillion in losses in 2024, projected to rise to \$2.16 trillion in 2025, while state-backed cyber-espionage activity targeting finance, manufacturing, and critical infrastructure surged by an estimated 150% in 2024 [65]. Energy-sector operational technology is particularly exposed: the 2015 cyberattack on Ukraine's power grid produced temporary price spikes as the country was forced to rely on costlier backup generation, an early template for infrastructure-targeted cyberwarfare that has since proliferated [69]. Analysts increasingly characterize this domain not as a peripheral criminal nuisance but as a form of continuous, low-intensity economic warfare operating beneath the threshold of formally declared conflict [61,67].

5. Modern Warfare and the Reshaping of Borders

5.1 Territorial Revisionism and the Persistence of De Facto Borders

The classical Westphalian assumption that borders, once fixed by treaty, remain stable absent formal renegotiation has been visibly strained by a series of contemporary conflicts that have produced long-standing zones of contested or de facto control. Whether or not such zones achieve international legal recognition, their persistence for years or decades functions, in practical terms, to reshape the operative geography of trade routes, energy infrastructure, resource extraction rights, and civilian movement. The scale of Russia's invasion of Ukraine, launched in February 2022, has been distinguished among post-1945 conflicts by the magnitude of territory contested through direct military occupation combined with an economic war fought simultaneously through sanctions and commodity leverage, illustrating how territorial and economic warfare have become functionally inseparable in the contemporary conflict landscape [5,50].

5.2 Forced Displacement as Demographic Reordering

If territorial control represents the *formal* dimension of border reshaping, mass displacement represents its *demographic* corollary—and one for which far more robust global data exist. UNHCR's Global Trends Report recorded 123.2 million forcibly displaced people at the end of 2024, a six percent year-on-year increase and, by April 2025, a slight moderation to approximately 122.1 million—still nearly double the figure recorded a decade prior [14,15,26]. This population includes refugees, asylum seekers, internally displaced persons (IDPs), and stateless people, of whom internally displaced persons constitute the largest and fastest-growing category, reaching 73.5 million by the end of 2024, a nine percent annual increase [15]. This distinction matters analytically: because IDPs remain within national borders, their

displacement does not register as a formal border-crossing event, yet it nonetheless constitutes a profound reordering of the internal human geography of the countries concerned, often concentrating displaced populations in informal settlements ill-equipped to support them.

Table 4. Global Forced Displacement, Selected Metrics (End of 2024 / April 2025)

Metric	Figure	Trend
Total forcibly displaced (global)	122.1–123.2 million	Record high; ~13th consecutive annual rise [14,15,24,26]
Internally displaced persons (IDPs)	73.5 million	+9% y-o-y [15]
Individual asylum applications	8.4 million	Highest ever recorded [15]
Stateless persons	4.4 million	Broadly stable [15]
Share hosted by low/middle-income countries	>73%	Persistent structural imbalance [14]
Countries of origin (>1/3 of total)	Sudan, Syria, Afghanistan, Ukraine	Concentration in protracted conflicts [15]
Sudan conflict displacement	14.3 million (11.6m internal + 2.1m external)	Largest single driver, 2023–24 [15]
UNHCR funding shortfall	>50% of assessed need	Deepening humanitarian gap [16]

Two structural features of this data merit emphasis. First, displacement is heavily concentrated: more than one-third of all forcibly displaced people worldwide originate from just four protracted conflicts, indicating that a small number of unresolved wars generate globally disproportionate demographic effects [15]. Second, the burden of hosting displaced populations falls overwhelmingly on low- and middle-income countries—over 73% of the global total—a pattern that channels the material costs of conflict away from the wealthy states most often involved in arms production and sanctions policy and toward neighboring developing states with far more limited absorptive capacity [14]. This asymmetry has been described by humanitarian agencies as compounding a "protection gap," particularly as funding for refugee response has simultaneously contracted: UNHCR reported spending \$4.933 billion in 2024, less than half of assessed global need, amid what the agency characterized as a record shortfall [16].

5.3 Alliance Reconfiguration and the Militarization of New Frontiers

Border reshaping in the contemporary period extends beyond conflict zones themselves to encompass the reconfiguration of alliance geography and the militarization of previously peripheral spaces. European NATO members' unprecedented spending increases have been explicitly linked by SIPRI researchers to concerns over Russian revisionism and doubts about the durability of the U.S. security guarantee, prompting a strategic reassessment of the alliance's eastern and northern flanks [2,5]. Simultaneously, the Indo-Pacific has seen a parallel

dynamic, with China's thirtieth consecutive year of military expenditure growth—the longest unbroken streak in SIPRI's database—occurring alongside heightened tension over Taiwan and contested maritime claims, developments that have prompted U.S. and allied defense planners to redirect substantial investment toward autonomous and AI-enabled systems explicitly designed for contested-space operations [2,57]. These shifts illustrate that the "reshaping of borders" in modern warfare is not confined to zones of active combat; it also operates through the anticipatory militarization of frontier regions where conflict has not yet occurred but is treated by state planners as a plausible near-term contingency.

6. Modern Warfare and the Reshaping of Minds

6.1 The Epidemiology of War-Related Psychological Trauma

The psychological toll of modern warfare is now documented with a degree of epidemiological rigor unavailable to earlier generations of researchers, owing to a proliferation of systematic reviews and meta-analyses conducted across dozens of conflict settings. A landmark systematic review spanning 181 surveys and more than 81,000 refugees and conflict-exposed civilians across 40 countries reported an unadjusted, weighted PTSD prevalence of 30.6% [33]. WHO-supported modelling of active conflict settings estimated that 22.1% of adults living in these environments carry a diagnosable mental disorder—spanning depression, anxiety, PTSD, bipolar disorder, and schizophrenia—at any given point in time, while a global epidemiological model suggests that between 316 and 354 million adult war survivors worldwide live with PTSD and/or major depression [33].

A comprehensive 2022 meta-analysis synthesizing studies published between 1945 and 2022 found aggregate prevalence rates of 28.9% for depression, 30.7% for anxiety, and 23.5% for PTSD among populations exposed to war or conflict, with civilians experiencing significantly higher rates of depression (34.7% vs. 21.1%) and anxiety (38.6% vs. 16.2%) than military personnel, though PTSD prevalence did not differ significantly between the two groups [32]. Depression prevalence during active wartime reached 38.7%, compared with 29.1% in post-war periods, indicating that acute conflict exposure substantially elevates psychological burden beyond the residual effects of trauma recovery [32]. Regionally focused meta-analyses reinforce this picture with striking specificity: a systematic review of Ethiopian communities in war-affected areas found a pooled PTSD prevalence of 48.4%, with elevated odds associated with witnessing the murder of a loved one (OR 3.0), having a close family member killed or seriously injured (OR 3.1), and experiencing poor social support (OR 4.4) [34]. A longitudinal study following 1,052 individuals in Israeli conflict zones after October 2023 found that 75%, 69%, and 67% of participants reported clinically significant symptoms of anxiety, depression, and/or PTSD at day 1, day 30, and day 90 of assessment respectively, indicating that acute psychological distress, while attenuating somewhat over three months, remains at extraordinarily elevated levels well beyond the initial traumatic event [17].

Table 5. Pooled Prevalence Estimates of Trauma-Related Mental Disorders in Conflict-Affected Populations

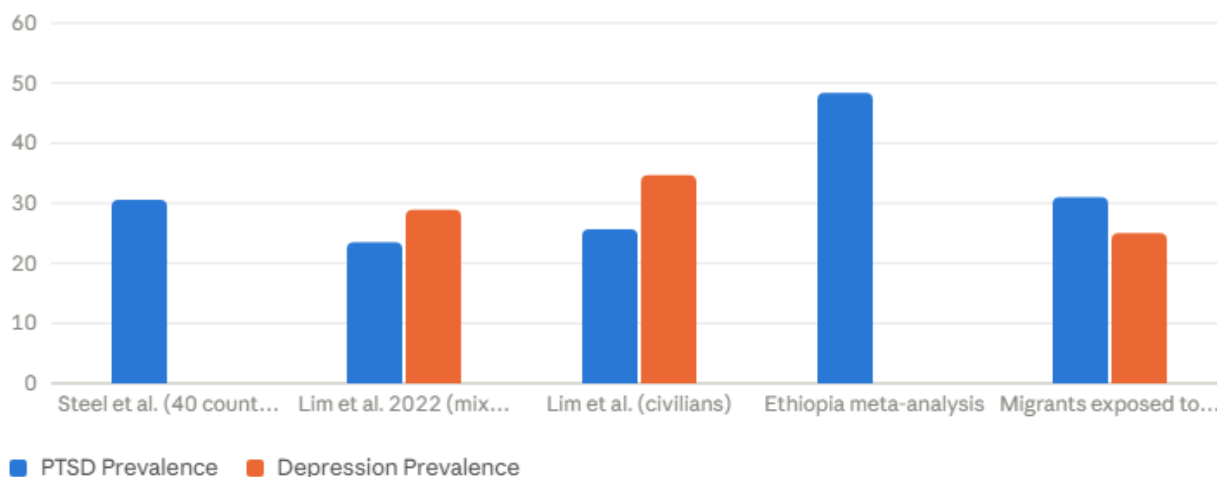
Study/Source	Population	PTSD	Depression	Anxiety
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Steel et al. (cited in [33])	81,000+ refugees/civilians, 40 countries	30.6%	—	—
WHO-supported modelling [33]	Conflict-setting adults (any disorder)	—	22.1% (any disorder)	—
Lim et al., 2022 meta-analysis [32]	Mixed civilian/military	23.5%	28.9%	30.7%
Lim et al., civilians only [32]	Civilians	25.7%	34.7%	38.6%
Lim et al., military only [32]	Military personnel	21.3%	21.1%	16.2%
Ethiopia regional meta-analysis [34]	War-affected communities	48.4%	—	—
Migrants exposed to armed conflict [17]	Conflict-exposed migrants	31%	25%	14%
Israel longitudinal study, day 90 [17]	Civilians post-Oct. 2023	~67% (combined symptom measure)	~69%	~75%

Pooled Prevalence of PTSD and Depression Across Conflict-Population Studies (%)

Pooled Prevalence of PTSD and Depression Across Conflict-Population Studies (%)

Prevalence (%)



Pooled Prevalence of PTSD and Depression Across Conflict-Population Studies (%)

Category	PTSD Prevalence	Depression Prevalence
Steel et al. (40 countries)	30.6	no data
Lim et al. 2022 (mixed)	23.5	28.9
Lim et al. (civilians)	25.7	34.7
Ethiopia meta-analysis	48.4	no data
Migrants exposed to conflict	31	25

What this cross-study synthesis makes clear is that the psychological burden of modern conflict is neither trivial nor transient. Even using the most conservative pooled estimates, tens of millions of war-exposed civilians worldwide are living with clinically significant trauma symptoms, and gendered vulnerability is a consistent finding across the literature: being female was independently associated with more than double the odds of PTSD in the Ethiopian meta-analysis (OR 2.2), a pattern echoed in studies of depression and anxiety prevalence in civilian populations more broadly [17,34].

6.2 Cognitive Warfare: Perception as a Declared Battlespace

Parallel to this epidemiological literature, a distinct but converging body of security-studies scholarship has emerged around the concept of "cognitive warfare"—a term that has moved, within roughly a decade, from a marginal expression in military planning circles to a recurrent category in formal doctrine and peer-reviewed research [23]. NATO's Allied Command Transformation defines cognitive warfare as a form of competition that targets human cognition directly, exploiting vulnerabilities in perception, emotion, and reasoning to weaken adversary societies from within, rather than targeting physical infrastructure or military capability alone [23]. This represents an explicit doctrinal evolution beyond twentieth-century psychological operations: whereas Cold War-era propaganda relied on mass broadcasting to shape opinion at a population level, contemporary cognitive warfare leverages algorithmic micro-targeting, synthetic media, and platform-level amplification to tailor influence operations to individual cognitive and emotional profiles [23,29].

Analysts at the Institute for the Study of War characterize the primary objective of Russian cognitive warfare operations as reshaping adversary decision-making and eroding the will to resist, noting that such campaigns are deliberately multi-modal—operating through social media, international diplomatic forums, staged conferences, and the deployment of ostensibly independent influential individuals as messaging vectors, in addition to more conventional means such as military exercises, sabotage, and cyberattacks used partly for their psychological rather than purely kinetic effect [24]. Comparative research on Chinese influence operations targeting Taiwan reaches a structurally similar but analytically distinct conclusion: disinformation sources are frequently disguised as Western media through local collaborators, increasing the cognitive burden on target audiences who must expend additional effort verifying sources, and "negative" propaganda designed to incite fear and intergroup hostility

proves substantially more corrosive to democratic social cohesion than "positive" state messaging, which the same research found largely ineffective at shifting opinion [28].

A doctrinal and ethical analysis of the field notes that cognitive warfare exploits foundational features of human cognitive architecture—heuristics and biases identified by post-war cognitive psychology research—and that the Russian doctrine of "Reflexive Control" explicitly aims to induce predetermined behavioral responses in adversaries by manipulating the information environment under conditions of time pressure and data overload [26]. Crucially, scholars in this field emphasize that cognitive warfare does not operate in a vacuum: it is parasitic upon pre-existing, non-military disinformation ecosystems—conspiracy theories, hate speech, and algorithmically amplified misinformation that circulate for commercial or purely social reasons—which state and non-state actors then instrumentalize for strategic effect, making the phenomenon far harder to isolate, attribute, or counter than traditional propaganda [25].

6.3 Generative AI, Synthetic Imagery, and the Collapse of Visual Verification

A particularly consequential recent development is the application of generative artificial intelligence to the production of synthetic war imagery. Research examining the Russia-Ukraine conflict's information environment found that AI-generated visual content, calibrated using specific color-grading patterns (look-up tables, or LUTs) associated with "authentic" battlefield footage, measurably increased audience perception of realism even when the underlying imagery was entirely fabricated [27]. This research situates the phenomenon within a longer historical arc of visual war propaganda—from the demonizing visual tropes deployed in Nazi-era propaganda through to contemporary AI-generated content—while noting that the speed, cost, and technical accessibility of generative tools represent a qualitative rather than merely incremental shift in the scale at which visual disinformation can be produced [27]. Complementary work on countering cognitive warfare in the digital age warns that large language models now permit the generation of "contextually relevant, persuasive, and tailored disinformation" at a pace that overwhelms both human content moderators and existing automated detection systems, compounding the challenge of maintaining a shared factual baseline during active conflict [29]. Experimental psychological research further demonstrates that exposure to disinformation continues to influence judgment and decision-making even after the false content has been explicitly and credibly refuted—a phenomenon sometimes termed the "continued influence effect"—which helps explain why fact-checking and debunking efforts, however well-resourced, have shown only partial success in mitigating the societal impact of wartime disinformation campaigns [30].





The pervasiveness of smartphone-mediated combat reporting illustrates how the modern battlefield has become simultaneously a physical and informational space, in which soldiers, civilians, and state propaganda units all produce content that circulates within the same algorithmically curated feeds that shape civilian perception of the conflict thousands of kilometers away [23,29].

7. Analysis: Competing Theoretical Perspectives

To avoid interpreting this evidence through a single ideological lens, this section reviews four established theoretical frameworks and the distinct—sometimes contradictory—conclusions each draws from the data presented above.

7.1 The Realist Perspective

Realist international relations theory interprets the rise in global military expenditure, the persistence of contested borders, and even cognitive warfare operations as rational, expected behavior within an anarchic international system lacking a central enforcement authority. From this vantage point, the decade-long rise in SIPRI-recorded expenditure is not evidence of systemic breakdown but of states rationally responding to a genuine deterioration in the security environment, particularly following Russia's 2014 and 2022 actions in Ukraine [1,2]. Realists would similarly interpret sanctions policy as an instrument of relative-power competition rather than a moral project, and would treat the apparent resilience of the Russian economy under sanctions—2.3% average GDP growth despite an unprecedented sanctions

regime—as evidence that unipolar economic coercion has structural limits in a multipolar trading system where alternative partners (China, India) can absorb redirected trade flows [50]. On this view, cognitive warfare is simply information-age statecraft in service of traditional national interest, differing in technique but not in kind from earlier eras of propaganda and covert influence.

7.2 The Liberal-Institutionalist Perspective

Liberal institutionalist scholarship, by contrast, emphasizes the erosion of the rules-based multilateral order that underpinned post-1945 economic and humanitarian governance. From this perspective, the record scale of displacement—123 million people, a near-doubling within a decade—represents not merely a humanitarian tragedy but a failure of the international protection architecture built around the 1951 Refugee Convention, compounded by a documented funding shortfall that left UNHCR able to meet less than half of assessed global need in 2024 [15,16]. Liberal scholars similarly interpret the more-than-tripling of trade restrictions since 2019 and the surge in corporate references to fragmentation risk as evidence of a genuine unwinding of the interdependence-based peace theory that dominated post-Cold War economic policy, with the weaponization of institutions such as SWIFT cited as accelerating precisely the kind of defensive economic bloc formation that institutionalist theory warns against [32]. On this account, cognitive warfare represents a distinctly dangerous development because it directly targets the informed-citizenry precondition on which democratic and multilateral governance depends.

7.3 The Critical/Constructivist and Securitization Perspective

Critical security studies and constructivist scholars would question the objectivity of "threat" itself in this account, arguing that the discursive framing of cognitive warfare, hybrid threats, and geopolitical competition can itself function as a securitizing move that legitimizes further militarization—a self-reinforcing cycle in which the perception of information-domain threat justifies expanded surveillance, censorship, and military-cognitive spending, potentially replicating the very erosion of open discourse that cognitive-warfare theorists warn against [25,26]. From this perspective, the finding that "positive" state propaganda is largely ineffective while "negative" fear-based messaging is highly corrosive [28] cuts in a politically uncomfortable direction: it applies equally to democratic states' own counter-disinformation and deterrence messaging as it does to adversarial influence operations, raising normative questions about where legitimate strategic communication ends and cognitive warfare against one's own population begins. Constructivist scholars would also emphasize that the demographic and territorial "reshaping" documented in Section 5 is not a natural or inevitable process but the product of specific political choices—choices about who is granted refugee status, which occupied territories receive international recognition, and which humanitarian crises receive funding—that reflect prevailing global power hierarchies rather than neutral technical outcomes [14,15].

7.4 The Political Economy / World-Systems Perspective

A fourth lens, drawing on political economy and world-systems theory, emphasizes the redistributive character of the market effects documented in Section 4. The observation that defense equity markets rally precisely when broader indices fall, and that a small number of core economies (the U.S., China, Russia, Germany, India) capture 60% of global military expenditure while low- and middle-income countries absorb over 73% of the global refugee burden, is read by this school as evidence of a structurally unequal global division of the costs and benefits of modern warfare [5,14,56]. From this perspective, the "reshaping of markets" documented above is not a neutral macroeconomic adjustment but a mechanism of upward wealth transfer—from taxpayers and consumers facing inflation and fiscal strain toward defense-industrial shareholders and creditors—layered atop an already unequal international economic order. This perspective would further note that cybercrime's estimated \$10.5 trillion annual cost, disproportionately borne by firms and governments with the fewest resources to defend against it, exemplifies a broader pattern in which the diffuse, systemic costs of modern conflict fall unevenly across the international system's core and periphery [61,65].

7.5 Synthesis

These four perspectives are not mutually exclusive, and the evidence reviewed in this paper is compatible with elements of each. The realist emphasis on rational state responses to genuine threat helps explain the specific timing and geographic concentration of military expenditure increases (Section 4.1); the liberal-institutionalist emphasis on eroding multilateral capacity helps explain the widening gap between displacement need and humanitarian funding (Section 5.2); the critical/constructivist emphasis on discursive framing helps explain the rapid doctrinal institutionalization of "cognitive warfare" as a named domain (Section 6.2); and the political-economy emphasis on distributional effects helps explain the divergence between aggregate macroeconomic damage and sector-specific equity gains (Section 4.4). A genuinely balanced reading of the evidence, this paper argues, requires holding all four lenses simultaneously rather than adjudicating a single "correct" theory.

8. Discussion

Three cross-cutting observations emerge from the preceding analysis. First, the three domains examined—markets, borders, minds—are not merely co-occurring but causally intertwined. Sanctions-driven commodity shocks (Section 4) directly exacerbate food insecurity that, per the political-geography literature, has historically correlated with civil unrest in exposed regions [18], which in turn generates further displacement (Section 5), which in turn concentrates trauma-exposed populations in under-resourced settings that the mental-health literature identifies as risk-amplifying factors—poor social support carried the single highest odds ratio (4.4) for PTSD in the Ethiopian meta-analysis reviewed in Section 6.1 [34]. The three domains thus form a mutually reinforcing cycle rather than three parallel but independent effects of war.

Second, the temporal asymmetry between market and humanitarian responses to conflict is analytically significant. Defense equity markets can reprice within hours of an escalatory event

[53,58], while humanitarian funding mechanisms operate on annual budget cycles that, per UNHCR's own reporting, are chronically unable to keep pace with need, resulting in the record funding shortfall documented in Section 5.2 [16]. This asymmetry suggests that the institutional architecture for capitalizing on war's economic opportunities is considerably more agile than the institutional architecture for mitigating its humanitarian and psychological costs—an imbalance with direct policy implications.

Third, the "minds" domain examined in Section 6 represents the least institutionally governed of the three. Whereas military expenditure is at least nominally subject to parliamentary budgetary oversight and sanctions regimes are subject to legal codification, cognitive warfare operations occupy a regulatory gray zone in which neither international humanitarian law nor domestic platform regulation has yet developed settled doctrine, a gap that multiple sources in this review explicitly flag as an area of active concern among both military planners and civil-society researchers [23,29].

9. Limitations

This review is subject to several limitations that should inform interpretation of its conclusions. First, as a synthesis of secondary institutional and peer-reviewed sources rather than original primary-data collection, the paper's conclusions are only as reliable as the underlying sources it draws upon, several of which (particularly real-time economic and sanctions data) are subject to ongoing revision as more complete information becomes available. Second, meta-analytic prevalence estimates in the mental-health literature carry substantial heterogeneity (in some cases I^2 values exceeding 98%, as noted in the original studies), reflecting genuine variation across conflict contexts, measurement instruments, and population characteristics that should caution against treating pooled estimates as precise point predictions for any single setting [32]. Third, the cognitive-warfare literature remains conceptually contested, with scholars disagreeing on the boundaries of the term relative to established categories such as propaganda, psychological operations, and information warfare more broadly [24,36]; this paper has attempted to represent that contestation rather than resolve it. Finally, given the fast-moving nature of the conflicts discussed—particularly the Russia-Ukraine war and Middle East tensions—some of the most recent figures cited should be understood as provisional and subject to revision in subsequent institutional reporting cycles.

10. Conclusion and Implications

This paper has argued that modern warfare must be understood as a systemic, multi-domain phenomenon that simultaneously reshapes global markets, territorial and demographic configurations, and the cognitive environment in which populations interpret conflict itself. The evidence reviewed—spanning a decade-long, unprecedented rise in global military expenditure to \$2.718 trillion in 2024 [1,3]; a record 123 million forcibly displaced people worldwide [14,15]; and pooled PTSD prevalence estimates ranging from 23% to over 48% across conflict-affected populations [18,32,34]—supports the conclusion that contemporary conflict generates effects that are broader in geographic scope, more tightly interconnected across economic and social systems, and more directly targeted at human cognition than earlier eras of interstate war.

Several implications follow. Policymakers concerned with humanitarian response should recognize the structural mismatch between the speed of market adjustment to conflict and the comparatively slow, chronically underfunded architecture of refugee protection and mental-health support documented in Sections 5 and 6. Researchers in security studies and public health should continue to develop cross-disciplinary frameworks capable of tracing the causal pathways connecting commodity shocks, displacement, and trauma epidemiology, rather than treating these as separate research silos. And regulators and international bodies should treat the governance gap surrounding cognitive warfare—identified across multiple sources in this review as an area lacking settled legal or normative doctrine—as an urgent priority, given the demonstrated capacity of AI-generated disinformation to outpace existing verification and moderation infrastructure [27,29]. Ultimately, the evidence assembled here suggests that any adequate twenty-first-century theory of war must integrate economic, geopolitical, and psychological analysis into a single interpretive framework, rather than treating markets, borders, and minds as separable consequences of an otherwise unitary phenomenon.

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