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The shift to a more turbulent IB environment, and how MNEs respond to this shift

Farok J. Contractor [a,*], John Cantwell [a], Gary Gereffi [b], Karl P. Sauvant [c]

[a] *Management and Global Business Department, Rutgers Business School, Rutgers University, 1 Washington Park, Newark, NJ 07102, USA*
[b] *Duke University, 1008 Monmouth Avenue, Durham, NC 27701, USA*
[c] *Columbia Center on Sustainable Investment (CCSI), Columbia University, USA*

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ABSTRACT

Since the mid-2010s, multinational enterprises (MNEs) have operated in an increasingly turbulent international business (IB) environment characterized by geoplitical frictions, trade protectionism, intensified FDI screening, and assertive techno-nationalist industrial policies. These developments mark a shift from the efficiency-driven globalization of 1980–2016 toward strategies emphasizing supply chain resilience and local responsiveness. This paper contrasts the relative stability of the neoliberal era with today's fragmented regulatory landscape, tracing the transition from multilateralism to renewed economic nationalism. It examines how evolving industrial policies affect MNEs from advanced and emerging economies. The paper identifies adaptive responses—including reconfiguring global value chains, increasing inventories, diversifying suppliers, engaging in non-market strategies, and enhancing digital transparency. It concludes by outlining alternative trajectories for globalization: a bifurcation into hegemon-led blocs or a revival of multilateral cooperation grounded in comparative advantage, knowledge diffusion, and the enduring mutual gains from cross-border investment.

1. Introduction

"May you live in interesting times" goes an old proverb. For the foreseeable future, multinational enterprises (MNEs) will be in a turbulent era, and they must learn to adjust their strategies accordingly. In the next section, the paper begins by tracing the differences between the relatively benign "neo-liberal" environment for globalization in 1980 – 2016, and the turbulent international business (IB) environment that MNEs are facing now. The third section examines the changing regulatory framework in the new turbulent environment for IB, which may be transitioning from multilateral frameworks for trade to more assertive nationalist industrial policies. The fourth section examines industrial policies and their impact on MNE strategies. The fifth section summarizes how the impacts differ between MNEs based in developed versus developing nations. The sixth section focuses on the adjustments traders and MNEs need to make, to reconfigure their strategies and global value chains (GVCs) in the new IB environment. The concluding section proposes possible directions for future globalization.

2. Relative stability of the past compared to increasing turbulence in the global economy

In this section we draw a contrast between the current turbulent environment in which the global consensus about rules and norms for international trade appear to be eroding and those for foreign direct investment (FDI) are changing, and where the degree of unilateral government intervention in international business is markedly increasing, relative to a more benign post-World War II period, when trust in multilateral institutions such as the World Trade Organization (WTO) as forums for multilateral negotiations and the observance of common rules which nations would subsequently obey, was at a high.

2.1. *The era of relative stability, 1945 – 2016*

Since the first industrial revolution in the 18th century the IB environment has often been turbulent, just as it is today. Rather, it was only the 1945–2016 period which has been historically exceptional for the calmness and stability of the IB environment. The 1890s, sometimes referred to as the first wave of globalization (O'Rourke & Williamson,

* Corresponding author.
E-mail addresses: farok@business.rutgers.edu (F.J. Contractor), cantwell@business.rutgers.edu (J. Cantwell), ggereffi@duke.edu (G. Gereffi), karlsauvant@gmail.com (K.P. Sauvant).

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1999) were also a time of rising protectionism and high domestic income inequality, as well as an increasing national assertiveness by the imperial or would-be imperial powers. Indeed, the 1890s are often cited as a template by President Trump and his advisors for the kind of international economic policy regime to which they would like to return (Irwin & Wolff, 2024).[1] The inter-war period (1918 – 1939) which included the Great Depression, also saw a rise in trade protectionism and a decline in the ratios of trade and FDI divided by the gross domestic product (GDP) of nations (Altman & Bastian, 2025).

However, between 1945 and up to at least 2010, all globalization indicators – world exports, world FDI inflows, and licensing[2] – increased both in absolute US dollars as well as in dollars divided by each recipient nation's GDP. Thus, globalization numbers grew both in absolute terms as well as faster than the average nation's economy until approximately the year 2010.

This post-1945 period saw the emergence of IB as a scholarly field. The seminal contributions of Dunning (1958) and Hymer (1960/1976) were demonstrated in the wider economic and social impacts of the international technology transfer of MNEs on both home and host countries, and by distinguishing the MNE strategy-based drivers of FDI from the financially driven motives for foreign portfolio investment (for a recent discussion see Cantwell, 2024). In the early post-war era, the fastest growing category of FDI was local market-seeking, and much of this was transatlantic FDI (Dunning, 1970). This was accompanied by a growth of international trade that with the spread of market-seeking FDI ensured a steady rise in the penetration of international markets by MNEs, especially within Europe where it was reinforced by the processes of regional economic integration.

Most IB scholars who grew up in this post-war period regarded globalization as a relatively settled international economic environment. They have therefore seen this as a benchmark against which to assess the changes in MNE strategy and the FDI policy environment that we see emerging today, making the turbulence of today seem more unusual than it is historically.

During the 1945–70 period, FDI was mainly between the 'triad' regions of North America, Europe and Japan. Grounded on the Bretton Woods Agreement and the General Agreement on Tariffs and Trade (GATT) established in 1947 as the predecessor to the WTO,[3] the international economic policy regime in this post-war period was oriented towards a framework for multilateralism in trade which was secured by the economic and technological leadership of a hegemonic United States (US).

By contrast, in much of the developing nations and socialist world until the 1980s, Western-origin MNEs were treated with suspicion and FDI was kept out or restricted. However, after the 1980s there was a sea-change in attitudes in those countries with a strong impetus for internal institutional reform and greater openness (and even a welcome for MNEs) in developing or emerging market economies, most notably in China and India, and in Central and Eastern Europe following the fall of the Berlin wall. They perceived the opportunities for export and FDI-led growth in the subsequent 1980–2016 neo-liberal era of increasing international economic integration and global knowledge connectivity, reinforced by the technological transformation of the information age. The same influences also contributed to a significant increase in the international knowledge-seeking category of FDI and the role of global knowledge-based webs for MNEs after 1980 (Cantwell, 1989; 1995).

2.2. The neo-liberal era of globalization, 1980 - 2016

The neo-liberal period 1980–2016 could be described as the flowering of globalization with the global spread of pro-market policies, and general conformity and trust in multilateral institutions such as the World Bank, the International Monetary Fund, and the WTO. The year 2016 saw two events that signaled a change – the United Kingdom (UK) leaving the European Union (EU) and the election of the first Trump administration – and were symptoms of a growing populism in the US and Europe, manifested in subsequent years in greater scrutiny of MNE activity and rising tariffs (Contractor, 2025).

A rules-based international regime reduced uncertainty in cross-border transactions, lowered barriers to trade and FDI and restrained, through treaties, the ability of governments to unilaterally change their commitments with respect to foreign business property, or industrial standards, and limited the extent to which governments could favor domestic firms. In return for the benefits of IB, nations accepted a slight erosion of their sovereignty, in turn becoming more predictable arenas for foreign business.

The era that spanned the 1980s - 2016 period has been characterized as one of neoliberalism and international financial deregulation, within which there was a phase some described as hyper-globalization[4] from around 1990–2010 (see Wolf, 2024). The neoliberal era also corresponded with the arrival of the information and digital age, and the emergence of digital trade and digital platform MNEs (Alcácer et al., 2016).

The formerly-socialist developing countries also opened their doors to inward FDI. MNE strategy began to shift from an emphasis on market-seeking FDI (the output side) to also include "efficiency-seeking" FDI (focusing on lowering procurement costs on the input side) and more internationally integrated forms of FDI. Lower trade costs (mutually lower tariffs negotiated under the aegis of GATT and WTO, as well as reductions in transport and inventory holding costs) enabled the geographical separation of production and consumption. Improved communication and transportation technologies sharply reduced the time and cost of moving services and goods, facilitating the expansion of FDI in an increasingly integrated network of cross-border supply chains (Baldwin, 2016; Buckley & Strange, 2015).

The sharp increase in the role of GVCs, i.e. the global fragmentation and dispersion of production, was manifested in the rise of the proportion of international trade in intermediate goods relative to final products. Under competitive pressure, advanced nation companies became willing to "fine-slice" their value chains and outsource and offshore selected portions to low-wage countries (Contractor et al., 2010). As a result, the geographic dispersal of production and foreign value-added rose substantially during this era. This culminated in (overly) optimized (i.e., extremely cost-efficient) international supply chains – whose fragility was later exposed during the Covid-19 disruption and vulnerable to rising geopolitical tensions.[5]

[1] To put the role of the US in an overall perspective, in 2025 the US accounts for 26.1 %, and China 16.6 % of world GDP using current exchange rates (International Monetary Fund, 2025). The US share has been diminishing over time. Adjusting for alleged undervaluation of the Chinese currency (RMB) and using a theoretical PPP "purchasing power parity" exchange rate, the Chinese economy is bigger than that of the US, principally because China's population is 4.06 times as big as that of the US.

[2] Proxied by cross-border payments for intellectual property rights.

[3] The WTO was established in 1995.

[4] Even during so-called hyper-globalization, most large MNEs remained regional rather than global in the distribution of their sales (Rugman & Verbeke, 2004; Verbeke et al., 2025), especially when political affinities are congruent with geographic proximity (Cui et al., 2025). However, looking at MNEs' trade, Altman & Bastian's (2025) find an expanding geographic reach in international trade (procurement and export sales). They calculate an index of average geographical distance in international trade or cross-border shipments, whose average rose significantly between 2003 and 2012, but then subsequently remained around 4900 kilometers.

[5] Section 6 of this paper examines how MNE strategies that were adapted to cope with increasing turbulence, often called "resilience" or "mitigation" strategies, amount to a partial retreat from the extreme optimization and geographical fragmentation of production and value added (Gereffi et al., 2021).

The neo-liberal environment triggered a fundamental geographic and organizational configuration of GVCs. For example, in three major industries – apparel, automotive, and electronics, studied over a five-decade period (Gereffi et al., 2021) – major transformations in the structure and location of production were tied to liberalization of trade policies. In the apparel GVC, protectionist tariffs and quotas associated with the Multifiber Arrangement (MFA), as well as quota-limited production, fragmented over a multitude of nations, were phased out in 1995–2005. This led to a subsequent concentration of apparel GVC in a handful of large countries, such as China and Bangladesh. Offshoring of goods and services production to low-wage locations, based on competitive advantage and low labor costs, resulted in large reductions in prices to consumers,[6] especially in the US and Europe. The enormous benefit to consumers worldwide was equally matched by a drastic reduction in poverty in developing nations. Using the World Bank's criterion for abject poverty – $1.90 per person per day in 1990, adjusted for inflation to $3.00 in 2025 – more than 1.25 billion humans have been lifted out of grinding poverty in significant part because of globalization (Norberg, 2018).

2.3. *The era of increasing turbulence (2017 – present) and emerging doubts about globalization*

Some observers note 2016 as an inflection point in the reassessment of benefits versus costs of globalization, marked by "Brexit" and the election of President Trump. But even previously, the 2008 global financial crisis had sparked the first questioning and doubts about this extended period of trade, investment expansion and neoliberal economic policies (also known as the "Washington Consensus") (Gereffi, 2014). International financial deregulation accompanying "hyper-globalization" (a term used by Wolf, 2024), is said to have precipitated the world financial crisis of 2008. There was concern that this global economic slowdown would trigger a protectionist response. However, the World Bank's initial study on GVCs showed that the interdependencies created by global supply chains muted protectionism and allowed trade to rebound from the recession sooner than expected (Cattaneo et al., 2010). These interdependencies are still a factor moderating raw nationalistic impulses in the new turbulent era. The 2008 financial crisis was merely the first in a series of disruptions that have shaken the global economy.

The withdrawal of the UK from the EU in 2016 was a bellwether for a global resurgence of economic nationalism in countries such as Hungary, Turkey, the United States (US), China, and others. The COVID-19 global pandemic (2020–2022) was the most significant disruptive force that shuttered supply and demand in many global industries, leading to acute product shortages in essential industries like medical supplies (Gereffi, 2020). Global supply-chain vulnerabilities heightened interest in industrial policies to strengthen or rebuild supply sources as critical national security issues (European Commission, 2019; White House, 2021). Recent regional conflicts such as the Russia-Ukraine war and the ongoing Israel-Hamas-Iran conflicts in the Middle East further reinforce the geopolitical instability of the current period.

Simmering under the surface has been the argument that the offshoring of jobs away from the US and Europe has squeezed the incomes of the bottom 30 % of their workforces, and idled their factories, with the consequence that the disaffected segment of their publics have voted for populist leaders. Bivens et al. (2014) reported that between 2000 and 2013, hourly wages of the bottom 30 % segment of the US workforce "fell", and for the next 40 % were "essentially flat" - while the topmost brackets saw their wages rise. But the evidence is mixed regarding the causality between offshoring and wages. Helpman (2016), who reviewed the literature on this question, concluded that globalization's adverse impact on wages was scattered and limited, although income inequality had increased (but perhaps for other causes such as automation and the wage premium earned by skilled workers due to technological advances). IMF economists (Dao et al., 2019) conclude that while offshoring accelerated the growth of imports, the labor share of national income, in general in advanced countries, has declined, as much due to automation compared to other causal factors. Contractor (2025 appendix) cites the fact that while US manufacturing output has more or less continuously increased over the decades (and the US retains by far the second largest manufacturing output in the world after China) the number of employees in US manufacturing has long been on a downward slope – suggesting that automation, as much as globalization, is a factor.[7]

At any rate, political perceptions, fueled by social media as opposed to economic facts, motivate voting publics who remain mostly oblivious of the vast benefits of globalization (through reduction in prices amounting to trillions over the years) enjoyed by advanced nation consumers.

The general critique of globalization boils down to this benefit/cost question: "Does the consumer interest in terms of lower prices (through efficiency-seeking offshoring of slices of the value chain) outweigh the possibly deleterious effects of globalization on producers and jobs in the less-competitive countries?"[8]; There is no definitive answer, which also varies by country. This question arises particularly in the context of the pros and cons of tariffs, launched by the Trump administration, a symptom of rising protectionism and populism worldwide (Contractor, 2025).

3. The changing regulatory environment for international business

The more turbulent current era is also manifested in increasing assertiveness of national governments in international economic policy since the 2020 s. The world trading system is arguably now entering a phase that is even more turbulent and uncertain than in the 1890s. Many nations are increasingly promoting their own national goals and interests by proactively reshaping continued globalization in certain ways (rather than attempting to reverse globalization in general, as has sometimes been claimed). Thus, in the US case, tariffs are currently being used primarily as a tool to re-negotiate the form of international economic relationships, rather than more simply just exiting from such relationships. In this more turbulent era of greater socio-economic, environmental, and geopolitical disruptions and uncertainties, there has been a shift towards efforts to de-risk or raise the resilience of GVCs, and to pay greater attention to national security considerations (Gereffi et al., 2025).

At the same time, governments are now actively targeting technologies to produce "national champions", in contrast with the neoliberal era where the dominant principle was to 'let the market decide' and (for governments) 'don't try and pick winners'. As the geographic scope of globalization has expanded to increasingly include formerly emerging economies such as China that are thought to be playing by different rules, national governments everywhere are beginning to take greater account of their national security and other economic and local (or regional) interests in their outlook on FDI policies. Governments are increasingly concerned over their capacity to ensure technology sovereignty in their innovation policies (Edler et al., 2023).

[6] Curiously, in the debates over globalization, we find vanishingly few estimates of the consumer benefit worldwide resulting from reduction in prices due to offshoring.

[7] Incidentally, this remains a relatively unexplored research question.

[8] This appears to be a research question untouched by IB scholars, economists or social scientists: consumer benefits vs. job losses from offshoring. Incidentally, "offshoring" has two variants, relocating a production segment or function to (i) a foreign affiliate, or (ii) contractual offshoring to an arms-length foreign vendor.

Virtually all countries seek to attract FDI. However, policies have shifted from an unqualified welcome to the contemporary practice of greater national scrutiny and intervention (which was also a factor in the first post-war era (as discussed by Hymer, 1972), as well as the pre-industrial mercantilist era of the 17th and 18th centuries, as seen in the relationship between the East India Company and the British state. Similarly, with respect to inward FDI, there are inklings of a return to the 1960s when there was a growing suspicion of foreign-owned business (such as US-owned business) in Europe, including France (e.g. Servan-Schreiber (1967)) and in the then socialist developing world). The balance is gradually shifting from a welcome for MNEs seen during the neoliberal era of 1980 – 2016, toward the current environment that is still open, but increasingly tied to specific national objectives. Investors and traders must adapt towards this evolving and uncertain environment, as we detail in Section 6 of this paper.

3.1. The changing national FDI regulatory framework

Developed countries remain dominant in outward FDI (OFDI), but developing-country MNEs are increasingly significant, and they can be expected to grow further in importance in the years to come. Data from UNCTAD (UNCTAD, 2025a) show that the share of OFDI from developed nations declined from 95 % in 1990, to 69 % in 2024, while the share of developing nations grew from 5 % in 1990–31 % in 2024; the top outward investors (2023–2024 averages) were the US (US$332 billion), Japan (US$179 billion) and China (US$170 billion), for a world total of US$1.6 trillion in 2024.

National rules for outward and inward FDI are designed to serve domestic interests. Traditionally, home countries aim to boost their firms' international competitiveness. Accordingly, they have liberalized outward FDI and supported their MNEs with (among other things) treaty protections, risk insurance, financing, and even equity stakes. The rationale of this approach has been that outward FDI, ultimately, benefits the home country.

FDI-receiving host countries seek the tangible and intangible benefits that are associated with FDI. Most countries have investment promotion agencies that compete for international investors, using incentives targeted at certain sectors or sub-regions the nation intends to promote. Nations that freely opened their economies to FDI are now becoming slightly more restrictive: The ratio of national regulations facilitating or liberalizing the entry of MNEs *versus* regulatory changes that closed the door tighter to inward FDI used to be as much as 6.7–1 during 1991–2014, but fell to 2.7–1 during 2015 – 2024. A 2.7 to one ratio is still, on balance welcoming, and does not restrict FDI entry, but may portend – for some MNEs – narrower and more constrained openings for future FDI.

The rise of populism in many nations results in economic nationalism, seen in FDI frameworks shifting towards a direction that promotes each country's own national objectives. A growing number of (especially developed) home countries are screening outward FDI, ostensibly driven by national security, geo-economic and geo-technological concerns. They seek to determine whether specific projects are in their interest, particularly when they involve sophisticated technologies, sanctioned countries, and supply-chain resilience. Thus, the EU recommended, in January 2025, member-state screening in semiconductors, artificial intelligence and quantum technologies. The US has gone further, having issued "Outbound Rules" in November 2024, which restrict outward FDI to certain "countries of concern" (i.e., China, Hong Kong, Macao) in national security related technologies and products, namely semiconductors and microelectronics, quantum information technologies and artificial intelligence.

China's emergence as a major home country has, of course, had an impact on the patterns of FDI, but its impact on the FDI regulatory regime has been mixed: On the one hand, China's official pronouncements are supportive of the international investment law regime. On the other, China's actions, regulating and bending FDI, technology and trade towards its own nationalistic objectives, have by reaction contributed to the rise of screening in other countries.

Suspicion and scrutiny have increased. This Special Issue includes a relatively rare examination by Zhou et al. (2025) of the evolution of western country perceptions of Chinese MNEs, which were previously viewed as relatively benign trading partners, to threatening actors that now merit stigmatization. The Trump Administration's National Security Memorandum is expanding these restrictions to other countries (Cuba, Iran, North Korea, Russia, Venezuela) and additional sectors (e.g., aerospace, advanced manufacturing, directed energy).

In many host countries, the FDI regulatory framework remains welcoming. often offering generous incentives in cutting-edge technology industries. Some free trade agreements (FTAs) now include concrete FDI commitments, pioneered in the 2024 India-EFTA agreement. Recent US agreements with Japan, the EU and South Korea contain similar commitments (Myles, 2025). Moreover, tariff hikes in some cases encourage tariff-jumping FDI.[9] Still, the share of restrictive regulatory changes has risen – such as joint venture requirements and local content rules.

Screening inward FDI for national security risks (defined to include also economic and geo-technological considerations) has also risen. To put this in an overall context, in 2023, out of 25,581 FDI projects worldwide, only 989 transactions in 11 developed countries underwent extended reviews, with 1 % (especially in high-technology industries) blocked.

By way of another example, the US has a long-established screening mechanism, the Committee on Foreign Investment in the US (CFIUS), which reviewed 325 filings in 2024. Of these, 116 led to actual investigations (i.e., more extended reviews). Only six transactions were blocked since 2014 (none during 2021–2023; two during 2024). However, in the current turbulent climate, after 2025 there could be an escalation in interventions by governments.

The screening of incoming FDI obviously introduces uncertainty for MNEs, especially for mergers and acquisitions. Still, the total number of screened projects is relatively small - the great majority going forward without complications. That said, some observers such as Heifetz (2024) propose that the above statistics understate the heightened risk-aversion and uncertainty created by national screening mechanisms – especially after 2025 - so that many FDIs that would have been proposed in a more passive business environment simply do not bother to apply and do not go through the screening process.[10] Not coincidentally, world FDI declined by 11 % in 2024, the second successive yearly drop according to UNCTAD (2025b).

None of these developments at the national level imply that countries are no longer interested in FDI. But they demonstrate that governments are becoming more discerning, intrusive, and pay more attention to their own interests, including them seeking higher quality and sustainable investments.

3.2. The changing international FDI regulatory framework

The international FDI regulatory framework - built to serve the interest of home and host countries - remains favorable to MNEs. It consists of 2843 bilateral investment treaties and 480 other treaties with investment provisions, for a total of 3323 international investment agreements (IIAs) in 2024 (2625 in force). The protections they provide to foreign investors include national treatment, most-favored-nation treatment, safeguards against expropriation, free transfer of funds, and investor-state dispute resolution. While the cumulative total of IIAs is

[9] Another strategic move by MNEs which is under-researched.

[10] FDI has always been more of a looming obstacle for small and medium-sized firms, compared with large MNEs with greater resources, legal experts, information and connections. How the smaller international firms navigate, or are deterred by, geopolitical barriers is an under-researched research topic.

high, after a peak of signed treaties in 1994–2001, there has been a slowdown in new treaties. At the same time, treaty terminations have increased. UNCTAD (2023) reported that "For the third consecutive year, the number of effective treaty terminations exceeded that of new IIAs". But terminations may not always signify a tightening IB climate. An old treaty is sometimes replaced with a new one, or several treaties are terminated only to be combined into one regional treaty.

Growing disputes between MNEs and countries, involving millions or billions of dollars, may signify a more turbulent environment (e.g., by 2024, MNEs had launched at least 1401 treaty-based arbitrations, involving 135 countries plus the EU). But this can also be seen as a positive development. The increased use of the investor-state dispute-settlement (ISDS) mechanism, which allows investors to initiate international arbitration over alleged treaty breaches, could increase the confidence of MNEs to go ahead with FDI in a country. Arbitrations can also be initiated based on national laws and contracts between foreign investors and host-state entities. The number of disputes is likely to grow, because stronger institutions and mechanisms both attract and give clearer grounds for action, as Buitrago (2025) argues in the paper in this Special Issue.

MNEs are facing not only heightened scrutiny, but also more requirements. IIAs are increasingly specifying investor obligations, albeit typically as "soft" (hortatory or non-specific and non-binding) formulations such as "responsible business conduct" or "corporate social responsibility" or contribution to the nation's economic development. But more important are implicit pressures, not necessarily written but quietly discussed with the government, whereby MNEs promise a certain level of capital investment, or number of jobs created, or percentage local value-added, to get their investment proposal 'cleared' by the government. Governments are also interested in tax collection from foreign companies: the OECD-led Base Erosion and Profit Shifting initiative proposes a global minimum tax of 15 % on MNEs with revenues of over €750 million, to deter MNEs from shifting profits to low-tax jurisdictions and tax havens.

Additional pressures on MNEs are likely from stakeholders and nongovernmental organizations (NGOs) who, citing multilateral codes such as the UN Guiding Principles, the ILO MNE Declaration, and the OECD Guidelines, lodge complaints against individual firms. alleging that they have violated the provisions of the guidelines.

MNEs should expect that, in the new business environment (2017 – future), governments are going to be far more interventionist than in the neoliberal era of globalization (1980 – 2016). FDI makes various contributions to national economies, and is mostly welcomed, but now foreign market entry is not necessarily automatic and has to be "bargained" with the host government. The welcome mat that is still rolled out by countries to attract FDI is going to be accompanied by scrutiny, bargaining, lobbying (euphemistically labeled "non-market strategies) and increasingly complex compliance requirements with national and international regulations and codes of practice. The rights, privileges and concessions earned by MNEs will be balanced by responsibilities imposed by host countries, especially countries with strong bargaining power, ready to enforce them – an echo of the era prior to 1980 portrayed by Fagre & Wells (1982).

4. Industrial policies and their impact on MNE strategies

In 2022, *The* Economist (2022) reported that "*More than 100 countries accounting for over 90 % of the world's GDP now have formal industrial strategies…*" Governments have responded to recent socio-economic, environmental, and geopolitical disruptions by reorienting industrial policy from a prosperity-driven to a security-driven agenda (Gereffi et al., 2025), and from multilateral to unilateral initiatives designed to drive technology development and local firm capabilities in certain sectors the government (in its wisdom[11]) deems domestically important. While the concept of industrial policy can be traced back to the infant-industry arguments of the 18th and 19th centuries, it has also been widely deployed in both industrialized and developing economies in the post-World War Two era (Chang & Andreoni, 2020; Juhász et al., 2024; Naudé, 2010). Examples include efforts by national governments to strengthen their domestic economies through various forms of import-substituting industrialization (ISI) and export-oriented industrialization (EOI) policies (Gereffi & Wyman, 1990) to the emergence of the "developmental state" in East Asia (Amsden, 1989; Wade, 1990; 2018).

Analyzing contemporary industrial policy includes two dimensions: level of economic development (advanced versus emerging economies) and prevailing context (global integration versus geopolitical fragmentation). The resulting typology identifies four strategic orientations that illustrates the shift from global integration ("the era of globalization") to global fragmentation ("the era of disruptions") (Gereffi et al., 2025):

- ***Creating winners*** *(In advanced economies in an era of global integration)*. Policymakers in advanced economies have historically used industrial policy to "create winners" (favored industries or national champion firms) that could enhance national competitiveness. Tools range from infant industry protection to broader technological development strategies, and subsidies, common in strategic sectors like aerospace, telecommunications and energy.
- ***Enabling latecomer catch-up*** *(In emerging economies in an era of global integration)*. In the latecomer catch-up strategy, emerging economies are the recipients and absorbers of advanced technological capabilities from industrialized nations. In both the developmental state and GVC upgrading literatures, the catch-up process is instrumental for emerging economies and their firms to thrive under globalization. FDI was encouraged because MNEs bring with them technologies, organizational skills including marketing and brand management, training to upgrade human capital (in the FDI affiliate, as well as through spillovers), higher standards in labor conditions, designs and quality, and finance. Equally importantly, MNEs provide access to international markets via the MNE's international supply chains
- ***Enhancing economic security*** *(Policies in advanced economies under geopolitical fragmentation.* Moving away from the efficiency-driven logic that promotes the disaggregation of GVC activities based on comparative advantage, governments in advanced economies now perceive this interdependence as strategic risks and vulnerabilities to their national resilience (Witt, 2019; Zahoor et al., 2023). Economic security is perceived to derive from national autonomy and stronger control over supply chain activities. Economic and security considerations are also reflected in the increase in "screening" of FDI proposals, intended to prevent or deter certain foreign companies, as well as prevent outward FDI that might benefit the foreign destination economy in critical technologies.
- ***Strengthening supplier resilience*** (In *emerging economies under geopolitical fragmentation)*. For emerging economies, this quadrant is a key strategic challenge and source of vulnerability – especially with rising tariffs (that may capriciously change). They must navigate between maintaining GVC integration while reinforcing resilience against the pressures to decouple from rival global or regional superpowers. As governments in advanced economies become increasingly concerned with securing control of critical stages in

[11] Some observers and economists remain skeptical of governments' "wisdom" in directing industrial policy in an attempt to pick national "winners". Economic history paints a gloomy conclusion for many such attempts.

GVCs, policy measures to locate those activities closer to home create direct risks for emerging economies.

Each of these strategic industrial policy scenarios has significant locational and GVC implications. In the "creating winners" quadrant, industrial policy in advanced economies shifted from building entire industries to capturing high-value segments on the "smile curve" of value creation, particularly in innovation, design, and branding (Van Assche, 2020). For "enabling latecomer catch-up," the emergence of GVCs encouraged domestic firms to integrate into global production networks for technological accumulation and export expansion (Gereffi & Sturgeon, 2013). The security-driven industrial policies in the geopolitical fragmentation era directly reshape geographic linkages in GVCs as governments in advanced economies compel MNE lead firms to reconfigure their GVC networks (Gereffi, 2020; Juhasz et al., 2024). Finally, the "strengthening supplier resilience" scenario compels suppliers to redefine their value proposition in GVCs, moving beyond traditional cost-based competition toward capability-based differentiation.

"Green industries" provide a good example of how both advanced industrial and emerging economies have used industrial policies to improve their global position and enhance their capabilities under geopolitical fragmentation. Sustainable GVCs are a top international priority to address environmental sustainability and development concerns. Sustainable GVCs not only involve improving, shortening, and diversifying supply chains, but also incorporating supplier firms with low carbon intensities that reduce direct and indirect emissions – illustrated in case studies of five strategic sectors in the EU (antibiotics, vaccines, batteries and electric motors, iron and steel, and chips and circuits) affecting the carbon footprint of these GVCs (Lopez et al., 2025). The findings suggest that reshoring could shorten GVCs but increase direct emissions within the EU and its proximate partners. But reshoring to developed economies like the EU, while reducing carbon emissions, developing economies risk being bypassed if they cannot comply with higher environmental standards required in lead-firm home economies.

GVC upgrading by latecomer countries that focus on low-emission hydrogen (LEH) is examined by Altenburg and Strohmaier (2025). The authors use published national hydrogen strategies of 20 latecomer countries and generate a novel typology of four industrial development pathways along the LEH value chain. Each pathway is defined by its mix of three types of industrial policy (generic, latecomer-specific, and greening-specific) and ultimately leads to different GVC configurations. The comparative assessment of these pathways and policies identifies different stages in which latecomer economies can join the LEH value chain, and potential challenges and development trade-offs are reviewed.

The role of industrial policies in facilitating the participation and upgrading of 12 middle-income countries in three renewable energy GVCs (solar PV [photovoltaic], wind, and biomass power) is analyzed in an article by Lema and Rabellotti (2025). Distinguishing between deployment and manufacturing GVCs, the authors use a mix of quantitative and qualitative data to carry out a Qualitative Comparative Analysis (QCA) based on country-specific combinations of national preconditions and policies. While participation is widespread in both deployment and manufacturing GVCs, upgrading is more prominent in deployment chains that present lower entry barriers. A key policy insight is that targeted and context-specific industrial policies (demand-side, supply-side, and technology-focused) to seize "green windows of opportunity" in renewable energy GVCs.

5. Major areas of strategic concerns for MNEs in a turbulent business environment

The classic strategic tension between localization and international economic integration, confronting all MNE strategists, was overlaid by a third variable, namely the role of the nation-state by Rodrik (2000). In the first decade of this century, many predicted a diminishing role for national governments in IB in favor of supranational institutions. In the new turbulent environment since 2017, increasingly interventionist national governments are sharpening the divide felt by MNEs between desires for greater cross-border integration and conformity with local mandates.

Table 1 identifies areas of strategic concern for MNEs in the new turbulent environment. Companies must balance both in different countries and contexts. Various government interventions are felt differently by MNEs from developed countries versus developing country-based companies. Of course, they share many of the concerns resulting from a turbulent environment, but the strategic needs and priorities are different between the two. Table 1 provides an overview of the impacts of major geopolitical and nationalist pressures. The left column of Table 1 lists strategic *concerns forcing de-linking and disintegration*, while the right identifies *desires for further cross-border integration,* albeit constrained by geopolitics.

5.1. Perspectives and major concerns of MNEs from developed countries

As the technological lead of the US has diminished, rising hegemons such as China wish to gain eminence in many critical fields. One of the first actions of the Xi Jinping administration was to publish in 2015 the "Made in China, 2025" plan which targeted key sectors and technologies with the specific intention to rival the EU and US by 2025.

Techno-competition becomes a strategic dilemma for MNEs (Edler et al., 2023). Not counting domestic patent filings and only counting international patent applications under the Patent Cooperation Treaty (PCT), in 2010 China filed 12,300 international patents versus 44,000 patent filings for the US. But in 2024, Chinese inventors accounted for

Table 1
Major Strategic Concerns for MNEs in a Turbulent Business Environment.

	GEOPOLITICAL INFLUENCES AND PRESSURES	
COUNTRY TYPE	**De-integration / Diversification / Localization Pressures and Concerns**	**Impact of Geopolitics on Further Cross-Border Integration Desires**
Perspectives of MNEs from Developed Countries	• Techno-competition • "Near/friend-shoring" • Knowledge spillovers • Supply chain "resilience" vs. cost minimization • Reconfiguration costs • Lobbying for protectionism • "National champions"	• Foreign nation FDI screening barriers • Host government mandates • Tariffs/other barriers impeding offshoring • Access to foreign markets affected by geopolitics

Perspectives of MNEs from Developing Countries	• Concerns about being forced into rival geopolitical "camps"
	• Tariff vulnerabilities
	• "Asset specificity" risk in international supply chains in the context of turbulence and uncertainty
		• Desire to participate in GVCs for
		  • Job creation
		  • Learning by being suppliers
		• More market-seeking OFDI via trade and economic treaties
		• IFDI for host market development

70,160 patent filings versus 54,087 for the US.[12] Patent filings are a weak indicator, but extant evidence clearly shows China's preeminence in more than a few fields, such as high-speed rail, electric vehicles and batteries while being a serious contender in artificial intelligence (AI), supercomputers, mobile telephony, clean energy, and robotics. Since 2005, China has quietly built expertise and capacity in the processing of critical materials such as graphite, lithium, cobalt, nickel, silicon and gallium (used in electric motors, solar panels and other military applications). "Rare earths" are often not rare and can be mined in many countries. However, China has a dominant share in their processing, and the processing of even widely available elements such as magnesium, manganese, indium, and tungsten. Andersson (2020) relates how, in 2016, China's issued its first official catalogue of 24 "strategic minerals" with the intent of dominating international supply chains. With a global market share of two-thirds to 85 % in such critical materials, it provides China a "techno-national" dominance and a potential chokepoint in international supply chains, as seen in 2025 US-China trade talks.

De-linking from China and "localizing" in terms of "near-shoring" or "friend-shoring" of such capability is, in principle, technically and operationally feasible. But it is quite difficult in practice, when MNEs as consumers of the processed materials in their global supply chains are caught up in the geopolitical tussle because the time and investment involved in such a geographical relocation are enormous. Even then, the average cost per unit of output, after the relocation, would be much higher, given the far lower Chinese labor costs, proprietary learning embedded within Chinese producers, their achieved economies of large scale, and Chinese government subsidies and support. Even when there is no technical-lead or dominance issue, the higher procurement cost resulting from de-coupling or de-linking from China becomes a key issue – especially if an MNE's competitors are not doing the same. This is one of many difficult dilemmas facing MNEs – the tradeoff between greater assurance or "resilience" and substantial increases in cost.

MNEs are reciprocally concerned about unintended leakage of their own technical advantage and proprietary trade secrets, especially from their FDI affiliates in China. Contractor (2019) relates how some technology transfer is inevitable and necessary, as when a European or US company affiliate in China needs to train its employees and suppliers to its standards. In more than a few cases, the former Chinese vendor integrates downstream and becomes an eventual competitor. Some technical "spillover" to Chinese competitors is inevitable because of simple "demonstration effects", i.e., observations via public sources of what the foreign company is doing, or reverse-engineering its products. In some cases, the sheer act of filing a patent reveals some proprietary knowledge (so that some firms marginally prefer to keep their knowledge as a trade secret). But trade secrets are also vulnerable by the local affiliate's employees quitting and joining a rival, as well as through surreptitious hacking or stealing. Some US, Japanese or European technology is "voluntarily" if grudgingly shared under long-standing Chinese regulations compelling FDI investors to ally with a local firm under licensing or equity joint venture arrangements as a condition of market entry,

A senior Chinese official put it bluntly, reportedly stating that "*China's offer to the world has been straightforward…Foreign companies are allowed to access China's markets but they would need to contribute something in return: their technology.*" (Wei and Davis (2018)). Withdrawing from China, for fear of technology leakage, then becomes another dilemma for the MNE, because of the enormous size and value of the Chinese domestic market (Witt et al., 2021). Another factor in deciding to *not* decouple is that by 2025, Chinese technology in a few areas has become cutting edge, and worthy of learning and imitation by foreign firms.

Finally, in the Developed Country/Localization upper-left quadrant in Table 1, some US and Japanese firms seek tariff or regulatory protection against lower cost or technically superior imports. Ironically, even mature companies such as Intel (until a few years ago, a technical leader in computer chips) or First Solar (photovoltaics) base their claims for protection with arguments similar to the infant-industry argument, on the grounds that they lack the scale and cutting-edge technology of their Chinese rivals (Luo & Van Assche, 2023). Policies in Europe and the US to create such "national champions" is littered with more failures and misdirected and wasted capital expenditures than successes (Chang & Andreoni, 2020; Falck et al., 2011). China may be an exception.

The very rationale for the existence of MNEs is the gains achieved from cross-border integration. That rationale may be somewhat more circumscribed by geopolitics, but does not disappear. In the upper right quadrant of Table 1 we see that MNEs from developed nations continue to desire greater integration across national borders for both seeking and accessing foreign markets as well as using other foreign locations as supply chain hubs for efficiency-seeking (i.e., cost reduction reasons). Earlier sections of the paper have sufficiently identified major constraints emerging in the new turbulent environment post-2017, such as FDI screening, increasingly intrusive host government mandates (such local-value-added minimums, job creation quotas and forcing local partners and technology transfer), tariff and non-tariff barriers (affecting both foreign market access as well as the ability to use a particular foreign location as a supply chain source) and finally, limited or constrained access to foreign markets because of geopolitical aversion or stigmatization (Zhou et al., 2025).

5.2. Perspectives and major concerns of MNEs from developing countries

Developing country-based MNEs have somewhat different concerns and desires. *Ipso facto,* MNEs based in developing nations are smaller and more vulnerable than their counterparts in advanced nations, and their governments also typically have lower bargaining power and defense against geopolitical pressures. They are more concerned about being forced into rival geopolitical "camps". Under one gloomy scenario of future globalization, the world may devolve into a US and EU-led camp and a China-led camp, with firms in other developing nations deliberating which camp to belong to, or the dangers of being labeled neutral and ostracized by both (Gopinath et al., 2025; Luo & Tung, 2025). This scenario may have a lower probability but has sparked concerns and debates in many developing nation capitals from Brazilia to New Delhi (e.g., Heine, 2025; Rao et al., 2025).[13]

Things have not gone beyond deep concerns. However, in terms of tariff vulnerabilities, resisting either camp and trying to remain neutral from China and the US, both Brazil and India were subjected, in 2025, to the highest tariff of 50 % levied by the Trump administration. In a trade dispute developing nations, generally speaking, lack the retaliatory power of a China. Moreover, reciprocal tariff increases only hurt the developing nation's import customers with an additional tax, without eliciting concessions from a larger power like the US (Contractor, 2025).

Williamson's (1985) "asset specificity" in the context of GVCs refers to the fact that specialized assets such as machinery located in a vendor country, often is so specialized to a particular component or product (i.e., a dedicated design) that the asset has no (or few) alternative uses or value if the supply-chain arrangement is terminated due to geopolitical considerations. This is a major concern (and limitation) in the reconfiguration of international value chains; something explored in more

[12] In general, patent filings provide imperfect and invidious comparisons, since the industry and sector mix varies across countries, as does the propensity to file patents. Bonuses and promotions said to be offered to Chinese employees and scientists increase their propensity to file. With such extra incentives, domestic filings in China exceeded those in the US as early as 2011. On the other hand, PCT patent filings are somewhat more indicative of the worldwide commercial value of a technology.

[13] Resisting either camp and trying to remain neutral from China and the US, both Brazil and India were subjected, in 2025, to the highest tariff of 50 % levied by the Trump administration.

detail in Section 6.1 below when discussing MNE location flexibility.

In the lower right-hand quadrant of Table 1, we see that developing nations continue to desire greater participation in GVCs for job creation and upgrading skills in their countries, and learning technology by becoming suppliers and vendors (Gereffi & Sturgeon, 2013). According to an ILO survey, India has as many as 400 million persons who are marginally or seasonally employed, or unemployed. While India excels in certain services and digitalization, these services create few jobs, occupied by educated English-speaking elites. On the other hand, manufacturing GVCs can employ tens of millions after relatively modest training. By the same token, the welcome mat is still available for incoming market-seeking FDI in developing nations. But both efficiency-seeking FDI as well as market-seeking FDI, while desired by developing countries, is in danger of being constrained by a more turbulent geopolitical environment.

6. MNE responses and adaptations: altered strategies and new GVC configurations

In this section of the paper we examine how MNEs have, and can, adapt and respond to a more turbulent business environment. Strategy formulation in the golden era of globalization (1980 – 2016) was much simpler and more predictable, as governments around the world retreated from interventionism or industrial policies and opened their doors wider to inward FDI. Where to locate a new affiliate was determined mainly on economic grounds, such as purchasing power of consumers in the foreign nation, and labor and transportation costs. With increased product standardization in many sectors, MNEs had to compete by lowering prices, which entailed cost-cutting. To lower costs, firms scoured the globe, looking for offshore locations in which to perform certain pieces or slices of their value chains (Contractor, 2025 Appendix).

But the vulnerability of cost-minimizing and efficient GVC configurations was manifest after Covid19, and certainly in today's new era of geopolitical tensions. Strategies have shifted from extreme efficiency-seeking to a security-driven agenda, also bending to the recent surge in government mandates and industrial policies (Gereffi et al., 2025). Almost inevitably, this strategy shift and transitions described below come with a grudging acceptance of higher costs that such transitions entail.

6.1. Geographical relocation

International business now must contend with geopolitical as well as tariff uncertainties. On the output or marketing side (i.e., the selection of foreign markets to sell in), firms can be affected by politics and consumer sentiment or boycotts.[14] On the input or procurement side, the MNE has to decide (i) how many "fragments" or "slices" to chop their value chain or GVC into, (ii) which country to locate each slice, and (iii) the degree of investment in each slice (each GVC location) with a view to flexibility or reversibility, in case tariffs or fluctuating geopolitics affect that location in the future.

Flexibility and "resilience" remain strategic considerations on the marketing side, to cope with geopolitical disruptions, tensions and techno-nationalism. This is a considerable concern (mainly in the US and EU) that has led several of their MNEs to freeze or reduce operations in China (Luo & Van Assche, 2023). Withdrawal from the Chinese domestic market, in some cases, is also motivated by the fears of unintended knowledge spillovers (Contractor, 2019). In sheer population size and income, China is one of the world's most attractive markets for many companies, but restrictions imposed by its government can greatly diminish that potential. As one of many examples of increasing tensions, consider the notice prohibiting employees in Chinese government agencies and state-owned enterprises (accounting for roughly half of China's GDP) from bringing foreign company mobile phones (Apple, Samsung, etc.) to work. Apple Inc. is plateauing assembly operations in China and adding more manufacturing value in geopolitically alternate nations such as Vietnam and India (which also have growing internal markets).

Decoupling a company's GVC from China is also difficult because of knowledge clusters in that nation where certain regions or towns specialize in making just one product or group of products with great cost efficiency and innovation (Xu et al., 2022). Embedded suppliers, sub-suppliers and sub-sub-suppliers, after decades of network interaction, simultaneously compete and co-innovate. As a result, Chinese clusters constitute an international supply chain hub whose cost efficiency and designs can hardly be reproduced quickly in other countries. Nevertheless, with difficulty and considerable transition costs, geographical "switching" can occur. The paper by Yücesan (2025) in this Special Issue, using models with variables at the macro, GVC and micro or behavioral levels, proposes a list of countries that could benefit as alternate sources, when MNEs shift production away from China.

In the case of trade restrictions and tariffs in apparel, automotive, and electronics, Gereffi et al. (2021) show how MNEs adopt both "switching" strategies (production, market, and supplier switching) and "upgrading" strategies (both product and functional upgrading) to maintain their international competitiveness despite restrictive trade policies. Both strategies affect the geographic location and organizational reconfigurations of GVCs.

Locational flexibility can derive insights from some aspects of transaction cost theory (TCT). For example, when considering "reshoring" or friend-shoring" or the relocation of an existing production operation away from one nation to another, the TCT concept of "asset specificity" or dedicated assets can be a major consideration for many firms. Williamson (1985) suggests that asset specificity is a fundamental factor in organizational design and governance. Here this is extended to international business. Specialized factory equipment, personnel, or real assets located in one country may not be transferable, and have few alternate uses, or a much-reduced sale value, if an MNE withdraws from the country in question. A relocation away from such a nation can impose large losses or costs on whoever owns such assets (either an MNE subsidiary or an independent supplier). From the perspective of a prospective new supplier in another country, today's turbulent global environment demands caution. Such a supplier will hesitate to invest in assets that are specific to, or highly dependent on, an MNE's designs and supply chain needs. They may fear that future tariff changes or geopolitical realignments could prompt the MNE to act opportunistically and withdraw, leaving the local partner with few alternative uses—or resale value—for its "dedicated" assets (Cuypers et al., 2021).

6.2. Multiple suppliers

In the quest for cost efficiency, some firms previously relied on just one supplier in the lowest-cost-country location. Post-Covid-19, even when the sole supplier may be their own foreign affiliate, they prefer to add one more supplier in order to reduce risk. Diversification by number of suppliers in more than one nation has obvious risk-reduction advantages (often mentioned under the rubric of "China +1"). As Contractor (2021) indicates, adding suppliers should be a carefully thought-out strategy, balancing the often-higher average cost per unit of procurement, versus the benefit of risk reduction.

Several variables enter into the calculation, such as Minimum Economic Scale (MES) to produce the item. In producing some items, the engineering or factory economics may dictate a large scale or volume of production to bring average costs down. In that case, having multiple supply locations, at less than optimum scale or MES in each, can significantly increase costs. In that situation, the factory-level economics

[14] Illustrated in the 2025 reluctance on the part of Canadians to buy US brands. Or the travails of Swedish companies like H&M in China (Bohman & Pårup, 2022).

will instead point towards fewer factories, or just one large-scale plant. On the other hand, a small MES for a product facilitates multiple locations without too much of an increase in per unit costs.

Labor cost comparisons in multiple locations will obviously matter in comparison with the lowest-cost location. Tariff differences in the destination nations (depending on the country-of-origin label) can also determine the location and number of suppliers, although the MNE must also navigate (and calculate for) each import/destination country's rules for "nation of origin" in terms of what percentage of value is added in which location in its GVC.

Studies such as Alfaro and Chor (2023) found for the period 2017–2022, a significant correlation between the reduction in US sourcing from China and an increase in sourcing from Vietnam and Mexico, likely because Chinese companies shifted production to Vietnam and Mexico to avoid tariffs on China-labeled products. This has recently led to a tightening of the "substantial transformation" criterion of the US Customs and Border Patrol when scrutinizing each import shipment, as well as auditing of exporter and import documents for shipments coming into the US (Contractor, 2025). Now that the US and other importing nations have become more alive to the issue of "transshipments", even GVCs configured on purely economic considerations can be subject to allegations of "transshipment" designed to evade tariffs.

6.3. Increasing inventory holdings

Inventory is nothing but insurance against stockouts, which can stop or slow assembly lines and curtail sales of the final product. Since more than half of world trade is now in intermediate inputs rather than finished items, a stockout of a component adversely affects not only the focal firm, but also its downstream GVC partners and buyer companies.

Maintaining larger inventories is a potential remedy. But inventories are merely dead capital, incurring interest, warehousing, depreciation, real estate, and management overheads, as well as obsolescence risk. It is again a "higher cost vs. higher degree of assurance" calculation. Inventories are a significant cost for business. Inventory-to-sales ratios for US firms have been rebounding since early 2021 (according to the US Census Bureau). And in the coming turbulent era they are likely to rise further as a hedge against geopolitical risk and tariff uncertainty.

Seeking overall GVC "resilience" involves carefully assessing the cost/risk tradeoffs between multiple variables and calculations. For example, in determining appropriate levels of inventories along the international supply chain, too much inventory can be suboptimal because it raises inventory carrying cost. The same applies to determining the optimum number of suppliers and the number of geographical locations.

Multiplicity reduces risk and uncertainty. But multiplicity increases the per unit average cost of the procured item. Despite being in a turbulent world, cost and cost-based competition remain a paramount factor or consideration for MNEs in a still-hypercompetitive world.

6.4. Non-market strategies and lobbying

The rules-based system of trade and FDI that evolved during the 1980 – 2016 period of globalization was far from perfect. But it now appears to be in danger of devolving into company and industry-specific concessions, exemptions and subsidies negotiated individually with governments. IB scholars have adopted the label "Non-Market Strategies" which covers not only lobbying with governments but also how MNEs need to contend with civil pressure groups and NGOs representing environmental concerns, climate change, labor rights, income inequality and myriad other causes (Shirodkar et al., 2024).

Case-by-case negotiations between MNEs and governments are increasing over issues such as removing bureaucratic obstacles to FDI or trade; tariff exemptions; waivers and refunds; local-value-added mandates; subsidies; loans and loan guarantees; and export controls (Doh et al., 2022). Of course, such MNE-government negotiations can be protracted and costly. It was several years before Boeing's negotiations with the Indian bureaucracies (state and federal) resulted in forming its India Engineering and Technical Center with a reported investment of US$ 200 million, the largest of its kind outside the US. Apple struggled for years with the Indian federal government, local labor laws and state governments before it could implement its "China + 1" strategy. Individualized MNE-Government negotiations appear to be somewhat of a throwback to the pre-globalization era prior to the 1980s (Fagre & Wells, 1982).

The 2025 round of Trump tariffs may be seeing a repeat of the lobbying and "diplomacy" seen in the first Trump administration, when nearly a half million appeals for exemption or reduction of tariffs were made to the US Commerce Department. Only a fraction – some 13 % – were successful. But that amounted to as many as 65,000 companies whose requests were granted in part or full. Fotak et al. (2023) suggest that there was evidence that hiring consultants or lobbyists, and having the correct political party orientation, favored successful applicants. All the above suggests an increased cost of doing business. But when the strategic benefits outweigh the delays and costs of negotiation, it is worthwhile for MNEs. The Shen, Giroud & Han (2025) paper in this special issue proposes new ways to analyze risks and reviews 111 papers on how MNEs have used non-market strategies to mitigate risks.

6.5. Seeking additional efficiencies in GVCs by augmenting supplier relationships and digital technologies

In a turbulent world, tariff increases, as well as the foregoing strategic adaptations – namely geographical reconfiguration of GVCs, additional suppliers as a backup, marginally increasing inventories and "non-market strategies" – portend significantly increased costs of IB in the future. But there can be some redress for MNEs who seek further efficiency improvements that offset the higher costs of adaptation. Several studies conclude that deepening relationships with foreign suppliers, building trust and mutual forbearance, and exchanging ideas can yield efficiency benefits in terms of lower procurement costs, better logistical execution, and joint designing which yields superior product or service designs.

A supply chain vendor is a partner. In alliances, almost inevitably, the benefit/cost/risk "package" accruing to each partner at the time of initial negotiation, will alter as the business environment changes. Hence the net benefits and profits accruing to each partner will change in ways that cannot be foreseen. Corporate lawyers and negotiators are indeed getting better at devising contingency or real-options clauses in agreements. But especially in a turbulent world, no one can foresee all future contingencies. Apart from spot contracts, most supply chain arrangements are medium-to-long-term relationships which, in a less predictable or uncertain world, require flexibility and forbearance and a willingness to renegotiate alliance agreement terms, if needed, for more stable partnerships (Buckley & Casson, 1988).

Hence, stronger social relationships between alliance partners – and the time invested in building the relationship – can partially substitute for, and be superior to, detailed contract clauses (e.g., White & Lui, 2005). Augmenting technical as well as logistical training given to the GVC partner can yield benefits in (i) better delivery coordination and (ii) with joint R&D, better or simpler designs, or (iii) the use of alternate materials that reduce production cost.

Ultimately, upgrading a contractual alliance into an equity joint venture (EJV) where the engineers and managers of the partners interact daily, signifies the deepest relationship and commitment. That said, with very capable allies such as in China, an EJV also increases the likelihood of unintended technology leakage to opportunistic partners, unscrupulous employees, or simply when an EJV employee leaves the company, carrying his/her knowledge with them to a rival firm (Contractor, 2019). The paper in this Special Issue by Sacco et al. (2025) presents insightful case studies in the pharmaceutical and medical devices domain – a sector particularly affected by turbulence during

Covid-19 and afterwards - on how these firms used "collaborative governance" or stronger relationships and multiple sourcing to be more resilient.

Informational asymmetries in supply chain relationships produce suboptimal results when a vendor is not fully apprised of the buyer's standards and expectations regarding quality, sustainability, labor conditions and delivery (Pietrzak et al., 2020; Vosooghidizaji et al., 2020). Imperfect coordination can be improved with better relationship building, and training. The paper in this Special Issue by Choksy et al. (2025) shows how better task management and task codification leads to superior resilience in supply chain partners in South Asia.

For delivery and logistics, we are still in a situation where buyers in one country do not know the exact status of their order placed on a supply chain partner in another nation. Kano & Verbeke (2015) describe inadequate information and verifiability across a geopolitical divide as "bounded rationality" and reliability. Recent digital technologies provide a partial solution or improvement to this. In some international supply chains, buyers and vendors mutually agree to give real time access to partitioned portions of each other's computers, thereby making the status of an order visible, in terms of scheduling, production and shipment (Yang et al., 2021). In the case of multiple suppliers linked in a supply chain arrangement, coordination is more important since delays or imperfections in one link in the chain can affect all the others. Centobelli et al. (2022) explore the use of blockchain technology where any action by one vendor, or segment of GVC, is immediately transparent to others and the buyer, thereby reducing transaction costs, delays and other costs. Delivery tracking is increasingly enabled by satellites during sea voyages, and cell tower triangulation and RFID on land. AI programs forecast demand, global prices, weather, cargo capacity, shipping cost and routing alternatives, and geopolitical impacts. AI can make marketing and final price recommendations, and aid in customs clearance, better planning, end-to-end visibility, and delivery assurance, thus reducing the overhead cost of international supply chains (Sharma et al., 2022). Such efficiency gains offset the higher costs in a turbulent environment.

7. Some possible directions for future globalization

The rise in nationalism and populism around the world is likely to remain a factor in strategic planning by MNEs. Although Witt et al. (2021) use the word "de-globalization" their actual commentary suggests a change, rather than retreat, in international trade and FDI. In the past several years, the absolute magnitude (measured in current dollars) of the total of all countries' exports has kept increasing (and FDI as well, until 2022). It is also true that exports and FDI divided by GDP as a ratio has been flat, or decreasing, as reported by Altman & Bastian (2025) and other sources. But that may simply be true because the denominator of the ratio (i.e. GDP) grew, over the years, faster than the numerator – growth of exports and FDI occurring, but not keeping pace with the growth of world GDPs.

In past centuries, there have been many periods of turbulence in IB. At the time of this paper's writing, the US is a main locus of uncertainty in the IB environment. The US remains the world's largest importer, and largest economy accounting for 26.5 % of world GDP at current exchange rates for the US dollar in early 2025. But to view things in a larger perspective, using Purchasing Power Parity (PPP) exchange rates, the US occupies only 14.8[15] percent of world GDP (World Bank Data, 2025) and the US share in world imports (albeit the biggest amongst nations) is only 12.45 % – a share that has been declining since the year 2000. The rest of the world continues to believe in the *net* advantages of globalization.

The underlying imperatives of globalization will not easily cease, barring catastrophes or global upheavals. These include comparative and created advantages of countries, low transportation costs to value ratios, billions in relative poverty willing to work for a pittance, and innovation that gives export and investment advantages to knowledge proprietors. It is more likely that globalization (as measured by the absolute value of total exports, FDI and licensing) will not decline (except perhaps as a ratio or percentage of world GDP because the latter may grow faster).

7.1. Two contrasting views about the future of globalization

Two contrasting scenarios present themselves. In one, the pre-2016 variety of globalization, undergirded by universal norms and rules, may devolve into two hegemon-centered camps, each having its own institutions, norms and participants as envisaged by Gopinath et al., (2025) or Luo & Tung (2025), while smaller or developing nations face a dilemma as to which camp to join or remain neutral (Adarkwah et al., 2025). The other is where, after a temporary period, most countries with IB stakes return to a system of common negotiated rules, motivated by the mutual net benefits derived from comparative advantage and FDI.

The story of humankind has been one of intellectual and economic progress based on cooperation, more than competition, in increasing-size organizational groupings, advancing from small hunter-gatherer bands to city states, to corporate strategic alliances (Contractor & Lorange, 1988) and recently, cooperating nations. All modern economics and international business are based on trust across a geographical distance, where transacting parties may not meet each other face-to-face, if ever. Business and economics function because they are undergirded by institutions. An institution may have an imposing building in some country location, but institutions really consist of mental pathways and rules governing behavior, obligations and restraints that parties subscribe to. Darwin (1859) was less than half right in his early work (*On the Origin of Species*) when, based on observations of animal behavior, he emphasized competition more than cooperation. But even nature is not always red in fang and claw.[16] In his later work *The Descent of Man* (Darwin, 1871) when analyzing cooperating species and humankind, he alluded to qualities of cooperation, forbearance and empathy when he wrote "…*those communities, which included the greatest number of the most sympathetic members, would flourish best,…*"

The concepts of "markets", as mere transactions, was broadened by Hayek (1960; 2022) by adding the notions of collaboration and community. He used the term "catallactics" which signifies not just cold-blooded or adversarial market "exchanges" but envisions the counter-parties bound in a community with shared norms and institutions, which has the result of converting adversaries into cooperating actors. The framework for economic cooperation can encompass not just markets and governments but as Ostrom (1990) details, also should include non-governmental civil institutions for multilateral governance that engender the global collective actions needed to develop new economic opportunities, and to sustain shared norms.

In a turbulent IB environment, even though multilateral or global institutions such as the WTO have eroded, regional trade and investment treaties provide a partial refuge from uncertainty, especially for nations that are smaller or have weaker bargaining power because treaties provide a more predictable framework for investment and transactions

[15] The estimates of the US share vary up to 19 %, simply because PPP exchange rates are a theoretical construct, with different economists and accountants using different "baskets" of goods and services to compare overall price levels across countries.

[16] Paraphrased from a poem by Alfred, Lord Tennyson: *In Memoriam A.H.H.* in which he literally writes the opposite that "Tho' Nature, (be) red in tooth and claw", (parentheses added) the baser and brutal aspects of nature are superseded by the fact that "…love (is) Creation's final law" (parentheses added). Thus, Tennyson alludes to a higher law of Creation (God) underlying and elevating human activity and relationships above and beyond the rapine behavior observed in animal natures.

based on commonly subscribed rules. Of course, many nations are now signatories in multiple bilateral and regional treaties such as Mercosur, EFTA, RCEP and so on, each having its own provisions, rules and norms. This proliferation of bilateral and regional treaties (as opposed to global or universal rules) makes planning and strategizing more complicated than in the 1980 – 2016 multilateral period of globalization. But they provide a refuge from tussles between hegemons, and diversification, which ameliorates geopolitical uncertainty.

Whatever the future course of globalization, the imperatives of comparative advantage and the mutual net (if not necessarily equally-accruing) benefits of trade, FDI and international licensing of intellectual property as vehicles for IB, will remain and can be realized more fully in a common destiny for humankind.

Data Availability

No data was used for the research described in the article.

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