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More than meets the eye

Exploring the shadow architectures of global value chains

Berlin, July 2026

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1. Introduction

In 2024, global merchandise trade was valued at US$25 trillion, while international services trade approached US$8 trillion (UNCTAD, 2025). By 2025, the total value of global trade exceeded US$35 trillion for the first time, with growth in services outpacing that of goods (UNCTAD, 2026). These figures are comparable to the combined nominal Gross Domestic Products (GDPs) of Brazil, China, Germany, Japan, and the United Kingdom, which together account for roughly one third of the world's nominal GDP. They underscore not only the immense magnitude of contemporary trade, but also the profound transformation of the world economy since the end of the Cold War.

Global value chains (GVCs) have been a core instrument in the unfolding of deep globalisation, in which cross-border trade increasingly centres on components and intermediate goods rather than finished products – a phenomenon described as the "second unbundling of globalisation" (Baldwin, 2006). From a conceptual perspective, GVCs can be understood as organisational arrangements in which production processes are fragmented across firms and borders, yet remain coordinated through contractual, managerial, and governance mechanisms designed to manage transaction costs and control (Antràs, 2019).

In this paper, global supply chains are understood as the logistical and operational infrastructures through which inputs, goods, services, and information move across firms and borders, while GVCs refer more broadly to the organisation and governance of value creation, capture, and distribution across those processes. Current estimates suggest that around 70 per cent of international trade is linked to GVCs and their underlying supply-chain infrastructures (OECD, no date; UNCTAD, 2026). This is reflected in the composition of trade: intermediate goods account for nearly 60 per cent of global merchandise trade (UNCTAD, 2025), while intermediate inputs represent more than 70 per cent of services trade (UNCTAD, 2026).

These data underscore the scale and influence of the contemporary "GVC world" (Mayer and Phillips, 2017). They also explain why GVCs are often described as the "backbone and central nervous system of the world economy" (Cattaneo, Gereffi, and Staritz, 2010, cited in Phillips, 2017: 430). Since the turn of the millennium, GVC terminology has rapidly become standard within transnational corporations (TNCs) and international organisations. As Gary Gereffi and Raphie Kaplinsky (no date) note, and as reflected in the wider GVC literature, the framework also moved quickly from academic debate into policy and development practice. This trajectory matters analytically. It helped standardise what counts as "GVC analysis", often privileging chain mapping, upgrading, and private governance, while leaving questions of legal enforcement, tolerated rule-evasion, and opacity more easily treated as contextual.

The framework has inspired substantial academic inquiry in business, international economics, and the social sciences, leading scholars and policy makers to integrate GVC perspectives into models and strategies for economic development. During the era of the Washington Consensus and rapid industrial integration on a global scale, GVC analysis became widely adopted. Enhanced efficiency and reduced costs facilitated by just-in-time production, driven by breakneck advances in communications and transportation technologies, seemed to signal a new phase of "global convergence" (Barro & Sala-i-Martin, 1997; Sachs & Warner, 1995). Development economists, concerned about the potential benefits to developing countries, contributed research on upgrading within GVCs.

Until recently, corporations and governments rarely treated the vulnerability of GVCs as a problem requiring sustained institutional and regulatory transformation. The global financial crisis of 2008–2009 severely disrupted international trade and production networks, prompting renewed attention to the fragility of GVCs and their developmental implications (Cattaneo et al., 2010). In the years that followed, however, corporate and policy responses largely focused on restoring trade flows and stabilising production networks rather than reconfiguring the legal and governance architectures of global production. More recent shocks, including the COVID-19 pandemic, wars in Ukraine and the Middle East, and intensifying geopolitical competition, have reopened these questions more fundamentally. They have accelerated shifts away from cost minimisation and just-in-time production towards resilience, security, and strategic control (Rustad, 2025; Solingen, 2025).

This evolving landscape, often described in political discourse as permacrisis or polycrisis, underscores a reality obscured during the period of neoliberal ascendancy. GVCs are not merely technical arrangements for efficiency. They are large-scale institutional structures that shape international economics, law, and power relations, including the diffusion and reconfiguration of state authority in the world economy (Strange, 1996). They serve as repositories and vectors of global power, disproportionately benefiting large corporations and political elites, predominantly in advanced economies. Access to, and upgrading within, GVCs has generally remained limited for developing countries. Current pressures for risk mitigation by states and firms may reshape global production in ways that further entrench existing inequalities. In this sense, recent disruption is not simply a temporary "shock" to an otherwise stable model of industrial development. It is part of a broader transition away from business as usual (Kaplinsky & Morris, 2025), one that can also intensify incentives for legal insulation, regulatory arbitrage, and other forms of legal elasticity addressed in this paper.

The extensive body of GVC research developed over the past twenty-five years offers valuable insights into these dynamics (Kano et al., 2020).[1] Nonetheless, much of this

[1] A substantial body of literature now exists on GVCs and related concepts, including global commodity chains (GCC) and global production networks (GPN). Offering a comprehensive overview is outside the scope and

literature has remained focused on firm-level governance, upgrading trajectories, and value capture, often treating political, legal, and institutional factors as contextual rather than constitutive (Dallas et al., 2019; Gereffi et al., 2006; Frederick, 2019). In particular, mainstream GVC research has largely taken legal compliance as a background assumption, devoting limited attention to the role of illicitness, opacity, and selective enforcement in the organisation and everyday functioning of global production networks.

This paper argues that such an omission is analytically consequential. Rather than being peripheral or exceptional, illicitness is frequently constitutive of GVC architecture and governance. To capture this, the paper distinguishes between *illegal* practices, which formally violate statutory law, and *illicit* practices, understood more broadly as unauthorised, normatively proscribed, or rule-evading activities that may be illegal, quasi-legal, tolerated, or rendered effectively permissible through selective enforcement and jurisdictional fragmentation. Adopting a political economy perspective, the paper conceptualises GVCs as legally elastic systems in which structurally produced opacity enables selective and uneven enforcement, allowing illicit practices to become systemic rather than exceptional.

Building on this perspective, the study introduces the concept of shadow architectures to capture how regulatory arbitrage, legal insulation, useful illegality, wilful blindness, strategic negligence, and plausible deniability interact to stabilise illicit outcomes within formally legal GVCs. The concept does not replace existing accounts of outsourcing, regulatory arbitrage, private governance, or labour exploitation. Rather, building on established GVC insights into power asymmetries and risk externalisation, it extends the framework by making legal elasticity, enforcement gaps, and the governance of illicitness central to the analysis of global production. Its contribution is to specify how otherwise familiar dynamics combine into durable governance arrangements that produce opacity, shift responsibility, and make rule-evasion compatible with formal claims of legality.

In contrast to approaches that treat illicit trade and production as operating outside the licit global economy, this framework challenges rigid licit–illicit binaries and highlights the ways in which rule-evasion and selective non-enforcement are integrated into the governance of global capitalism. However, it does not claim that illicitness is universal across GVCs, nor that it operates uniformly across sectors or regions. Rather, it advances a conditional argument: illicit practices are most likely to emerge and stabilise where global production combines jurisdictional fragmentation, extensive subcontracting, logistics-intensive infrastructures, limited traceability, strong asymmetries between rule-setting and risk-bearing actors, and uneven enforcement. These conditions are especially pronounced in long, multi-tiered GVCs and in enclave spaces such as ports and special economic zones. Where production

intention of this paper. Instead, the analysis draws on a purposive selection of sources listed in the references section.

is more vertically integrated, regulation denser, traceability stronger, or labour organisation more effective, the scope for illicitness may be constrained, though not eliminated. Illicitness is thus treated as a recurrent governance outcome under specific structural conditions, rather than as an inherent feature of global production.

The paper proceeds in three steps. Section 2 situates the GVC framework within its historical and theoretical origins. It shows how earlier traditions in international political economy foregrounded structural inequality and power asymmetries that later GVC research partly bracketed. Section 3 develops a political economy framework for analysing illicitness within GVCs. It conceptualises GVCs as legally elastic systems and introduces the mechanisms that together constitute their shadow architectures. Section 4 concludes by outlining a forward-looking research agenda centred on seaports as critical empirical nodes where these shadow architectures become particularly visible. It proposes an initial focus on the Colombian ports of Buenaventura and Cartagena, followed by a comparative extension to European ports characterised by different configurations of authority and enforcement.

2. Historical origins and theoretical foundations of the GVC framework

While the contemporary study of GVCs is closely associated with the post–Cold War era of globalisation, its intellectual lineage extends to earlier debates on international political economy, logistics, and power asymmetries in global trade. In the decades following World War II, the focus of logistics and supply chain analysis was on how emerging transnational corporations (TNCs) from advanced industrial economies secured access to raw materials for industrial expansion and reconstruction. Corporate strategies in the 1950s and 1960s typically revolved around operational efficiency and cost minimisation within vertically integrated firms, with production largely managed in-house or within a single country. Even as outsourcing increased, TNCs often retained direct control over overseas facilities, especially in developing economies (Balaam & Dillman, 2019).

The global economic landscape shifted dramatically with decolonisation and the intensification of Cold War geopolitics. New critical perspectives emerged, most notably the dependency paradigm (DP) and Immanuel Wallerstein's World System Analysis (WSA), both rooted in structuralist thought. These frameworks foregrounded the persistent inequalities in global trade, highlighting how structural asymmetries and deteriorating terms of trade disadvantaged developing countries (Cardoso & Faletto, 1979; Dos Santos, 1970; Frank, 1967; Wallerstein, 1974). Such critiques questioned the notion that global trade produced mutual benefit, instead drawing attention to the uneven distribution of gains – concerns that would later resurface in GVC research (Weissenbacher, 2024). Policy responses included import substitution industrialisation (ISI), particularly in Latin America, which aimed to reduce reliance on international markets (Baer, 1972; Cardoso & Faletto, 1979; Furtado, 1964).

The subsequent decades saw profound transformations in production, finance, and trade, driven by technological change and waves of deregulation. This led to the vertical disintegration of many TNCs, who, under competitive pressure and seeking higher profits, increasingly outsourced low-value production segments to emerging economies – while retaining high-value functions such as design, branding, and marketing (Balaam & Dillman, 2019; Kaplinsky, 2000; Gereffi et al., 2001). The rise of China as a global manufacturing powerhouse further accelerated this shift. International trade patterns evolved from inter-industry to intra-industry trade, with a surge in cross-border flows of intermediate goods and components among newly industrialising economies. Meanwhile, many developing countries remained locked into less differentiated, resource-based exports (Kaplinsky, 2000).

The emergence of research on global commodity chains (GCCs), global production networks (GPNs), and later GVCs, reflected a need for analytical tools capable of tracing how structural asymmetries are reproduced within and across cross-border production systems. Work on GCCs, arising in the 1990s and deeply influenced by

WSA, focused on the macro-level power dynamics between lead firms in the industrialised North and suppliers in the developing world. It distinguished between buyer-driven and producer-driven GCCs, each with distinct governance structures and implications for value distribution. In both cases, wealth generation was found to be concentrated in the hands of lead firms or TNCs in advanced economies (Gereffi & Korzeniewicz, 1994; Bair & Werner, 2011).

In the 2000s, economic geographers advanced the GPN concept, emphasising networked and multi-scalar configurations of production over the linearity of "chains." GPN scholarship broadened analysis beyond lead firms to include states, labour, and civil-society actors (Coe et al., 2008; Smith, 2015), while early GVC research highlighted how structural asymmetries in chain organisation constrain upgrading and unevenly distribute risks (Kaplinsky, 2000). This approach brought greater nuance to research on the uneven geographies of global production, but often retained a commodity focus rather than tracing the full sequence of a product, from design to consumption.

The consolidation of GVC analysis coincided with the rise of new manufacturing hubs, particularly in East Asia, and the growing complexity of economic globalisation. GVC research, in contrast to GCC and many GPN approaches, is oriented toward mapping the sequence of activities through which value is created and captured across production stages. It operationalises governance in terms of how lead firms coordinate relationships and control key "nodes" within GVCs, with a strong emphasis on micro-level firm dynamics and influential governance typologies (Gereffi et al., 2006). Building on Michael Porter's work on national value chains and competitiveness, GVC research also addresses strategies for enhancing firm performance in the global marketplace (Porter, 1985, 1990).[2]

Yet Porter's approach has been critiqued for neglecting structural inequality, corporate power, and institutional context. These issues are central to the argument advanced in this paper. International development scholars, including researchers based at Duke University and the Institute of Development Studies (IDS) at the University of Sussex, sought to address these gaps. They examined the prospects for upgrading firms from the global South and advocated broader, multi-stakeholder approaches (Kaplinsky, 2000; Gereffi et al., 2001, 2006; Weissenbacher, 2024; Bair & Werner, 2011; Dicken, 2007; Smith, 2015). These efforts pushed the GVC literature to engage more deeply with governance, institutions, and global divisions of labour. They also align with this paper's call to foreground power, illicitness, and the structural conditions shaping GVC dynamics.

[2] As China and India, for instance, built high-tech industries, GVC analysis shifted to global corporate competitiveness. Value creation increasingly comes from branding and intellectual property, as seen with US companies like Nike and Apple, who gain more by owning brands and patents than by manufacturing.

Seen through this lens, the historical consolidation of GVC analysis is also a story about the diffusion of a socio-techno-economic paradigm: as the framework was institutionalised and translated into the toolkits of international organisations and development agencies, it tended to reward forms of evidence and explanation that are legible to policy practice (Gereffi & Kaplinsky, no date). One implication is that issues such as enforcement discretion, legal insulation, and tolerated illicitness – central to the argument advanced in this paper – could be backgrounded as “context” rather than treated as constitutive features of how many GVCs are governed.

Reframing GVC and GPN frameworks through International Political Economy (IPE)

Consistent with the argument set out in the introduction, contemporary GVC analysis needs to move beyond a narrow focus on firm-centred dynamics. It must also account for the broader political, legal, and institutional environments in which GVCs operate. The GVC framework, as both an analytical device and a metaphor, captures the interconnectedness of modern global production. Yet it can obscure how governance, power, and illicitness are embedded within and across these structures (Gereffi & Fernandez-Stark, 2019). Much of the literature examines coordination between firms and the capture of value along production sequences (Gereffi et al., 2006; Gibbon et al., 2008; Mayer & Phillips, 2017). It has paid less attention to the constitutive role of extra-firm actors and institutions highlighted by international political economy research on the reconstitution of a global public domain (Ruggie, 2004).

Gereffi and colleagues’ widely cited typology of GVC governance identifies five types of coordination between lead firms and suppliers, mapping the spectrum from arm’s-length market relations to hierarchical, vertically integrated structures (Gereffi et al., 2006). This typology has been central to understanding how power and value capture are distributed *within* GVCs. Nonetheless, this firm-centred approach only partially engages with the full complexity of GVCs. A parallel tradition, especially in economic geography and associated with the Manchester School’s GPN scholarship, stresses the “embeddedness” of global production in specific institutional, regulatory, and social contexts (Dallas et al., 2019; Ponte and Sturgeon, 2014). This perspective foregrounds how rules, norms, and governance structures beyond the firm – including those produced by states, international organisations, social movements, and even illicit actors – shape GVC dynamics and outcomes.

Despite calls for a broader analytical lens, mainstream GVC research continues to privilege private governance and formal institutions, often treating the roles of states, civil-society organisations, and especially transnational organised crime networks as peripheral to the analysis of illicitness and enforcement (Clelland, 2014; Eckhardt & Poletti, 2018; Mayer & Phillips, 2017). However, as argued in the introduction, a more realist and politically attuned approach is necessary – one that recognises GVCs as historically contingent structures serving powerful economic, political, and geostrategic interests, and that interrogates how GVCs reproduce or deepen global inequalities (Mayer & Phillips, 2017; Phillips, 2017; Strange, 1994).[3]

IPE scholarship, therefore, broadens the analytical scope by situating GVCs within the larger field of global power relations. It asks not only how firms coordinate GVCs, but also how states, international organisations, civil-society organisations, and legal frameworks shape authority, accountability, and enforcement within them. These extra-firm sources of power can decisively shape GVC structure, market access, and the distribution of value – an issue of increasing importance given recent geopolitical and geoeconomic turbulence (Solingen, 2025; Rustad, 2025).

This approach also calls for a re-examination of the relationship between GVCs and markets. Whereas chain analysis often treats markets as transactional arenas for inter-firm exchange, IPE perspectives highlight how market structure, profitability, and the ability of firms and states to capture value are all shaped by the organisation and governance of GVCs. The metaphor of the market as "king" underscores why lead firms seek to construct GVCs that are efficient, resilient, and adaptable to shocks – including those arising from regulatory intervention, labour unrest, or geopolitical conflict. Crucially, markets and GVCs are not self-regulating or detached from broader social and institutional processes. Rather, they are constructed and embedded within systems of norms, rules, and power relations, which include the possibility of rule-breaking, opacity,[4] and selective enforcement – phenomena at the heart of this paper's argument.[5]

As the introduction stresses, understanding the future resilience and sustainability of GVCs requires moving beyond the study of licit transactions and formal institutions. It is necessary to examine how GVCs are shaped by – and in turn shape – the social hierarchies, power structures, and legal ambiguities that characterise the global economy. This includes attention to the ways in which illicitness and legal elasticity become integral to the architecture and governance of GVCs.

[3] These studies examine how trade restrictions – including tariffs and voluntary export restraints – have prompted firms to pursue switching and upgrading strategies, thereby influencing both the geographic and organisational configuration of GVCs. Authors further highlight the significant impact of regulatory interventions, noting the profound integration of political and institutional frameworks within the operation and development of GVCs (Gereffi et al., 2021).

[4] Opacity in GVCs refers not to accidental ignorance but to structurally produced conditions of limited visibility, arising from organisational fragmentation, jurisdictional layering, and governance arrangements that restrict what can be known, documented, and acted upon. Crucially, opacity in GVCs is relational: chains may be highly transparent to corporations, particularly lead firms, while remaining opaque to regulators, auditors, workers, and affected communities.

[5] A long succession of political economy scholars – including Elmar Altvater (1992), Jens Beckert (1997), Neil Fligstein (2018), Stephen Gill (1995), Mark Granovetter (2001), Karl Polanyi (1944), Dani Rodrik (2011, 2018), Susan Strange (1996), and Immanuel Wallerstein (1974) – have shaped critical debate on market theories. Despite their different perspectives, they commonly question the assumptions of classical and neo-classical economics, arguing that structural and institutional factors, not just supply and demand, significantly influence market behaviour and outcomes. Their work exposes the limits of orthodox models and offers broader tools for understanding contemporary market economies.

In sum, the origins and evolution of GVC analysis reveal the shifting patterns of global production and trade. They also show why a research agenda on GVCs must centrally incorporate governance, power, and illicitness. This section is therefore not an exhaustive review of the GVC literature. It identifies the conceptual terrain from which the paper's political-economy contribution proceeds. Its core claim is that conventional GVC analysis illuminates inter-firm coordination and value capture more readily than the legal, institutional, and enforcement conditions through which opacity, responsibility displacement, and tolerated rule-evasion become possible. Section 3 builds on this staging work by specifying how these conditions operate through interrelated mechanisms that together constitute shadow architectures within GVCs.

3. Illicitness within GVCs

This paper approaches GVCs as legally elastic systems. In such systems, opacity, selective enforcement, and illicit practices are often systemic rather than exceptional. The analytical focus is on governance arrangements that distribute compliance, risk, and visibility unevenly across actors and tiers. It is not on specific actor types, such as lead firms or suppliers. The analysis therefore foregrounds how firms, intermediaries, states, and infrastructures distribute knowledge, risk, and benefit asymmetrically. Illicit outcomes emerge from positional effects of chain design, not only from the conduct of particular actors. In legally elastic systems, illicitness is rarely reducible to any one node's intent. It is stabilised through relational configurations in which some actors bear enforcement exposure while others capture the gains of rule-evasion. Despite a substantial literature on corporate crime and wrongdoing, and on illegality in both legal and illegal markets (Balaam & Dillman, 2019; Beckert & Dewey, 2017; Tombs & White, 2015), mainstream GVC research has traditionally marginalised structural opacity and illicitness. This is especially so where such practices fall short of explicit statutory violation, yet remain central to chain governance (IGLP, 2016). This omission is striking given the persistent empirical difficulty of mapping GVCs in full, including the breadth and depth of suppliers operating across transnational production networks.

To avoid conceptual overstretch, the framework distinguishes four related but separate categories. *Illegal* practices formally violate statutory law. *Illicit* practices are broader. They are unauthorised, normatively proscribed, or rule-evading, even when they are not consistently prosecuted as illegal and may be considered legitimate by some actors. *Tolerated* practices are illicit practices that persist because enforcement is selective, politically constrained, or economically inconvenient. *Weakly regulated* practices are not automatically illicit. They become relevant to this framework when regulatory gaps are used to obscure harm, displace responsibility, or make non-compliance difficult to detect. Shadow architectures therefore do not refer to all forms of informality or weak regulation. They refer to configurations in which legality, opacity, and responsibility displacement interact to stabilise illicit outcomes.

The framework developed in this section is deliberately conceptual and programmatic. Because the paper is designed to set the stage for future empirical research, the examples below should be read as illustrative rather than as fully developed case studies. Their purpose is to show how different mechanisms, including regulatory arbitrage, legal insulation, useful illegality, wilful blindness, strategic negligence, and plausible deniablity, can be identified and related analytically. An outlook on the more systematic empirical elaboration is reserved for the seaport research agenda developed in Section 4.

Regulatory arbitrage enables corporations, particularly lead firms, to reduce costs and displace responsibility by exploiting jurisdictional fragmentation, uneven enforcement, and contractual outsourcing across borders. These dynamics are especially visible in enclave spaces such as Special Economic Zones (SEZs), Free Trade Zones (FTZs), and Export Processing Zones (EPZs), although they are not confined to them. Such spaces often operate under differentiated regulatory, fiscal, and oversight regimes. They therefore represent institutionalised concentrations of regulatory arbitrage rather than its only or primary locus. Analytically, they exemplify corporations' strategic exploitation of jurisdictional variation in laws, standards, and enforcement. These zones are not accidental by-products of globalisation. They show how regulatory arbitrage can enable the relocation of production stages, the reclassification of activities, and the rerouting of goods in ways that lower compliance costs and dilute accountability. This can generate forms of illicitness that may be formally legal while remaining substantively unauthorised or weakly regulated (Hall et al., 2023). Regulatory arbitrage is therefore not only a firm strategy, but a system property co-produced by states, intermediaries, and infrastructural nodes.

Regulatory arbitrage is closely linked to **legal insulation**, a second mechanism through which illicitness becomes embedded in GVC governance. Legal insulation enables firms to distance themselves, organisationally, contractually, and jurisdictionally, from sites where rule violations are likely to occur. Through outsourcing, subcontracting, and fragmented ownership and control, firms can benefit from cost reductions generated by upstream illicit practices while limiting their formal exposure to liability. These practices may be illegal, tolerated, or ambiguously regulated. Legal insulation is not confined to the top of the chain. It can cascade across tiers as suppliers, subcontractors, and labour intermediaries externalise liability further downstream. In fragile or conflict-affected settings, this may take a defensive form. It may reflect adaptation to predatory enforcement, coercion, or extreme margin pressure rather than a purely strategic corporate design choice. What matters analytically is the cumulative effect. Insulation becomes a chain-level pattern of responsibility displacement reproduced through contractual layering and jurisdictional fragmentation (LeBaron, 2020). It also resonates with scholarship on private authority in global supply chains, which shows how standards-based governance can proliferate "rules" without generating enforceable rights or effective accountability for those exposed to harm (Bartley, 2018).

Historically, legal and ethical oversight of transnational corporations' sourcing practices has been limited, uneven, and weakly enforced across jurisdictions.[6] Even within critical traditions such as dependency theory and world-systems analysis, opacity and illicitness in international trade were rarely treated as central analytical categories. Where they did appear, they were typically understood as structural by-products of the global economy or as instruments for intensifying extraction and

6 Up until the late 1970s – and sometimes even later – western companies could report bribes and illegal payments to foreign officials as business expenses in their home countries, allowing them to receive tax deductions for these payments (Moriconi, 2018; Rose-Ackerman, 1999).

accumulation. What remained under-theorised, however, was how rule-evasion and selective non-enforcement could become functionally integrated into GVC governance rather than representing a by-product of GVCs that is acknowledged but treated as exceptional and peripheral.

Recent developments in European Union sustainability regulation underscore the contemporary relevance of these dynamics. Published by the European Commission in February 2025, the Omnibus I simplification package set in motion substantial revisions to key elements of the EU's sustainability framework, including the Corporate Sustainability Due Diligence Directive (CSDDD). Critics have argued that these proposed reforms risk significantly weakening the CSDDD, potentially undermining years of progress on corporate accountability, responsible sourcing, and the protection of human rights across GVCs. Of particular concern is how the package may affect the scope of lead firms' liability within the EU for harms linked to armed conflict and serious human rights violations in conflict-affected and high-risk areas (CARAHs). From the perspective developed in this paper, such reforms can be read as reinforcing legal elasticity within GVC governance, further insulating lead firms from upstream risks and redistributing responsibility in ways that may deepen opacity and sustain conditions of plausible deniability rather than curbing illicit outcomes (Resource Matters, 2025).

This functional integration is captured by the concept of **useful illegality** (Kühn, 2022). Useful illegality represents a specific subset of illicitness in which routine violations of labour, environmental, fiscal, or trade regulations – that is, clearly illegal practices – are not aberrations but inputs into competitive advantage. In many GVCs, compliance with all applicable rules would significantly raise costs, slow production, or undermine flexibility. Under such conditions, selective non-compliance can become economically "useful", even when formally prohibited. Crucially, usefulness does not imply intentional criminality at all levels of the chain, nor does it exhaust the wider field of illicit practices that may remain formally legal yet substantively unauthorised or formally illegal yet socially accepted. Rather, it highlights how governance systems can be organised to benefit from illegality without explicitly endorsing it.

Useful illegality is therefore best understood as an asymmetric distributional relation, not as a property of a single actor type. The actors who *practice* routine rule-breaking (often upstream suppliers, subcontractors, recruiters, or logistics intermediaries) are frequently not those who capture the principal gains of flexibility and cost reduction. Conversely, actors with greater structural power may benefit from illegality without directly organising it, precisely because chain design displaces enforcement exposure and concentrates deniability. This asymmetry is particularly stark in fragile and conflict-affected contexts, where "compliance" can be structurally unattainable for lower tiers while remaining rhetorically available to dominant nodes. As a result, illicitness has frequently been framed as a feature of marginal actors or exceptional contexts, rather than as a routine outcome of governance arrangements in which legal compliance is structurally expected of lower-tier actors – often under conditions where compliance is unattainable – while dominant firms retain the capacity to claim formal compliance and plausible deniability.

From the 1990s onward, illicitness was increasingly problematised through the lenses of transnational organised crime, corruption, environmental degradation, and conflict-linked trade, reinforcing a focus on illicit international flows as phenomena associated with marginal actors and exceptional contexts, particularly in seemingly "messy" – and "dangerous" – settings in the developing world. Governance responses such as the Kimberley Process and the Extractive Industries Transparency Initiative (EITI) represented important attempts to address opacity and unauthorised value capture within GVCs (Haufler, 2009; Kolstad & Wiig, 2009; Murdoch, 2021; Rustad et al., 2017). At the same time, these initiatives also reveal the limits of transparency-based governance in legally fragmented systems. Formal compliance mechanisms often coexist with persistent gaps in enforcement and verification, allowing forms of useful illegality to persist beneath the surface of certification and disclosure regimes. This pattern is consistent with analyses of private regulation that emphasise how transnational standards can expand rule-making and auditing while leaving underlying enforcement capacity and rights protections thin or uneven (Bartley, 2018).

These governance arrangements rely not only on legal insulation and useful illegality, but also on **wilful blindness** and **strategic negligence**. Wilful blindness refers to arrangements that structure the avoidance of knowledge that would otherwise trigger legal, ethical, or fiduciary obligations. It helps stabilise illicit outcomes without requiring overt illegality at all nodes of the chain.[7] Wilful blindness is position-dependent. Its governance function is most consequential where liability, reputational exposure, and auditability are concentrated. Upstream actors often possess direct knowledge of violations but lack the power to convert that knowledge into compliant outcomes under price pressure, coercion, or weak protection. Knowledge without capacity is not "blindness." The analytical target is the structured management of visibility and obligation along the chain. Some actors can afford not to know, while others cannot afford to comply. In GVCs, this may take the form of narrowly scoped audits, selective data collection, or reliance on supplier self-reporting (LeBaron, 2020; Bartley, 2018). Strategic negligence goes one step further. It describes systematic under-investment in monitoring, due diligence, or remediation as a rational governance choice rather than an oversight. It should also be disaggregated across tiers. For dominant nodes, it may preserve flexibility and

[7] It is noteworthy that UNODC (2025) describes corporate involvement in criminal activity along a continuum ranging from unintentional or "unknowing" participation to knowing and intentional engagement. While developed primarily for enforcement and compliance purposes, this paper treats "unknowing participation" not as a morally neutral or purely accidental position, but as a governance outcome of legally elastic value chain architectures in which wilful blindness, strategic negligence, and selective enforcement systematically delimit what is known, audited, and acted upon.

limit liability. For weaker nodes, it may reflect constrained capacity or coerced informality rather than a calculated governance choice. Both mechanisms shape what is known, recorded, and acted upon within GVCs. Both contribute to the normalisation of legal ambiguity.

The governance outcome produced by the interaction of regulatory arbitrage, legal insulation, useful illegality, wilful blindness, and strategic negligence is **plausible deniability**. This is unevenly accessible across the chain: it is a privilege of position rather than a general tactic. Upstream actors and intermediaries are often exposed to direct enforcement, coercion, or local accountability and therefore cannot plausibly deny what they are compelled to manage. By contrast, actors located where compliance claims are audited and reputationally priced can convert opacity into a credible posture of non-knowledge, even when illegality is functionally integral elsewhere in the chain. Plausible deniability should therefore be understood not as an individual tactic or evidence of criminal intent, but as a chain-level governance condition through which illegal, quasi-legal, or selectively enforced practices remain compatible with formal claims of compliance. In this sense, plausible deniability is not the absence of governance. It is a form of governance adapted to legally elastic systems, and it can be reinforced, rather than reduced, by rule-dense but weakly enforceable regimes of private regulation (Bartley, 2018) and by labour governance approaches that fail to confront corporate power and outsourcing structures (LeBaron, 2020).

The shadow architectures of GVCs

The expansion of integrated globalisation has coincided with the growing prominence of transnational organised crime (TOC). While cross-border criminal activity long predates the end of the Cold War, its visibility in policy and academic debates increased markedly in the 1990s, alongside heightened concern with transnational trafficking in drugs, weapons, wildlife, toxic waste, and people (von Lampe, 2016). Research in this area has shown that illicit actors routinely exploit the same production, logistics, and transport infrastructures that underpin licit global trade. Policy-oriented analyses, including the OECD's work on illicit trade, recognise that criminal and licit networks converge within global trade infrastructures, but continue to treat this convergence primarily as an external threat rather than as a governance outcome of GVCs (OECD, 2016). Mainstream GVC research has similarly tended to treat such activities as external to the "mainstream" economy – an underworld operating in parallel to legal capitalism – thereby obscuring the continuities between licit and illicit economic practices.

The separation, however, obscures important continuities (Friman & Andreas, 1999; Mayntz, 2017; Nordstrom, 2007; Passas, 2002; Schultze-Kraft, 2019; Wilson, 2009). In this respect, my argument echoes Abraham and Van Schendel's (2005) critique of rigid licit/illicit binaries, emphasising instead how economic practices move across shifting legal and normative boundaries rather than occupying fixed positions inside or outside legality. Research on transnational trafficking and organised crime shows that illicit flows are frequently embedded in regulatory governance, state authority, and conflict dynamics, rather than operating outside them, particularly in fragile and conflict-affected settings (Jojarth, 2009). Transnationally organised criminal networks generate immense profits and rely on jurisdictional gaps, logistical corridors, and enforcement asymmetries that are also central to licit value chains (Gregson & Crang, 2017; Hall, 2013; Hudson, 2014; The Millennium Project, 2024). Empirical research on illicit commodity chains shows how licit and illicit goods often move through shared infrastructures and spatial configurations, with illegality and risk redistributed rather than contained along different segments of the same chain (Dávila et al., 2021; Gilman et al., 2011; Pinheiro-Machado, 2018). From the perspective developed here, TOC represents the overtly illegal end of a broader spectrum of illicit practices that are otherwise embedded within formally legal GVCs.[8]

The concept of **shadow architectures** captures these continuities and specifies their organisational logic. It explains not simply that outsourcing, regulatory arbitrage, private governance, and labour exploitation occur within GVCs, but how they can become mutually reinforcing. Shadow architectures point to spatial, legal, and institutional arrangements that generate durable opacity. These arrangements enable actors to move between legality and illegality, and between legality and illicitness, through mechanisms such as regulatory arbitrage, legal insulation, and selective enforcement. They do not sit outside GVCs. They are produced through the same processes of outsourcing, subcontracting, and jurisdictional fragmentation that structure formally legal GVCs. In this context, useful illegality is not confined to explicitly criminal markets. It extends to everyday practices of informalisation, unauthorised subcontracting, and regulatory evasion within otherwise legal industries.

Shadow architectures should thus be treated as properties of GVCs, nodes, and interfaces rather than as the design of any one corporate actor. They are reproduced through interaction: between firms and subcontractors, private compliance regimes and public enforcement discretion, and local power relations at logistical chokepoints such as seaports. This interactional view preserves asymmetry – some actors set terms, others absorb risk – while avoiding a lead-firm-only account that cannot explain how illicitness stabilises across heterogeneous GVC segments and jurisdictions.

Shadow architectures are not directly observable as discrete entities but can be identified empirically through patterned configurations of organisational design, le-

8 References to transnational organised crime are used to illuminate governance and infrastructural continuities across licit and illicit domains, not to suggest equivalence between GVCs and criminal enterprises. Organised crime is treated as an extreme manifestation of broader illicit practices embedded within formally legal value chains, allowing analysis of convergence without conflation.

gal arrangements, and enforcement practices. Rather than isolated violations or episodic non-compliance, they are indicated by the persistent alignment of regulatory arbitrage, legal insulation, selective visibility, and enforcement asymmetries that stabilise illicit outcomes over time. Empirically, this becomes visible where rule-evasion recurs without proportionate sanction; where responsibility for harm is systematically displaced across contractual and jurisdictional boundaries; and where formal compliance coexists with durable opacity. Shadow architectures thus vary in depth and intensity, depending on the degree of legal elasticity, organisational insulation, and the stability of plausible deniability. Treating these patterns as governance outcomes, rather than implementation failures, allows analysis to move beyond individual violations to the institutional conditions that reproduce them.

Studying the shadow architectures of GVCs requires attention to the spatial settings – both physical and virtual – through which GVCs operate (Hall, 2013). These spaces are characterised by uneven state oversight and differentiated enforcement capacity (White, 2014). Within them, wilful blindness and strategic negligence function as informational complements to regulatory arbitrage: by limiting what is known and documented, actors can navigate legal ambiguity while maintaining operational continuity. Plausible deniability again emerges as a systemic effect, allowing firms and intermediaries to benefit from illicit practices while sustaining claims of compliance and legitimacy – dynamics that echo broader critiques of audit-centred and standards-driven governance (Bartley, 2018) and of labour governance regimes that do not disrupt exploitative business models (LeBaron, 2020).

Recent scholarship on illicit or shadow value chains underscores these dynamics by showing how legal and illegal flows intersect, how governance arrangements allocate risk and rents, and how moral economies and livelihood strategies shape participation (Arias & Grisaffi, 2021; Brombacher et al., 2022; Østensen & Stridsman, 2017). What remains underdeveloped, however, is a systematic integration of these insights into GVC analysis. Bringing concepts such as regulatory arbitrage, legal insulation, useful illegality, wilful blindness, strategic negligence, and plausible deniability into GVC research helps shift attention from routes and commodities to the institutional design features that stabilise illicitness within global capitalism.[9]

This framework, summarised in Table 1 below, conceptualises GVCs as legally elastic systems. In these systems, illicitness emerges as a structured governance outcome rather than a peripheral deviation. The table identifies a set of interrelated mechanisms: regulatory arbitrage, legal insulation, useful illegality, wilful blindness, strategic negligence, and plausible deniability. Together, these mechanisms constitute what this paper terms the shadow architectures of GVCs. The analytical levels in the table distinguish between the conditions that make illicitness possible, the

[9] This approach is complementary to moral economy accounts of illicit markets, such as Arias and Grisaffi's (2021) work on the cocaine trade, which foregrounds the normative logics and livelihood rationalities through which participants legitimise engagement in illicit economies at different nodes of the cocaine chain. By contrast, this paper focuses on how illicit outcomes are stabilised across GVCs through governance architectures—rather than through shared moral norms or actor-level legitimacy claims.

organisational arrangements that distribute responsibility and exposure, the governance practices that manage visibility and compliance, and the systemic outcome that stabilises these dynamics. Structural conditions refer to the wider legal and regulatory environment of jurisdictional fragmentation and uneven enforcement. Organisational design refers to the contractual, ownership, and subcontracting arrangements through which responsibility is separated from control. Governance practices refer to recurrent operational behaviours, such as selective monitoring, non-knowledge, and under-investment in due diligence, that reproduce opacity in everyday chain management. Plausible deniability is treated as the emergent chain-level outcome of these interacting mechanisms.

These mechanisms describe a self-reinforcing architecture in which illicitness is stabilised rather than addressed and eliminated. Plausible deniability feeds back into regulatory arbitrage and legal insulation by reducing incentives for deeper oversight, thereby reproducing legal elasticity across the chain. The shadow architecture of GVCs thus emerges from the interaction of structural conditions, organisational design, and governance practices, offering a framework for analysing how licit and illicit practices become mutually entangled within global capitalism.

Table 1. The Shadow Architectures of GVCs

Analytical Level	Concept	Definition	Governance Function
Structural conditions	Legal elasticity	Fragmentation and variability of legal and regulatory regimes across jurisdictions	Enables selective compliance and rule evasion
	Regulatory arbitrage	Strategic exploitation of jurisdictional differences in law, standards, and enforcement	Lowers costs; redistributes regulatory risk
Organisational design	Legal insulation	Organisational and contractual separation of lead firms from sites of rule violation	Limits formal liability and accountability
Governance practices	Useful illegality	Routine rule-breaking that contributes to competitiveness and value creation	Integrates illegality into chain efficiency
	Wilful blindness	Structured avoidance of knowledge that would trigger legal or ethical obligations	Narrows accountability through ignorance
	Strategic negligence	Systematic under-investment in monitoring and due diligence	Normalises regulatory ambiguity
Systemic outcome	Plausible deniability	Chain-level condition allowing actors to claim compliance while benefiting from illicit practices	Stabilises illicitness within GVC governance

Note: The table conceptualises illicitness as a structured governance outcome rather than a peripheral deviation. Structural conditions identify the legal and regulatory environment in which elasticity becomes possible; organisational design captures contractual and institutional arrangements that distribute responsibility and exposure; governance practices describe recurring forms of visibility management and selective compliance; and plausible deniability names the systemic outcome through which these mechanisms stabilise illicitness within GVC governance.

Source: Author's elaboration

4. Conclusion and future directions: advancing research on illicitness within GVCs

This paper argues that illicitness is not an external anomaly or residual pathology of GVCs. It is a recurrent feature of their architecture and governance. By conceptualising GVCs as legally elastic systems, the paper has shown that opacity, selective enforcement, and differentiated responsibility are not simply failures of governance. They are patterned outcomes of governance. Regulatory arbitrage, legal insulation, useful illegality, wilful blindness, strategic negligence, and plausible deniability together constitute what this paper terms the shadow architectures of GVCs. Through these architectures, illicitness is stabilised rather than eliminated.

However, the argument advanced here is conditional rather than universal. Illicit practices are most likely to emerge and stabilise in GVCs that combine jurisdictional fragmentation, extensive subcontracting, logistics-intensive infrastructures, limited traceability, strong asymmetries between actors who set terms and those who absorb risk, and uneven enforcement. Under these conditions, legal elasticity, opacity, and responsibility displacement can become institutionalised. Such configurations are especially pronounced in long, multi-tiered GVCs and in enclave spaces such as seaports, free trade zones, and special economic zones, as well as in GVCs spanning conflict-affected or high-risk areas. Where production is more vertically integrated, oversight denser, traceability stronger, or labour organisation more effective, the scope for illicitness may be constrained, though not eliminated. Illicitness is therefore analysed as a recurrent governance outcome under specific structural conditions, not as an inevitable feature of global production.

A central implication of this analysis is that the boundary between licit and illicit economic activity cannot be understood solely through formal legality or the presence of overt criminality. Instead, illicitness emerges relationally and unevenly across chain nodes, jurisdictions, and institutional settings. Structurally produced opacity plays a crucial role in this process, not as accidental ignorance or simple concealment, but as a condition of limited legibility that enables selective enforcement and sustains plausible deniability. As a result, value creation within GVCs is frequently intertwined with practices that are unauthorised, weakly regulated, or unevenly sanctioned, even where formal illegality is limited, displaced, or externally outsourced.

Recent developments in European Union sustainability regulation highlight the contemporary relevance of these dynamics. Introduced in 2025, the European Commission's Omnibus simplification package proposes substantial revisions to core elements of the EU's sustainability framework, including the Corporate Sustainability Due Diligence Directive (CSDDD). Critical legal scholarship has interpreted such reform initiatives not simply as technical adjustments, but as politically contested efforts to recalibrate corporate responsibility and liability in favour of lead firms, often under the guise of regulatory "simplification" (Buckel et al., 2024). Critics have warned that these reforms risk weakening corporate accountability and undermining advances in responsible sourcing and human rights protection achieved in recent years. Of particular concern is how proposed changes may affect the scope of lead firms' liability within the EU for harms linked to armed conflict and serious human rights violations in conflict-affected and high-risk areas (CARAHs). From the perspective developed in this paper, such reforms can be understood as potentially reinforcing legal elasticity within GVC governance, further insulating lead firms from upstream risks and redistributing responsibility in ways that may deepen opacity and sustain conditions of plausible deniability rather than curbing illicit outcomes.

Building on this conceptual framework, the next stage of the research programme develops an empirical analysis of seaports as critical sites where the shadow architectures of GVCs become particularly visible. Ports make these dynamics empirically tractable because they concentrate legal pluralism, subcontracting, and enforcement discretion. They are logistical chokepoints, jurisdictionally complex spaces, and interfaces between global trade, state authority, and local political economies. They are also sites where opacity is actively produced through fragmented oversight, layered regulatory regimes, and the coexistence of public and private governance arrangements. Scholarship on illicit geographies, legal and illegal economic interfaces, and extra-legal governance shows that such spaces are often characterised by negotiated authority, selective enforcement, and ambiguity at the boundary between licit and illicit activity (Hall, 2013; Hudson, 2014; Passas, 2002; von Lampe, 2016). Recent analyses of crimilegal governance in Colombia further show how these dynamics operate in settings marked by armed conflict, organised violence, and uneven state authority (Schultze-Kraft & Valencia, 2025). This makes ports particularly conducive to the normalisation of illicit practices within otherwise licit economic systems. From a labour governance perspective, institutional fragmentation can be compounded by commercial compliance systems that privilege procedural verification over workers' enforceable rights. This can allow severe exploitation to persist in the shadow of formal standards (LeBaron, 2020).

An initial empirical focus on southern seaports, such as the Colombian port complexes of Buenaventura and Cartagena, examines how illicitness is embedded within otherwise licit value chains. These ports operate in contexts marked by inequality, uneven state capacity, and the historical entanglement of legal trade with armed conflict and organised violence. Drawing on fieldwork conducted in Colombia in 2025, this research analyses how regulatory arbitrage, legal insulation, and strategic negligence operate across port governance, labour regimes, customs enforcement, and logistics operations. Ports also make visible how subcontracting, recruitment intermediaries, and audit-centred compliance can obscure responsibility for labour abuses within otherwise licit logistics and trade systems (LeBaron, 2020).

A subsequent comparative extension to a sample of northern European ports shifts attention to environments with different configurations of authority and enforcement. The comparison does not assume the absence of illicitness. Instead, it asks whether different governance frameworks generate similar or different patterns of opacity and liability displacement, redistributing rather than eliminating illicit outcomes (Magliocca et al., 2021). Comparing European ports with Buenaventura and Cartagena also enables analysis of whether, under stronger formal regulation, labour harms are reduced, displaced into subcontracted segments, or rendered less visible through compliance infrastructures. This possibility is suggested by research on labour governance and decent-work deficits in ports and maritime supply chains (LeBaron, 2020; Scherrer & Karatepe, 2025).

By foregrounding seaports as strategic nodes within GVCs, this research agenda advances a more spatially and institutionally grounded political economy of illicitness. It shifts the analytical focus away from illicit commodities or criminal actors as isolated phenomena. Instead, it examines the governance arrangements that stabilise illicit outcomes across diverse settings. In doing so, it offers a framework for understanding how contemporary regulatory reforms, including those aimed at simplifying or recalibrating corporate due diligence obligations, may be absorbed into the shadow architectures they seek to reform. Understanding these dynamics is essential for developing more realistic and politically informed approaches to governing GVCs in an era of geopolitical tension, regulatory experimentation, and contested globalisation.

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Markus Schultze-Kraft: More than meets the eye

Global value chains (GVCs) organise much of the contemporary world economy, shaping production, trade, and value capture across borders. While extensive scholarship has examined governance, upgrading, and power relations within GVCs, less attention has been paid to how illicitness is produced and stabilised within their everyday operation.

This paper argues that illicitness is not simply a marginal deviation from global production, but a recurrent governance outcome under specific structural conditions. It develops a political economy account of GVCs as legally elastic systems in which jurisdictional fragmentation, outsourcing, subcontracting, and uneven enforcement generate durable opacity and enable selective compliance. The paper distinguishes between illegal practices that violate statutory law and illicit practices that are unauthorised, normatively proscribed, or rule evading, even when they are tolerated, quasi legal, or rendered effectively permissible through selective enforcement. Building on this distinction, it introduces the concept of shadow architectures to capture how regulatory arbitrage, legal insulation, useful illegality, wilful blindness, strategic negligence, and plausible deniability interact to stabilise illicit outcomes within formally legal GVCs. The argument does not reduce illicitness to criminal intent or particular actor types. Instead, it shows how illicitness emerges relationally from governance arrangements that shift compliance obligations and enforcement exposure onto lower tier actors while insulating dominant nodes.

The paper’s contribution is conceptual and programmatic: it reframes illicitness as an embedded feature of legally elastic GVC governance, while specifying the conditions under which such outcomes are most likely to arise. It concludes by outlining a research agenda centred on seaports as critical nodes where the shadow architectures of global production become empirically visible.